

EUROFI

MONETARY SCOREBOARD

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with the support of Elias Krief

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INSIDE

Continuously very accommodating monetary policies in OECD countries since 2000

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

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Monetary policy has moved into uncharted territory and faced basic questions and trade-offs. 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 course².

During the Global Financial Crisis (GFC), the EU sovereign debt and Covid 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.

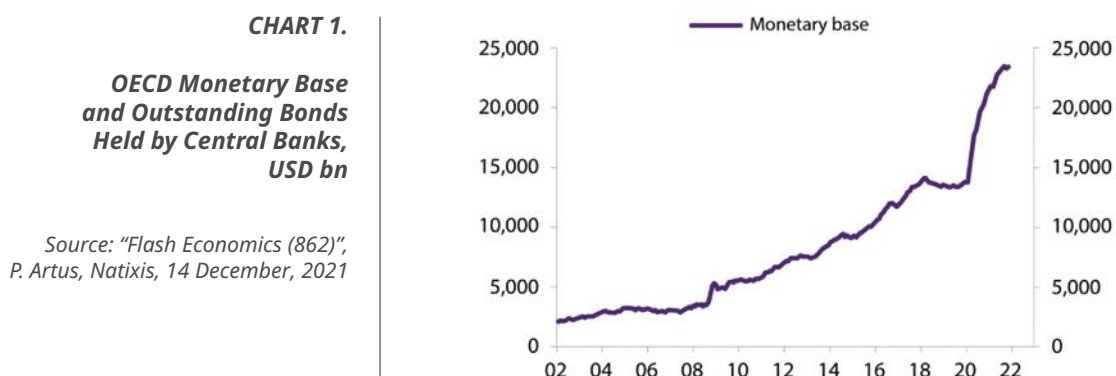
However, the 2% inflation target has trapped monetary policy in a systematic and asymmetric accommodative stance during the past decade. Lasting accommodative monetary policies have pushed global debt to an all-time high of 360% of the world GDP in June 2021 and has driven the monetary base of OECD economies 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 behavior has fueled swelling bubbles, along with eroding the profitability of the EU banking and life insurance sectors.

Inflation rates have risen steeply for months in many countries and could last longer than expected, challenging the very accommodative monetary stance in advanced economies. First signs of normalisation emerge but monetary policies are still expansionary in the main advanced economies.

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 AND THE COVID-19 CRISIS

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 chart below (*Chart 1*) highlights the exceptional and significant increase of the monetary base in OECD economies³. Indeed, it accounted for less than \$2 500 bn in 2000, and increased to \$25 000 bn in 2020, i.e. a more than tenfold rise⁴. We can see that the rise in the monetary base has been much stronger in response to the Covid crisis than to the Global Financial Crisis in 2008. The monetary base of OECD economies more than doubled from 2009 to 2015 (multiplied by 2.67 in a 7-year period), but it was approximately multiplied by 1.87 over March 2020 to November 2021.



Since the beginning of 2008 to mid-2021, the monetary base of the US Federal Reserve (Fed) has been multiplied by 8, and by 7 in the euro area (*see Chart 2*).

1. All charts and statistics in this report are based on data released as of 3 February 2022. We thank Jean-Jacques Bonnaud and Matteo Le Hérisse for their comments and suggestions.

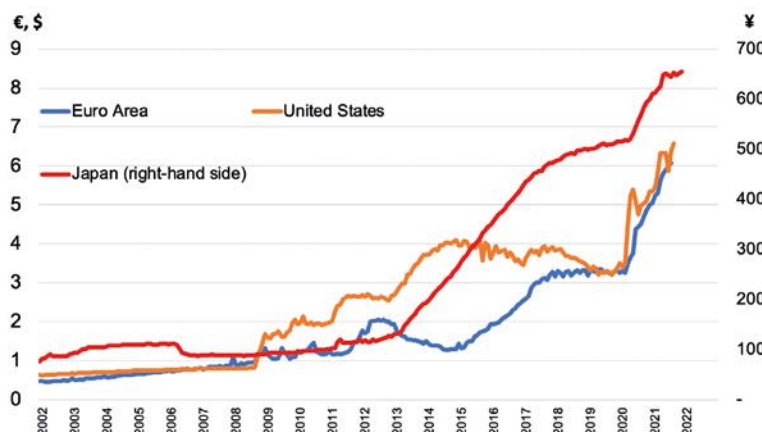
2. Normalisation topics are discussed notably in two Eurofi documents: "Addressing the dangers of the monetary policy deadlock" (September 2020) and the "Eurofi Lisbon Summary" (April 2021).

