

EUROFI

Monetary Scoreboard

APRIL 2023

**Jacques de Larosière and Didier Cahen
with the support of Elias Krief**

Inside

- Continuously very accommodative monetary policies in OECD countries over the past two decades
- Significant impacts in terms of indebtedness and wealth inequalities
- Negative economic and financial stability consequences
- The return of inflation: state of play and challenges ahead
- Central banks are still behind the curve despite increases of nominal interest rates

Eurofi
Monetary Scoreboard

•

Prepared by
Jacques de Larosière and Didier Cahen
with the support of Elias Krief

•

April 2023

Content

EXECUTIVE SUMMARY	7
--------------------------	----------

1. THE MONETARY BASE OF OECD ECONOMIES HAS BEEN MULTIPLIED BY 10 SINCE 2000

1.1 Central Banks' Balance sheets between 2000 and 2022: facts and figures	9
<i>1.1.1 The monetary base of OECD countries has increased tenfold between 2000 and 2022</i>	
<i>1.1.2 The growth of the monetary base in particular in the US and the Eurozone has consistently exceeded that of GDP in these countries since 2000</i>	
<i>1.1.3 The expansion of the monetary base results from central banks' asset purchase programmes, which have led their balance sheets to grow by more than 500% between 2008 and 2022</i>	
<i>1.1.4 A significant part of the increase in the aggregate monetary base occurred outside of recessionary phases, which is a consequence of the asymmetry of monetary policy</i>	
1.2 Central banks reacted swiftly and forcefully during the Lehman Brothers, EU sovereign debt and Covid-19 crises	11
1.3 Very accommodative monetary policies have allowed financial markets to continue functioning and being liquid in the EU, and also prevented the tightening of financing conditions for states, firms and households	13
1.4 Lasting easy monetary policies have contributed to the downward path of interest rates	14
1.5 The 2% inflation target has led the ECB's and the Fed's monetary policies to be asymmetric over the past 20 years	15
<i>1.5.1 Once the economic situation improved after the sovereign crisis, the ECB's monetary policy has not been tightened nor normalised</i>	
<i>1.5.2 Central banks were overly involved: the asymmetry of the Fed's and the ECB's monetary stances over the past 20 years can be illustrated by the trajectory discrepancy of their real short-term interest rate</i>	
<i>1.5.3 Until July 2022, the ECB continued its QE policy while inflation was rising sharply, climbing to its highest levels since the beginning of the monetary union</i>	

2. SUCH PROLONGED MONETARY POLICIES EASING HAS STEADILY BEEN CONTRIBUTING TO THE INDEBTEDNESS OF ECONOMIES

2.1 Lessons on the causes of the 2008 crisis have not been learned by policy makers	19
2.2 Central banks have not acted to control – let alone rein in – credit growth during the past decades	20
<i>2.2.1 Money supply growth has been high over the past decade and stronger than GDP growth in advanced economies between 2000 and 2019</i>	
2.3 Lasting persistent low interest rates contributed to the over-indebtedness of advanced economies	22
<i>2.3.1 Loose credit conditions have entailed a huge public debt overhang</i>	
<i>2.3.2 The corporate sector entered the COVID-19 crisis with high levels of debt</i>	
2.4 Central banks have, de facto, become the agents of fiscal policies	25

3. PERSISTENT ULTRA-LOOSE MONETARY POLICIES HAVE LED TO NEGATIVE ECONOMIC AND FINANCIAL STABILITY CONSEQUENCES

3.1 Lasting zero interest rates damaged productive investment and growth in Europe.....	29
3.1.1 Signs of the liquidity trap: preference for liquidity prevails over productive investment	
3.1.2 'Too low for too long' policies have fuelled the survival of weak firms, increasing a misallocation of capital	
3.1.3 Lasting low interest rates incentivise companies to take on cheap debt to buy-back their shares rather than invest in long-term projects	
3.2 Persistent low rates have been exacerbating financial vulnerabilities.....	34
3.2.1 Net wealth has grown much faster than income	
3.2.2 Interest rates no longer play their discriminating role, thus leading to a mispricing of risks	
3.2.3 High leverage has massively increased market valuations and thus spurred the development of asset bubbles	

4. THE RETURN OF INFLATION: STATE OF PLAY AND CHALLENGES

4.1 High inflation is expected to last for longer.....	41
4.1.1 Even prior the war in Ukraine, inflation was already an issue for OECD countries	
4.1.2 The war in Ukraine has triggered a major global commodity price shock, pushing inflation to higher levels in OECD economies in 2022 and 2023	
4.1.3 The current inflation spike is driven by structural factors	
4.1.4 Wage growth constitutes an important component of "homemade" inflation	
4.2 Normalisation process as of end-March 2023: state of play.....	47
4.3 Despite the increase of nominal interest rates by Central Banks and the rise of bond yields, monetary and financial conditions remain expansionary, especially in the euro area.....	54

CONCLUSION	59
-------------------------	-----------

Executive summary

The objective of this scoreboard is to analyse the evolution of monetary policy and central banks' decisions over the last two decades through the extensive use of data¹. Indeed, central banks' balance sheets have only rarely reached similar heights relative to GDP, except during wars. By presenting key numbers and charts, this document opens the debate on monetary policy and the need to change course.

During the Global Financial Crisis (GFC), the EU sovereign debt and Covid-19 crises, central banks played a crucial role and intervened on an unprecedented scale to keep financial markets liquid and stabilise the financial system. In addition, in Europe, the ECB's measures have avoided a financial fragmentation in the dynamics of bonds prices, particularly for sovereign bonds. These swift and decisive actions have helped to prevent potential economic collapses.

However, the 2% inflation target has trapped monetary policy in a systematic and asymmetric accommodative stance during the past two decades. Lasting accommodative monetary policies have pushed global debt to an all-time high of 338% of the world GDP in 2022 and has driven the monetary base of OECD economies to be multiplied by 10 since 2000. Persistent low interest rates have been fostering liquidity hoarding at the expense of productive investment in Europe in particular. The price paid in terms of over-leverage, decline in corporate dynamism, productivity growth, important assets bubbles and instability, has been high. Through its monumental programme of government bond purchases, the ECB has become a *de facto* agent of fiscal policies, buying most government bond issuances in 2020-21. In turn, this huge leverage has weakened the financial system stability: the search-for-yield behaviour has fuelled swelling bubbles.

The recent banking crisis in the US reminds us of the significant financial vulnerabilities built over years of low rates, compressed volatility, and ample liquidity. Persistent very accommodative monetary policies have also been accompanied by a significant increase in wealth inequality.

Inflation remains persistent and high, well above the 2% target. Since the second quarter of 2021, inflation has been increasing to levels not seen in decades fuelling concerns about the rising cost of living for households.

Year-on-year inflation in the OECD area reached 8,8% in February 2023. High inflation should last longer than expected. Formerly attempting to "look through" what they considered to be "transitory" higher inflation, many central banks across Advanced Economies responded late.

Central banks have raised their policy rates by 350 basis points in the euro area between July 2022 and March 2023, and by 475 basis points in the US between March 2022 and March 2023. Nevertheless, monetary policies are still expansionary especially in the euro area with real interest rates still very negative.

In such a context, inflation must remain the priority of central banks despite the vulnerabilities they have created over the years.

1. All charts and statistics in this report are based on data released as of to 3 April 2023.

1. The monetary base of OECD economies has been multiplied by 10 since 2000, mainly as a result of the 2% inflation target which has become the absolute guide to monetary policy until 2022

Monetary base has grown significantly in OECD economies as a result of the non-standard monetary policies conducted in response to the 2008 and Covid-19 crises, as well as of the 2% target which has become the absolute guide to monetary policy. The balance sheets of central banks have exploded in the past 20 years.

Monetary policy, notably in the euro area, has been asymmetric: it has stimulated activity at the first signs of slowing growth, whereas it has been reluctant to tighten when overheating appeared. Indeed the 2% inflation target has trapped monetary policy in this systematic accommodation until 2022.

1.1 Central Banks' Balance sheets between 2000 and 2022: facts and figures

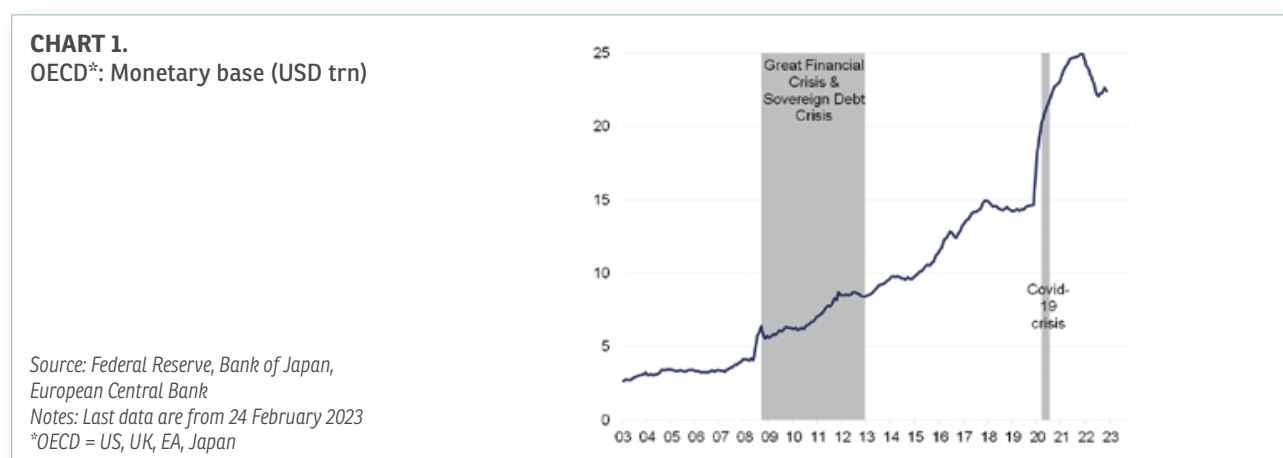
1.1.1 The monetary base of OECD countries has increased tenfold between 2000 and 2022

The Chart below highlights the exceptional and significant increase of the monetary base in OECD economies. The aggregate monetary base of the OECD countries (US, Eurozone, Japan, UK) has grown from \$ 2.5 trn in 2000 to \$ 25 trn in March 2022, an increase of 900%.

Two phases must be distinguished in this unprecedented expansion:

- Between January 2008 and the end of 2019, the monetary base had grown by \$ 10.7 trn, reaching \$ 14.6 trn in December 2019.
- From March 2020 to March 2022, the amount of money issued by central banks had increased by a further \$ 10 trn, reaching \$ 24.6 trn by March 2022.

So, the rise in the monetary base has been much stronger in response to the Covid-19 crisis than to the Global Financial Crisis in 2008.



Since the beginning of 2008 to end-2021, the monetary base of the US Federal Reserve (Fed) has been multiplied by 8, and by 7 in the euro area.

1.1.2 The growth of the monetary base in particular in the US and the Eurozone has consistently exceeded that of GDP in these countries since 2000

M0 grew extremely fast between 2008 and 2019: 13.5% a year in advanced countries, while their GDP grew 2% on average, in real terms. Given an annual inflation around 1.5%, the average nominal growth of GDP in AEs has been in the order of 3.5%. Therefore, during those 10 years, the money base grew almost 4 times quicker than the nominal GDP.

In the euro area, the monetary base grew by an average of 13.8% per year between the end of 2007 and the end of 2019, i.e. 5.8 times faster than nominal GDP growth (+2.5%).

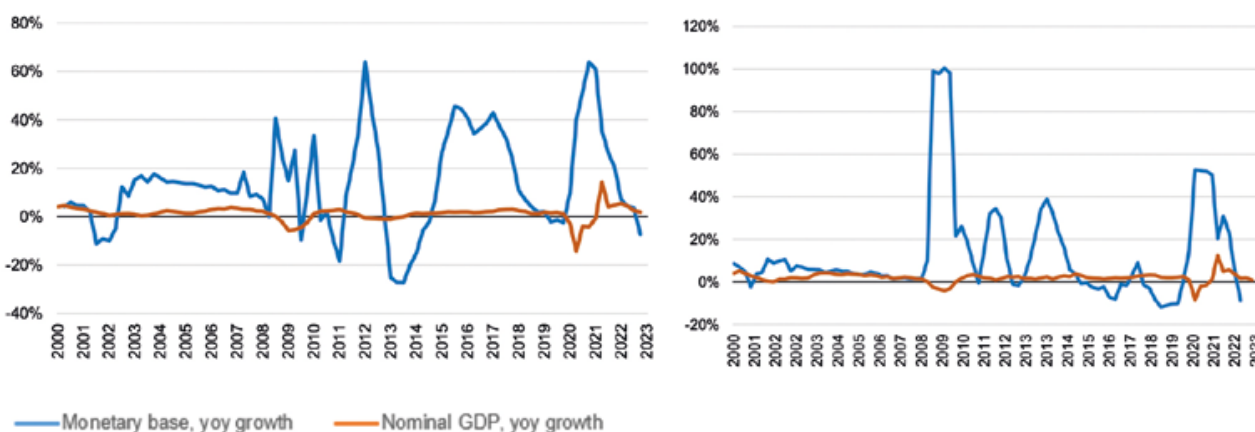
Over the same period, the monetary base in the United States grew by 14.8% per year on average, a pace 4.6 times higher than that of nominal GDP (+3.2%).

CHART 2.

Nominal GDP against Monetary base, quarterly growth, % annual change

2a. Euro area

2b. United States



Sources: IMF, OECD

As of Q4-2022

1.1.3 The expansion of the monetary base results from central banks' asset purchase programmes, which have led their balance sheets to grow by more than 500% between 2008 and 2022

Between January 2008 and June 2022,

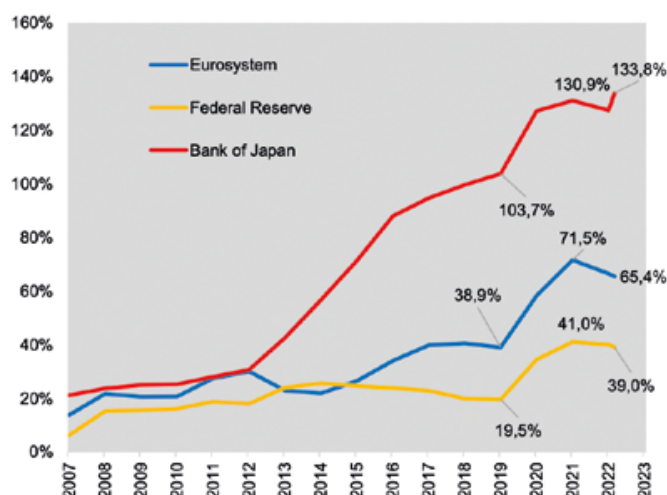
- The Fed's balance sheet grew by 890%, a total increase of \$ 8 trn.
- The Eurosystem's balance sheet grew by 560%, corresponding to an increase of € 7.5 trn.
- The growth in balance sheet size was 548% in Japan and 1056% in the UK.

As a result, the size of the assets held by the Fed represented 41.7% of US GDP in June 2022, compared to 6.1% in 2008. The Eurosystem's assets were 73.3% of Eurozone GDP in June 2022, up from 13.8% in January 2008 (see Chart 2).

The assets of the Bank of Japan (which began its asset purchase programme in March 2001) were equivalent to 132.6% of Japanese GDP in June 2022, compared with 21.7% in January 2008.

CHART 3.

Central Banks' Total Assets Relative to GDP, %



Source: Federal Reserve, Bank of Japan, European Central Bank

Notes: Last data are from 24 February 2023 ; the ratio is calculated on the basis of the 2019 nominal GDP for all the data since 2019

The fact that a Central Bank like the ECB decided to buy – and, in effect monetize – bond securities to the tune of more than 70% of the Eurozone's GDP gives an idea of the unprecedented scale of the explosion that has occurred since 2014 in monetary support to the economy.

Jacques de Larosière points out in his latest book² (see Chapter V), “when [the ECB] buys – through money creation – the equivalent of $\frac{3}{4}$ of the national economy, we get problematic results:

- a certain form of “nationalisation” of the economy by the issuing institution,
- a “fiscalization” of the role of the central bank insofar as it becomes an essential part of the financing of the treasuries,
- the substitution of a public body for market forces and, by the same token, a decisive influence on the yield curve (such a subordinate position of the Central Bank in relation to the public authorities was generally only encountered in times of war when national defense governments set rates).”

1.1.4 A significant part of the increase in the aggregate monetary base occurred outside of recessionary phases, which is a consequence of the asymmetry of monetary policy

As we have seen, the aggregate monetary base increased by \$ 22.5 trn between 2000 and 2022: \$ 13.4 trn were issued during the Great Financial Crisis and the European sovereign debt crisis between 2008 and 2013 (+ \$ 4.5 trn) and in response to the health crisis in 2020 (+ \$ 8 trn).

The remaining \$ 9.1 trn were issued outside of the recessionary phases (see Chart 1), namely between 2000 and 2008 (+ \$ 1.6 trn), between early 2014 and late 2019 (+ \$ 5.3 trn) and between January 2021 and early March 2022 (+ \$ 2.3 trn).

1.2 Central banks reacted swiftly and forcefully during the Lehman Brothers, EU sovereign debt and Covid-19 crises

The Fed's purchases from 2008 to 2015 in reaction to the Global Financial Crisis (GFC).

Between 2008 and 2015, the Federal Reserve's balance sheet expanded from \$ 0.9 trn to \$ 4.5 trn (corresponding to nearly 16.8% of US GDP as of January 2015).

This increase results from the massive purchase programme of US Treasuries and Mortgage-Backed Securities (MBS) that was conducted by the Fed in three phases. The first wave of QE occurred between November 2008 and March 2010, during which the Fed accumulated a total of \$ 1.75 trn of securities, or twice as much as its total assets' value prior to the crisis. In October 2010, the FOMC announced the second round of QE, containing US Treasuries purchases worth \$ 600 bn and ending in June 2010. Finally, the third round of QE began in 2012 and ended in 2015, targeting a monthly purchase of MBS (\$ 40 bn) and longer-term Treasuries (\$ 45 bn). Over \$ 1.7 trn of assets were acquired during this period.

ECB purchases from 2011 to 2015 to counter the effects of the GFC and the EU sovereign debt crisis.

Between 2008 and 2013, the Eurosystem's balance sheet grew from € 1.2 trn to € 3.03 trn, corresponding to 14.2% of euro area GDP as of January 2013.

Unlike the Fed, the ECB's emergency action has been less sizeable in terms of balance sheet expansion in the aftermath of the Great Financial Crisis in 2008. However, as the crisis extended with the sovereign debt crisis in the euro area (2010-13), the Eurosystem's balance sheet has significantly expanded in the following years.

By December 2011, the Eurosystem had purchased government bonds under the Securities Markets Programme with a total settlement amount of € 211.4 bn. Accounting for 47% of the outstanding, Italian debt was the largest holding, followed by Spain (21%), Portugal (10%), Ireland and Greece. The Eurosystem's balance sheet expanded in an unprecedented way, overall, more than doubling in size between 2008 and mid-2012, before starting to recede in the second half of 2012. The provision of central bank refinancing which had decreased substantially to around € 90 bn at the end of December 2012, largely remained in a € 90-130 bn range throughout 2013.

Following the Global Financial and EU sovereign debt crises, the ECB monetary policy remained strongly accommodative. As inflation stood below the 2% target and fell to 0.4% in 2014, the ECB decided to embark in a massive asset purchase programme. Launched in January 2015, it aimed at purchasing public and private securities at a monthly pace of € 60 bn, as part of the Asset Purchase Programme (APP). The share of each

2. J. (de) Larosière, “Putting an end to the reign of financial illusion: for real growth”, Odile Jacob, September 2022.

country security in the portfolio was based on the respective National Central Banks' contribution to the ECB's capital. Though, the maximum holding limit of a single issuer's outstanding securities was limited to 33%.

From January 2015 to early March 2020, a total of € 2.66 trn of public and private securities were purchased by the Eurosystem, corresponding to nearly 20% of the eurozone's 2019 GDP. This brought the balance sheet's value to € 4.7 trn (*i.e.* 39.3% of GDP).

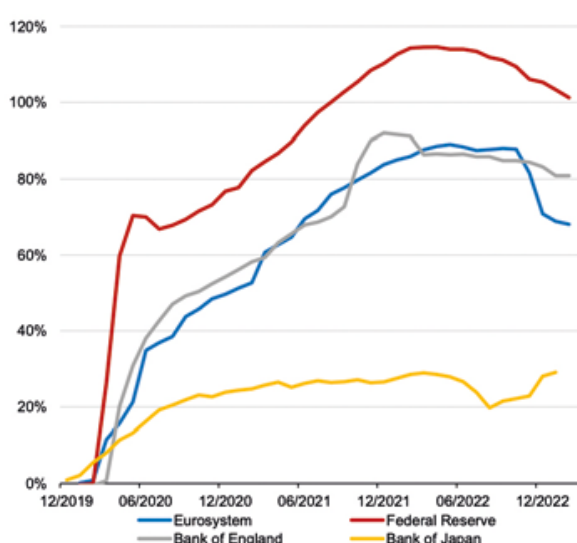
Central banks' responses to the Covid-19 crisis (2020 – 2021).

When the pandemic struck in March 2020, most Central Banks in advanced economies (AEs) were already providing very accommodative financing conditions and their key financing rate could not be lowered further, as it was the case for the ECB and the BOJ. The Fed immediately reduced its main rate by a total of 1.5 percentage points, from a range of 1.05 – 1.75% to 0 – 0.25%. Accordingly, the three Central Banks deployed massive emergency purchase programmes.

Between end-2019 and end-2021, the ECB's total assets grew by 83.8% while the Fed's balance sheet rose by 110.2% (*see Chart 4*).

CHART 4.
Change in Central Banks' balance sheet since December 2019, %

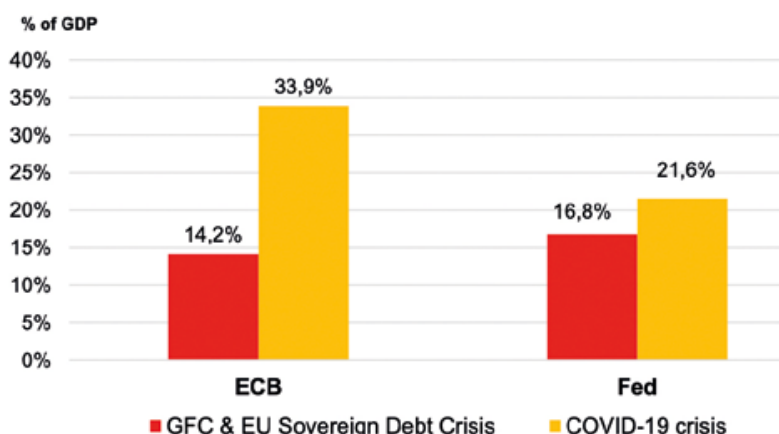
Source: Federal Reserve, Bank of Japan, European Central Bank
Notes: Last data are from 24 February 2023



Between March 2020 and March 2022, the size of the Eurosystem's balance sheet as a share of the eurozone's GDP expanded by more than twice as much as it did in the five years of the GFC and EU sovereign debt crisis [2008–2013] (*see Chart 5*). As for the US, the total rise of the Fed's balance sheet amounted to 21.6% of GDP in less than two years, between March 2020 and December 2021, compared to an increase of 16.8% of GDP between 2008 and 2015.

CHART 5.
Expansion of Central Banks' Balance sheet during the Global Financial Crisis and during the COVID-19 crisis

Source: Federal Reserve
Notes: the period associated to the ECB's Balance sheets extended from 2008 to 2013; and from 2008 to 2015 for the Fed; the COVID-19 period extends from 13 March 2020 to 31 March 2022; data are calculated on the basis of the 2019 nominal GDP



Considering the **ECB's action**, the Governing Council decided on March 2020 to launch a Pandemic Emergency Purchase Programme (PEPP), on top of the existing Asset Purchase Program (APP) in place since 2015. According to CGFS calculations³, the two programs (PEPP + APP) carried out by the ECB during the Covid-19 crisis amounted to 19.7% of 2019-euro area nominal GDP and were largely conducted under the PEPP.

Specifically, the total intended envelope of the PEPP amounted to € 1.850 trn (corresponding to around 15.5% of 2019-euro area nominal GDP), which comprises the initial € 750 bn envelope announced in March 2020 and subsequent additional envelopes amounting to € 600 bn in June 2020 and € 500 bn in December 2020. Cumulative net purchases under the PEPP were carried out until March 2022 and amounted to € 1.718 trn, implying 93% usage of the total envelope. PEPP purchases consisted of private and public sector securities, the eligibility criteria for which were expanded relative to the APP. In the first three months of the PEPP, public sector purchases accounted for 80% of overall purchases, reaching around 97% of overall PEPP purchases in March 2022. The ECB discontinued net purchases under the PEPP at the end of March 2022 and terminated net purchases under the APP as of 1 July 2022.

In response to the Covid-19 pandemic, the **Federal Reserve** purchased large quantities of Treasury securities and agency MBS, including commercial MBS between March 2020 and March 2022. As result, the Federal Reserve's holdings of assets increased from \$ 4.31 bn in March 2020 to \$ 8.96 trn in April 2022, corresponding to 20.2% and 41.9% of 2019 GDP, respectively. As underlined by Better Markets⁴, half of the increase in the Fed's assets (\$ 2.1 trn) occurred in just 90 days after the 2020 Pandemic Stress, an amount that took nearly four years for the Fed to purchase after the 2008 Crash. In November 2022, the Federal Reserve's holdings of assets stood at \$ 8.6 trn, or 40.2% of 2019 GDP.

1.3 Very accommodative monetary policies have allowed financial markets to continue functioning and being liquid in the EU, and also prevented the tightening of financing conditions for states, firms and households

During the European sovereign debt crisis (2011–2012), the Italy-Germany spread reached a considerable level – up to 450 basis point (bps) in the first quarter of 2012. This led to a significant reaction from the ECB. Indeed, the Eurosystem's balance sheet expanded in an unprecedented way, more than doubling in size between 2008 and mid-2012. Notably, the European Financial Stability Facility (EFSF)⁵ delivered in June 2010 a € 750 bn envelope coupled with Mario Draghi's "whatever it takes" speech in July 2012, contributing to control the spread and pave the way out of the crisis.



3. "Central Bank asset purchases in response to the Covid-19 crisis", BIS, March 2023.

4. D. Kelleher & P. Basil, "Federal Reserve Policies and Systemic Instability", Better Markets, January 2023.

5. Temporary crisis resolution mechanism created by the euro area Member States in June 2010 to provide financial assistance.

Sustained ultra-accommodating policies since 2015 have avoided a financial fragmentation within the euro area (with the maintenance of homogeneous financing conditions).