3. United States, United Kingdom, Japan and eurozone.

4. P. Artus, M-P. Virard "La dernière chance du capitalisme", Odile Jacob, May 2021.

CHART 2.
Monetary Base of Major Central Banks, national currency, in trillion

Source: IMF, Bank of Japan



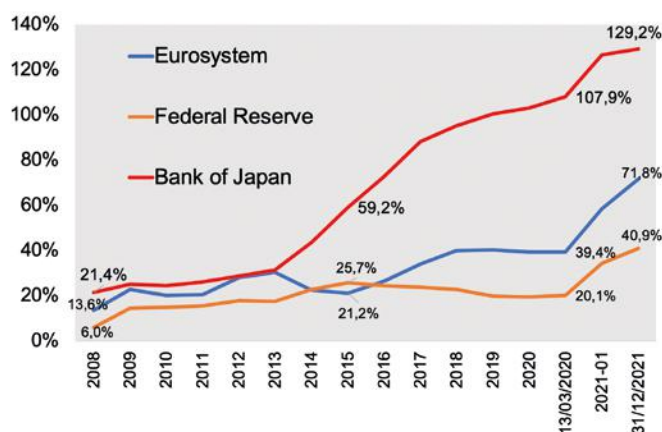
Since 2008, the quantitative easing measures taken by the Fed, the European Central Bank (ECB) and the Bank of Japan (BOJ) have been the main contributors to this global expansion.

In the US, the Fed's balance sheet increased by \$7.8 tn to reach \$8.75 tn between January 2008 and late December 2021, which corresponds to 40.9% of US GDP.

CHART 3.
Central Banks' Total Assets Relative to GDP, %

Source: Federal Reserve, Bank of Japan

Note: The ratio is calculated on the basis of the 2019 nominal GDP



Over this 13-year period, the ECB's balance sheet increased from 13.6% of the eurozone's GDP, to 71.8% (see Chart 3). That is a EUR 7.2 tn rise to top EUR 8.5 tn as of 31 December 2021.

The Bank of Japan, that pioneered this QE instrument since the early 2000s, has seen its balance sheet surging from 21.4% of Japanese GDP in 2008, to 129.2% in December 2021 (see Chart 3).

This continuous increase in central banks' total assets from 2014 to early 2020 also reflects the asymmetry of monetary policies (further described in section 1.4). This has led the financial system into over financialisation and repeated crises.

Indeed, between 2015 and early March 2020, the aggregate balance sheet of the ECB, the Fed and the Bank of Japan increased by a cumulated 40%. In the euro area, it increased by \$2.66 tn, from 21.2% of GDP in 2015 to 39.4% in early March 2020. In Japan, the balance sheet expanded from 59.2% of GDP in 2015 to 107.9% in early March 2020. Over the same period, the Fed's balance sheet has decreased slightly — as the US Central Bank did not reinvest the maturing securities purchased between 2009 and 2015 — but remained at around 20% of GDP as of early March 2020.

1.1 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 tn to \$4.5 tn (corresponding to nearly 21% 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 tn 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 tn of assets were acquired during this period.

The ECB's purchases from 2011 to 2015 to counter the impacts of the GFC and EU sovereign debt crisis

Between 2008 and 2013, the Eurosystem's balance sheet grew from €1.2 tn to €3.03 tn, corresponding to 30.6% 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 (SMP) with a total settlement amount of €211.4 billion. 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 billion at the end of December 2012, largely remained in a €90-130 billion range throughout 2013.

Following the Global Financial and EU sovereign debt crises, the ECB monetary policy remained strongly accommodative. As the HICP growth 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 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 tn 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 tn (*i.e.* 39.3% of GDP).

Central banks' responses to the Covid crisis

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 from 1.625 percent to the bottom range of 0.15-0.25 percent. Accordingly, the three central banks deployed massive emergency purchase programmes. Between early March 2020 and end-2021, ECB's total assets grew by 82% while the Fed's balance sheet rose by 103% (*see Table 1*).