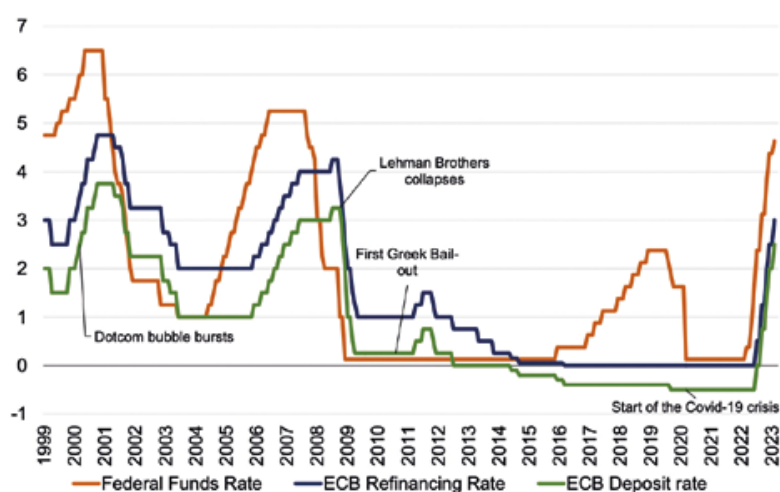
Chart 6 also illustrates the narrowing of euro area bond yields spreads between core and peripheral countries, since the EU sovereign debt crisis. For instance, the Italy-Germany spread in 2010-2011 was significant. In contrast, since August 2020, the latter has not outreached the 2 pp.

However, loosened monetary policy has not restored capital mobility from the richer countries with excess savings to the poorer countries in the euro area⁶.

1.4 Lasting easy monetary policies have contributed to the downward path of interest rates

The continuation of very accommodative monetary policies has led to the downward path of interest rates. Notably, the ECB deposit facility – one of the short-term interest rates of the ECB – remained negative between 2014 and 2022 (see Chart 7).

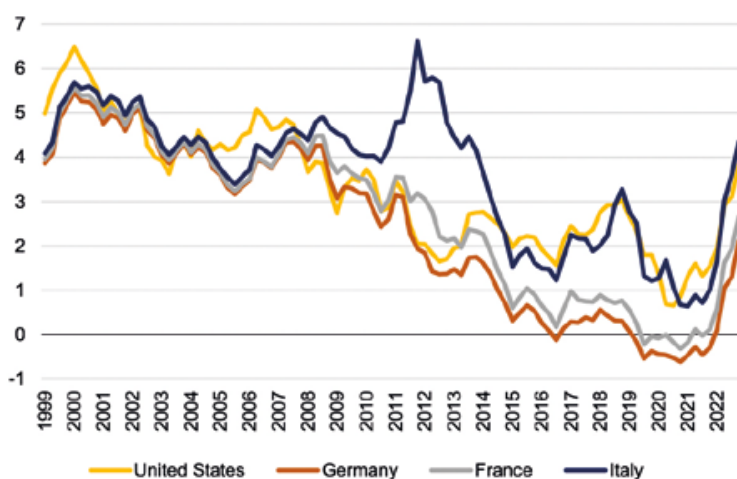
CHART 7.
Key Nominal Short-term Interest
Rates for the US and the Euro Area



Source: BIS, ECB
Latest data from February 2023

The following Chart (Chart 8) displays the downward trend in long-term interest rates in some main advanced economies over the last 20 years. The German 10-year interest rate was the first to become negative in the end of 2016, while the French 10-year interest rate was close to zero. From the end of 2019 to the end of 2021, both were negative. Since the start of 2022, French and German long-term government bond yields have returned above zero (see part 4).

CHART 8.
10-Year Nominal Interest Rates of Selected
Advanced Economies, quarterly data, %



Source: OECD
Latest data from Q4-2022

6. See Eurofi, Macroeconomic Scoreboard, April 2023.

Academic literature suggests that natural interest rate has been on a downward trend for the past few decades. It may well be for secular reasons (ageing population, globalisation...) but zero or negative nominal interest rates are not a natural phenomenon. They are in large part the result of heavy central bank purchases.

Expansionary monetary policies partly influence risk-free rates but compress the interest rate risk premium. Without the central bank intervention, risk-free rates might not be significantly higher because they depend in part on growth potential, which has been noticeably low for the past few years. However, the massive liquidity and quantitative easing programmes implemented by the AEs' central banks (e.g. the ECB, the Fed, the BoJ) have been blurring the reading of long-term interest rates which no longer play their discriminating role and lead to a mispricing of risk (see Section 3.2.1).

As a result, central banks have controlled the yield curve, usurping traditional functions of markets.

1.5 The 2% inflation target has led the ECB's and the Fed's monetary policies to be asymmetric over the past 20 years

Over the past 20 years, monetary policies have been asymmetric and have broadly remained accommodative to achieve the 2% inflation target. This overwhelming objective has driven monetary policies since then. The massive increase in central banks' total assets (*Chart 3*) and the expansion of the monetary base (*Chart 1*) illustrate this asymmetry.

The reality is that overall **monetary policy has become disconnected from the economic cycle: it has been highly expansionary over the past two decades. Central banks have not tightened monetary conditions when the economic situation improved. It has led the financial system into over financialisation.**

An inflation target is supposed to protect the system from excessive price increases or deflation, but it is not to seek an artificial price level higher than the one resulting from market forces. The problem with the 2% target is that the equilibrium, until the Covid-19 crisis, was actually achieved, for structural reasons, with an inflation rate of about 1%. This was the order of magnitude that avoided both deflation and excessive inflation.

But instead of letting inflation evolve around 1%, the Central Banks wanted, at all costs, to increase inflation from 1% to 2%. This erroneous and doctrinal vision led the Central Banks to massively and unnecessarily inflate money creation. The pretext was: "we have not yet reached the sacrosanct 2% target" (despite the fact that this 2% figure was artificial and that even if it had been reached, it would not have guaranteed prosperity). In fact, the danger of deflation was exaggerated while the drawbacks of persistent low interest rates were completely underestimated.

According to J. de Larosière⁷, "an illustration of this asymmetric approach was the injection of liquidity by the Fed to prevent a feared, but mistaken, deflationary trend in 2002. This overreaction produced a massive demand bubble. If, as political correctness would have it, there was no desire to raise interest rates in the face of this widespread indebtedness, it would at least have been desirable to implement a macroprudential policy adapted to the different countries and circumstances. Some countries that are particularly prone to inflation would have tightened regulatory constraints (e.g., by raising the minimal capital contribution required to obtain a mortgage). But these reactions to the scale of indebtedness did not occur. The lessons were not learned, and subsequent episodes of crisis were not avoided as the warning signs of excessive indebtedness continues to appear..."

1.5.1 Once the economic situation improved after the sovereign crisis, the ECB's monetary policy has not been tightened nor normalised

The Global Financial Crisis and the EU sovereign debt crisis legitimately called for substantial bond-buying programmes. As soon as late 2013, GDP growth returned on a reasonable sustained path. Unlike the ECB, the Fed decided to "normalize" its policy by gradually raising the federal funds rate from 0,25% to around 2,4% by the end of 2018 and reducing the size of its balance sheet by \$ 675 bn between mid-2017 and mid-2019.

This is not the case for the ECB, which has not stopped its purchases despite the economic recovery in the euro area. Indeed, in 2017, growth in the euro area was around 2.6% while that of the US was around 2.3%. In addition, inflation had risen above 2% in the euro area between May and October 2018. Nevertheless, between October 2014 and December 2018, the Eurosystem made net purchases of securities which increased the ECB's balance sheet from € 2.2 trn in 2014 to € 4.4 trn in 2018 and the ECB's refinancing rate remained unchanged at 0%.

If monetary policy over the past 15 years had been geared to a more realistic inflation target of around 1% instead of 2% and had taken into account the increasing financial vulnerabilities linked to the very accommodative stance (see Section 3), the world would have avoided this unnecessary expansionary monetary stance as well as deflation.

7. See J. de Larosière, "Putting an end to the reign of financial illusion: for real growth", Odile Jacob, September 2022.

1.5.2 Central banks were overly involved: the asymmetry of the Fed's and the ECB's monetary stances over the past 20 years can be illustrated by the trajectory discrepancy of their real short-term interest rate

As showed in Chart 9, the real short-term interest rate over the past two decades has mainly evolved in the negative territory both in the euro area and the US. Monetary policy has become disconnected from the economic cycle: it has been accommodative over the two past decades. As interest rates were close to zero or even negative in real terms, central banks have also used QE programmes during, as well as after, crises.

The ECB has not tightened monetary conditions when the economic situation improved thus limiting the ability to act decisively at the next turning point.

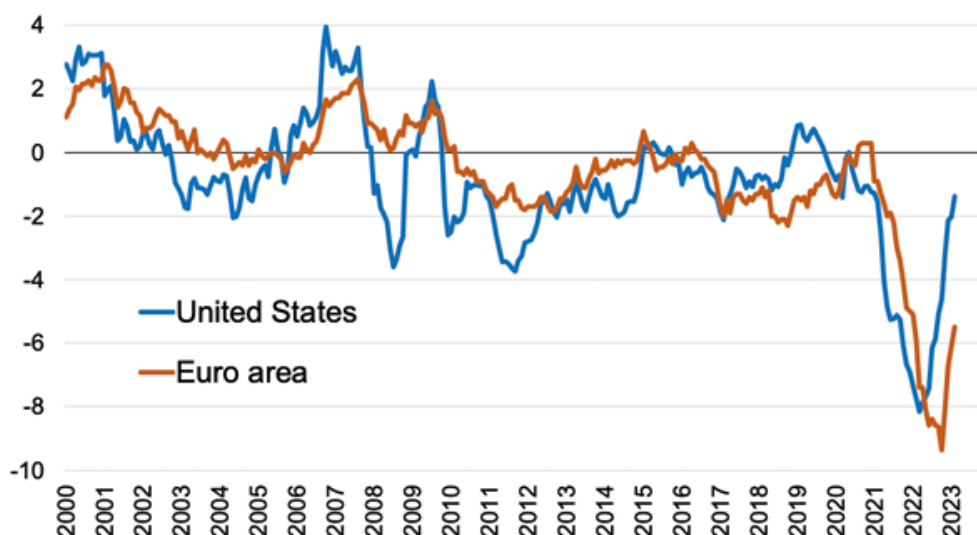
For instance, the real refinancing rate in the euro area remained negative through 2019 despite the economic improvement, whereas the recovery in the United States translated to a slight normalisation. While HICP growth peaked and then stood above 2% between April and October 2018, the ECB kept its main rates unchanged at 0% for the refinancing rate and -0.4% for the deposit facility rate.

In September 2019 the ECB decided to resume the asset purchase programme at a monthly pace of € 20 bn. It also lowered its deposit rate from -0.4% to -0.5% in response to the decrease of the HICP inflation by 0.3 ppts from a month earlier, but still averaging 1.3% in the previous six months and while economic conditions had not reached worrying trends.

In other words, the leaning-against-the-wind mantra has been abandoned for 20 years. Before the 2008 crisis real interest rates were low but positive. Since then, the ECB has maintained negative rates despite the economic recovery.

Changes in interest rates cannot affect the structural reasons which explain the downward trend in inflation (ageing of our societies, opening of international trade to imports from countries with very low wage rates, changes in labour market behaviours, productivity gains resulting from new technologies...).

CHART 9.
Real Refinancing Rates in the US and Euro Area
Policy rate minus inflation rate, % points



Source: BIS

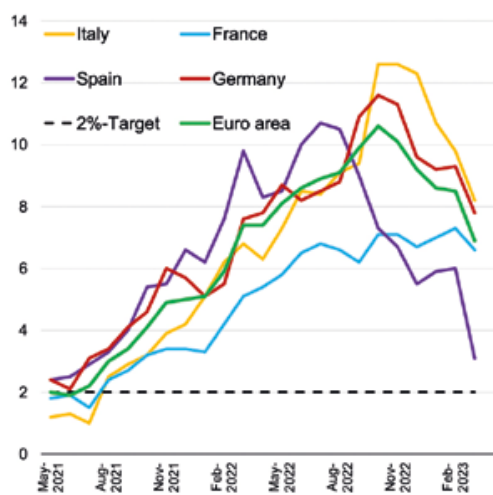
Notes: Latest data from February 2023

1.5.3 Until July 2022, the ECB continued its QE policy while inflation was rising sharply, climbing to its highest levels since the beginning of the monetary union

While inflation has consistently exceeded 2% in the Eurozone since July 2021 and has risen to record levels since then (see Chart 10), the ECB did not stop its securities purchase policy until July 2022 and minimize the risk of inflation.

CHART 10.

Recent inflation (HICP growth) development across selected Key Eurozone Member States, annual change, %



Source: Eurostat

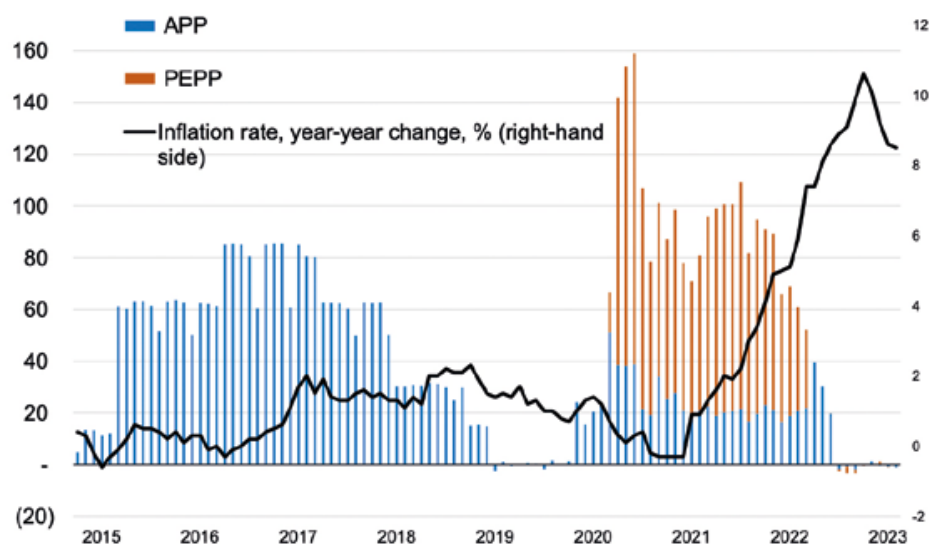
Latest data from March 2023

After peaking at € 160 bn in June 2020, net monthly purchases of securities by the ECB averaged € 91.3 bn between October 2020 and November 2021 (see Chart 11). The pace of purchase was then reduced to € 50-70 bn per month between December 2022 and March 2022.

Following the end of the net purchased under the PEPP in March 2022, the Eurosystem continued buying securities as part of the APP. In April 2022, a total of € 40 bn public and private securities were purchased under this program, while the headline inflation (HICP) was more than three times higher than ECB's 2%-target. Monthly net purchases then declined to € 30.2 bn in May, and € 19.7 bn in June, before being discontinued on 1 July 2022 (see last section).

CHART 11.

Asset purchases Programs of the ECB and inflation in the euro area
Monthly Net Purchases of Debt (Trillion EUR)



Source: ECB

Notes: latest data taken from February 2023

So, despite accelerating inflation, including core inflation since the third quarter of 2021, the ECB stuck to an extremely expansionary stance until July 2022. This was based on models which yield a forecast that inflation will return to below 2% whatever the circumstances due to the credibility of its policy. As explained by D. Gros and F. Shamsfakhr, "With its own forecasts always ending with inflation below target, the ECB acquired a dovish bias. The models used by the ECB imply that shocks in energy prices drive headline inflation up to 8%, at the end of the forecast horizon inflation would return automatically anyway (i.e., without any policy change to slightly below 2%)"⁸.

8. D. Gros & F. Shamsfakhr, "Too little too late: ECB's normalization path was model – rather than data-driven", Suerf policy brief, July 2022.

The models used by the ECB are not data driven and able to adapt the realities and uncertainties. They imply in particular that any wage pressure would be neutralised because the models assume explicitly that the ECB inflation target of 2% will be reached because national agents assume that it will be reached. Wages demand have significantly increased across all of the euro area, including double-digit increases in minimum wages in several countries (see *Part 4.1*). This could have been anticipated: How to imagine that European workers would accept a loss of purchasing power of 7-10% without demanding any compensation?

In a speech delivered in November 2021, M. King⁹ emphasised that the models used by central banks are based on questionable assumptions that are not necessarily those of the markets and have become the determining factors of expectations. This type of models only works when nothing happens...

•

J. de Larosi re underlines that “it is understandable that a Central bank may, at certain times, and for reasons of economic adjustment, lower its key rates to zero. But to do so continuously for two decades (see Chart above) is difficult to conceive and justify. This is unheard of... A situation of negative rates for so long defies comprehension. This is because one of the fundamental forces of the economy has been artificially broken. This has led to profound disruptions in the financing of the economy..., which contributed to a shape a hyper-leveraged financial system vulnerable to crises...

An inflation target is supposed to protect the system from excessive price increases or deflation, but it is not to seek an artificial price level higher than the resulting from market forces... The danger of deflation was exaggerated, while the drawbacks of persistent low interest rates were completely underestimated”.

Instead of fighting structural problems, most countries have attempted over the last decade attempted to address structural problems with accommodative monetary and fiscal policy – cyclical instruments.

A. Weber in his article for the Eurofi magazine¹⁰ stresses that “even if monetary policy were effective in countering some of these problems, which it is not, it would have been the wrong tool. With interest rates at zero or slightly negative and central bank balance sheets massively expanded by quantitative easing, the ultra-loose monetary policy has largely operated through the exchange rate channel and the asset price channel, whilst the traditional interest rate channel and the credit channel of monetary policy transmission had become ineffective. Policymakers were trying to solve massive structural problems by pushing up debt to unprecedented levels and by using cheap money for devaluing their currencies and artificially inflating stock and real estate prices. The longer the underlying structural problems are not tackled, the greater they become.”

9. M. King, “Monetary policy in a world of radical uncertainty”, International Monetary research Institute, 23 November 2021.

10. A. Weber, “Cheap money and rising debt undermined the growth potential of the euro zone”, Eurofi Magazine, April 2023.

2. Such prolonged monetary policies easing has steadily been contributing to the indebtedness of economies

Central banks have not acted to control credit growth and hence have been contributing to the over indebtedness of economies. The expansion of credit has not attracted their attention over the past two decades.

By favouring government debt monetary policy has damaged the long-term growth potential.

Both public and private sectors entered the Covid-19 crisis with high levels of debt because of persistent loose credit conditions. The system has been swamped with liquidity through the highly accommodative monetary stance of the two past decades. This has pushed global debt to 340% of the world GDP in December 2022, and have disincentivised many countries to undertake structural reforms including the control of their public deficits and indebtedness.

In such a context, National Central Banks own a growing and significant share of the national government debts and have de facto become the agents of fiscal policies.

2.1 Lessons on the causes of the 2008 crisis have not been learned by policy makers

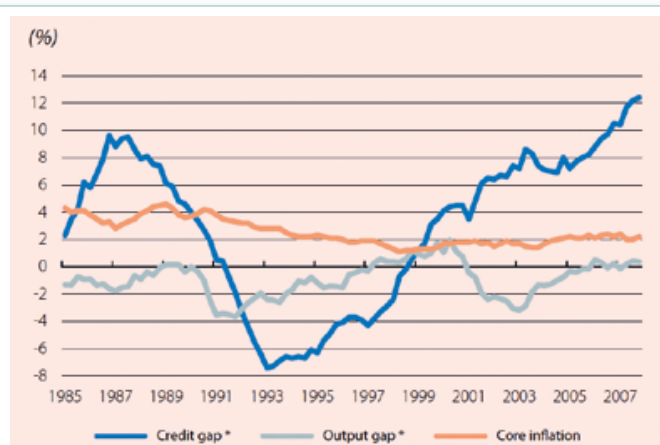
The explosion of credit was a major factor behind the Global Financial crisis (2008).

J. de Larosière explained in 2010¹¹ that the explosion of credit – which is a monetary phenomenon – was a major factor behind the Global Financial Crisis¹². Of course, the abuse of off-balance sheet operations (SIVs, conduits, etc.) and of securitization of complex and opaque products significantly contributed to this expansion. But many central banks – and in particular the Federal Reserve which allowed real interest rates to hover around zero for several years – pushed up credit expansion which, in turn, impacted on the monetary aggregates.

In the period preceding the 2007-2008 crisis, debt rose much faster than the economic grew (see Charts 12 and 13).

CHART 12.
Measures of macroeconomic and financial stability in the United States [1985-2008]

Source: CaixaBank Research, based on data from the BIS, US Congressional Budget Office and US Bureau of Economic Analysis
* Above-potential growth in credit and economic activity, respectively



J. de Larosière already pointed out that “given the importance of credit for both domestic and external monetary stability, it is something of a mystery that central banks don’t seem to have paid much attention to it as an indicator, even though traditionally credit growth has been a major element in the analysis and toolbox of monetary policymakers. At the very least, the magnitude of the credit bubble should have raised questions about the adequacy of monetary policies”.

To avoid the recurrence of such events, central banks will have to resume monitoring the expansion of credit and therefore bubbles. J. de Larosière underlined in particular that central banks should lean against the wind to “improve macro-economic performance by reacting systematically to asset price misalignments, over and above their reaction to inflation forecasts and output gaps... Central banks can use different options...”

11. See J. de Larosière, “Monetary policy has played a major role in the run up to the financial crisis”, Columbia University, December 2010.

12. For example, the ratio of US private sector debt to GDP skyrocketed from 112% in 1976 to 295% in 2008. In Britain, the ratio of households’ mortgage debt to disposable income has surged from 80% in 1991 to 140% in 2008. In the United States, credit expanded by around 10% to 15% per year from 2004 to 2008 when economic growth in nominal terms was around 5% (the corresponding figures for the eurozone are 8 % to 10 % for a nominal GDP growth of 4 %).

Unfortunately, these 2010 analyses and proposals have not been followed up. Worse, the financialisation¹³ of economies has only increased since then.

The current situation has characteristics that make it much worse than 2007.

In terms of debt, everything went back to business as usual after the financial crisis subsided. Worse yet, “the debt engine shifted into a higher gear”¹⁴. Global debt is now at its highest level in peacetime:

- At the end of 2006 the overall debt level in the world – private and public debt combined – stood at \$ 150 trn. By the end of 2022 the figure had exactly doubled.
- In terms of % GDP, the ratio increased from 270% in 2006 of world GDP to 340% in 2022, according to the IIF.
- Helped by strong economic activity and high inflation, the global debt-to-GDP ratio declined over 12 percentage points (ppts) to 338% of GDP in 2022 – but is still above pre-pandemic levels (320% of GDP at the end of 2019).

For 20 years, debt has exceeded investment.

Mc Kinsey¹⁵ has calculated that on average for 4 dollars of liabilities (debt and similar) have been needed to create 1 dollar of net investment between 2000 and 2020.

Even if there are significant disparities between countries in this area, the fact remains that this multiplier of 4 indicates a considerable leverage effect – a historical record – which can only raise concerns about the sustainability of this debt in the future.

2.2 Central banks have not acted to control – let alone rein in – credit growth during the past decades

Two periods should be distinguished: the period 2000 – 2019 and then the period from Covid-19 to the present day.

2.2.1 Money supply growth has been high over the past decade and stronger than GDP growth in advanced economies between 2000 and 2019

For the euro area, the M3¹⁶ aggregate grew at a yearly pace of 5.3% between 2000 and 2019. In the US, it grew by 6.1% per year on average.

CHART 13.

M3 Growth Rate Against Real GDP growth rate, % annual change

13.a : Euro area



13.b : United States



Source: OECD
As of Q4-2022

13. The term refers to the growing importance of international finance – and the debt it carries – in the development of the economic cycle.

14. J. Van Overtveldt, “The Mystic Hand”, Agate, 2022.

15. Mc Kinsey Global Institute, “The rise and rise of the Global balance sheet”, November 2021.

16. M3 is a broad measure of the quantity of money in circulation, that includes highly liquid assets as cash and deposits accounts but also less liquid components as institutional money market funds, and short-term repurchase agreements.

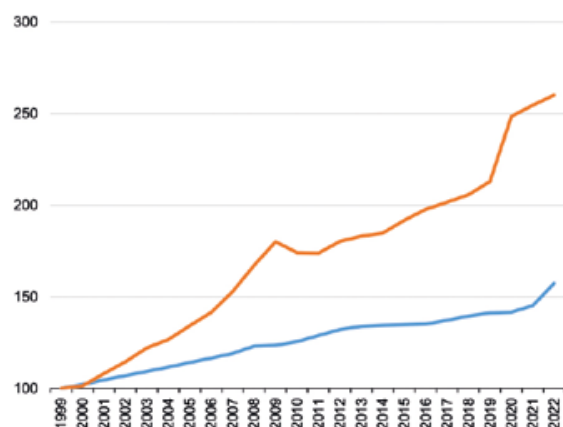
The growth of M3 has continuously exceeded real GDP growth both in the US and in the eurozone (see *Chart 13*). Between 2000 and 2019, the volume of M3 increased by 219.9% in the US, while real GDP grew by 48.6%. In the euro area, M3 grew by 172.5%, while real GDP grew by 28%.

Until 2021, this amount of “excess money” did not translate into higher prices of goods and services, but fuelled the rise in real estate and financial asset prices (see *Section 3.1.1*) and contributes to explain the increase in liquid savings held by individual savers in EU countries (see *Section 3.2.2*).

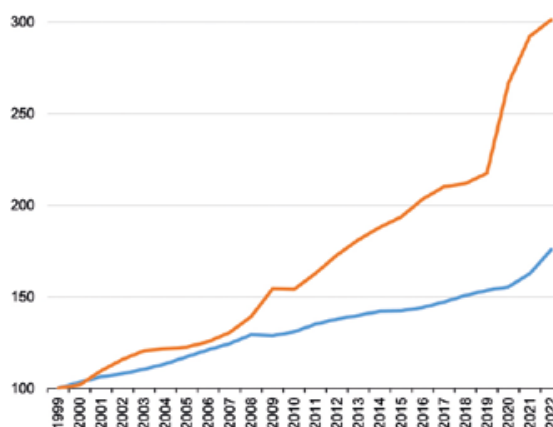
CHART 14.

Money supply, real GDP and inflation, 1999 = 100

14.a : Euro area



14.b : United States

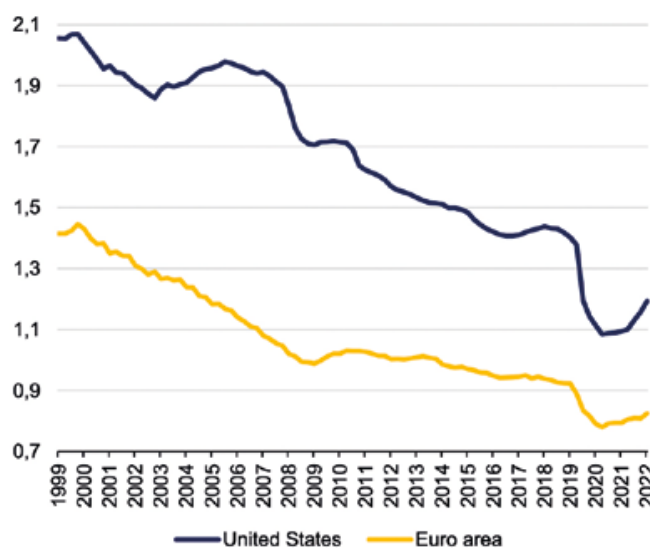


Sources: OECD, Fed, ECB

One way to understand the differing paths of evolution in money supply and growth is to look at the velocity of money¹⁷. Money creation has not been seeping into the real economy because its transactional power and velocity have weakened. Hence, the equation of the quantity theory of money does not seem to be functioning. According to the Banque de France, the velocity of money declined by 53% in the euro area and 46% the United States between 1999 and end-2019 (see *Chart 15*).

CHART 15.

Velocity of Money in Circulation in the United and the Euro area, in units



Source: ECB, Federal Reserve
Last data from 2022 Q4

17. The number of times a currency unit moves from one hand to another, over a quarter, for instance.

Following the Covid-19 crisis, the growth of money supply has significantly accelerated driven by central banks asset purchases.

In the United States, the growth rate of M3 peaked at 26.9% in February 2021 compared to the previous year – a record since 1943 – before gradually falling back to levels close to 12% between June 2021 and January 2022, twice the pre-pandemic average (+5.5% per year on average between 2014 and 2019).

In the euro area, annual M3 growth has been more moderate, peaking at 11.9% in January 2021, fluctuating around 7 - 8% between May and December 2021, and slightly above 6% since January 2022. Annual M3 growth has been close to 6% until September 2022, although it remains well above its pre-pandemic trend of 4.5% per year on average between 2014 and 2019.

Between February 2020 and April 2022, the money supply increased by a total of 40% in the US and 20.2% in the euro area, the same as in previous years. Indeed, between January 2013 and December 2019, the money supply increased by a total of 46.2% in the US and 33.3% in the euro area.

Because the increase in money supply has been much greater than GDP, the amount of ‘excess money’ thus confirms that inflation is a monetary phenomenon (see Section 4.1).

Another key factor behind the current rise in inflation lies in the dynamic of the velocity of money. After collapsing during the Covid-19 crisis following the sharp increase in the quantity of money and the fall in GDP (see Chart 13), the velocity of money stabilised in late 2020 in the eurozone and the United States (see Chart 15). Since June 2021, it has started to increase slightly in the two regions, indicating that such excess money has been used by households and firms to purchase goods and services, resulting in a bustling economy with strong economic activity, and so associated with a high degree of inflation.

Since March 2022, when the Fed ended its asset purchase programme and started to raise its policy interest rate (see last Section), the annual growth rate of M3 has fallen sharply from 9.5% in March 2022 to 0.3% in November 2022. It turned negative in December 2022 (-1.1%) and contracted further in January 2023 (-1.7%). According to S. Hanke and J. Greenwood¹⁸, “this flip from expansion to contraction is the steepest adjustment in money-supply growth in postwar U.S. history”, which could accelerate the pace of disinflation in 2023. As a result, the authors lowered their forecast for year-on-year inflation from 5% to between 2% and 5% by the end of 2023.

2.3 Lasting persistent low interest rates contributed to the over-indebtedness of advanced economies

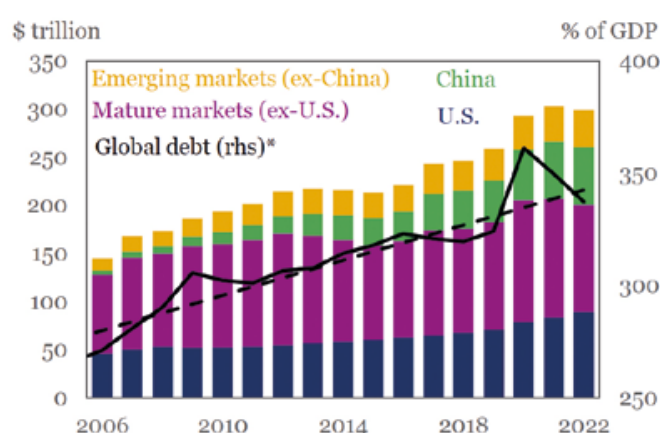
The continuation of very low interest rates has allowed global debt to records in peace time, even before the Covid-19 crisis. Public deficits have been booming and the public debt-to-GDP ratio rose from 100% to 120% in advanced countries within five years (2015-2020). Private debt has also ballooned.

According to statistics issued by the IIF (see Chart 16), global debt reached a record high of 360% of GDP at the end of June 2021, up from 320% in 2019 and 200% in 2011.

Helped by strong economic activity and high inflation, the global debt-to-GDP ratio has declined to 338% of GDP in 2022 but remains nearly 20 ppts above its pre-pandemic level.

CHART 16.
Global debt

Source: Institute of International Finance
Notes: as of Q4 2022; *dashed line shows the trendline implied by the pre-Covid-19 period



18. S. Hanke & J. Greenwood, “High Inflation Will End Soon”, Wall Street Journal, 14 February 2023.

Financial crises are always the result of excessive debt.

The more debt increases, the more borrowers – some of whom are overexposed – sink into debt, and the more likely and severe future crises become. Some of the indebted states (especially those in the developing world) will not be able to meet the costs of their commitments¹⁹. This means that our financial system – over exposed – is vulnerable.

According to the BIS, the ratio of global debt to GDP increased by 54 percentage points between 2008 and 2022.

According to BIS data (see Table 1), which unlike the IIF excludes financial debt, global debt²⁰ has risen from 186.3% of GDP in 2008 to 240.3% in 2022. It should be noted that the overall debt had already increased by 37.3 ppts between 2008 and 2019 to 223.6% of GDP before the start of the pandemic.

The public sector and non-financial corporations were the main contributors to the increase in overall debt between 2008 and 2022.

- Between 2008 and 2022, overall public debt increased by 30.3 ppts, from 55.6% in 2008 to 85.9% of GDP in 2022.
- Private sector debt increased by 23.9 ppts, from 130.5% of GDP in 2008 to 154.4% of GDP in 2022.
- The debt of non-financial companies has largely contributed to this dynamic (+20.1 ppts, from 76.8% of GDP in 2008 to 96.9% in 2022), while that of households has been more limited (+3.1 ppts, from 53.9% of GDP in 2008 to 57.5% in 2022).

TABLE 1.

Credit To Non-Financial Private Sector, Public Sector, Firms and Households % of GDP

	General Government			Private Non-Financial Sector (a + b)			Non-Financial Corporations (a)			Households (b)		
	2000	2008	Q3-2022	2000	2008	Q3-2022	2000	2008	Q3-2022	2000	2008	Q3-2022
United States	48,6	66,1	112,6	135,4	168,8	153,9	64,3	72,5	78,8	71,1	n.a	n.a
United Kingdom	37,7	50,8	100,8	135,3	184,8	154	70,7	90	69,5	64,6	n.a	n.a
Japan	114,6	145,1	228,3	187,5	163,8	184,7	117,7	103,5	116,8	69,8	n.a	n.a
China	22,9	27,1	76,2	109,3	111,9	219,7	n.a	93,9	158,2	n.a	n.a	55,6
Euro area	69,2	69,8	93,1	126	157,2	167,4	76,8	96,5	109,1	49,2	55,6	85,9
France	58,8	68,8	113,4	137,7	164,2	230,6	104,3	116,2	164,1	34,2	85,9	113
Germany	59,3	65,8	66,6	140,6	129,9	129,2	69,4	70,1	73,4	71,2	113	130,5
Italy	108,9	106,2	147,2	79,3	116,5	112,2	56,6	77,5	69,6	22,6	130,5	154,4
Spain	57,8	39,7	115,4	117,9	214,2	151,7	72,5	131,6	97,4	45,4	154,4	n.a
Netherlands	52,2	54,7	49	219,7	234,7	241,3	130,1	123,2	144,1	89,6	n.a	76,8
Austria	66,1	68,7	82,2	127,8	142,5	148,3	83	90,5	98,2	45,3	76,8	96,9
Portugal	54,2	75,6	120,1	142,8	206,3	158,1	83,9	117,4	95,4	58,8	96,9	n.a
Belgium	109,6	93,2	106,2	146,2	192,1	199,9	105,4	142,2	139,3	40,8	n.a	53,9
Aggregate	n.a	55,6	85,9	113	130,5	154,4	n.a	76,8	96,9	n.a	53,9	57,5

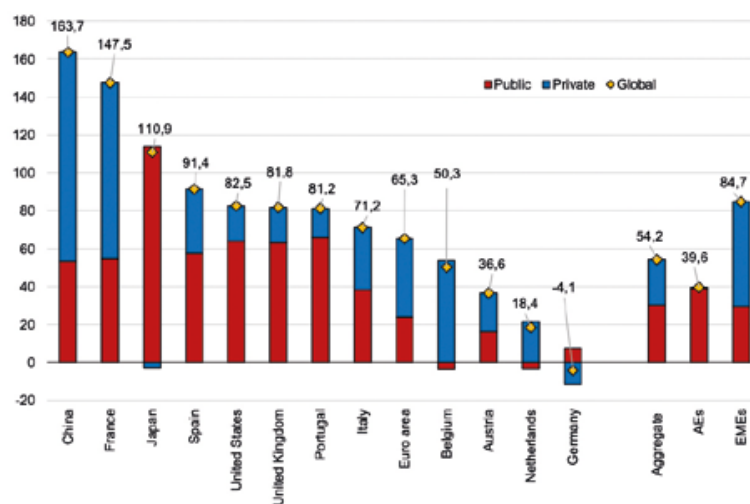
Source: Bank For International Settlements

'Aggregate' regroups 45 advanced and emerging economies

CHART 17.

Change in global debt between 2008 et 2022

Percentage points



Source: Bank For International Settlements

19. W. Rhodes and J. Lipsky, "Act now to prevent a new sovereign debt crisis in the developing world", 23 March 2022.

20. Global debt is aggregated using data from 45 advanced and emerging economies.

2.3.1 Loose credit conditions have entailed a huge public debt overhang

Over the past two decades, the level of public debt of advanced economies has risen continuously, from 63.4% of GDP in 2000 to 99.7% in 2019, according to the BIS. Following the Covid-19 crisis, public debt of advanced economies jumped to 114.5% of GDP in 2021. Helped by higher growth and inflation, public debt marginally declined to 112.3% of GDP in 2022-Q3, although it remains 12.6 ppts above its pre-pandemic level.

Among the main advanced economies, the US, the UK, France, Italy and Spain saw their public-debt-to GDP ratio increasing by more than 30 ppts between 2008 and 2022. Only Germany experienced a change not exceeding 10 ppts during this period (see Chart 18.b).

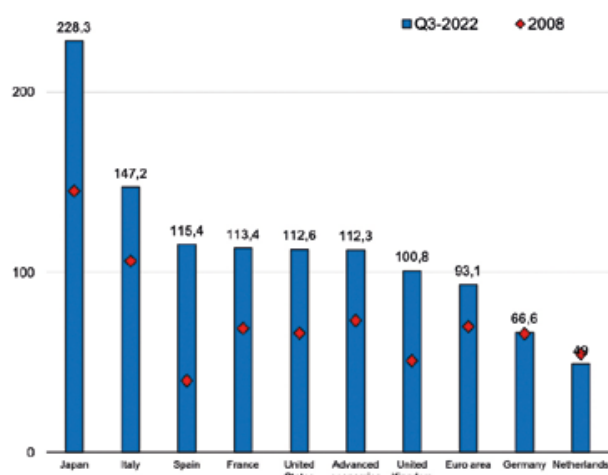
CHART 18.
Gross Public Debt, as % of Nominal GDP

18.a : Advanced economies



Source: Bank For International Settlements
Last observation from 2022-Q3

18.b : Main Advanced Economies

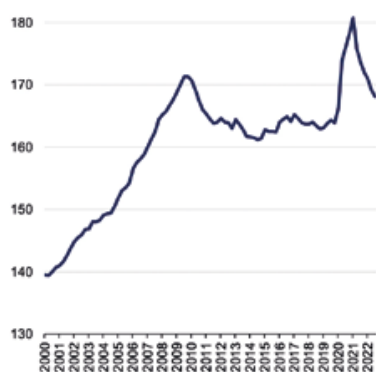


2.3.2 The corporate sector entered the Covid-19 crisis with high levels of debt

In such a monetary context, the amount of debt of non-financial corporations in advanced economies (loans + bonds) amounted to \$ 43.8 trn at the end of 2019, compared to \$ 20.2 trn in 1999, according to the BIS (see Chart 17). Expressed as percentage of total GDP, the figure reached 91.8% in Q4 2019, compared to 76.3% in 1999 (see Chart 17.a). As of September 2022, the debt of non-financial corporations increased to \$ 46.5 trn, corresponding to 95.2% of GDP.

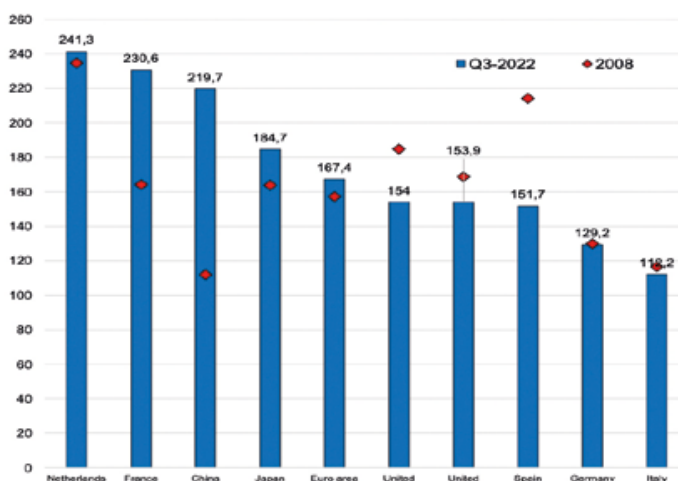
CHART 19.
Credit to private non-financial sector,
as % of Nominal GDP

19.a : Advanced economies



Source: Bank For International Settlements
Last observation from 2022-Q3

19.b : Main Advanced Economies



The global outstanding stock of non-financial corporate bonds at the end of 2019 reached an all-time high of \$ 13.5 trn. Notably, for every year since 2010, around 20% of the total amount of all bond issues has been non-investment grade, testifying of a long-lasting issue in overall bond quality²¹.

The decline in the quality of the corporate bond market also affected global investment-grade bonds: while in the 2000-2007 period, BBB rated bonds constituted on average 38.9% of global investment-grade issuance²², they averaged 44.1% in the 2008-2018 period and reached 53.8% in 2018. This shift in BBB share occurred at the expense of bond issues with AA and AAA ratings: the average annual share of AA rated bonds moved from 16.7% to 13.7% between 2000-2007 and 2008-2018 periods and that of AAA rated bonds declined from 5.4% to 2.3%.

Accordingly, “this prolonged decline in bond quality points to the risk that a future downturn may result in higher default rates than in previous credit cycles”, the OECD warned in February 2020.

Hence, the corporate sector entered the Covid-19 crisis with high levels of debt and it necessarily borrowed more to navigate the crisis, raising concerns for a significant number of borrowers.

As explained by J. de Larosi re in Chapter 1 of his latest book²³; “Low interest rate policy has played an important role for a long time in this deterioration of credit quality. Indeed, an environment of persistent very low interest rates leads financial actors to seek yields and therefore to take more risks. This may concern credit risks (operators agree to lend to companies that are already over-indebted) and liquidity risk (the duration of loans is extended and the level of cash down payments required is lowered”.

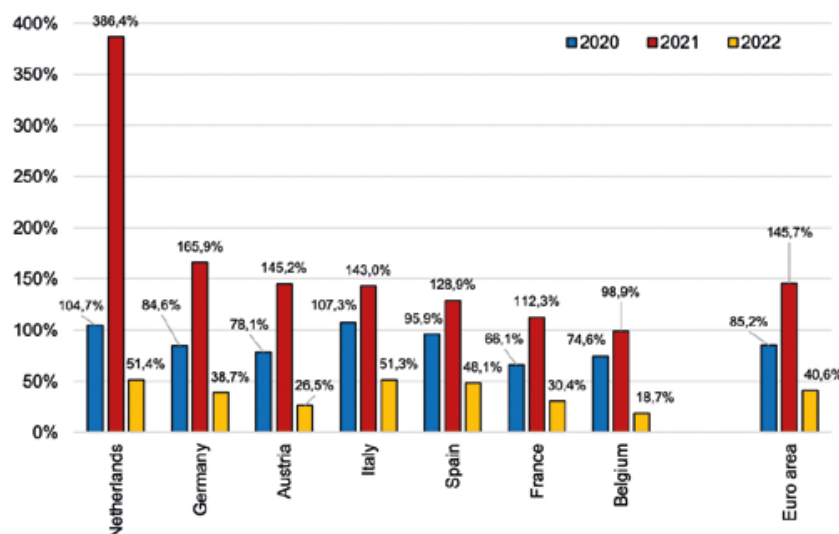
2.4 Central banks have, *de facto*, become the agents of fiscal policies

National Central Banks own a growing and significant share of their country general government debt.

The Eurosystem has had a leading role in public debt monetisation during the Covid-19 crisis, as its public securities purchases amounted to most of governments borrowing requirements (*see Chart 20*). The scale of these interventions translated into a considerable advantage for borrowing governments (*i.e.* “fiscal dominance”).

CHART 20.

Share of Public Debt purchased by the Eurosystem in 2020, 2021, 2022



Sources: ECB, Eurostat, Eurofi Calculations

In 2020, euro area governments issued an additional € 1058.6 bn of public securities. € 901.4 bn of bonds were absorbed by the Eurosystem, *i.e.* 85.2% of new issuances in 2020²⁴.

In 2021, euro area governments issued € 621 bn (a decline of € 400 bn compared to 2020). However the amount of assets purchased by the Eurosystem increased slightly compared to 2020, to € 905.7 bn in 2021 (*i.e.* 145.7% of public debt issuance). In other words, in addition to having absorbed all the new issues in 2021, the Eurosystem has also repurchased back part of the rolled-over debt that matured in 2021.

21. Celik.S, Demirtas.G, Isaksson.M, Corporate bond market trend, emerging risks and monetary policy – OECD capital market series, 2020.

22. This concerns corporate bonds issued by non-financial companies from 114 countries.

23. See footnote n°5.

24. We calculate the share of Eurosystem purchases in government refinancing needs, by dividing the total amount of net purchases of Eurosystem securities in a year to the annual change in government debt.

According to Eurofi calculations more than the totality of the public debt issued in 2021 by the French, German, Spanish and Italian governments would have also been acquired last year by the Eurosystem (*see Chart 20*)²⁵.

In 2022, the Eurosystem's net purchases of securities accounted for 40.6% of debt issuance in the euro area. The reduction and subsequent end of net asset purchase in July 2022 explains this decline compared to the past two years: in 2022, € 197.7 bn of securities were purchased by the Eurosystem, almost five times less than in 2021.

The purchase of sovereign bonds since 2015 has led the Eurosystem to hold more than a third of the euro area's public debt stock in 2022.

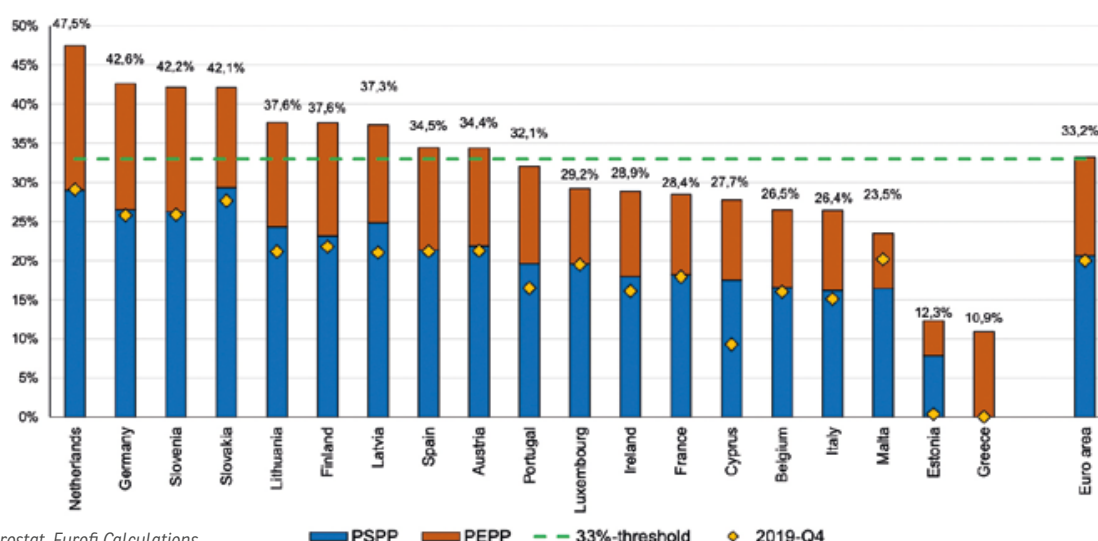
Charts 21 & 22 illustrate the growing share of government debt held by National Central Banks. The latter has been increasing continuously since 2015, when the ECB launched its Asset Purchase Program (*see section 1*). Between January 2015 and December 2019, the share of public debt held by the Eurosystem grew from 4,4% to 20% at the euro area level.

As of June 2022, when the ECB officially ended net purchases under the APP (*see Section 4*), the figure rose to 33.2%.

28.4% of the stock of French public debt and 26.4% of the stock of Italian debt were held by the Eurosystem in June 2022. The share of Dutch, German, Spanish and Austrian debt in particular has exceeded the 33% threshold, initially set under the APP but suspended under the PEPP.

CHART 21.

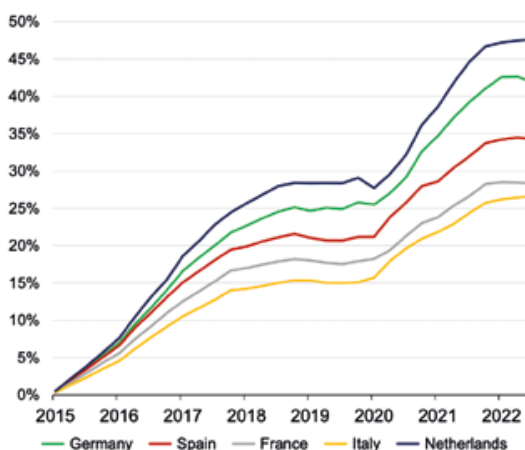
Share of Government Debt held by the Eurosystem as of June 2022, %



Sources: ECB, Eurostat, Eurofi Calculations

CHART 22. a

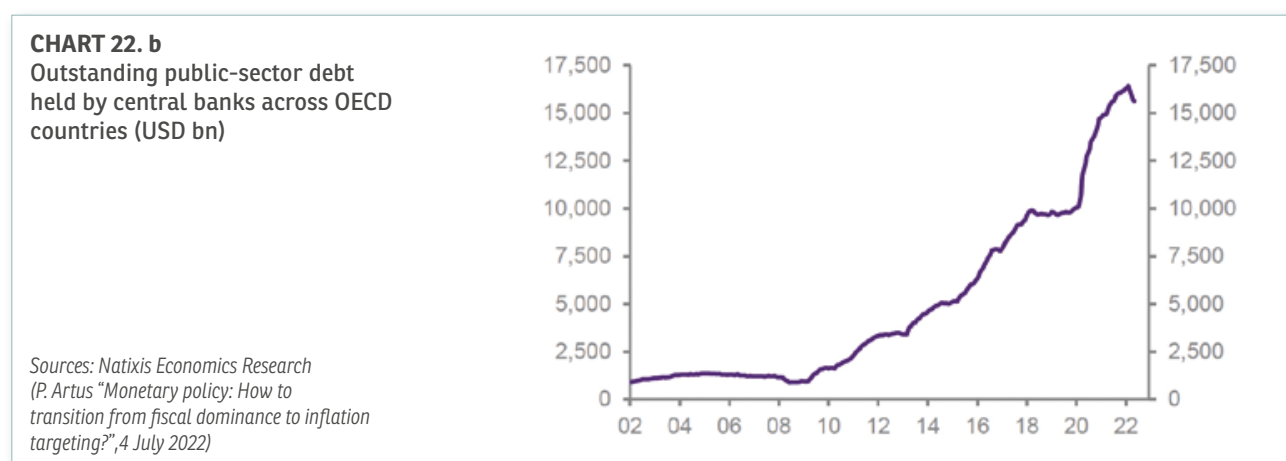
Share of public debt held by the Eurosystem



Sources: ECB, Eurostat, Eurofi Calculations
Last observation from 2022-Q3

25. When the Eurosystem purchases more than the newly issued debt, i.e. more than 100%, it means that the figure includes principal repayments of maturing securities purchased previously.

The intensification of the link between sovereign states and central banks.



The above Chart (*Chart 22*) illustrates the strengthening of the link between sovereign states and central banks. Advanced economies have seen their central banks endorsing stronger responsibilities, strengthening the sovereign-central bank loop.

Ultra-low rates and other monetary interventions have lowered government debt service ratios. This has encouraged governments to believe that the economic situation is under control, and that governments can also continue with “business and usual”.

It should have been clear that systematic buying of public bonds should not open the way for governments to finance vast stimulus plans without necessary conditions. Increasing the efficiency of public spending and giving priority to public investment instead of current redistribution should also have been considered.

The “fiscal dominance”²⁶ that has been presently taking place carries two big dangers. First, it raises doubts about the independence of central banks. Then, it has been a major disincentive for governments to replace unproductive expenditures by productive public spending and engage in the structural reforms that are notably essential to meet the fundamental challenges of the green transition of our world, challenges that cannot be faced by printing more and more money.

In fact, lasting zero or even negative interest rates have been a disincentive for many Member States in the EU to undertake structural reforms which could lift potential growth. Indeed, with interest rates at ultra-low levels, governments are under no pressure to reduce their debts. Negative real interest rates encourage them to borrow more. And if government borrowing becomes a free lunch there is a clear disincentive to fiscal discipline. Furthermore, the rules of the Stability and Growth Pact have not been respected by most EU large economies since their implementation (e.g. Italy, Spain, France, Belgium).

In other words, the reassurance of low rates, given political imperatives, encourages governments to increase debt further. But thinking that monetary creation can solve the problems arising from excessive debt is an illusion²⁷. The end of the pandemic is now likely to reveal that we have a debt overhang problem that only governments, not central banks can deal with.

•

26. In a fiscal dominance regime, debt sustainability is therefore maintained by low long-term interest rates and not by a reduction of fiscal deficits if they are excessive.

27. See the Eurofi note, “Addressing the dangers of the monetary policy deadlock”, September 2020.

While debt is acceptable when it is used to finance investments that will eventually generate additional income (which will pay off the debt), debt should be of concern when it is used to finance current expenditure or public deficits. In this case, unless there is an unlikely euphoric growth, it can only be repaid by taking on more debt, creating an indefinite process of debt accumulation.