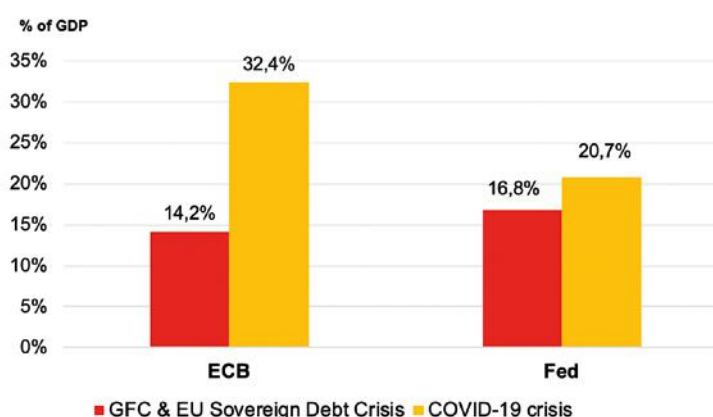
Between March 2020 and December 2021, the size of the Eurosystem's balance sheet as a share of the eurozone's GDP expanded by more than twice as much as it did in the five years of the GFC and EU sovereign debt crisis [2008-2013] (*see Chart 4*). As for the US, the total rise of the Fed's balance sheet amounted to 20.7% of GDP in less than two years, between March 2020 and December 2021. It amounted to 16.8% of GDP between 2008 and 2015.

CHART 4.

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 December 2021; 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) of up to €750 bn until the end of 2020, on top of the €120 bn in extra purchases as part of the existing APP. Since then, the PEPP's envelope has been gradually increased: by €600 bn in June 2020 and by €500bn in December 2020; totaling €1.85 tn to be disbursed before March 2022.

Regarding the **Fed's action**, it committed in March 2020 to purchase at least \$500 bn in US Treasury securities and \$200 bn in government-guaranteed MBS over “the coming months”, before announcing unlimited government bond-buying a month later. Indeed, it made the purchases open-ended, saying it would buy securities “in the amounts needed to support smooth market functioning and effective transmission of monetary policy to broader financial conditions”.

Between mid-March and early December 2020, the Fed's portfolio of securities held outright grew from \$3.9 tn to \$6.6 tn. Until November 2021, the Fed has spent \$120 bn every month to purchase public and private bonds. Among them, \$80 bn were aimed at buying Treasury debt and \$40 bn allocated to buy MBS.

In such a context, the Fed's balance sheet increased from \$4.2 tn to \$8.7 tn from March 2020 to December 2021. Over the same period, the size of the Eurosystem's balance sheet reached a historical high of €8.5 tn in December 2021, an increase of €3.2 tn compared to March 2020. The Bank of Japan's balance sheet has grown from JP¥ 588 tn in March 2020 to JP¥ 729 tn in mid-July 2021⁵.

TABLE 1.
Magnitude of Balance Sheets' Expansions Between 31 December, 2021 and ...

Source: Federal Reserve

Lecture: Between January 2021 and December 2021, the ECB's total assets have increased by €3.86 tn, a 82% growth

	Eurosystem		Federal Reserve	
	Cumulated growth	Change in trillion euros	Cumulated growth	Change in trillion dollars
1st January 2008	540%	7,23	892%	7,88
1st January 2015	320%	6,53	95%	4,27
1st January 2020	82%	3,87	116%	4,70
13 March 2020	82%	3,86	103%	4,45
1st January 2021	23%	1,59	19%	1,39

1.2 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 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)⁶ 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.

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

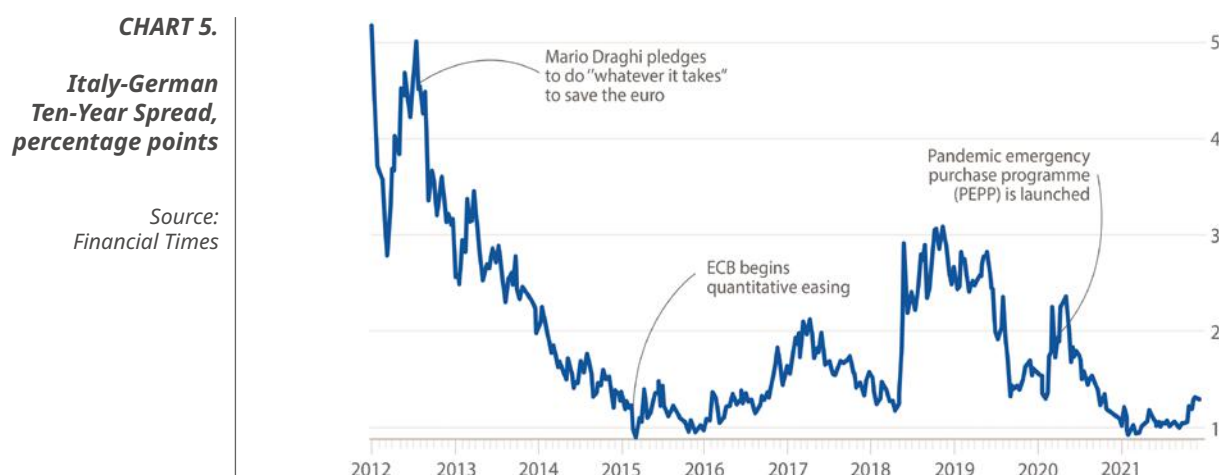


Chart 5 also illustrates the narrowing of euro area bond yields spreads between core and peripheral countries, since the EU sovereign debt crisis. For instance, the Italy-Germany spread in 2010-2011 was significant. In contrast, since August 2020, the latter has not outreached the 2 pp.