The exaggerated growth of debt not backed by future income has a major drawback: it weakens the financial system by multiplying bad risks, causing defaults, or artificially favouring the survival of zombie companies that benefit from the subsidy of low interest rates, without being competitive. The extreme increase in global indebtedness that has been achieved demonstrates the over-financialisation of our system and the danger of a financial crisis as soon as monetary conditions turn around.

“The production potential of the economy decreases with increasing debt levels, because the interest burden of servicing the higher public debt levels has now become a meaningful government expense again with higher interest rates. This will lead to a further increase of taxes and duties, with all their negative knock-on effects on economic incentives and future growth. In the long run, there will be a high price to pay for this recent period of cheap money”²⁸.

28. A. Weber, “Inflation and monetary policy: way forward”, Eurofi Magazine, April 2023.

3. Persistent ultra-loose monetary policies have led to negative economic and financial stability consequences

Lasting monetary policies have led to the downward path of interest rates, damaging productive investment and growth as the preference for liquidity prevails over investment notably in Europe. Such policies have fuelled a misallocation of capital, encouraging zombie-firms proliferation and an increase in share buybacks. Persistent low rates have exacerbated financial vulnerabilities, leading to mispricing of risks, asset bubbles. They have also been accompanied by a significant increase in wealth inequality.

3.1 Lasting zero interest rates damaged productive investment and growth in Europe

The ultra loose monetary policy has undermined the growth potential of the euro zone. Abundant liquidity and low interest rates have not resulted in higher productive investment but in liquidity hoarding. Interest rates that remain at zero for an indefinite period discourage investors from investing in risky projects, who instead move into yielding and speculative assets. Household and non-financial corporations' savings have shifted to liquid and non-risky assets, as investments no longer yield any return, in Europe in particular.

Furthermore, low or negative interest rates induce a fatalistic mindset that lowers – and not raises – propensity to invest. Under what John Maynard Keynes²⁹ called the 'liquidity trap', investors play safe by placing savings in very short-term instruments rather than deploying them over longer term, where low interest rates bring them inadequate returns for higher risks.

As stated by the BIS³⁰, "no well-functioning economy should operate with real interest rates that remain negative for too long: capital is misallocated and growth impaired".

3.1.1 Signs of the liquidity trap: preference for liquidity prevails over productive investment

Loose monetary policies coupled with expected low returns on earnings drive a preference for liquidity.

Charts 23 and 24 indicate that, since 2008, a significant increase occurred in the purely liquid part (currency and sight deposits) of portfolios of households and non-financial corporations across euro area countries. Once the investor's risk is no longer rewarded, investors turn away from more risky long-term projects.

Indeed, the liquid share of financial assets held by households and non-financial corporations increased from 10.2% in 2007 to 19.3% in 2019 in Germany and from 5.3% in 2007 to 7.3% in 2019 in France. The increase was also important in Spain and Italy over the same period (respectively +7.3 ppts and +5.1 ppts). Following the Covid-19 crisis, the figure reached 20.8% in Germany as of September 2022, 9.9% in France, 22.9% in Spain and 25.1% in Italy.

As noted by G. Naacke and L. Gabaut³¹, "the Covid-19 crisis has certainly had the effect of restricting household consumption, which has translated into a significant increase in their savings; but they have mostly remained passive vis-à-vis this "forced saving". They have kept a large portion in their current accounts. Moreover, uncertainty about the duration of the crisis accentuates the willingness to build up precautionary savings. The persistence of low interest rates also explains this flight to liquidity phenomenon, as traditional risk-free savings vehicles no longer yield any return."

In a context a rising inflation and concerns about the international economic and geopolitical environment, European economic agents remain cautious. Despite the loss of purchasing power created by price inflation, European households are still saving more money than before the Covid-19 crisis. In France, the households' saving rate stood at 16.2% in the third quarter of 2022 *i.e.* 1.5 ppts above the level observed before the Covid-19 crisis.

Nevertheless, financial investments remain highly concentrated on liquid and risk-free assets in Europe. As highlighted in the following graph, loose monetary policies coupled with expected low returns on investments that we observed since the Lehman crisis, drove a preference for liquidity. Since 2008, a significant increase occurred in the purely liquid part (currency and sight deposits) of the portfolios of households and non-financial corporations across euro area countries. Once the investor's risk is no longer rewarded, investors turn away from more risky long-term projects.

29. Keynes was in favour of low interest rates, but he specified not too low interest rates. Indeed, when they are too low, they deter savers from investing in long-term bonds and encourage them to either keep their savings in liquid forms, which they are doing, or in assets remunerated only because they are risky. On the other hand, entrepreneurs, discouraged by the prospect of no growth emanating from zero interest rates for a long time, are turning away from productive investment in favour of things like share buybacks and speculative opportunities.

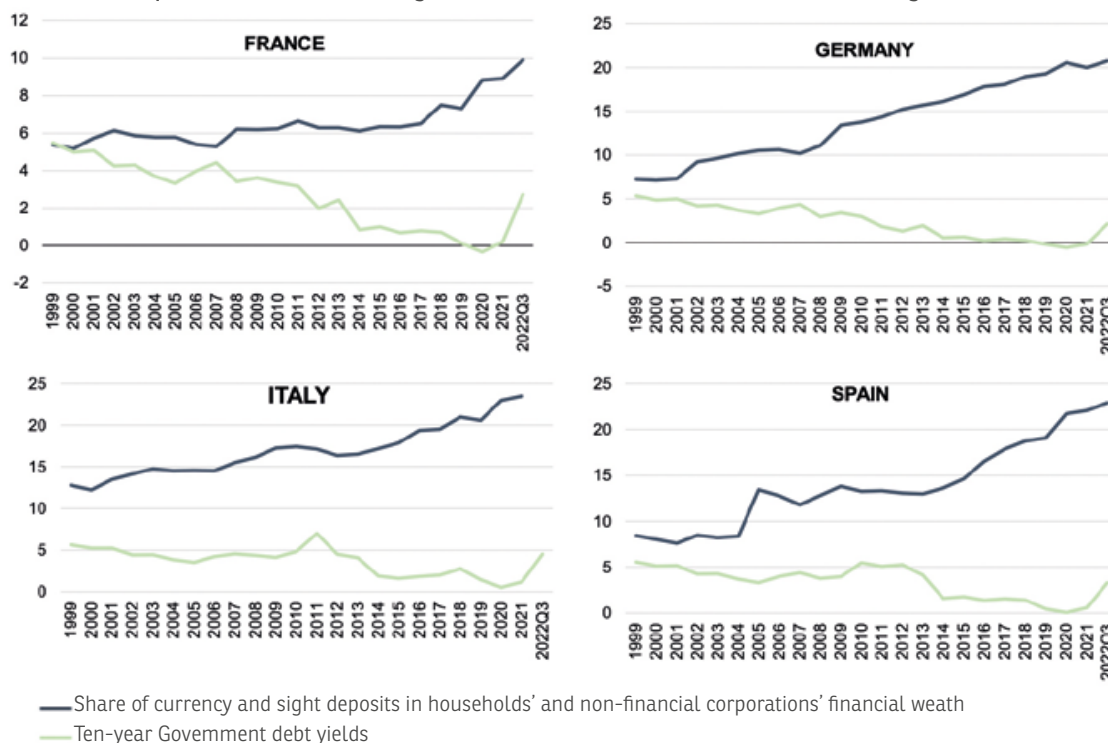
30. BIS, Annual economic report – June 2021.

31. G. Naacke & L. Gabaut, "La baisse du taux d'épargne n'est pas pour demain", Revue Banque, January 2022.

From the end of 2008 to September 2022, the liquid share of financial assets held by households and non-financial corporations increased from 11.1% to 20.8% in Germany and from 6.2% to 9.9% in France. The increase was also important in Spain and Italy over the same period of time (respectively +10.1 ppts and +9 ppts). Moreover, it should be noted that the flight to liquidity effect measured by this liquidity ratio is underestimated because of the valuation effects on stock markets. Over the same period of time, the STOXX Europe 600 index increased by 96%. The strong valuation effects on stock markets impacted significantly the denominator (total financial wealth) but not the numerator (liquid assets). Such a preference for liquidity diverts savers away from long-term investments.

CHART 23.

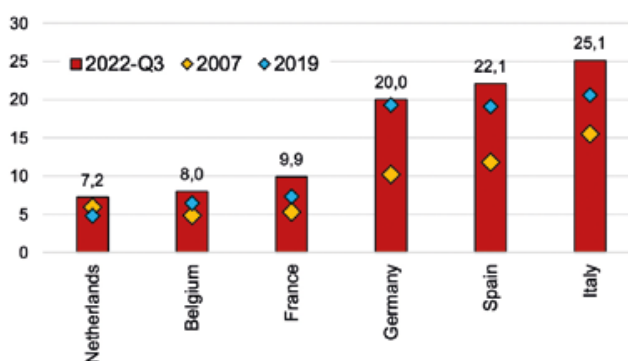
Evolution of the liquid assets of economic agents in financial wealth and interest rates and government bonds



Sources: Eurostat, Refinitiv Eikon, OEE (Observatoire de l'Épargne Européenne)

CHART 24.

Share of financial liquid assets held by households and non-financial corporations, % of financial wealth



Sources: Eurostat, Refinitiv Eikon, OEE (Observatoire de l'Épargne Européenne)

This concentration of households' investments in liquid and risk-free assets is also explained by the fact that many savers remain passive and don't take time to think about the optimal way to allocate their savings. For example, this was illustrated during the Covid crisis, where we saw an important increase of saving rates due to consumption constraints with containment measures, but a large part of these amounts of complementary saved money remained on non-interest-bearing current accounts.

This was highlighted in a recent article by G. Naacke and L. Gabaut³². In a study by L. Calvet³³ commissioned by

32. G. Naacke & L. Gabaut, "La baisse du taux d'épargne n'est pas pour demain", Revue Banque, January 2022. <https://www.revue-banque.fr/archive/baisse-taux-epargne-est-pas-pour-demain-KORB20518>

33. "How Did Low Interest Rates Impact the Cash Holdings of Individual Investors and Firms?" – Mai 2021 – Étude réalisée par Sebastien Betermier (Université McGill), Laurent Calvet (EDHEC Business School) et Jens Kvaerner (Université de Tilburg) <https://www.oee.fr/download/saving-behaviors-of-low-income-households-in-europe/#>

the European Savings Institute (OEE), is also highlighted the fact that only the small proportion of wealthiest economic agents are adapting their saving behaviours according to the evolution of the economic context.

Moreover, there is “monetary illusion” phenomenon. In France, we recently saw an increase in the flows of money invested in regulated saving products following the increase in nominal interest rates of these products. Nevertheless, with high inflation rates, the real interest rates were in fact decreasing and becoming significantly negative. By doing so, households cause their financial assets to lose value.

The OEE recently launched an index³⁴ measuring the performance of households’ financial investments. We can see that changes in the weight of each asset class in households’ portfolio remain small ones and therefore have few impact on global performance of the index. Fixed income products still account for 79% of households’ financial wealth in France.

Over the past ten years:

- the annual average performance of the index reached 2.11%;
- equity products contributed to nearly half of the performance of the index (46%), whereas their weight in the index was below 20% on average;
- there has been nine quarters (from 2nd quarter of 2018 to 2nd quarter of 2019 and the four quarters of 2022) during which the index annual growth rate was lower than inflation.

More recently, in 2022, the index performance net of inflation decreased continuously throughout the year and reached -7.48% in the fourth quarter.

The long-running low-interest rate policies tended to undermine productive investments.

It is long term productive investment that allows an economy to progress, to increase its productivity and face the necessary transitions (green, digital...). Long-term investment involves betting on the future and taking risks. Lasting low interest rates do not foster by themselves, more productive investment. Indeed, entrepreneurs are discouraged from investing in an environment of persistently low interest rates, which means low growth prospects. When uncertainty of the future, risk aversion and lack of return combine, it is obvious that the prospect of long term investment fades in favour of defensive, risk free and liquid investment.

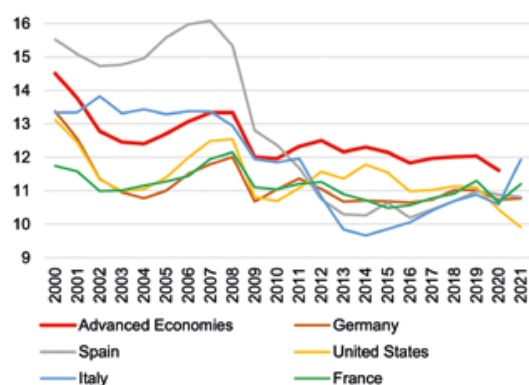
Chart 25 underlines that in advanced countries the level of gross non-residential investment in tangible assets has declined significantly over the past two decades, from 14.5% of GDP in 2000 to 12% in 2019. Half of this decline occurred between 2008 and 2019.

The rise in intangible investment over the same period was less than the decline in tangible non-residential investment (see Chart 25.b). Indeed, non-residential intangible investments that include patent, brand, trademark, copyright or software, have stagnated or increased slightly over the past two decades, reflecting the digitalisation of advanced economies. In AEs, it has increased from 4.3% of GDP in 2000 to 5.1% in 2019. But this dynamic did not compensate for the decline of total non-residential investment, that went from 18.8% of GDP in 2000 to 17.2% in 2019.

CHART 25.

Non-Residential Investments in Advanced economies, % of GDP

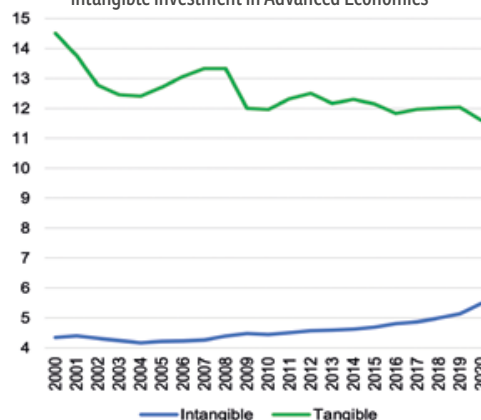
25.a : Non- Residential Tangible Investments
in selected Advanced economies



Sources: OECD, IMF Staff Calculations

Notes: Advanced economies = Australia, Canada, France, Germany, Italy, Japan, Korea, Spain, United Kingdom, United States ; the series include government and corporate investment

25.b : Non-residential tangible versus
intangible investment in Advanced Economies



34. <https://www.oee.fr/performance-of-financial-saving-index/?lang=en>

As a major contributor to GDP, non-residential investment in tangible assets results from expenditures on tangible capital such as infrastructures, commercial real estate, tools, machinery, and factories.

This gradual decline is broad-based across major advanced economies. In the US, it fell by 2 ppts since 2000, to reach 11.1% of GDP in 2019. In Germany, it fell by 2.4 ppts since 2000, to 11% of GDP in 2019. Italy and Spain are among the large euro area countries that have experienced the most important decline, with investment dropping by respectively 2.5 ppts and 4.5 ppts since 2000, to reach 10.8% of GDP and 11% of GDP in 2019. French non-residential tangible investment has registered one of the lowest changes in the past two decades (-0.4 ppts). With the exception of Italy, the level of non-residential investment was still below its pre-pandemic level in 2021, for all the countries mentioned.

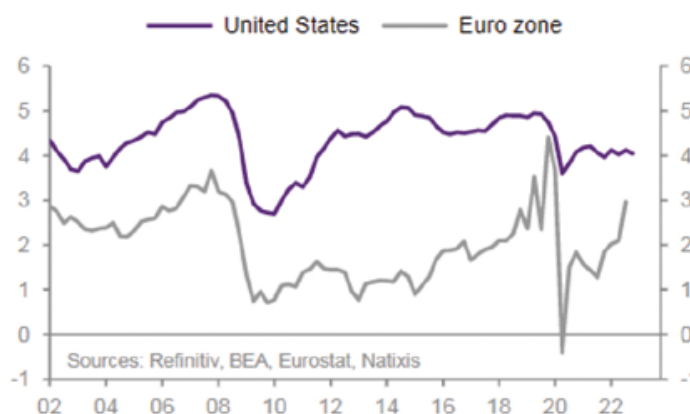
An article in the Financial Times³⁵ citing World Bank data indicated that “France and the US have invested nearly two percentage points of GDP less this century than they did in the 1970s and 1980s; Germany and Italy about 4.5 ppts less; the UK and Japan 6 and 10 ppts less respectively. These are enormous numbers”.

A note issued by Natixis³⁶ analysed the net corporate investment rate (*i.e.* excluding capital depreciation and in real terms, to avoid biases due to the measurement of quality effects) in OECD countries since the subprime crisis. The evolution of this ratio (*see Chart 26*) highlights the shortfall in net corporate investment since the GFC, which corresponds to a slowdown in net capital accumulation. This note also underlines that net corporate investment compared to nominal GDP has been decreasing in both the US and the eurozone, over the last twenty years or more although over the same period corporate profitability has risen in the two areas³⁷. Moreover, in the eurozone, net corporate investment has consistently been lagging behind the US one.

The study concludes that “the increase in corporate gross investment has not offset the increase in capital depreciation”. When looking at net corporate investments, the shortfall is clear in OECD countries, according to the same Natixis paper.

CHART 26.

Net corporate investment (as % of nominal GDP)



Source: Natixis, with Refinitiv, BEA and Eurostat data

If we want to achieve the green and digital transitions that can only be financed by household savings (and not money creation), we must resolve to restore the two necessary conditions for long term investment.

- Financial stability that reassures about the future (while inflation blurs the horizon).
- A sufficient return on the risks incurred in long- term financing.

3.1.2 ‘Too low for too long’ policies have fuelled the survival of weak firms, increasing a misallocation of capital

The lack of success from monetary policies at reviving economic growth can also be entailed to capital and subvention allocation choices. Favourable borrowing conditions ensure the survival of non-productive firms – firms whose profitability is so low that they would not be viable if interest rates were higher.

35. M. Sadbu, “The investment drought of the past two decades is catching up with us”, Financial Times, 20 July 2022.

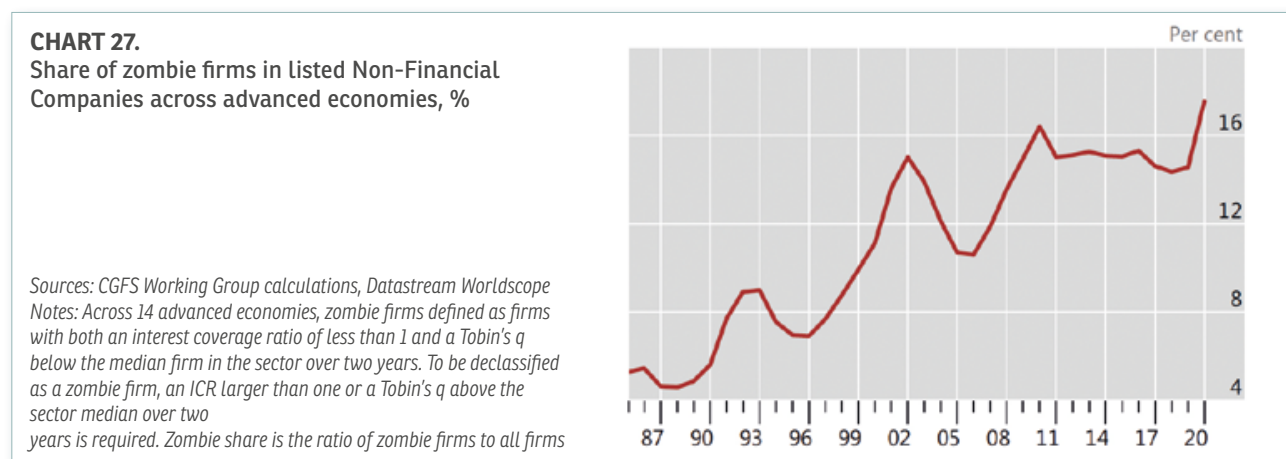
36. P. Artus, “Since the subprime crisis, OECD countries have suffered from a shortfall in corporate investment”, Flash Economics, Natixis, 25 January 2022.

37. The rise in earnings has been used to increase shareholder remuneration in the United States and to make acquisitions and increase cash reserves everywhere (United States, eurozone, Germany and France), according to P.Artus (P. Artus, “What have companies done instead of investing”, Natixis Economic Research, April 2022).

Over the past decade, loose monetary policy has impeded the process of creative destruction, by ensuring the survival of zombie firms that should have gone bankrupt. This dynamic has further damaged aggregate productivity growth, and so perpetuated the disinflationary pressures that prevailed over the period prior to the Covid-19 crisis. Acharya et al. (2020)³⁸ have detailed the process: in sectors where zombie firms prevail, prices decline (so do profits). However, increased competition for factors inputs raises costs and further decreases profits for all. This reduces investment, particularly for health firms, and decreases the growth in future productivity. The level of productivity in the sector also falls arithmetically since it includes low productivity zombies. In short, zombie firms increase disinflationary pressures in the short-run, since excess capacity is maintained; but they also lower the level and the growth of productivity. Put otherwise, zombification encourages (through lower inflation) further monetary stimulus even as it raises the probability of future inflation.

Chart 27 illustrates the fact the share of zombie firms in OECD economies has grown from 1% in 1990 to 15% in 2017. According to the Committee on the Global Financial System (CGFS) Working Group³⁹, the share of public firms classified as zombies spiked in 2020. This report underlines that “one risk is that – as seen in previous cycles – the share does not completely reverse, leaving a subset of less productive firms that hold back the growth of more productive and dynamic firms. Another risk is that debt overhang problems may weaken investment and lead to a decline in the economy’s productive capacity”.

Thus, productivity is hampered by zombie firms, which will dedicate their time and treasuries to reimburse their debt rather than invest in productive initiatives, impeding the reallocation of resources necessary for innovation and growth.



The expansion of zombie firms would have contributed to the trend decline in potential growth in OECD countries: when the share of zombie firms in an economy increases by 1%, total factor productivity growth falls by about 0.3 percentage points⁴⁰.

According to W. White, the sharp reduction in corporate default rates in recent years also attests the growing zombification of many economies. Since the pandemic, the drawing down of bank lines and heavy recourse to bond market has likely made this problem worse. Insolvencies have in fact declined further in many countries.

3.1.3 Lasting low interest rates incentivise companies to take on cheap debt to buy-back their shares rather than invest in long-term projects

Developments with respect to share buybacks cannot be decoupled from monetary policy (see Chart 28).

The 2021 OECD report⁴¹ stresses that “this link is particularly important in the current low interest environment, which greatly affects the relative cost of debt and equity. Low interest rates may drive increases in corporate debt issuance to finance share buybacks, rather than invest in future projects. Expansionary monetary policy initiatives such as the ones undertaken in many OECD countries after the 2008 crisis and the Covid-19 pandemic may directly affect the development in payout policy and adjustments in the companies’ capital structures”.

38. V. Acharya, M. Crosignani, T. Eisert & C. Eufinger, “Zombie credit and dis-inflation: evidence from Europe”, National Bureau of Economic Research, May 2020.

39. Malikamas et al, “Private sector debt and financial stability”, CGFS Paper, May 2022.

40. R. Banerjee et B. Hofmann, “The rise of zombie firms: causes and consequences”, BIS, September 2018.

41. “Trends in the corporate sector and capitals markets pre-Covid-19”, OECD, July 2021.

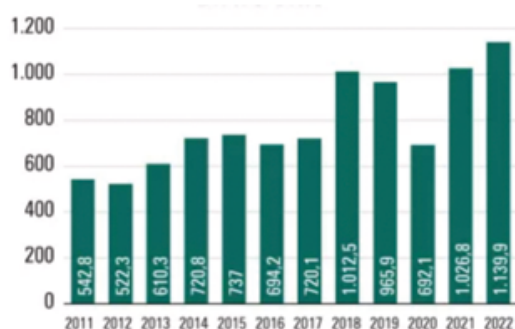
According to the OECD, of the total value of share buybacks in 2018, approximately 83% was attributable to US corporations. A significant proportion of US share buybacks comes from the financial sector, whose profitability has been impacted by lasting low interest rates. In 2018 US companies' shares repurchase accounted for roughly \$ 1.1 trn, more than twice the 2010 amount.

In 2019, the total share buybacks in OECD countries amounted to \$ 599 bn, over twice the amount of new equity issuance. The amount spent on share buybacks has exceeded the amount of equity every year from 2016 to 2019⁴².

CHART 28.

Share buybacks by non-financial corporations (USD USD)

28.a : United States



28.b : Europe (incl. UK)



Sources: S&P Global Market Intelligence, via AGEFI

The year 2022 saw a major increase in the value of shares repurchased by listed corporates in both sides of the Atlantic: in the United States, a new record was reached at \$ 1.139 trn (1.8% of GDP) , against \$ 1.026 trn in 2021 (see Chart 28.a), according to the S&P Global data which were reported by the AGEFI⁴³.

In Europe, \$ 286 bn in buybacks (1.4% of GDP) occurred in 2022, down from \$ 291.5 bn in 2021 (see Chart 28.b).

Across the biggest 11 European markets, the value of shares repurchased by listed corporates amounted to € 161 bn, nearly twice as the € 84 bn of share buybacks executed in 2021, according to BNP Paribas Exane⁴⁴. The four major markets (UK, France Netherlands and Germany) alone accounted for 77% of executions in 2022. Takeovers doubled in Germany, tripled in the UK and even increased sixfold in Italy.

As reported by a recent study from Natixis⁴⁵, “the real motivation for share buybacks is probably to boost share prices, using the portion of profits that would otherwise be invested at a lower return on equity than the standard of corporate profitability”.

This suggests that these share buybacks have not led to the transfer of savings into financing more efficient corporate investments, and so that the Schumpeterian reallocation of capital to more efficient companies did not actually materialise. Indeed, share buybacks have coincided with a decline in capital accumulation (see Charts 25 & 26) and a rise in share prices over the past decade (see Chart 28).

This is worrying, since companies will have to invest massively to achieve their decarbonization, and the return on such investment is fairly low. As noted by P. Artus⁴⁶, “share buybacks will deprive companies of some of this financing needed for energy transition investment”.

3.2 Persistent low rates have been exacerbating financial vulnerabilities

With ultra-expansionary monetary policies, net wealth has grown much faster than income, asset prices have been massively distorted. High leverage has massively increased market valuations and thus spurred the development of asset bubbles. In such a context, wealth inequalities between (i) asset and non-asset owners and (ii) across generations have widened.

42. Idem.

43. “Un millésime 2022 record en Europe et aux Etats-Unis pour les ‘buybacks’ ”, AGEFI, 17 March 2023.

44. “European corporate share buyback volumes almost doubled in 2022”, Global Markets, February 2023.

45. P.Artus, “What about share buybacks?”, Natixis Economic Research, February 2023.

46. Idem footnote 17.

3.2.1 Net wealth has grown much faster than income⁴⁷

In a result of the very accommodating monetary policy, financial and real asset prices have risen out of proportion with incomes. This marks a break with historical precedents.

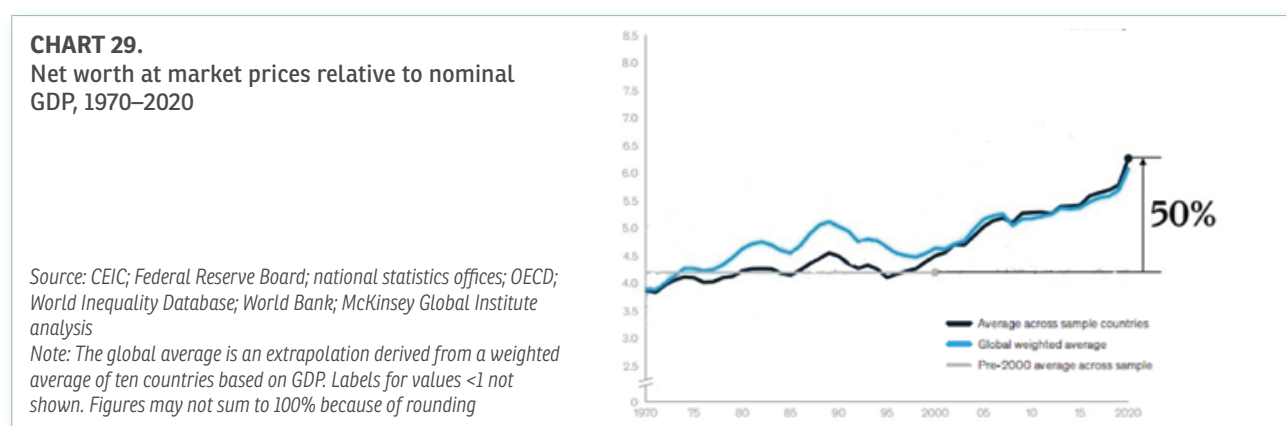
Prior to 2000, net wealth (the value of assets at market prices) evolved largely, with some exceptions, in line with GDP. Since 2000, net worth has exploded (the ratio of net wealth to GDP has increased from 0 to 50%) while GDP has grown only moderately.

Chart 29 illustrates the break that occurred around the year 2000.

The surplus savings, which did not give rise to productive investments, were channelled largely into real estate. All in all, it is a system that is not very productive (debt financing of current expenditure, transactions in old buildings) that generates high asset valuations while real growth remains modest.

The central finding of McKinsey's work is that, at the level of the global economy, the historical link between net worth and output (GDP) growth is no longer true. Economic growth has been modest over the past 20 years, while valuations have surged. The pace of valuations – which traditionally kept pace with GDP – is now 50% higher than the historical relationship.

Two systems: before 2000 net worth follows GDP; after 2000 it takes off (see Chart 29).



McKinsey has calculated that 77% of the net worth growth from 2000 to 2020 comes from rising asset prices and valuations (and only 23% from real resource creation).

In the environment of quantitative monetary ease and low – or negative – interest rates maintained by central banks for nearly 15 years, financial asset valuations have surged, allowing equity holders, in particular, to realize gains in excess of normal remuneration (“operating returns”).

It is understandable, under these conditions, that investors have given priority to making quick profits on valuations rather than committing themselves (without remuneration) to financing risky long-term projects.

This observation is important. An economy cannot function in the long term and for the good of all if investors' choices are oriented (notably because of monetary policy) towards immediate speculative opportunities and gains on valuations, rather than towards long-term growth prospects.

3.2.2 Interest rates no longer play their discriminating role, thus leading to a mispricing of risks

In a market-based economy, financial markets should discriminate across signatures according to their quality and not be dominated by the setting up of interest rates by central banks. But with their large-scale central bank purchases, as we have seen in Section 1, central banks in OECD countries have been controlling the prices of a growing number of assets: not only short-term interest rates but those with QE which leads to monitor the yield curve. Indeed, with control over long term interest rates through government bond purchases, sovereign risks premia do not reflect market forces nor provide savers with appropriate information about the economic and financial developments. In other words, sovereign bond prices have been turned from market prices into administrated prices.

47. We quote here in extenso pages 27, 28 and 29 of J. de Larosière's latest book, “Putting an end to the reign of financial illusion – For real growth”, Odile Jacob, September 2022.

How can free markets assess value in these conditions? Let us not underestimate the importance of this loss of benchmarks as zero interest rates blur risk premia. This reduction of risk premia was a phenomenon already observed prior to the 2007-08 crisis.

One illustration of the mispricing of risk has been the growing share of negative-yielding debt securities worldwide between 2015 and 2022. As of end-2020, close to 40% of global government debt offered negative yields, corresponding \$ 18.4 trn (see Chart 30), according to The Economist.⁴⁸

In March 2021, roughly 20% of bond yield returns in Europe were negative, and around 60% were below 1%, according to the Banque de France. Even the Greek 5-year bond yield turned negative for the first time in May 2021.

CHART 30.
Amount of Global Negative Yielding Bonds, \$ tr

Source: Wall Street Journal/Bloomberg
As of July 2022



Such a proportion of ultra-low yielding assets has brought financial markets to shift away from economic fundamentals. This has pushed investors into riskier segments in search of income, compelling them to lend to lower-quality companies and countries.

Pandemic-related actions taken by Central Banks in 2020-21 distorted financial markets by incentivizing even more risk-taking, which was already at all-time highs. In the US for instance, the Fed's actions had the predictable impacts of driving Treasuries and MBS yields lower across all maturities and leading to a classic "reach for yield" by investors, as stated by Better Markets⁴⁹.

According to this report, "because financial returns had been lowered, investors were willing to take on more risk to potentially make the financial returns they wanted. As a result, the cost of credit was greatly reduced, and the availability of credit was greatly increased." For example, in 2021, spreads on junk bonds reached lows not seen since 2007, just before 2008 crash (see Chart 31.a). Lower credit cost led average issuance of high yield debt in the six quarters after the 2020 Pandemic Stress to double, compared to the average of issuance in the three years prior of that (see Chart 31.b).

CHART 31.
Corporate bond Spreads and High-Yield debt issuance in the United States

31.a : Spreads on CCC and Lower Rated Corporate Bonds (basis points)



Source: St. Louis Fed

Last observation from 23 March 2023

The red line represents the 2007-average; spreads are computed as the difference between CCC and Lower rated bond yields and investment grade rated corporate debt publicly issued in the US domestic market

31.b : Issuance of High Yield Bonds (USD bn)



Source: taken from the Banking report of Better Market 'Federal Reserve Policies and Systemic Instability : Decoupling Asset Pricing from Underlying Risks'

48. The Economist, "A requiem for negative government-bond yields", 23 April 2022).

49. D. Kelleher & P. Basil, "Federal Reserve Policies and Systemic Instability", Better Markets, January 2023.

3.2.3 High leverage has massively increased market valuations and thus spurred the development of asset bubbles

Money supply growth has been abundant over the last 20 years, without success in generating a proportional economic growth. This massive wave of money supply failed at achieving the 2% inflation target until 2020 but was transferred to financial and real estate's prices. High leverage has massively increased market valuations, which poses great financial stability dangers notably if inflation and higher interest rates re-establish themselves.

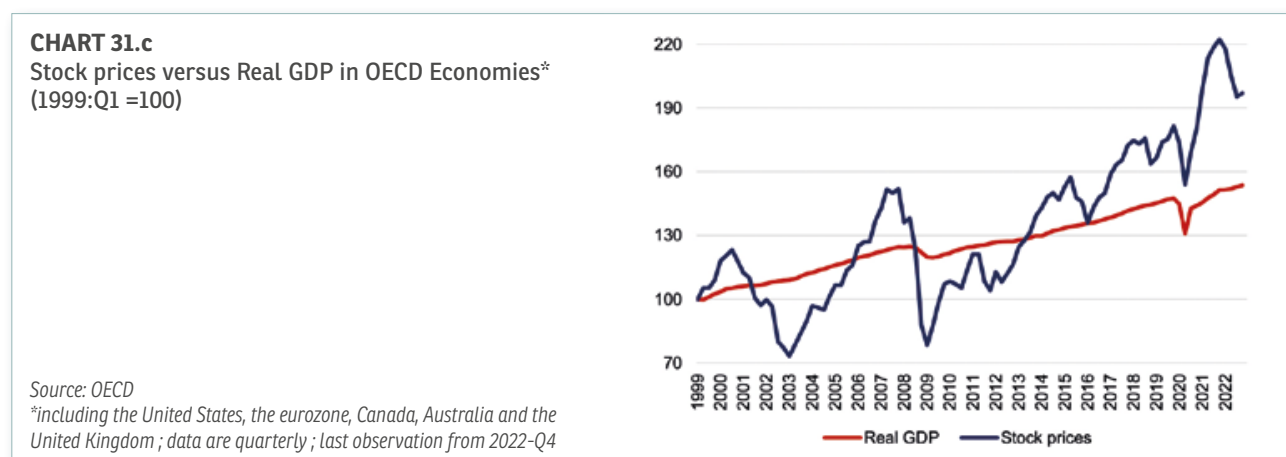
The abandonment of a *leaning-against-the-wind* stance has nourished financial imbalances. The disconnection between financial and housing asset prices on the one side and the economic fundamentals on the other side is leading to market bubbles. Indeed, lasting low interest rates open the floodgates of credit to both governments and the private sector, encourage search-for-yield behaviour and represent a source of financial instability with the resulting asset bubbles.

This can be illustrated by stock and real estate assets inflation, and lately by the Bitcoin price volatility.

Stock markets have been mainly governed by central bank monetary expansion during the past years.

Chart 31 highlights the widening gap between stock prices and real GDP growth in OECD economies, indicating a clear disconnection between financial markets and fundamentals. Between early 2013 and early 2020, stock prices at the OECD level increased by a cumulated 45.5%, three times as much as the real GDP (+15.4%). Their disconnection from the economy was also illustrated by the rise of 16.26%⁵⁰ of the S&P500 and 43.6% of the Nasdaq in 2020, while the world experienced a 4.2% recession that year.

Stock indexed rose even further in 2021, as the S&P 500 and the Nasdaq indexes returned, respectively 27.2% and 20.1% in 2021.



This Chart also underscores that, given the permanent loose monetary policies during the past decade, share price declines caused by negative shocks (cf. Lehman Brothers' bankruptcy and Covid-19 crisis) were immediately followed by an upturn in prices.

The steep rise in house prices due to the overwhelming influence of central banks 'liquidity'.

The associated Chart (Chart 32) displays the steep rise in house prices, both in the United States and the euro area, which has been stimulated by the abundance of money supply growth during the past years. Between 2015 and 2019, house prices rose by roughly 23% in OECD economies (see Chart 32.a). They increased by 25% in the United States and 19% in the euro area.

Following the Covid-19 crisis and central banks' actions that pushed interest rates to further low levels, home prices were 73.8% higher than their 2015 level as of September 2022 in OECD economies, up to 47.9% up in the euro area and to 87.2% for the US.

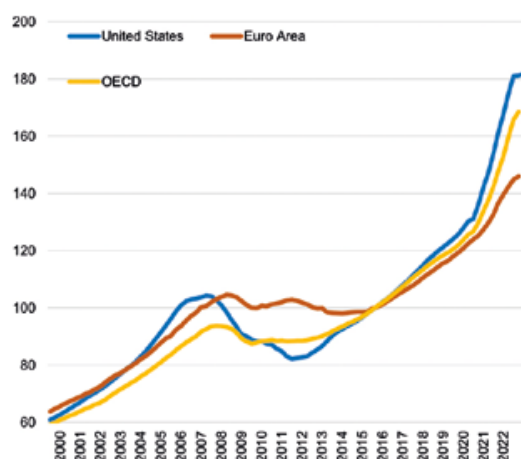
We can see that the increase in real estate values since 2014 at the OECD level is greater than that observed between 2000 and 2007 and which led to the crisis of 2008⁵¹. This comparison – that is worrying should give us cause for concern.

50. Excluding dividends for S&P500 and Nasdaq.

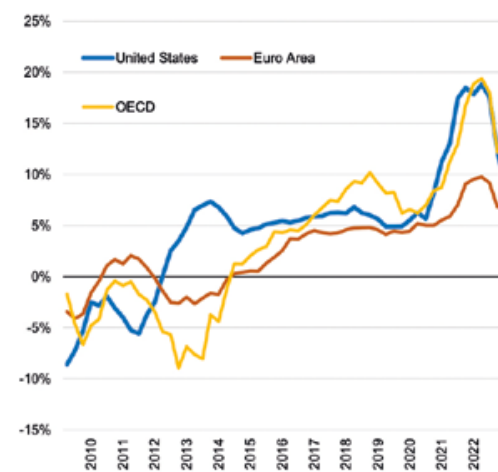
51. At the OECD level, the increase in house prices between 2014 and 2022 was 19 ppts higher than in 2000-2007. This is also the case for the US, where the increase in 2014-22 was 26 ppts higher than in 2000-2007. In the euro zone, house price increases, although at 47% between 2014 and 2022, are still 10 ppts lower than in 2000-2007, during which price grew by a cumulated +58%.

CHART 32.**House Prices development**

32.a : Residential House Prices, Q2-2015=100



32.b : Residential House Prices, Year-on-Year Growth, %



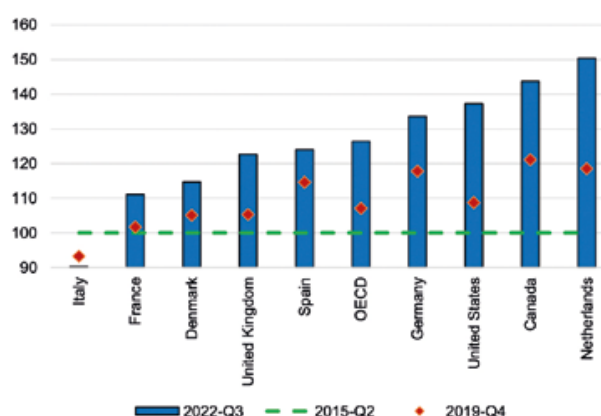
Source: OECD

Last data are from 2022-Q3 for the euro area and the OECD, and from 2022-Q4 for the United States

The surge in house prices illustrates the implied difficulty for households to access housing, in particular for the youth. A measure of the affordability of homes for households is the price-to-income ratio (see Chart 33). Its increase indicates that home prices are rising faster than their disposable income.

From a level of 100 in 2015, the ratio increased to 107 in December 2019. Following the Covid-19 crisis, this index rose to 126.4 in 2022.

Already up by 9.7% in 2019 compared to 2015, the ratio was 37.3% greater than in 2015 in the United States, in September 2022. Although there is no available indicator for the euro area, the development is similar in some Member States. Over the past four years to 2019, Germany and the Netherlands have experienced the largest increase in the price-to-income ratio, jumping by 17.8 ppts and 18.5 ppts respectively. Three years later as of September 2022, these numbers have increase by an additional 15.7 ppts in Germany and 31.8 ppts in the Netherlands.

CHART 33.**Price-to-income Ratio (Q2-2015 = 100)**

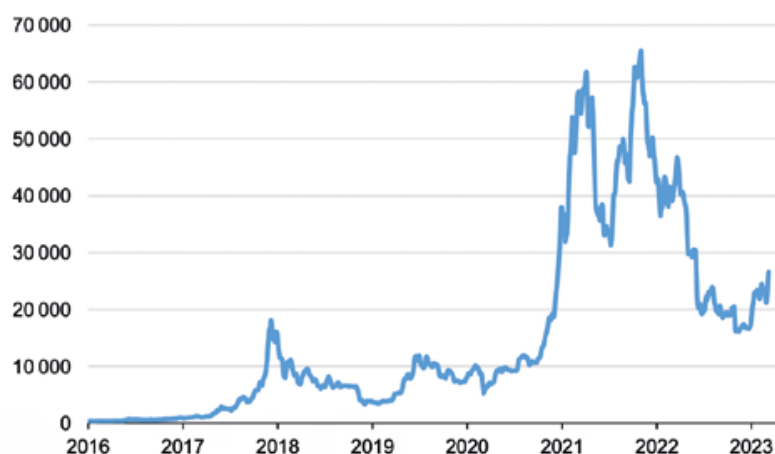
Source: OECD

As mentioned in the last chapter of his latest book, J. de Larosi re stressed that “when the value of assets increase much faster than GDP, this is generally a sign of overheating, which always leads to a market correction. If the growth in net worth is the result of asset price increases rather than investment, there is a risk of favouring the minority of the wealthiest asset holders to the detriment of wage earners with little financial savings”.

Cryptocurrency development.

The search-for-yield attitude also spreads across cryptocurrencies where excess money supply has brought volatility. The Bitcoin, whose price index soared by more than 4 000% between 2016 and January 2022, is a staggering example. After reaching \$ 60 000 in the first months of 2020, the price of Bitcoin has fallen by 50% in only few weeks (see Chart 34).

CHART 34.
Price of Bitcoin, USD



As Chart 35 shows, gold is the ultimate safe haven in times of crisis. Its price has risen sharply since the Covid-19 crisis. The Ukraine war and the recent financial turmoil have increased its attractiveness to savers.

CHART 35.
Gold price, USD/ounce



Consequently, monetary policy is widening wealth inequalities between (i) asset and non-asset owners and (ii) across generations.

As we have seen, low interest rates, asset purchases and other accommodative unconventional monetary policy instruments have tended to increase asset prices (particularly housing, equity, as well as government and corporate bonds) and thereby have especially benefited the wealthiest segment of society.

Ultra-accommodative monetary policy also has cross-generation distributional consequences. Since elderly people tend to have higher savings (accumulated from their families and during their active time), they are able to sell their assets whenever appropriate for them and maintain their consumption level. Thus, 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.

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

A report issued by the McKinsey Global Institute⁵², notes that globally, net worth has tripled since 2000; but the increase mainly reflects valuation gains in real assets – especially real estate – rather than investment in productive assets that drive our economies. Rising asset prices and two decades of relatively low interest rates have helped expand the world’s “balance sheet” to high levels, far outpacing underlying economic growth and raising questions over whether this can endure.

52. McKinsey Global Institute, “The rise and rise of the global balance sheet”, November 2021.

Moreover, “asset values are now nearly 50 % higher than the long-run average relative to income”, the report continues. “Not only is the sustainability of the expanded balance sheet in question; so too is its desirability, given some of the drivers and potential consequences of the expansion. For example, is it healthy for the economy that high house prices rather than investment in productive assets are the engine of growth, and that wealth is mostly built from price increases on existing wealth?” it says.

The central finding of McKinsey’s work is that, at the level of the global economy, the historical link between net worth and output (GDP) growth is no longer true. Economic growth has been modest over the past 20 years, while valuations have surged. The pace of valuations – which has traditionally kept pace with GDP – is now 50% higher than the historical relationship.

McKinsey has calculated that 77% of the net worth growth from 2000 to 2020 comes from rising asset prices and valuations (with thus only 23% from real resource creation). It is generally observed that those who have benefited the most from the rise in stock prices are in the top 10% of the population.

“If we take only households in the United States and China, we see that 2/3 of the wealth is held by the richest 10%. The increase in inequality in China is striking: the poorest 50% of the population are seeing their share of wealth decrease: they only held 15% of the wealth in 2015.

In the United States, household wealth held by the richest 10% of the population rose from 67% to 71% of the total between 2000 and 2019. As for the share held by the poorest 50%, it now represents only 1.5% of the total...”

Table taken from the book J. de Larosière’s latest book, “Putting an end to the reign of financial illusion – For real growth”, Odile Jacob, September 2022

According to J. de Larosière, “the fact that our financial system has favoured to such an extent the holders of assets with a high and growing stock market value sheds a harsh and problematic light on the social consequences of monetary management as it has been conducted for the last twenty years. Similarly, the explosion of real estate prices prevents young people from settling in urban centers and leads to costly social inequalities, especially in terms of productivity. The excessive concentration of wealth in the hands of a few has never been a source of global growth...”

This assessment and its consequences lead us to question the “benefits” of the tripling of net worth described by McKinsey. A system that results in increased financial valuations for the richest 10% while leaving wage income stagnant does not seem likely to increase employment in the productive sectors. This system poses a major political and social problem: the rich become exponentially richer than the wage earners living from their work... A system that results in increased financial valuations for the richest 10% while leaving wage income stagnant does not seem likely to increase employment in the productive sectors”⁵³.

•

Persistent cheap money has undermined financial stability and the growth potential. Here we can quote A. Weber, who writes in this respect that “with their ultra-expansionary monetary policy, central banks have endangered their mandate of price stability and financial stability. With the recent massive reflation the risks to price stability have materialized. Central banks have also endangered financial stability by massively distorting asset prices. Distorted prices send the wrong signals to investors, who took bad investment decisions, for example in driving liquidity-fuelled boom-bust cycles in property markets or investing in the wrong financial products, firms, sectors, regions, or countries. Some of these investments will have to be written-off at some point in the future...”

Moreover, the ultra-loose monetary policy has undermined the growth potential of the euro zone. By subsidizing highly indebted countries or ailing economic sectors, central banks have not only lowered the cost of refinancing, but they also have contributed to reducing the pressure for the necessary consolidation and delaying restructuring. Labour and capital remained trapped in stagnant or, in the worst case, even value-destroying investments and were missing elsewhere. Reforms were being put off; structural crises became protracted.”

53. See J. de Larosière, “Putting an end to the reign of financial illusion: for real growth”, Chapter III, Odile Jacob, September 2022.

4. The return of inflation: state of play and challenges

Inflation generally remains well above central bank objectives and the risk of high inflation persists. Year-on-year inflation in the OECD area reached 8.8% in February 2023.

Since the second quarter of 2021, at the start of global economic re-opening after the pandemic, inflation has been increasing to levels not seen in decades, fuelling concern about the rising cost of living for households. Inflation has thus once again become the primary concern of Europeans, who are feeling a sharp decline in their purchasing power. Indeed, inflation is lowering real revenues and has the highest impact on the poorest. In addition, inflation is also reducing corporate earnings with negative consequences on investment. This uptrend is global, although it varies across regions, with numerous and complex roots.

At first, higher inflation was seen as transitory, reflecting increased relative prices for a small number of pandemic-affected items. But it proved persistent, broadening over time and the war in Ukraine added to the inflationary pressures.

Formerly attempting to “look through” what they considered to be “transitory” higher inflation, many Central Banks across Advanced Economies responded late and slowly. Since March 2022, signs of normalisation have emerged to varying degrees across countries, but nominal policy rates remain well below inflation.

As a result, real ex post policy rates – *i.e.* adjusted for inflation – became more negative in most countries, making monetary policies even more expansionary.

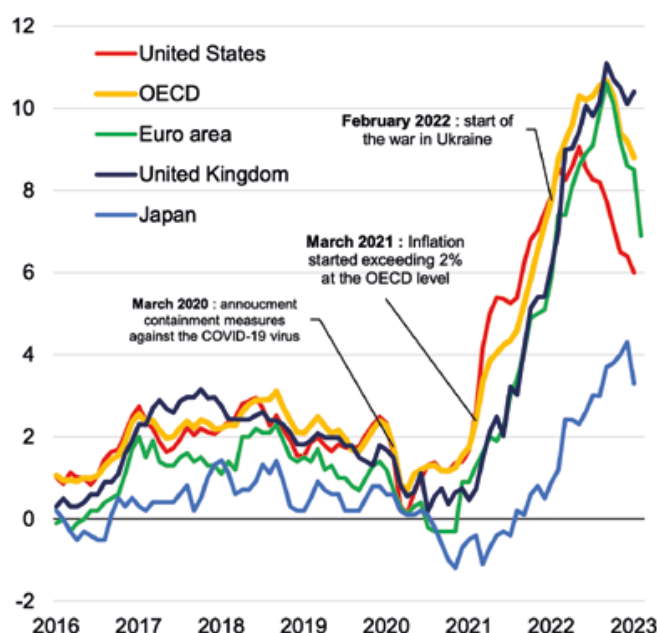
4.1 High inflation is expected to last for longer

We are experiencing another episode of inflation since March 2021, breaking with the trend of slow prices growth that prevailed during the decade prior to the Covid-19 crisis. Inflationary pressures have intensified in 2022, following the war in Ukraine.

The causes are many and complex, driven by a mix of cyclical and structural factors. Soaring energy prices – which extended to a wide range of commodities as food and raw materials have been a key driver in the inflationary shock. Global supply-chain disruptions exacerbated pressures on prices. But other sources of pressure exist too; the acceleration of inflation in 2022 may also be the result of the substantial excess of broad money growth over the past years.

Since the fourth quarter of 2022, Headline consumer price inflation has begun to decline in most economies mainly due to the easing of energy and food prices. However, core inflation remains elevated held up by strong service price increases, higher margins in some sectors and cost pressures from tight labour markets.

CHART 36.
Consumer Price Index growth in key advanced economies, % annual change



Sources: OECD, Eurostat
Latest data from February 2023 for the UK, US, OECD and Japan, and March 2023 for the euro area

4.1.1 Even prior the war in Ukraine, inflation was already an issue for OECD countries

Before the outbreak of the war, price pressures had intensified considerably :

Between March 2021 and February 2022, consumer price index inflation (CPI) has been running above 2% in many advanced economies.

At the OECD level, inflation increased from 2.4% in March 2021, to 4% in June 2021 and 7.8% in February 2022 (see Chart 12).

In the euro area, the HICP growth rate exceeded 2% for the first time in July 2021. Since November 2021, the headline inflation has been greater than 2% in all eurozone Member States and kept rising until February 2022.

In the United States, inflation has been exceeding 2% annually since March 2021, and increased to 7.9% until February 2022.

Lasting supply chain bottlenecks and supply and demand imbalances have continued to contribute to elevated levels of inflation.

In a speech delivered in August 2022, the President of the Bundesbank⁵⁴ explained this return of inflation: “One major factor driving this momentum was the global economy’s unexpectedly swift recovery from the pandemic-induced recession. The fiscal and monetary policy support measures taken around the globe to limit the economic damage caused by the pandemic played a part in this. The rapid revival of economic activity then sent commodity prices soaring.

Another contributing factor was the shift in consumer demand away from services and towards goods during the pandemic – instead of heading to the cinema or the gym, people were ordering laptops and exercise bikes. That left industry struggling to produce enough to keep up in some cases. This has further exacerbated price inflation, both for final products and at upstream stages.

In addition, the pandemic disrupted global supply chains and transport routes. Some of these supply disruptions have proved to be more persistent than initially expected. This, too, has had a hand in pushing up prices. And, with demand robust, energy prices were already on the rise before the war began”.

4.1.2 The war in Ukraine has triggered a major global commodity price shock, pushing inflation to higher levels in OECD economies in 2022 and 2023

At the **OECD level**, the aggregated consumer price index rose by 9.6% for the full year of 2022 compared to 2021, the highest level since 1988. Although it has fallen since its peak of October 2022 (10.7%), headline inflation remained at 8.8% as of February 2023.

In the **United States**, year-on-year headline inflation averaged 8.1% for the full year of 2022. As of February 2023, it fell to 6% from its peak of 9.1% recorded in June 2022. Core inflation, which peaked at 6.4% in March 2022, has been decreasing more slowly compared to the headline inflation. In February 2023, it declined to 5.5%, from 5.7% in December 2022 and 5.6% in January 2023.