However, loosened monetary policy has not restored capital mobility from the richer countries with excess savings to the poorer countries in the euro area⁷.

5. According to the Bank of Japan database.

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

7. See Eurofi, Macroeconomic Scoreboard, September 2021.

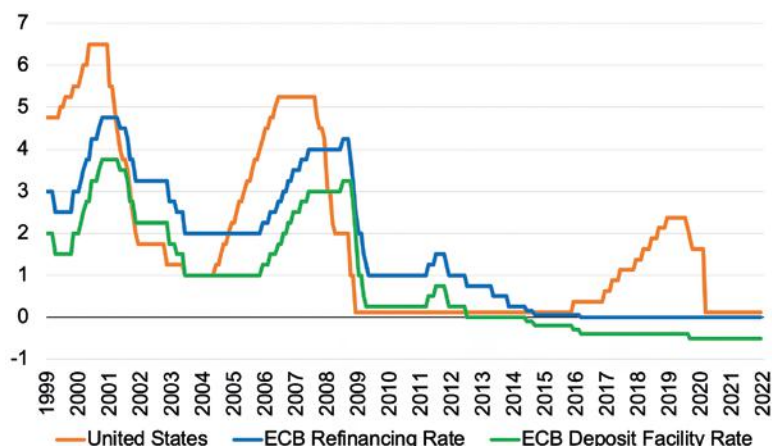
1.3 Lasting easy monetary policies have contributed to the downward path of interest rates

The continuation of very accommodative monetary policies has led to the downward path of interest rates. Notably, the EU deposit facility — one of the short-term interest rates of the ECB — has been negative since 2014 (see *Chart 6*).

CHART 6.

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

Source: ECB, BIS



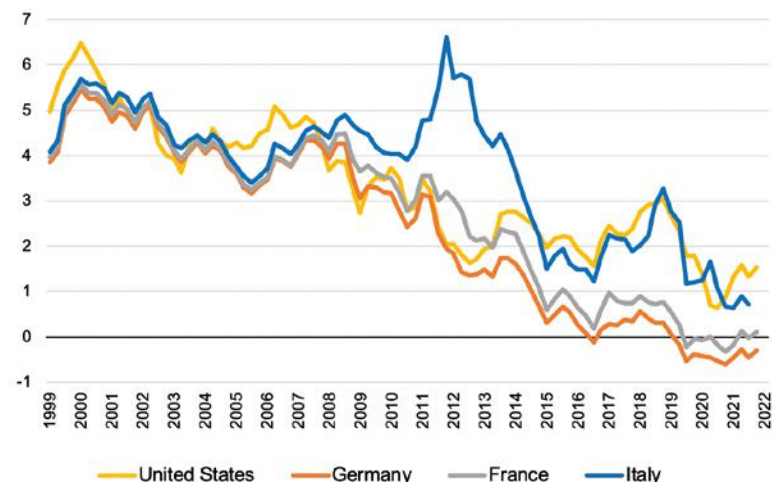
The following chart (*Chart 7*) displays the downward trend in interest rates in some main advanced economies over the last 20 years. The German 10-year interest rate was the first to become negative in the end of 2016, while the French 10-year interest rate was close to zero. From the end of 2019 to the end of 2021, both were negative.

CHART 7.

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

Source: OECD

Notes: Latest data from Q3-2021



Empirical evidence suggests that natural interest rate has been on a downward trend for the past few decades. It may well be for secular reasons (ageing demographics, 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.

1.4 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 (*Charts 1 and 2*) and the expansion of the monetary base (*Chart 3*) 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.

1.4.1 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. The Fed started to raise its interest rate in December 2015. For instance, in 2017, euro area growth was about 2.6% when the USA's growth was about 2.3%. The Fed's funds rate reached 2.4% in early 2019, while the ECB's refinancing rate was still at 0% since February 2016. Considering the strong recovery, the Federal Reserve decided to reduce the size of its balance sheet in 2018 and early 2019.