In the **Euro area**, consumer prices were up by 8.3% in 2022 compared to 2021, the highest level recorded since the creation of the monetary union in 1999. It peaked at 10.6% in October 2022, before slowly decreasing since, to reach 8.5% as of February 2023. Unlike the headline inflation, core inflation has continued to rise in the euro area. From 5% in October 2022, core inflation increased to 5.6% in February 2023, and 5.7% in March.

In the **United Kingdom**, inflation averaged 9% for the full year of 2022, a level not recorded since 1982. Although it fell from its peak of 11.1% recorded in October 2022, headline inflation remained above double-digit levels (10.1%) as of January 2023, and even picked up to 10.4% in February 2023, the highest level among the major advanced economies. Core inflation also increased, from 5.8% in January to 6.2% in February 2023.

As in **Japan**, headline inflation reached 2.5% in 2022, a level low by international standards but uncommon in a country that has battled deflation for decades. After peaking at 4.3% in January 2023, headline inflation declined to 3.3% in February. The Japanese indicator of core inflation, which excludes fresh but includes fuel costs, also decelerated to 3.1% in February 2023, from 4.2% a month earlier.

Inflation in the euro area: more than three times the ECB target.

The war in Ukraine, and the associated pressures in energy and food supply pushed the euro area headline inflation into unprecedented double-digit territory in October (10.6%) and November (10.1%) last year, and to 8.4% for 2022.

54. J. Nagel, “Monetary policy in times of geopolitical crises and high inflation”, 30 August 2022.

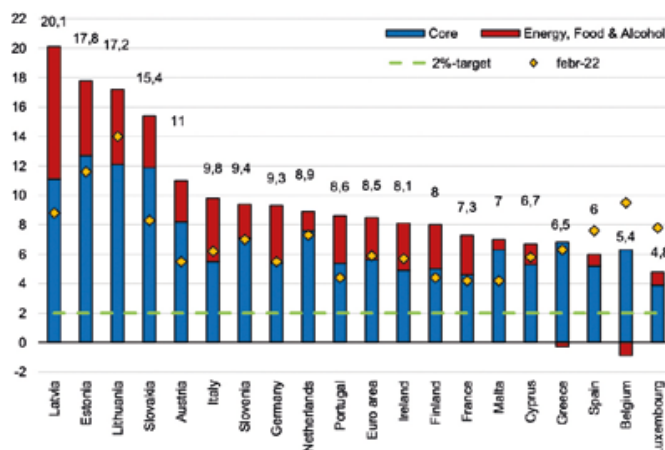
The large import price shock has led to the highest inflation rates in the Baltics among euro area countries. In Estonia, headline inflation doubled from 11.6% in February to peak at 25.2% in August 2022. It jumped to 22.5% in Lithuania, and 22% in Latvia, both in September 2022.

Headline inflation also jumped significantly in Germany, which peaked to 11.6% in October 2022. It also exceeded 10% in Spain (10.7% in July 2022), Italy (12.6% in October 2022) and the Netherlands (16.8% in October 2022).

As result of the recent decline in energy prices, headline inflation has decreased in many Member States from its peak of October 2022. As of February 2023, it fell to 6% in Spain and 5.4% in Belgium – flash estimates for March 2023 suggests that the headline inflation dropped further to 3.1% in Spain and 4.9% in Belgium. In Germany, headline inflation declined to 9.3% in February 2023, and 7.8% in March 2023. It decreased to 9.9% in Italy as of February 2023, and reached 8.2% in March. Unlike the other large eurozone Member States, France's consumer price accelerated in February 2023 to 7.3%, up from 7% in January. In March, it decreased to 6.6%.

CHART 37.
Headline Inflation Across
Eurozone Member States as of
February 2023, % annual change

Source: Eurostat
Label Data concern headline inflation (Core + Energy, Food & Alcohol) in February 2023; Yellow stars indicate the level of headline inflation in February 2022, before the war in Ukraine



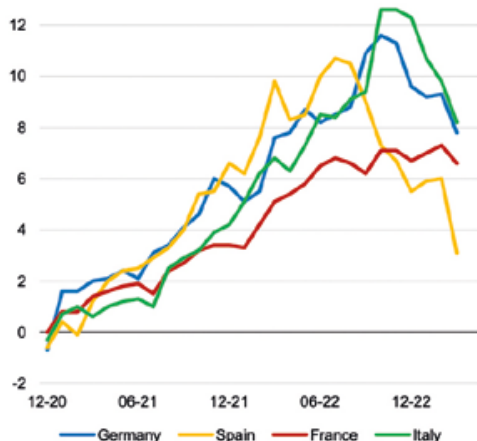
The decline in headline inflation contrasts with the rise in core inflation, as observed in most Member States since the third quarter of 2022.

Of the 15 countries that experienced a decline in headline inflation between September 2022 and February 2023, 8 experienced an increase in core inflation. Germany and Spain are among them, with core inflation reaching 5.4%, 5.2% respectively in February 2023, compared to 4.7%, and 4.8% in September 2022. In France and Italy, headline inflation continues to rise, as does core inflation, which rose from 3.7% and 4.4% respectively in September 2022 to 4.6% and 5.5% in February 2023.

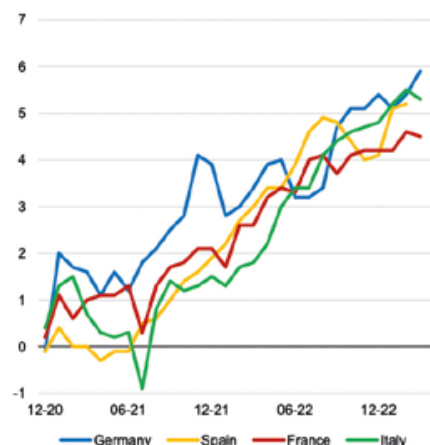
Core inflation accelerated further Germany in March 2023, reaching 5.8%. Core inflation in France and Italy declined slightly to, respectively 4.5% and 5.5%.

CHART 38.
Headline versus Core Inflation across the main euro area Member States, annual % change

38.a : Headline inflation



38.b : Core Inflation



Source: Eurostat
Last data from March 2023, except for Spanish core inflation which dates from February 2023

4.1.3 The current inflation spike is driven by structural factors

Since it has been exceeding the 2% target, policymakers have mainly described the inflationary upsurge as the result of a mix of special factors that would ease in the near-term. Headline consumer price inflation has spiked around the world, in 2021, pushed up by **higher commodity prices, supply side disruptions and stronger consumer demand** as economies reopened.

The Russian invasion of Ukraine has intensified some of these pre-existing price pressures, putting more upward pressure on energy prices, raising the energy input costs of other products and creating additional distortions of supply chains. At the same time, China's zero-Covid policy continued to weigh on the global outlook, lowering domestic growth and disrupting global supply chains.

The situation was in fact more complex because demand, driven by expansionary monetary and fiscal policies, ran up against the long-standing structural problem of inelasticity of the productive capacities, which is largely due to insufficient productive investment over the past years.

But the inflation problem may also be explained by monetary causes. Indeed, the **excessive monetary growth of the previous years** may have exacerbated supply chain issues by inflating overall spending and demand, reflecting a policy failure and not just "the teething problems of an economy recovering from the pandemic slump". When monetary policy is too tight, it slows aggregate demand. When monetary policy is too loose, it damages aggregate supply. The amount of 'excess money' resulting from a mix of highly expansionary fiscal and monetary policies boosted inflation.

The excessive monetary growth of the previous years emanating from aggressive central banks' quantitative easing policies (in particular in 2020 and 2021) may have exacerbated supply chain issues by inflating overall spending and demand, reflecting a policy failure and not just the teething problems of an economy recovering from the pandemic slump.

One thesis, particularly in the US, tends to show that the Fed's easy money policy has not led to an increase in bank lending insofar as the banks have maintained their reserves with the central bank instead of granting credit to the economy. Nevertheless, the truth of the quantitative theory is not denied. What is difficult is to establish precise links between the evolution of the money supply and inflation (the velocity of money is volatile, investment and savings decisions are motivated by multiple factors...).

But just because these relationships are difficult to formulate does not mean that reality does not exist. The mere fact that we continue to take an interest (albeit insufficiently) in the evolution of credit shows that quantitative theory continues to apply. Indeed, the increase in the money supply (M3 or M2) is strongly determined by the evolution of credit (a large part of M3 is the counterpart of bank credit), so indirectly it is indeed a money supply problem that is at stake.

The **green transition** should structurally drive inflation to higher figures. Previously, when oil prices were going up, shale oil producers quickly increased their levels of production, which put downward pressure on prices. That is not happening to the same degree now. I. Schnabel's insight⁵⁵ was that "this can probably be explained by the fact that, owing to the green transition, there is less incentive to invest in shale oil facilities. [...] If that is true, we are perhaps going to see stronger upward trends in oil prices in the future". She added that as the shift in the energy mix towards cheaper and less carbon-intensive fuels will take time, a rising carbon price, higher tax rates across a range of fossil fuels, and relatively inelastic energy demand may lead to continuous upward pressure on consumer prices in the transition period.

The green transition and the increasing use of electricity should also lead to a rise in energy prices because the cost of producing renewable energy is higher than the cost of producing thermal energy, amortised capital is replaced by new unamortised capital which leads to an increase of the cost of capital and due to electricity storage costs. In addition, the equipment needed for the energy transition (wind turbines, hydrolysers, electric batteries, electricity grids) uses important quantities of metal whose prices.

More recently, second rounds effects have started to materialise in reaction to high inflation: as firms are passing higher input costs to their final prices and workers are bargaining **higher wages** to make up for the loss of purchasing power. In the meantime, **government actions** implemented to offset the loss of households' purchasing power (tax cuts, subsidies, energy-price caps) feed the inflationary environment. These second-round effects suggest that inflation may remain high rather than fall rapidly in the coming months.

55. I. Schnabel, Interview with Le Monde, published on 22 December 2021.

4.1.4 Wage growth constitutes an important component of “homemade” inflation

Wages have increased significantly in 2022, in the context of high inflation and tight labour markets.

In 2022, nominal wages of US workers in the private sector have risen by 6.4% compared with to a year earlier, a record-high number in a decade, according to the Bureau of Labor Statistics. An alternative measure of wages dynamic provided by the Fed of Atlanta indicates that private wages peaked at 7.1% in June 2022, compared to a year ago (see Chart 44.a).

In the euro area, hourly wages rose by 4.1% in 2022 compared to a year earlier according to Eurostat, twice as the average yearly growth of 2% recorded between 2014 and 2019 (see Chart 39.b). Compared to a year earlier, nominal wages have risen by 4.8% in Germany, and 3.9% in France notably. The most recent data from 2022-Q4 suggests that wages have accelerated further across Euro area Member States, increasing by 6.2% in Germany and 5.1% in France in particular.

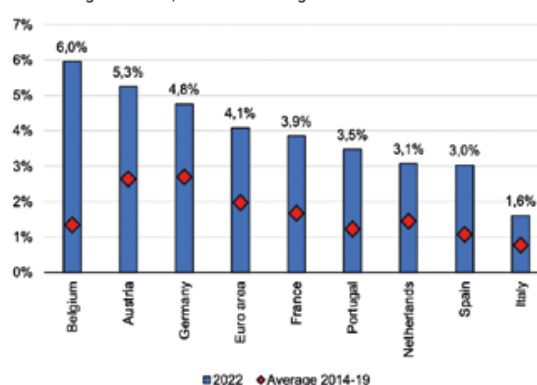
CHART 39.

Wage growth development in the United States and across key eurozone Member States

39.a : Median annual wage growth in the United States, %



39.b : Wages and salaries of the business sector, average for 2022, % annual change



Source: Current Population Survey, Bureau of Labor Statistics, and Federal Reserve Bank of Atlanta Calculations
Last data from February 2023

Wage growth increases have occurred in a context of tight labour markets and staff shortages, a problem that many firms have reported across major advanced economies.

When the crisis hit in March 2020, many workers lost their job but never returned to the labour market since. The persistence of staff shortages contributed to widen the gap between jobs opening and jobs seekers, especially in the United States. As of October 2022, there was nearly two job openings for every unemployed worker in the US, the most since 1950, when data were first collected (see Chart 40.a).

CHART 40.

Labour Market Tightness across advanced economies

40.a : Job openings versus job seekers in the United States, millions person



Source: US Bureau of Labor Statistics

40.b : Job vacancy rate in the eurozone

Proportion of vacant positions as a share of total jobs (filled and unfilled), %



Source: Eurostat. As of 2022-Q4

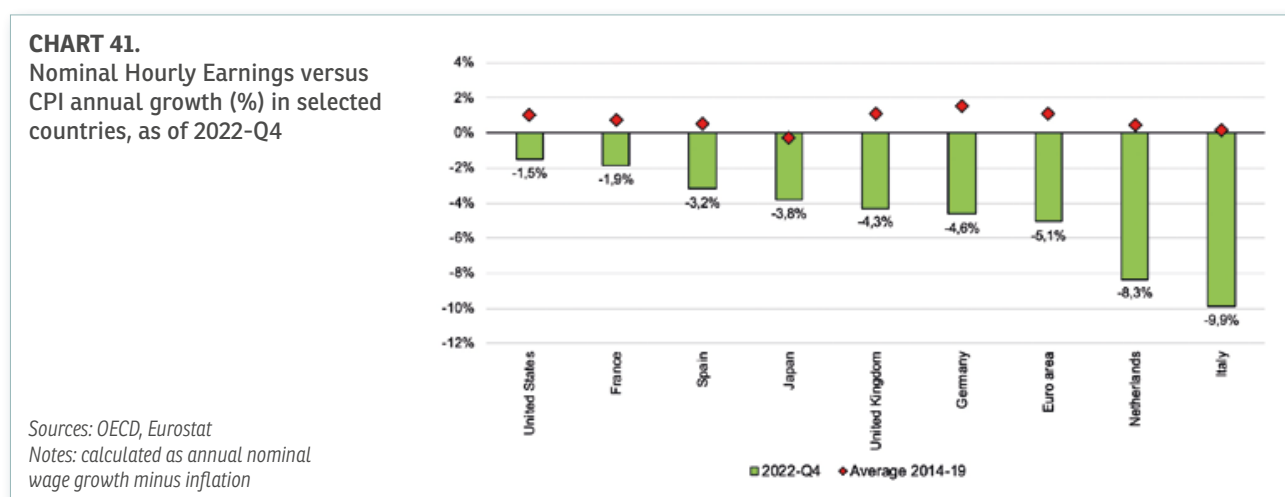
In Europe, the labour market has continued to improve, with unemployment remaining at its historical low of 6.7% in January 2023. Many firms are reporting staff shortages across Member States, and the vacancy rate⁵⁶ increased to reach 2.8% in 2022-Q4 in the euro area according to Eurostat, one of highest since data were first collected in 2006 (see Chart 40.b). According to J. Nagel⁵⁷, surveys show that labour shortages have become considerable obstacles to production. In the European Commission survey for the euro area service sector, for example, understaffing is the most frequently cited limit on business. Job vacancies across many sectors show that there is robust demand for labour.

According to the OECD⁵⁸, “low unemployment and high vacancy rates in most major economies, together with the extended period of high inflation, have put upward pressure on nominal wage growth”. Indeed, such mismatch between labour demand and supply has been improving employees’ bargaining power when demanding wage increases high enough to account for rising living costs.

However, wages have so far risen by less than prices have, in both the US and the euro area, pushing real compensation growth to fall into negative territories.

Wage inflation has been below consumer price inflation since the start of 2021, resulting in a decline in real consumer wages.

As of 2022-Q4, the annual hourly wage growth adjusted for CPI was -1.5% in the US and -5.1% in the eurozone (see Chart 41). The pain is being felt across the region: real wages fell by 4.9% in Germany, 1.9% in France and by 3.2% in Spain. Italy and the Netherlands suffered the most, with their real wage growth falling by respectively 9.9% and 8.3% as of 2022-Q4.



A key reason behind the sluggish pace of wages growth is that wages are imperfectly indexed to prices. According to the ECB⁵⁹, only around 3% of private sector employees in the euro area have their wages and minimum wages automatically indexed to inflation. It also underlines that, since the Great Financial Crisis, indexation regimes with a formal role for inflation in wage setting have become less prevalent.

Worldwide, institutional changes, such as the decline of workers’ unionisation, also hint at an environment less conducive to wage-price spirals than in the past, according to a study from the BIS⁶⁰. At the OECD level, union membership – the share of employees affiliated to a trade union – had fallen from 38 % in 1973, to 16% in 2019.

Still, recent developments in minimum wage and wage negotiations across the EU Member States should be a cause for concern.

56. A job vacancy is defined as a paid post that is newly created, unoccupied, or about to become vacant. The job vacancy rate hence measures the proportion of total posts that are vacant, according to Eurostat (see <https://ec.europa.eu/eurostat/web/labour-market/job-vacancies>)

57. “The labour market – supporting the economy or fuelling inflation?”, Speech at the OMFIF Economic and Monetary Policy Institute, March 2023.

58. OECD Economic Outlook, Interim Report March 2023.

59. G. Koester and H. Grapow, “The prevalence of private sector wage indexation in the euro area and its potential role for the impact of inflation on wages”, ECB Economic Bulletin, October 2021.

60. F. Boissay et al, “Are major advanced economies on the verge of a wage-price spiral?” BIS Bulletin N° 53, May 2022.

Attempts to recoup from loss of purchasing power combined with the structural decline in the available workforce could push wage growth to levels incompatible with the 2%-inflation target in the medium term.

While the risk of wage-price spiral seems to be contained so far according to some economists and policymakers⁶¹, the current pace of wage increase is not compatible with price stability in the medium term, and, if persistent, could keep inflation high.

One reason to believe that wage growth will remain elevated is the attitude of workers and trade unions, who are trying to compensate for the loss of purchasing power in wage negotiations. In the euro area, contract negotiations during 2022 have delivered a 4.4% wage increase for 2022 and a 4.8% increase for 2023. Additionally, “the wage increases agreed for 2023 have shifted upwards towards the end of the year over 2022”, according to P. Lane⁶².

German public sector unions have been bargaining a double-digit wage rise and Dutch unions are agreeing pay awards of 5-6%, well above historical norms, according to the Financial Times⁶³. Verdi, the German trade union which represents two million employees, call to secure a 10.5% pay-rise for staff while EVG, a rail-workers’ union, wants a 12% increase. In Spain, a survey conducted by the Central Bank suggests that half of collective bargaining deals for 2023 contains “indexation clauses”. For France, granular data collected by the Banque de France suggest that average increase in industry level wage floors was close to 5% at the end of 2022⁶⁴.

Many governments have responded to trade unions, by increasing minimum wages. Statutory minimum wages rose by 12% on average across the EU in 2022, twice as during the previous year. As reported by the Financial Times, this increase was partly “due to a catch-up in eastern and central European states, but the wage floor also rose by 22% in Germany, 12% in the Netherlands and around 5 to 8% elsewhere in the core of the bloc”.

As workers sought compensation for high inflation, wages are expected to accelerate for the coming years. The Eurosystem December forecast projected wage growth, as measured by compensation per employee, to increase from 4.5% in 2022 to 5.2% in 2023 before declining to 4.5% in 2024, more than twice the average pace recorded between 2014 and 2019.

As detailed above, wage agreements take place in a context of tight labour markets and staff shortages, “a phenomenon that is likely to intensifying in many countries in the future”, according to J. Nagel⁶⁵. As stressed by C. Goodhart and M. Pradhan⁶⁶, “there will be an absolute decline in the labour workforce in several countries – in the key economies of Japan, China and most of North Asia... as well as several continental Europe, such as Germany, Italy, Spain and Poland”. Accordingly, labour scarcity in Advanced economies) “will put workers in a stronger bargaining position, reversing decades of stagnation. [...] They will use that position to bargain for higher wages. This is a recipe for recrudescence of inflationary pressures.”

4. 2 Normalisation process as of end-March 2023: state of play

To varying degrees the Federal Reserve, the European Central Bank and the Bank of England are exiting their ultra-expansionary monetary policies.

The Bank of England was the first among the G7 countries to raise its key rates, in December 2021. Later in March 2022, the Federal Reserve followed by lifting the Fed Funds rate, after ending its asset purchase program. Since June 2022, it has started to reduce the size of its balance sheet. The European Central Bank has raised its policy rates later than the Fed and the BoE. The Bank of Japan remains an exception, maintaining its highly accommodative stance.

Most central banks have continued to tighten monetary policy since the beginning of 2023 to address high inflation. A recent OECD report⁶⁷ stressed that “a handful of central banks that tightened monetary policy at an early stage have now announced a pause to assess the economic impact of the cumulative increase in policy rates, including the Bank of Canada and the Central Bank of Brazil. Others, including the Federal Reserve and the Reserve Bank of Australia, have continued to tighten, while starting to reduce the pace of tightening and communicating that policy rates will be unchanged at their current level for an extended period of time.”

61. See for instance I. Visco, “Monetary policy and the return of inflation, questions and charts” (March 2023) and J. Alvarez & N-J Hansen, “Wage-Price Spiral Risks Still Contained, Latest Data Suggests”, IMF, February 2023.

62. “Underlying inflation”, Lecture at Trinity College Dublin, March 2023.

63. D. Strauss, “Global economy: will higher wages prolong inflation?”, FT, March 2023.

64. E. Gautier, “Negotiated wage increases: what is the picture for 2022?”, Banque de France blog post N°301, January 2023.

65. “The labour market – supporting the economy or fuelling inflation?”, Speech at the OMFIF Economic and Monetary Policy Institute, March 2023.

66. C. Goodhart & M. Pradhan, “The Great demographic Reversal”, Palgrave (2020).

67. OECD Economic outlook Interim Report, March 2023.

The Federal Reserve has gradually increased the federal funds rate since March 2022 to reach 5% in March 2023. Since June 2022, the Fed has also been reducing its bond holdings.

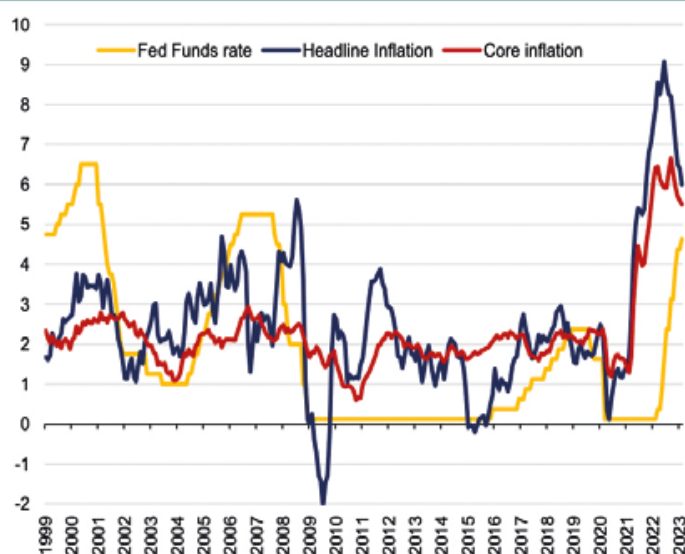
In November 2021, Jay Powell stopped considering inflation as a “transitory” phenomenon. This view, shared by many FOMC Members, justified the pursuit of a loosening monetary policy: between December 2020 and November 2021, the Fed continued to purchase US Treasuries and Mortgage-Backed Securities (MBS) at a monthly pace of \$ 120 bn, and left the federal funds rate unchanged at their bottom range.

From December 2021, the Fed gradually reduced the pace of net asset purchases, which fully ended in March 2022.

In March 2022, the Committee raised the federal funds rate by 25 bps, for the first time since 2019, and officially ended the purchases of public and private securities.

The pace of rate hikes accelerated considerably in subsequent meetings, with the FOMC raising the Fed Funds rate by 50 bps in May 2022 and by 75 bps in each of the four meetings held between June and November 2022. The Fed Funds rate was raised again by 50 bps in December 2022 and by 25 bps in February and March 2023. After a cumulative increase of 500 bps since the beginning of 2022, Chairman Powell indicated that “some additional policy firming may be appropriate.”

CHART 42.
Fed funds rate versus headline
inflation in the United States (%)



Source: Federal Reserve
Last observation from February 2023

In June 2022, the FOMC started quantitative tightening (QT) by reducing its holdings of US Treasury securities and MBS.

The Fed held \$ 5.8 trn in US Treasuries, ie a quarter of the government debt, as of June 2022. It also held \$ 2.7 trn in MBS.

The monthly pace of balance sheet reduction has increased from \$ 47.5 bn between June and September 2022 to \$ 95 bn since then. Consequently, from a total of \$ 8.9 trn in June 2022, the Fed's balance sheet has shrunk to \$ 8.4 trn at the end of February 2023. The amount of US Treasuries outstanding decreased by \$ 400 bn to \$ 5.4 trn in February 2023 and the amount of MBS decreased by \$ 89 bn to \$ 2.6 trn.

According Caixa Bank⁶⁸, this pace of the reduction is much more aggressive than during the previous tightening cycles: in 2017, the Fed set a monthly cap of \$ 50 bn, although in practice the initial pace was closer to \$ 10 bn. Between 2017 and 2019, close to \$ 613 bn of private and public securities were sold or not reinvested. Assuming the monthly cap of \$ 95 bn unchanged, the Fed's balance-sheet should then drop by more than \$ 1.6 trn in December 2023.

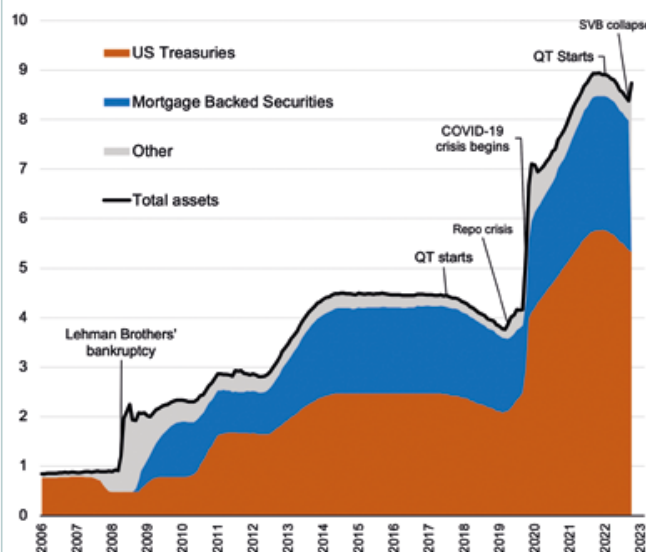
However, the recent banking turmoil induced by SVB's collapse has led the Fed's balance sheet to rise again since mid-March 2023. In collaboration with the Treasury Department, the US Central bank has established a “bank term funding program” to provide short-term liquidity assistance to U.S. banks. In the 10 days following the collapse of SVB, Fed's assets increased by nearly \$ 400 bn, while they had fallen by nearly \$ 600 bn between June 2022 and February 2023 due to QT.

68. A. Montilla, R. Gili, “On the reduction of the central banks' balance sheets” Caixa Bank Monthly Report N° 468, June 2022.

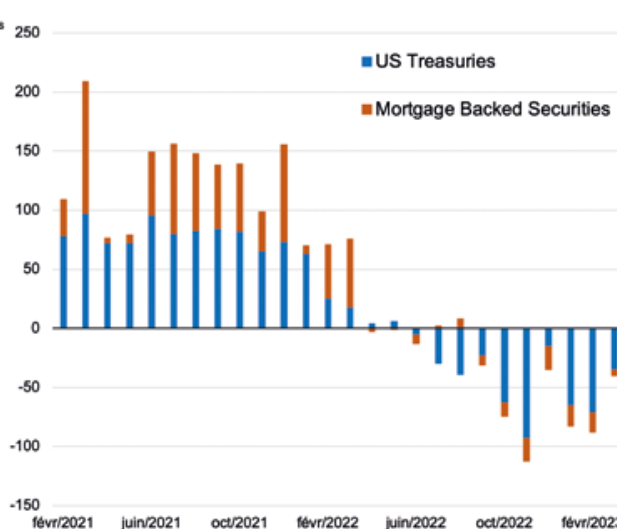
CHART 43.

Federal Reserve balance sheet, stock and flows

43.a : Total Assets, breakdown by purchase program, USD Trn



43.b : Monthly change in securities holding, breakdown by purchase program, USD bn



Source: Federal Reserve; Last data from 26 March 2023

The European Central Bank raised its key policy rates by 350 bps between July 2022 and March 2023 and started to reduce its securities holding since March 2023.

Until December 2021, the ECB Governing Council was still considering that “monetary accommodation [was] needed for inflation to stabilise at the 2% inflation target over the medium-term”. This stance justified the pursuit of the bond-buying programs and the unchanged level of key interest rates. Between December 2021 and March 2022, net monthly purchases under the pandemic-scheme PEPP and the APP averaged € 60 bn, while the deposit facility rate was still negative, at -0.5%, since September 2019.

At the end of March 2022, the Governing Council discontinued net purchases under the PEPP, although it planned to reinvest the principal payments from maturing securities purchased under the programme “until at least the end of 2024”. According to the ECB President, C. Lagarde, the reinvestment package totals € 1.7 trn. In the meantime, it continued purchasing governments and private securities under the initial APP, at a monthly net purchase pace of € 40 bn in April, € 30 bn in May and € 20 bn in June.

In June 2022, it decided to end net asset purchases under the APP by 1 July 2022, but continued reinvesting, in full, the principal payments from maturing securities purchased under the APP “for an extended period of time”.

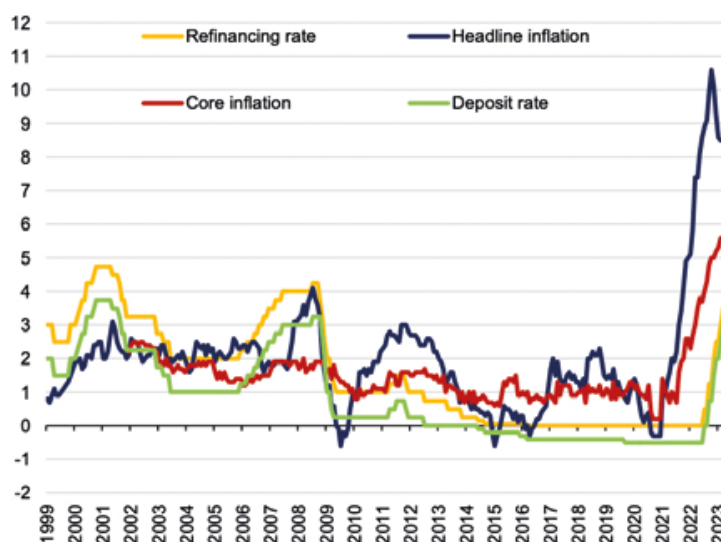
In July 2022, the Governing Council decided to raise the three key ECB interest rates by 50 bps, – the first hike since July 2011 – to exit its negative interest rate policy in place since 2014.

Separately, it approved the establishment of the Transmission Protection Instrument (TPI), a new tool designed to support the effective transmission of monetary policy across all euro area countries. Indeed, it “can be activated to counter unwarranted, disorderly market dynamics that pose a serious threat to the transmission of monetary policy across the euro area”⁶⁹.

Since July, interest rates have been raised at each meeting, by 75 bps in **September** and **October 2022**, and by 50 bps in **December 2022**, **February 2023** and **March 2023**. The ECB staff forecasts that headline inflation will average 5.3% in 2023, 2.9% in 2024 and 2.1% in 2025, a level that “remains too high for too long”, warned C. Lagarde during the March press conference.

69. TPI purchases would be focused on public sector securities (marketable debt securities issued by central and regional governments as well as agencies, as defined by the ECB) with a remaining maturity of between one and ten years. Purchases of private sector securities could be considered, if appropriate.

CHART 44.
Policy rate versus headline
inflation in the Euro area (%)



Source: Federal Reserve
Last observation from February 2023

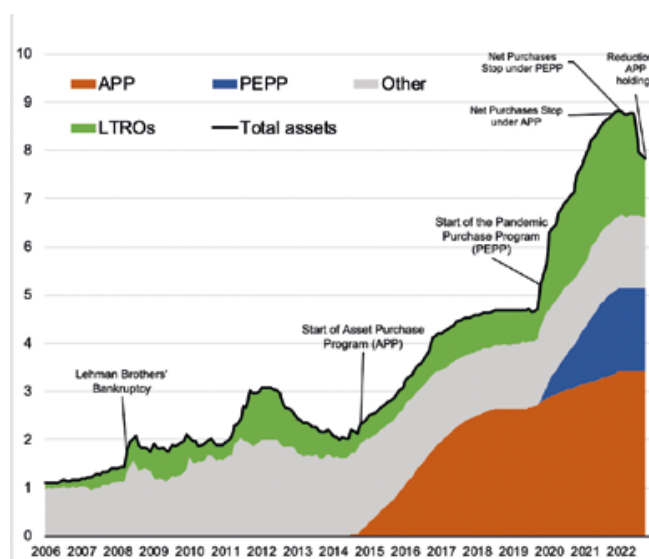
This cumulative increase of 350 bps in policy rate so far was complemented by several measures to reduce the size of the Eurosystem's balance sheet, as part of the "Quantitative Tightening".

A first measure has been to allow early repayments from the Longer-Term Refinancing Operations (LTROs). Between October 2022 and March 2023, European banks have repaid close to €895 bn borrowed from the ECB, out of € 2.1 trn of worth of cash from the LTROs. Repayment from refinancing operations have been the main reason for the decline in the € 930 bn's drop of total assets of the Eurosystem since November 2022 (see Chart 45.a).

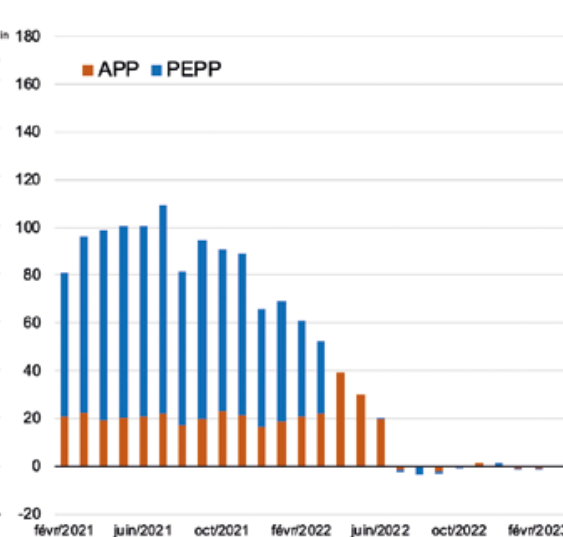
Additionally in **February 2023**, the Governing Council detailed the modalities for reducing its APP holdings: from the beginning of **March** until the end of **June 2023**, the APP portfolio will decline by € 15 bn per month on average, as the Eurosystem does not reinvest all of the principal payments from maturing securities. The subsequent pace of reduction in bond holding will be determined over time. PEPP holdings are not subjected to QT, as these maturing securities purchased under the program are still reinvested until "at least the end of 2024".

CHART 45.
Eurosystem's balance sheet, stock and flows

45.a : Total Assets, breakdown by purchase program, EUR Trn



45.b : Monthly change in securities holding, breakdown by purchase program, EUR bn



Source: Federal Reserve; Last data from 26 March 2023

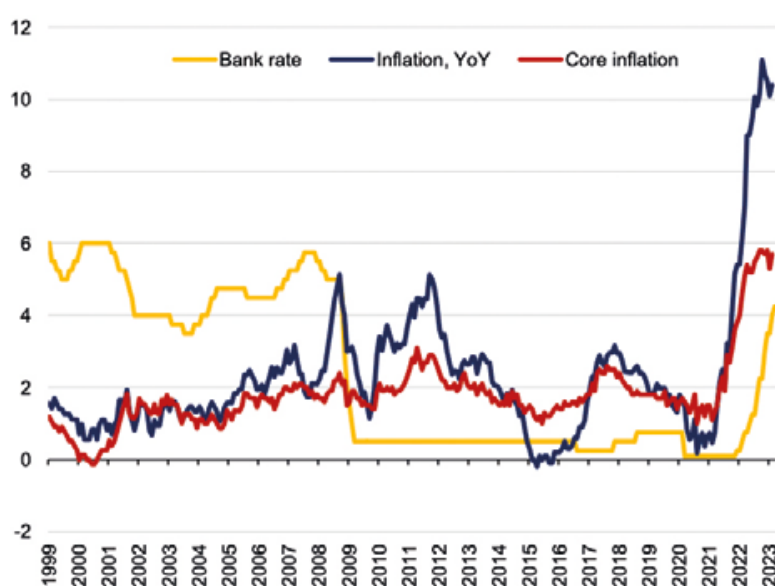
The Bank of England raised its policy rate for the tenth consecutive time since 2021, and sell UK governments bonds since February 2022.

The BoE has been the first major Central Bank among G7 economies to start raising rates since the pandemic began. In December 2021, it lifted the Bank Rate, from 0.1% to 0.25%. Since then, the Bank rate has been raised nine consecutive times to reach 4.25% in March 2023. The March meeting came after a pickup in inflation in February, which increased to 10.4%, 0.6 ppts higher than previously expected. “Although nominal wage growth has been weaker than expected, cost and price pressures have remained elevated”, noted the Monetary Policy Committee summary of the March meeting, signalling that “further tightening in monetary policy would be required, [...], if there were to be evidence of more persistent pressures”.

In addition to rate hikes, the BoE has been reducing its holding of UK government bonds. As of 2 February 2022, the total stock of UK government bond purchases was £ 875 bn. Since February 2022, the Bank decided to put an end to the reinvestment of its maturing government bond holding. In March 2023, the total stock of government securities held by the BoE declined to £ 818 bn.

CHART 46.

Policy rate versus headline inflation in the United Kingdom (%)



Source: Bank of England
Last observation from February 2023

Signs of monetary policy normalisation also take place at a more advanced stage in other developed and emerging market economies (see Chart 47).

In December 2021, the Committee of **Central Bank of Norway** unanimously decided to raise the policy rate from 0.25% to 0.5%. The policy rate was raised again by 50 bps, twice in August and September, and by 25 bps during each of the last 3 meetings since November 2023, to reach 3% in March 2023. As “inflation is markedly above target”, the Committee judges that additional rate hikes “are needed to curb it” and sees the policy rate “increasing to 3.5% in summer 2023”.

The action follows the path of **the Central Bank of New Zealand**, that raised its policy rate at every meeting since October 2021, after ending QE in July 2021. As of February 2023, the latter was raised again at 4.75%, the second the highest level among advanced economies behind the United States. It also continued selling \$ 5 bn of its government bond holding per year since July 2022.

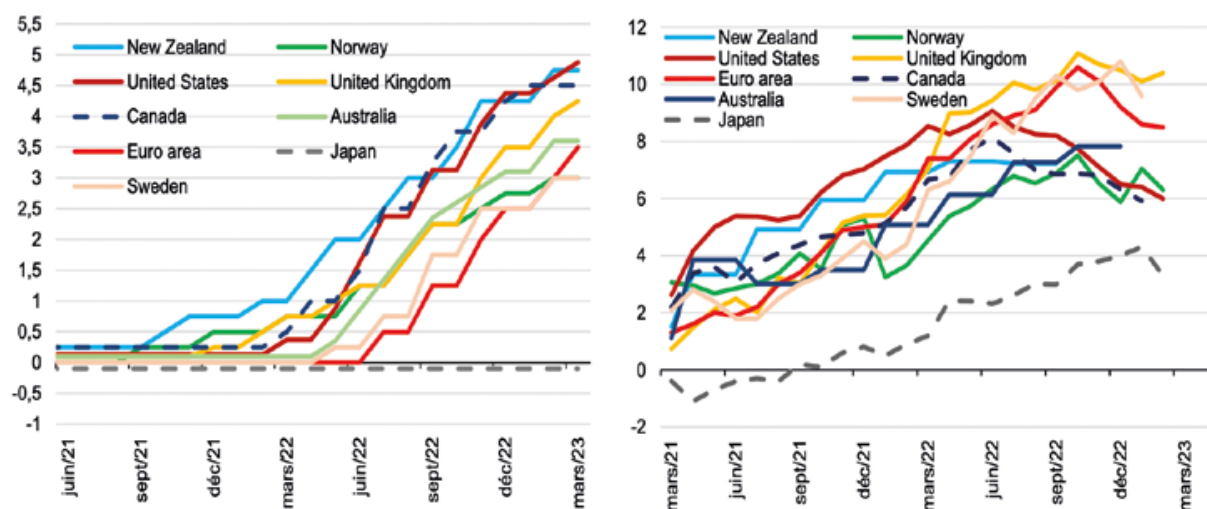
As the first central bank to announce a withdrawal of its monetary stimulus in July 2021, **the Central Bank of Canada** officially ended its QE programme in October 2021 and stopped reinvesting maturing bonds in April. It also raised its key policy by 50 bps at each of the three meetings that have taken place since then, bringing it to 1.5% in June 2022. In July 2022, the Bank lifted it by another 100 bps, the biggest rate hike since 1998, bringing the policy rate to 2.5%. Other smaller increases followed, bringing the rate to 4.5% since February 2023. The Committee left the policy rate unchanged at the subsequent March meeting, saying that it would implement a “conditional pause” on any more increases, as “the effects of higher interest rates continue to spread through the economy and [...] inflation is projected to fall to around 3% in the middle of 2023”. The Bank is also continuing its policy of quantitative tightening.

CHART 47.

Recent Development in nominal policy rate and headline inflation across selected advanced economies

47.a : Short-term nominal policy rate (%)

47.b : Headline CPI growth, annual change (%)



Sources: Bank for International Settlements, national Central Banks

In November 2021, the **Reserve Bank of Australia** exited the yield curve control tool implemented in March 2020 to keep the 3-year rate at 0.1% but continued to purchase government securities at a weekly pace of \$ 4 bn until February 2022. In May 2022, it increased the cash rate, the benchmark interest rate, for the first time since the pandemic began, from 0.1% to 0.35%, and allowed bond holdings to runoff. As of March 2023, the latter was raised cumulatively to 3.6%, and the Board expects that “further tightening of monetary policy will be needed to ensure that inflation returns to target”. Additionally, the Bank has been continuing to phase out maturing government held since July 2022.

In Sweden, the **Sveriges Riksbank**, which conducted a negative-interest rate policy between 2015 and end-2019, raised its policy rate by 25 bps in April. It has been raised by 50 bps in June, 100 bps in September and again by 50 bps in December 2022. As inflation stood at 9.4% in February 2023, a level that is “far too high and has continued to rise”, the Executive Board added another 50 bps hike in February 2023, bringing the policy rate to 3%. The Board has also decided to reduce the Riksbank’s asset holdings at a faster pace.

As for Emerging Market Economies (EME), Central Banks have been reacting rapidly and more aggressively in effort to tame double-digit inflation levels (see Chart 53). Since the fourth quarter of 2022, most EME central banks have paused their tightening, citing the prospect of disinflation, weakening economic outlook, and the materialisation of the effects of the hitherto substantial monetary policy tightening in their respective economies.

In December 2021 the **Czech National Bank** lifted its main interest rate by 100 bps to 3.75%, as the headline inflation rate hit a 13-year high of 6% in November. The move follows a 175 bps rate hike a month earlier, the highest increase since 1997. Additional increases have followed – especially since the start of the war in Ukraine that pushed the annual inflation rate to peak at 18% in September 2022 – bringing the policy rate to 7%, its highest level since 1999. The policy rate has been left unchanged steady at 7% for the fifth consecutive decision in its February 2023 meeting.

In the meantime, the **National Bank of Poland** raised its policy rate for the eleventh consecutive time, to 6.75%. Since August 2022, the Bank held its benchmark reference rate unchanged at 6.75% for the sixth consecutive time at its March 2023 meeting, despite the recent pickup in inflation (+18.3% in February). **Hungary’s central bank** raised its base rate by 50 bps to 5.9% at its May meeting. It was the twelfth consecutive rate hike in attempt to tame inflation, that stood at 9.5% in April. The Bank maintains its base rate unchanged at 13% in February 2023, expecting the “disinflationary effects to increase in the coming months”, after inflation declined from 25.7% in January to 24.4% in February 2023.

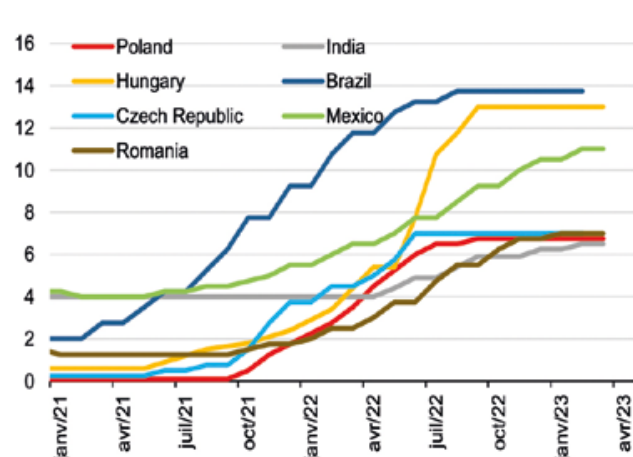
Among other EMEs outside of Europe, the **Central Bank of Brazil** gradually increased its policy rate, from 2.75% to 13.25% between March 2021 and June 2022. The policy rate has been held unchanged at 13.75% for the fifth consecutive meeting in March 2023, as the annual headline inflation halved from its peak of 12.1% in April 2022 to 5.6% in February 2023. Yet, the Committee “reinforces that future monetary policy steps can be adjusted and will not hesitate to resume the tightening cycle if the disinflationary process does not proceed as expected.”

In **Mexico**, the Central Bank hiked its policy rate to 7.75% in June 2022 while year-on-year inflation hit 8%. Further actions led the policy rate to 11% at its February 2023. Unlike other EME, the Mexican Central Bank has not paused its tightening in “a still complex inflation environment”. Although inflation fell to 7.6% in February 2023, from its peak of 8.7% in September 2022, many members “attributed the decline in headline inflation to lower pressures on energy price” and warned that “the core component still does not show a downward inflection point”.

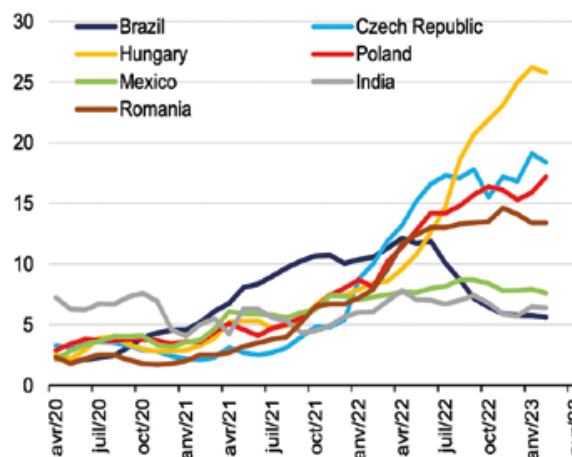
CHART 48.

Recent Development in nominal policy rate and inflation across selected emerging markets economies

48.a : Short-term nominal policy rate (%)



48.b : Headline CPI growth, annual change (%)



Sources: Bank for International Settlements, national Central Banks

Against the backdrop of the global reduction in monetary accommodation, only **the Bank of Japan** kept its policy rate unchanged at -0.1% and pursued its Yield Curve Control (YCC) Policy, in place since 2016. “Patient” monetary accommodation therefore continued despite the rise in inflation which reached 4% in December 2022 and the core inflation rate (excluding fresh food but including energy) which rose to 3.7% in November – the highest in 40 years. As of December 2022, BoJ Member committed to maintain this stance in order “until sustained wage increases can be expected.”

The YCC consists of purchasing public debt at an unlimited scale to limit the 10-year government bond interest rate exceeding 0.25%. Acknowledging “a possible negative impact on market functioning” such as the distortions in the yield curve, the BoJ decided to raise its effective cap on 10-year government bond yields to 0.5% from 0.25% in December 2022. To limit the rise of yields from other maturity following the December’s announcement, the BoJ has significantly increased its bond-buying from 7.3 trn yen a month, equivalent to \$ 55 bn, to 9 trn yen a month.

Quantitative Easing policies, particularly in the euro zone, have resulted in the purchase of long-term securities with the issuance of bank reserves. At a time of market reversal, this strategy explains the magnitude of the losses recorded and to come by the central banks.

This strategy explains the magnitude of the losses recorded and to come by central banks. The cumulative losses of central banks from the holding of private and public assets between 2023 and 2034 could reach € 193 bn in Germany, € 138.5 bn in France, € 88 bn in Italy and € 76.9 bn in Spain according to the estimates of D. Gros⁷⁰. At the euro area level, total loss suffered by the Eurosystem would amount to € 700 bn⁷¹, i.e. 5% of the GDP of the euro zone between 2023 and 2034.

70. D. Gros & F. Shamsfakhr, “The real fiscal cost of central bank bond buying”, CEPS (November 2022).

71. As detailed in the D. Gros’s article, “If an NCB bought a ten-year bond a couple of years ago with a yield of 0.5 % (not far from the average over the last decade) its income over the remaining life of this bond (say another seven years) will be 0.5 % per annum. But if the deposit rate increases to 3 %, the cost of holding this bond will be 3 % per annum, resulting in a loss of 2.5 % per annum. The cumulative loss will thus be 17.5 % of the outstanding total. If one applies this 17.5 % loss rate to the € 4.2 trn of government bonds held in the Eurosystem (as of July 2022), you arrive at a total of about € 700 billion.”

4.3 Despite the increase of nominal interest rates by Central Banks and the rise of bond yields, monetary and financial conditions remain expansionary, especially in the euro area

Since January 2022, the strengthening of inflationary pressures, the end of asset purchase programs from Central Banks and the market expectations of rate increases by Central Banks have led to a sharp rise in sovereign bond yields.

However, as inflation has outpaced nominal interest rates so far, real interest rates remain deeply negative. Additionally, central banks actively pursue their reinvestment policies, limiting the rise in long-term bond yields and sovereign spreads in the euro area. This indicates that monetary policies are still very accommodative and are not effective yet in reversing core inflation.

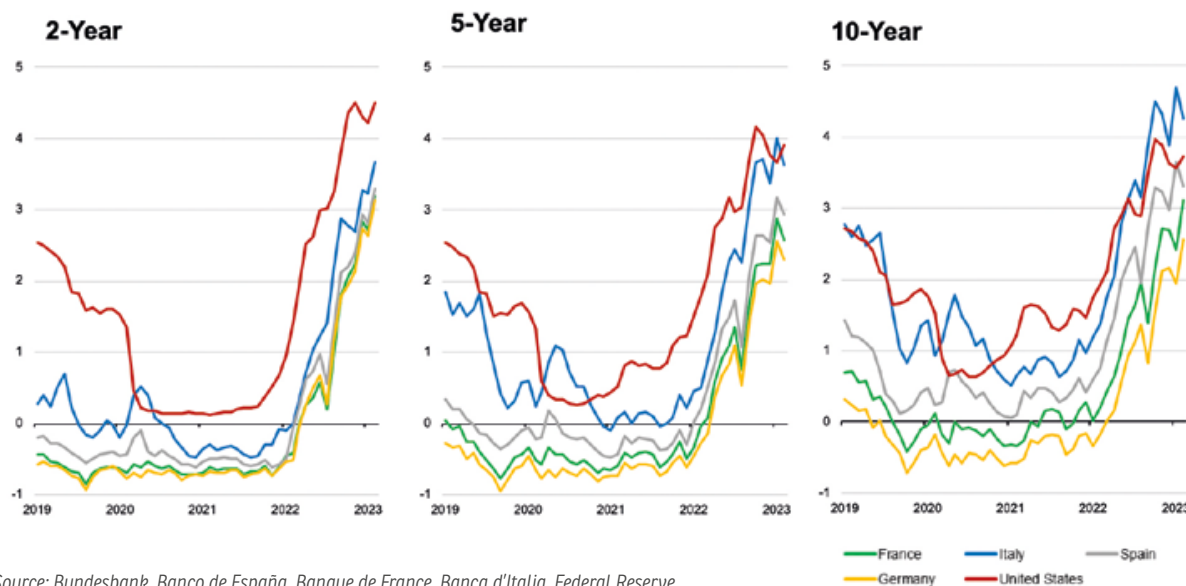
Government bond yields have increased in most countries since the start of 2022.

From January 2022 to end-February 2023, the nominal yield on 10-year nominal government bonds in the United States has more than doubled to 3.7%, its highest since 2010. The 10-year German Bund yield, which was negative until December 2021, increased to 2.6% in late February 2023. In France, it rose to 3% as of February 2023, from 0% in January 2022.

Sovereign bond yields have also increased significantly across Southern Member States. The Italian 10-year government yield soared by 320 bps since January 2022, approaching 4.5% in February 2023, its highest level since 2013. In Greece, long-term interest rate rose by 260 bps over this period, to reach 4.4% in late February 2022.

CHART 49.

Recent Trends of Sovereign Bond Yields in Selected Advanced Economies, %



Source: Bundesbank, Banco de España, Banque de France, Banca d'Italia, Federal Reserve
Latest data from 28 February 2023

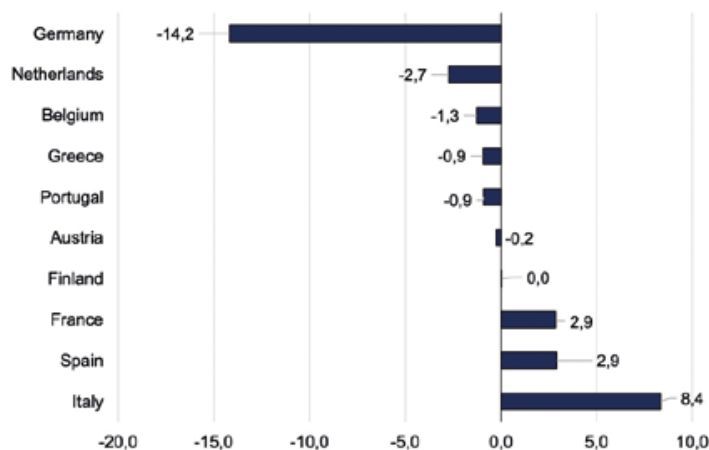
The Eurosystem actively pursues its reinvestment policies, limiting the rise in long-term bond yields and sovereign spreads and allowing accommodative financial conditions.