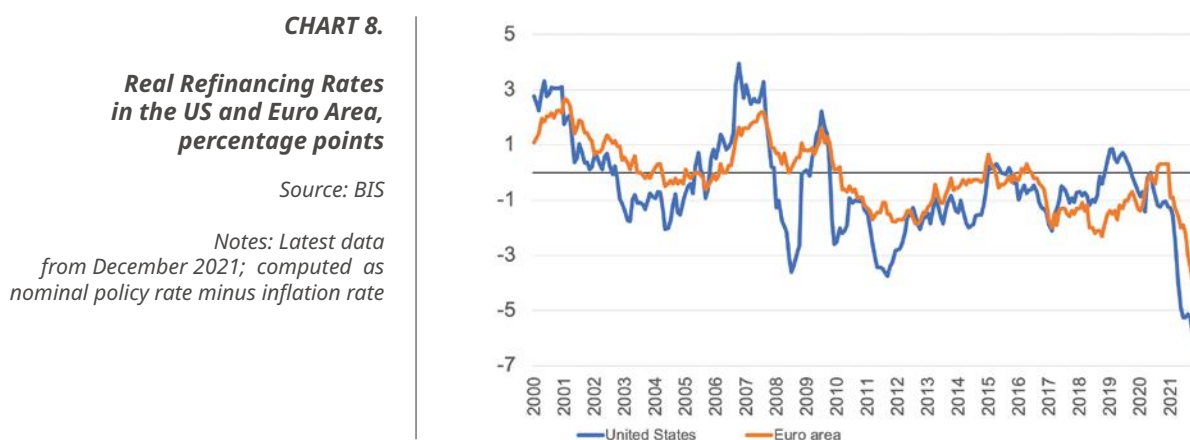
It was not the case for the ECB, which has not put an end to its purchases despite the economic recovery. Hence, between October 2014 and December 2018, the Eurosystem conducted net purchases of securities which brought the ECB's balance sheet from €2.2 tn in 2014 up to €4.4 tn in 2018.

This purchasing trend has kept the same pace it usually had in time of crisis, meanwhile growth across euro area Member States averaged 1.9% between 2014 and 2019. In 2017-2018, the ECB kept its main refinancing rates at zero, despite significant economic improvements. Indeed, the HICP had risen at or above 2% between May and October 2018.

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 expansionist monetary stance as well as deflation.

1.4.2 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 8, the real short-term interest rate since 2010 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, the 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 pp 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, ...).

1.4.3 While the economy is recovering to its pre-pandemic level and inflation rates have risen sharply in the past few months (climbing to their highest levels since the beginning of the monetary union) the ECB has been continuing its QE policy at the same steady pace

After peaking at EUR 160 bn in June 2020, net monthly purchases of securities by the ECB averaged EUR 91.3 bn between October 2020 and November 2021 (see Chart 9).

From October to November 2021, the ECB purchased €89 bn of securities, including €21 bn through the APP programme and €68 bn via the PEPP programme, while inflation was running at levels twice as much as the 2% target. And this dynamic of asset purchases is likely to continue, at least until March 2022 (see last section).

As of 30 November 2021, EUR 1 548 bn out of the EUR 1 850 bn PEPP envelope have been disbursed.

CHART 9.

Asset Purchases Programs of the ECB, flows and stock

CHART 9.a:
Monthly Net Purchases
of Debt, trillion EUR

Source: ECB

Note: Latest data taken from
November 2021 for inflation and
amount of securities purchases

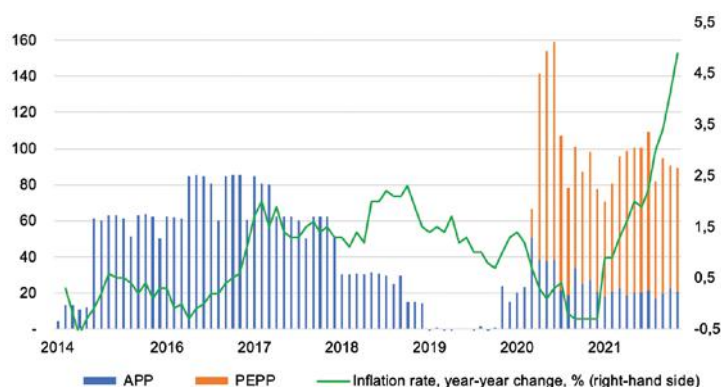
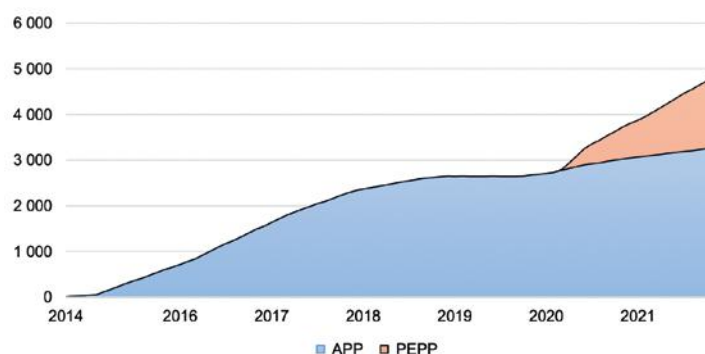