Since March 2023, the Eurosystem does not reinvest all the principal payments from maturing securities held under its APP portfolio, valued at € 3.427 trn in February 2023 (see 4.2). The decline amounts to € 15 bn per month on average until the end of June 2023 and this subsequent pace will of QT will be determined over time.

Separately, the Eurosystem continues to reinvest the principal payments from maturing securities purchased under the € 1.684 bn's PEPP, until at least the end of 2024. Since June 2022, the reinvestment policy has been focused on maturing bonds issued by the most fragile euro area countries. Indeed, between June and July, the ECB purchased additional € 11.3 bn of Italian and Spanish government securities, while allowing its portfolio of German and Dutch debt to fall by € 16.9 bn (see Chart 50).

CHART 50.

Cumulated Net Purchases of public debt securities under PEPP between June 2022 and January 2023 (EUR bn)



Source: ECB

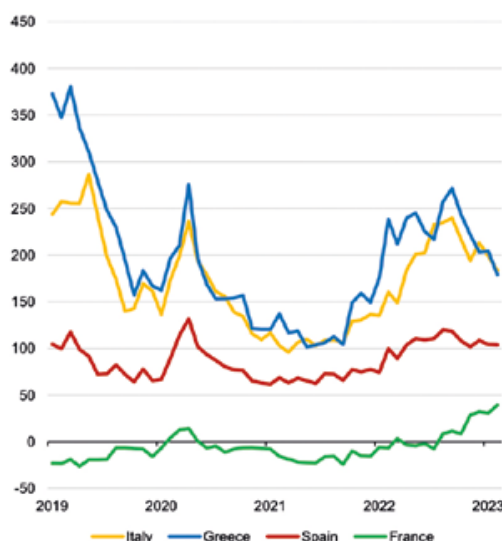
Other things being equal, according to I. Angeloni⁷², “it would take some 27 years to reabsorb all the liquidity that is around through this channel alone. The ECB cannot afford to wait that long.”

Reinvestment policies from APP and PEPP, coupled with the announcement of the TPI Transmission Protection Instrument designed to counter any sudden jumps in yields have coincided with a gradual decline in bond-yield spread since June 2022 (see Chart 51).

Sovereign bond yields spreads between Germany and peripheral EU Member States have temporally widened before returning below their pre-crisis level: after peaking at 239 bps in September 2022, the Italy-German 10 year sovereign bond yield spread declined to 183 bps in February 2023, a level below the 2019 average of 213 bps. In Spain and Greece, yield spread declined to respectively 103.9 bps, and 179 bps as of February 2023, down from their peak of 118.4 bps and 271.5 bps reached in September 2022.

CHART 51.

10-Year Government Yield of Selected Eurozone Member States over Germany, basis points



Source: Bundesbank, Banco de España, Banque de France, Banca d'Italia, Federal Reserve
Latest data from 28 February 2023

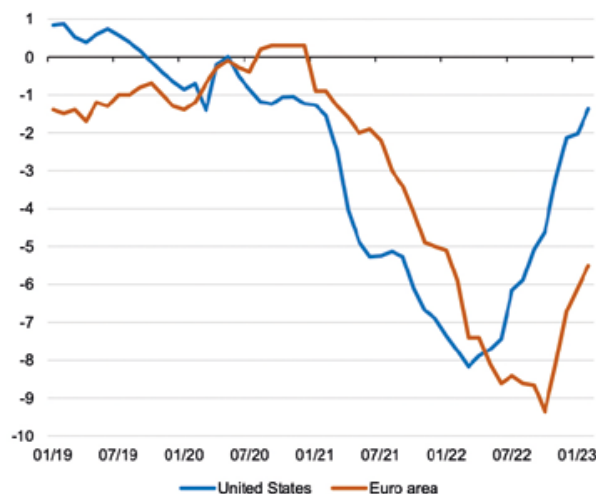
The rise in inflation has outpaced nominal yields increases, translating into further declines in real interest rates to negative territories.

It is often stated or written that monetary conditions have tightened in the eurozone since July 2022. But this is not the case in real terms. It is true that central banks have raised their policy rates by 350 basis points in the euro area between July 2022 and March 2023, and by 475 basis points in the US between March 2022 and February 2023. Nevertheless, real interest rates in the euro area are much more negative than they were before the war in Ukraine pandemic (see Charts 9 and 52).

72. “ECB must launch a new swap instrument to rein in liquidity”, OMFIF, March 2023.

CHART 52.
Real Refinancing Rates in the US
and Euro Area
Policy rate minus inflation rate, %
points

Source: ECB, Federal Reserve
Latest data from 28 February 2023

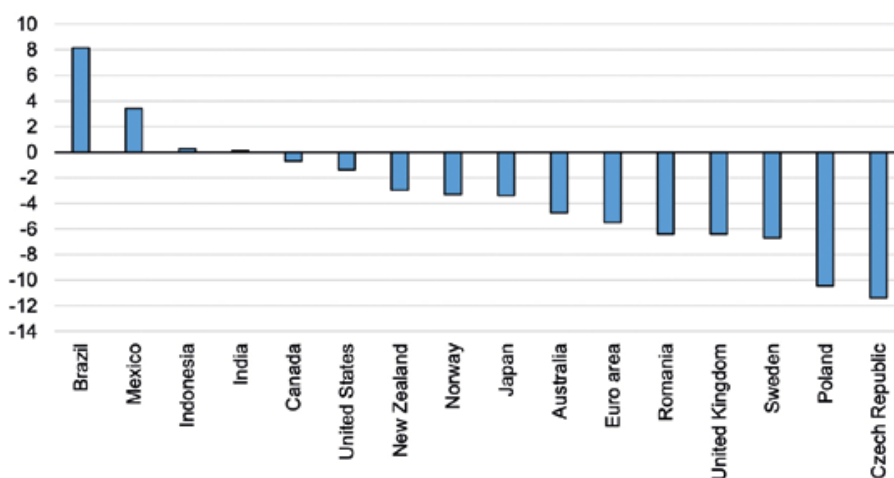


As of the end of February 2023, real policy rates – *i.e.*, adjusted for observed inflation – are still very negative in all advanced economies (see Charts 53). Real long-term interest rates also fell further into negative territories and stood from 3 to 6 pts below their historical range over the past two decades (see Chart 54).

J.P. Rathbone and V. Romei noted⁷³ that “the surge in inflation is leaving the world’s leading economies with their lowest real interest rates in decades, as central banks delay any abrupt tightening of the extra-loose monetary policy used to help weather the coronavirus crisis”.

CHART 53.
Real policy rates in selected
AEs and EMEs as of February
2023, percentage points;
Nominal Policy rate minus
inflation rate

Sources: OECD, Eurostat, BIS
All data are calculated on the basis of the
February 2023’s inflation level, except for the
New Zealand and Australia which date from
December 2022



Real interest rates reflect the real cost of borrowing and real return on savings. The combination of accelerating inflation in the US, eurozone and UK, and their central banks’ decision to remain patient when it comes to rate increases, effectively raises monetary stimulus.

Real interest rates are deeply negative in developed economies and keep financing conditions very accommodative. K.-M. Yi and J. Zhang⁷⁴ have shown that the last time real rates were as negative as today was in the 1970s, when rising energy prices pushed up inflation. Real interest rates have also slumped in the wake of the 2008 financial crisis.

Easy monetary policies become even more accommodative because of rising headline inflation in both the US and EU countries, which has caused negative real interest rates (especially in Europe) to fall still further. This raises the risk of a self-perpetuating process that will eventually feed into wages.

73. John Paul Rathbone and Valentina. Romei, “Inflation surge fuels negative real interest rates for leading economies”, the Financial Times, 9 November, 2021.

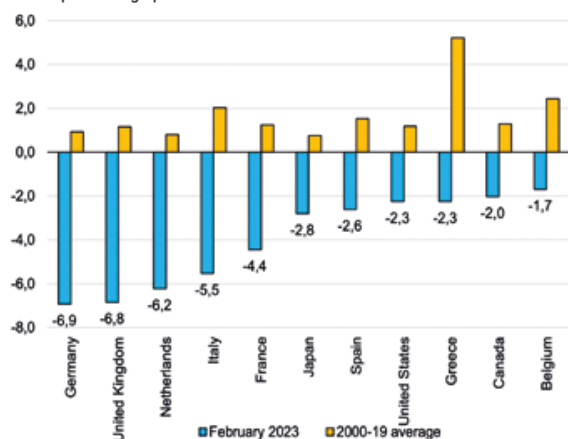
74. K.-M. Yi & J. Zhang, “Understanding global trends in long -run real interest rates”, Federal Reserve bank of Chicago, March 2017.

Negative interest rates are a source of financial instability, of misallocation of capital and less growth. In its Financial stability review (2021), the ECB stated that these lasting highly favourable monetary conditions has also led to a build-up of longer-term risks. Rising inflation and falling real interest rates have prompted investors to take greater risks in their search for yield, which has left parts of the property, debt and crypto asset markets “increasingly susceptible to corrections”, it warned.

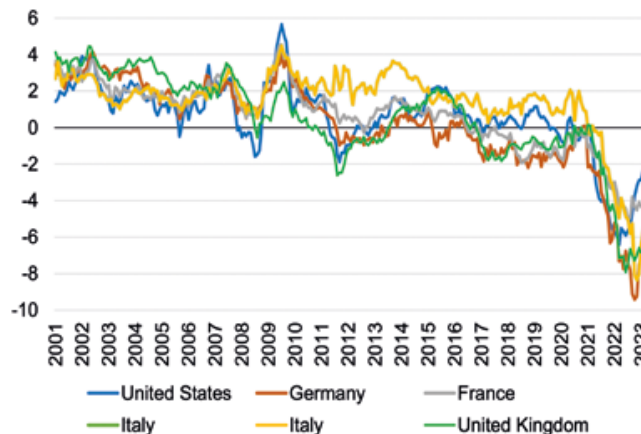
CHART 54.

Nominal Long-term government bond yields adjusted for CPI, percentage points

54.a : Real 10-Government Bond-Yields as of February 2023, percentage points



54.b : Real 10-Government Bond-Yields, percentage points



Sources : OECD, Eurostat

All data are calculated on the basis of the February 2023's inflation level

For Chart 54.a, the labels correspond to the level of real interest rates in February 2023

This low real interest rate environment has existed for more than 20 years in Europe in particular: it has not only favoured indebtedness, but also degraded its quality. It has contributed to the decline of productive investment due to zero or even negative returns, in favour of liquid investments, which are certainly non-interest-bearing, but risk-free. It has also contributed to the rise in asset valuations, boosting wealth inequalities. So the only possible answer in the current very high and persistent rise of inflation is to raise interest rates, which is also the condition to restart growth.

Conclusion

During the Lehmann Brothers, EU sovereign debt and Covid crises, central banks and fiscal policies played a crucial role as they intervened on an unprecedented scale to keep financial markets liquid and stabilise the financial system.

However, central banks have been overly involved during the past years. No well-functioning economy should operate with real interest rates that remain negative for too long: risk is mispriced, capital is then misallocated and growth impaired.

As this Eurofi monetary scoreboard demonstrates, pushing too hard and too long on the monetary pedal has severe negative consequences: the lasting excessively accommodative monetary policy over the last decade has enhanced incentives to borrow more, increased financial leverage and undermined financial stability. It also discouraged governments from undertaking structural reforms since borrowing “cost nothing” and undermined growth potential. Thinking that monetary creation can solve the problems arising from excessive debt is an illusion. In other words, supply-side obstacles cannot be overcome by throwing money at problems or by using cyclical policy instruments. Yet this is what has been done too often by pursuing lax fiscal, monetary and economic policies that will inevitably pose systemic risks to financial stability and therefore to future growth. Actually, the huge monetary and accommodative fiscal stances of the last decades have not led to sufficient productive investment or growth. Persistent low or negative interest rates induce a fatalistic mindset that lowers, not raises, propensity to invest. Under what J.M. Keynes called the “liquidity trap”, investors play safe by placing savings in very short-term instruments rather than deploying them over longer term when low interest rates bring them inadequate returns for higher risks.

The social significance of persistent very accommodative monetary policies should not be underplayed. Do they help reduce social inequalities? In fact, the opposite is true; they tend to increase wealth inequalities because the beneficiaries have been those who have the income and capital to profit from inflated financial and real estate asset markets. Not poor people.

Formerly attempting to “look through” what they considered to be “transitory” higher inflation, many Central Banks across Advanced Economies responded late and slowly. Inflation must remain the priority of central banks despite the vulnerabilities they have created over the years.

Since the resurgence of inflation, a number of approximations and untruths have emerged.

- **“The war in Ukraine with its consequences on energy prices was the main factor in the return of inflation”.** However, this is not the case: in January 2022, inflation in the Eurozone was 5.1% and has been above 2% since July 2021 – well before the outbreak of the war in Ukraine – since when it has been rising.
- **“The high levels of inflation since February 2022 are mainly the result of the supply shock (bottlenecks in production chains, rising commodity prices)”.** The situation was in fact more complex because demand, driven by expansionary monetary and fiscal policies, ran up against the long-standing structural problem of inelasticity of the productive capacities, which is largely due to insufficient productive investment over the last decade.

Instead of stimulating money creation and public debt, it would have been better to undertake structural reforms capable of increasing productivity, labour participation and thus potential growth. The mistake that has been made for a very long time is to believe that the deficiency in potential growth lies mainly in the insufficiency of demand, whereas this deficiency was and remains above all a problem of supply. When monetary policy is too loose, it damages aggregate supply.

- **“Since we had a partial view of the causes of inflation last year (oil price rises, the exit from Covid and the war in Ukraine), we thought that it would be transitory”:** in fact, the rise in the price of commodities was only supposed to be a shock limited in time. This was to forget that a significant rise in energy and food prices inevitably spreads throughout the economy. Moreover, given that the inelasticity of the productive capacities largely explains the inflationary problem, the shock could not be transitory because it is the supply side that is in question and the insufficiency of investments cannot be corrected overnight.

This explains why core inflation – excluding changes in energy, food and other volatile components – remains very high in the US and Europe. In March 2023, core inflation reached 5.7% in the euro area and 5.5% in the US in February 2023.

Moreover, the costs of decarbonisation are expected to increase with the rise of renewable energies, the increase in the price of carbon, the upward pressure on the prices of precious metals (lithium, cobalt, nickel, etc.) needed for the equipment required for the energy transition (electric batteries, etc.), which should contribute to making inflation structurally higher.

It is therefore necessary not only for monetary policy to normalise but also for governments to undertake reforms to encourage productivity instead of pursuing expansionary fiscal policies which often seek to preserve household purchasing power, but which thereby accelerate inflation and thus complicate the action of central banks.

- **“The evolution of monetary aggregates does not impact on inflation”.** One thesis, particularly in the US, tends to show that the Fed’s easy money policy has not led to an increase in bank lending insofar as the banks have maintained their reserves with the central bank instead of granting credit to the economy. Nevertheless, the truth of the Quantity Theory of Money is not denied. What is difficult is to establish precise links between the evolution of the money supply and inflation (the velocity of money is volatile, investment and savings decisions are motivated by multiple factors...).

But just because these relationships are difficult to formulate does not mean that reality does not exist. The simple fact that we continue to be interested (albeit insufficiently) in the evolution of credit shows that quantitative theory cannot be ignored. Indeed, the increase in the money supply (M3 or M2) is strongly determined by the evolution of credit (a large part of M3 is the counterpart of bank credit), so indirectly it is indeed a money supply problem that is at stake.

In any case, central banks have not been very interested in the explosion of credit over the last 20 years and their permanently accommodating monetary policies have contributed to the real estate and stock market bubbles which have accentuated social inequalities.

The willingness to use the monetary weapon continuously to stimulate the economy has led to the vulnerability of the financial market which now dominates the economic cycle.

- **“Inflation reduces debt and should be tolerated at levels above the 2% target”:** in the short term, inflation does reduce debt. But we need to look at the longer-term consequences of sustained high inflation: lenders are being misled, which is detrimental to the future of savings and investment. A prolonged period of inflation has never been shown to result in a revival of investment and strong economic growth. To base a system on the plundering of some would, in fact, represent a major social danger. Inflation is a surreptitious tax, not voted by Parliament, which hits the poorest first. Its persistence increases social risks and the development of populism.
- **“Monetary conditions have tightened in the eurozone since July 2022”.** But this is not the case in real terms. It is true that central banks have raised their policy rates by 350 basis points in the euro area between July 2022 and March 2023, and by 475 basis points in the US between March 2022 and March 2023. Nevertheless, real interest rates in the euro area are more negative than they were before the war in Ukraine. It seems difficult to fight inflation with such a debt premium.

The ECB bases its policy not on realised and observable inflation but on the expectations of economic agents. Market expectations seem reassuring. They are of the order of 3% over 3 years, which, with nominal rates of 3%, suggests that the ECB has reached the neutral zone.

However, there is a risk in relying on these expectations. Just because inflation expectations are limited does not mean that they are accurate. These expectations are always subjective and rarely based on a rational forecast of future price increases.

The investors interviewed are often tempted to play down their expectations in order to reduce or hide the disadvantages that could arise from too much inflation. Having suffered only a part of the losses caused by the rise in rates (central banks having borne a third of them), investors even if they feel relatively “serene”, want to stop the rise in rates. Investors are also influenced by the emblematic centrality of the 2% target, as created by central banks.

- **“The transmission of price inflation to wages has been moderate so far”**, we were told.

We see that in the fourth quarter of 2022, labour costs rose by 5.7% in the euro area compared to a year earlier. This is more than twice the historical average of 2% recorded between 2014 and 2019. The higher inflation becomes, the greater the risk of significant wage increases or even a return to indexation.

- **“The reduction of the balance sheet of central banks should be normalised at a very slow pace”.**

However, the rise in medium and long-term interest rates, the fall in inflation and the return to an economy where interest rates are the result of the supply and demand of capital, would move away.

A recent ECB publication¹ has shown the drawbacks of the excess liquidity that has built up (commercial bank reserves placed with central banks). This trend in high reserves can only increase as nominal rates rise. Hence the need to reduce the Eurosystem’s balance sheet.

The mistake of the Quantitative Easing policies carried out was to buy long maturity securities financed by short term money which maximises the risk of market reversal and leads central banks to keep on their balance sheet a legacy that dissolves only in the long term. This strategy explains the magnitude of the losses recorded and to come by central banks.

In monetary theory, it is better to use the purchase of short securities (punch effect) as already demonstrated by the economist Bagehot².

- **“When a country has little private debt, the consequences of monetary easing policies are less penalising thanks to the low debt and the solidity of the balance sheet of private actors”.** This is true but according to the BIS, if the debt of non-financial companies alone was only 80% of GDP in June 2022 in the US, in the euro zone it was 108.5% (in France 164.7%, an absolute record). This excess of private corporate debt in Europe is a factor of increased fragility in the event of a rise in interest rates.
- **“Positive real interest rates would be nightmarish”.** It can also be shown that they would force over-indebted states to reduce their deficits and debts; savings would no longer be taxed but remunerated and medium and long-term investments would be encouraged because they would be remunerated. Zero or very low interest rates foster the “liquidity trap” as Keynes taught: they push households to choose increasingly liquid forms of savings and to move away from long-term investments whose risk is not properly remunerated.
- **We have been told again and again that the banking system was well regulated and supervised. But it is a fact that some US regional banks, especially those with less than \$ 250 billion in assets, have been exempt from international prudential constraints since 2018 and are vulnerable.**

Central banks have pursued an unprecedented policy of monetary accommodation for some twenty years. With the QE and the monumental securities purchases that have been made, the value of the assets purchased by the issuing institutions has surged while interest rates have been lowered, and then maintained, at zero when they were not nominally negative.

In such a situation, the risk is to believe that rates will remain low indefinitely. If you believe this, the danger is that rates will go up again one day or another, which mechanically leads to a loss of value of the assets accumulated. If one has accumulated such fixed-rate assets while turning a blind eye to the possibility of a rise in rates, one risks very heavy losses on the depreciated assets.

Central banks have deliberately accepted this interest rate risk without bothering to hedge it. After all, these banks are not subject to regulation and the huge losses they are potentially about to incur do not seem to worry them much.

But the same cannot be said for private sector financial institutions: they are responsible for their own financial health and risk bankruptcy. And for those that might be tempted to ignore this risk, regulation would put them on the right path.

Generally accepted regulations state that:

- In a portfolio intended to be traded, the bank has to record these securities at their market value (“mark to market”); in the event of a rise in interest rates, additional capital will automatically compensate for the potential loss thus created.
- If the bank decides, on the contrary, to keep its portfolio without trading it, by classifying it as “held to maturity”, then the transactions will be resolved at the maturity of the securities in the portfolio without loss; in this case, it is logical not to impose additional capital requirements.

But it should be remembered that if the bank decides to sell even a small part of these securities, the entire portfolio would have to be reclassified as marketable and thus accounted for as mark-to-market. **This reclassification, although mandatory, was not required of the Californian banks, which gave a false impression of solidity to banks that had begun to dispose of their impaired assets without having to incur a capital charge for the losses already recognized.**

1. I. Schnabel, “Quantitative tightening: rationale and market impact”, 2 March 2023.

2. The Bagehot rule (“Lombard Street” 1873) is that the Central Bank must, in a crisis, “lend freely against good collateral and at high rates”.

European banks, on the other hand, strictly applied the rules in question.

The Basel regulation goes even further in the treatment of interest rate risk.

According to the IRRBB (“Interest Rate Risk on the Banking Book”) on how to deal with interest rate risk in the banking sector as adopted in Basel in 2015 and duly transcribed into European law (with entry into force in 2019), ALL portfolios – on the assets as well as on the liabilities side – held by banks (regardless of their classification) should be permanently subject to an interest rate sensitivity calculation.

The result of these calculations must be treated either by an adjustment of the equity capital (*Pillar 2*), which encourages to cover the risks by hedging (interest rate swaps).

It should be noted that this very protective regulation has not been formally mandated by the US regulator, either in the large systemic banks or in the smaller or regional institutions. As a result, the management of interest rate risk is not subject to systematic reporting that would allow supervisors and market analysts to monitor the risks incurred in a harmonised and efficient manner. The risk of quickly rising interest rates has not been included in the US stress tests either.

It is clear that **there are considerable differences in the regulatory and supervisory systems on both sides of the Atlantic. As the financial world is open, such disparities pose a real systemic risk that should be urgently identified and addressed.**

- **“Some believe that central banks are schizophrenic”.** Indeed, with one hand they are taking back liquidity (reducing their balance sheet) but with the other hand the Fed is giving liquidity back to the banking system to avoid the withdrawal of deposits by banks affected by the rise in interest rates and the inadequacy of the management of this risk

Are these two approaches contradictory? It all depends on how the banks use the additional liquidity. If, as we have reason to believe, the banks keep this additional liquidity in the form of deposits at the Central Bank without transferring it to new loans, the operation is neutral from the point of view of the credit to the economy.

Therefore, it is possible to conceive of a restrictive monetary policy with increasingly high nominal interest rates and, at the same time, the granting of financial aid to banks in difficulty.

•

It is imperative to revive productive investment. Therefore, long term interest rates should no longer be determined by central banks. QE has been used and abused to reduce artificially long-term yields while this should be the result of demand and supply on the financial markets.

A gradual, but determined, return to a more traditional and sensible monetary policy is of the essence. It should:

- Restore the oversight of credit expansion.
- Reintroduce symmetry in monetary policy and not stimulate continuously.
- Not give the market a form of free insurance against possible losses; moral hazard has plagued the system, upset the risk-reward relation and encouraged short term speculation.
- Be more careful on the risk of fiscal dominance; having created money to buy some 70% of GDP in the euro area, the central bank is getting so deeply involved in fiscal affairs that its independence is questionable.
- Should refrain central banks from the temptation of being “popular” and having too many goals (green, social inclusion...) that are not at the heart of their primary mission which should be monetary and financial stability.

•

The fear of the reappearance of spreads in Europe should not dominate the decision-making process of the monetary policy. Indeed, sooner or later, structural spreads – based on the past accumulation of fiscal and structural deficiencies – in Europe will appear on the markets. The ECB is certainly concerned with moderating “excessive” market rate differentials between European countries. But central banks do not have an obligation to forever erase all traces of interest rate differences in the appreciation of the markets. The elimination of all spreads would be difficult to reconcile with the Maastricht Treaty, as some member states – known for their fiscal discipline – place greater emphasis on the objective of monetary stability (believing that the ECB should not monetise public debt).

Monetary policy can erase spread differentials in the euro area but cannot relaunch capital flows from the North to the South. Indeed, since the EU sovereign debt crisis, Member States with excess savings (Germany and the Netherlands in particular) no longer finance investment projects in lower per-capita GDP countries (Spain, Italy, Portugal, Greece). This is notably due to the interest rate differential between the US and Europe (the risk is better remunerated in the US than in Europe), the limited financial flows between the eurozone countries and the insufficient number of investment projects. These limited cross-border capital flows in the euro area reflect the persistent doubts of investors in Northern Europe about the solvency of states and companies in other countries, as well as the lack of a genuine Banking Union and integrated financial markets.

If fiscal policies were to remain expansionary to address ingrained structural problems unrelated to the crisis, central banks would have to tighten monetary policies even further to curb inflation and reduce inflationary expectations exacerbated by this fiscal stimulus. In this respect, the issue of revising the Stability and Growth Pact appears central and urgent.

Fostering a sustainable path to stronger growth is essential, notably in the current indebtedness environment. Raising long term potential growth requires structural reforms, an appropriate remuneration of risky investments and sustainable fiscal policies designed to deliver a flexible and competitive economy. Lost competitiveness due to postponed reforms in many EU countries, has led to the deterioration of the potential growth which cannot be improved by cyclical policies. Monetary policy cannot do everything and more productive investment does not require more redistribution by budgets: only domestic structural – supply side oriented – reforms can resolve structural issues and foster productivity and growth. The Next Generation EU package, if well implemented, should be useful in this respect.

In over-indebted countries, governments must take corrective actions to ensure a path of primary fiscal balances and reduce unproductive and inefficient public spending. Reforming the Stability and Growth Pact is an urgent necessity.

Only productivity enhancing, and productive investment can create sustainable increases in productivity, neither negative real interest rates, nor QE.

•

Ultimately, the paradox of the euro is that a single currency and 27 national economic policies coexist without a strong cement of coordination. Ultra-accommodating and asymmetric monetary policy has been used to overcome this paradox, but the price of this permanent rescue is costly. It is essential to ensure convergence of fiscal and structural policies. An intelligent revision of the Stability and Growth should help to resolve these contradictions and thus make the euro sustainable.

eurofi
www.eurofi.net