CHART 9.b

Cumulative APP & PEPP purchases,
million EUR



1.5 The exchange rate: an implicit but unmentionable objective of the European monetary policy

For the euro area, the exchange rate serves as a crucial transmission channel not only for conventional, but also for unconventional monetary policy.

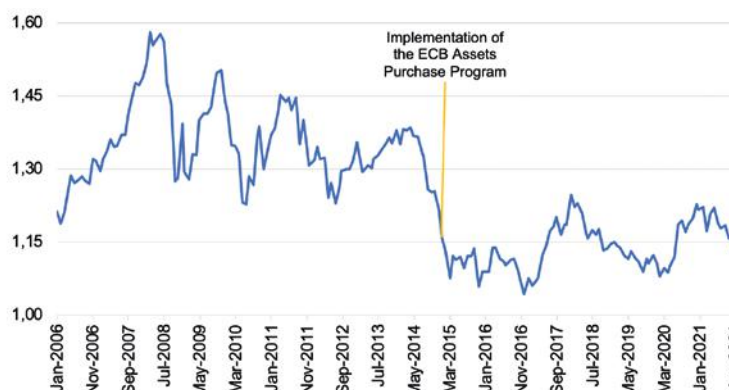
The depreciation of the dollar against the euro over 2010-2014 can be put in parallel with the implementation of the US QE policy. In 2015, there was a considerably sharper depreciation in the value of the euro against the US dollar (-13.7% between end-2014 and end-2015).

Chart 10 might suggest that the launch of the ECB QE policy, which started in 2015, also aimed at stabilising the euro/dollar exchange rate and moderate the appreciation of the euro to avoid any additional competitiveness loss for EU non-financial companies.

CHART 10.

US Dollar vs Euro Exchange Rate

Source: ECB,
as of 02 February, 2022



Monetary policy is becoming less expansionary in the US sooner and more significantly than in the eurozone: securities purchases will end sooner (March 2022) and interest rates should also rise earlier and faster in the US. And since monetary policy is expected to be very accommodative in the eurozone (*see last section*), the euro is depreciating against the US dollar. Between February 2021 and mid-January 2022, the exchange rate fell continuously: the euro lost 7.1% against the dollar. 63% of the drop occurred between June 2021 and mid-January 2022.

Although 60% of euro zone trade is intra-zone, industry-relying European economies heavily depend on exports outside the euro zone. Exchange rates thus remain an implicit but important variable of monetary policy.

Is it possible that negative rates could become an instrument used by central banks to depreciate their currencies, or to prevent them from rising? Could we have (or, have we already had) an undisclosed “currency war” that could exacerbate the economic costs of ongoing “trade wars”?

According to William White⁸, “It does seem hard to justify unprecedented monetary easing solely in terms of what have been, in many cases, only decimal point deviations of inflation from targets. And, if central banks of advanced economies have effectively changed the objective of monetary policy, what might be the eventual implications for inflation and the survival of the current, dollar based, international financial system? At the moment, however, policymakers seem to have little appetite to discuss such fundamental issues.”

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. Both public and private sectors entered the Covid 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 350% of the world GDP in September 2021 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 Central banks have not acted to control — let alone rein in — credit growth during the past decades

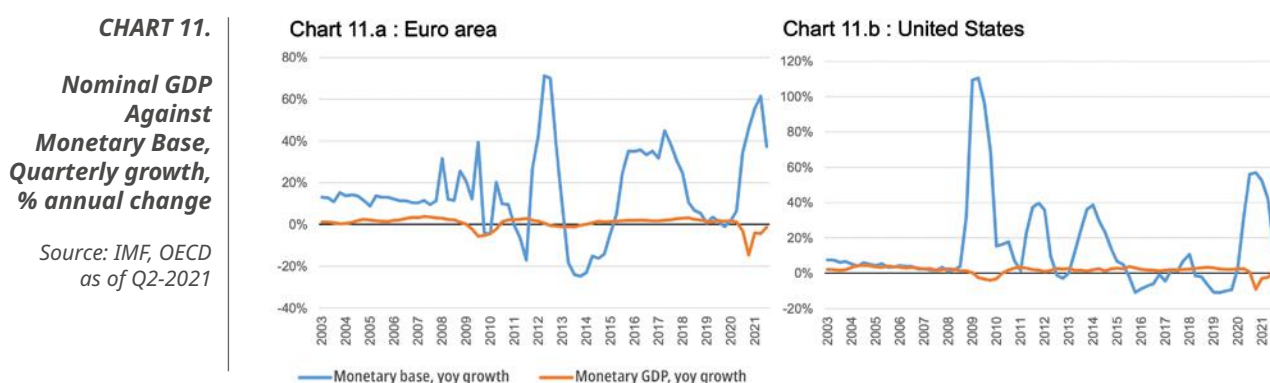
M0 (i.e. bank notes in circulation and bank reserves held at the central bank) and money supply (M3) have grown extremely fast since 2008 in advanced economies. Both aggregates grew much faster than GDP growth for AEs.

Following the Covid-19 crisis, the growth of money supply mainly driven by central banks asset purchases has accelerated. The quantity of excess money (i.e. the gap between the growth of money supply and real GDP growth) has also significantly increased.

Monetary policy and its impact on the increase in money supply has not been passed on to the real economy, notably in the euro area.

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 GDP⁹.

Chart 11 underlines that between December 2007 and January 2020, M0 in the euro area increased by 13.6% per year on average¹⁰, which is 5.4 times faster than nominal GDP growth (averaging 2.5%). During the same period, M0 increased at a yearly pace of 14.3% on average in the US, corresponding to 4 times its nominal GDP.



8. W. White, “It is worse than Reverse. The full case against ultra-low and negative interest rates”, Institute for New Economic Thinking, March 2021.

9. According to Jacques de Larosière in its speech at BNP Paribas, 15 April, 2021.

10. Quarterly data.

Money supply growth has been high over the past decade although lower than the rise of M0 and stronger than GDP growth in advanced economies

For the euro area, the M3¹¹ aggregate grew at a yearly pace of 3.9% between December 2007 and January 2020 despite a 13.6% annual growth rate of the monetary base. In the US, it grew by 6.1%¹² per year on average despite a 14.3% average quarterly growth of M0 over the same period.

CHART 12.

**M3 Growth Rate
Against Real GDP
Growth Rate,
% annual change**

Source: OECD

Chart 12.a: Euro area

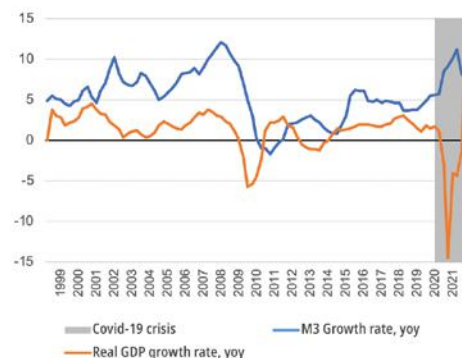


Chart 12.b: United States



The gap between the growths of M0 and M3 would be attributable to the reduction of the money multiplier¹³. According to some economists¹⁴, this might be due to the Basel III regulatory framework and notably the implementation of the Liquidity Coverage Ratio (LCR). They add that central banks might have responded to these regulatory constraints by further easing their monetary policies.

Although it has been moderate compared to the one of the monetary base over the past decade, the growth of M3 has continuously exceeded real GDP growth both in the US and in the eurozone (see Chart 12). This gap produces an excess quantity of money in the economies relative to their effective economic growth.

This excess money has not led to higher prices of goods and services until 2020 (see following charts). It fueled the rise in real estate and financial asset prices (see section 3.1.1) and contribute to explain the increase in liquid savings held by individual savers in EU countries until 2020 (see section 3.2.2).

Indeed, despite the unprecedented increases in money supply over the past decade, the respective inflation targets of central banks have not been reached until the beginning of 2021. The following charts display the disconnection between the monetary expansion and the weak increase in prices of goods and services.

CHART 13.

**Money supply,
real GDP
and Inflation,
1997 = 100**

Source: OECD,
Fed, ECB

Chart 13.a: Euro area

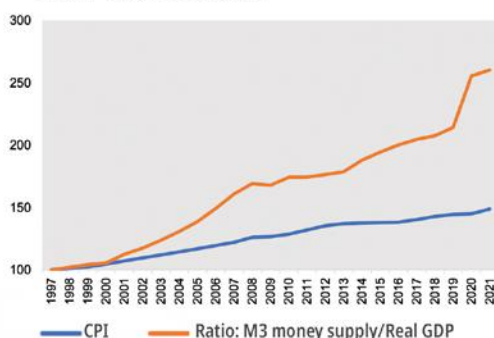
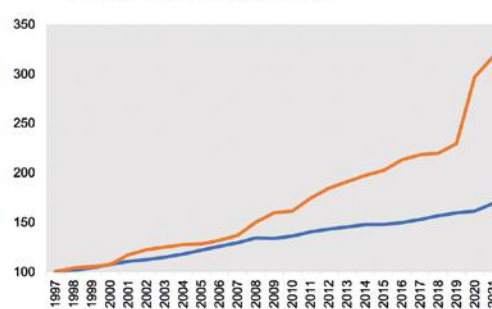


Chart 13.b: United States



One way to understand the differing paths of evolution in money supply and growth is to look at the velocity of money¹⁵. 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 in the euro area has been divided by two between 1999 and 2020 (see Chart 14).

11. 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.

12. Quarterly data for the US and the euro area.

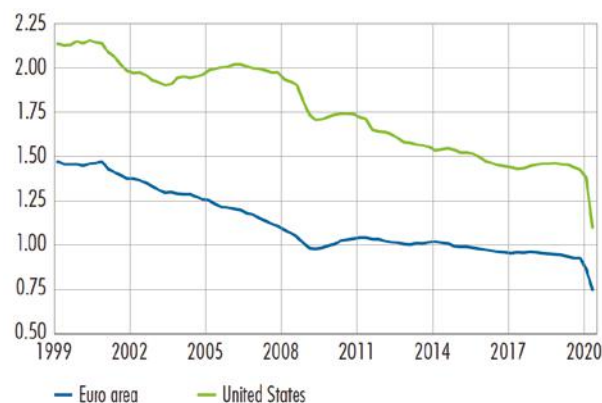
13. Money (or credit) multiplier usually defines how much of the monetary base is channeled into the broader money supply aggregate.

14. L. Quignon, "Basel III, the money multiplier and monetary policy", December 2013.

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

CHART 14.
**Velocity of Money
in Circulation in
the United and
the Euro Area,
in units**

Source: Banque de France



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

In the US, the M3 growth rate peaked to 27.1% in February 2021 compared to a year earlier — a record-high since 1943 — before gradually falling back to levels close to 12% since June 2021, but this is still twice as much as the pre-pandemic average.

In the euro area, annual growth in M3 stock has been more subdued, peaking at 11.6% in February 2021, to now fluctuate around 8-7% since May 2021. That is roughly two to three times more elevated than its pre-crisis average.

Between February 2020 and November 2021, the quantity of money supply increased by a total of 36% in the US and 15% in the euro area. Between January 2013 and December 2019, the figure rose by a total of 46.2% in the US and 33.3% in the euro area.

Accordingly, this has increased the amount of 'excess money' and may thus raise the prospect that inflation has become a monetary phenomenon (see *last section*). According to Steve Hanke¹⁶, while 25% of the increase has been absorbed by real GDP growth in the US, the remaining 75% are likely to show up in the form of inflation of goods and services.

2.2 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 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 15*), 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.

CHART 15.
Global Debt

Source: Institute of
International Finance

Note: as of Q3-2021



Global debt soared to a new record high of \$296 trillion in March 2021. According to the IIF, it was expected to fall to \$295 trillion by-2021, helped by stronger economic activity and higher inflation. However, it would remain \$36 trillion above pre pandemic levels.

16. Interview given to Kitco News (January 2022).

2.2.1 Loose credit conditions have entailed a huge public debt overhang

Over the past two decades, the level of public debt of G7 economies has risen continuously, from 74.8% of GDP in 2001 to 118% in 2019. With the Covid crisis, G7 economies' public debt jumped to 140.1% of total GDP in 2020.

Between 2007 and 2021, six countries of the G7 saw their public-debt-to GDP ratio increase by more than 50 pp. Only Germany experienced a change not exceeding 10 pp during this period (see Chart 16.b).

CHART 16.
**Gross Public Debt,
as % of Nominal GDP**

Chart 16.a:
G7 Economies

Source: IMF

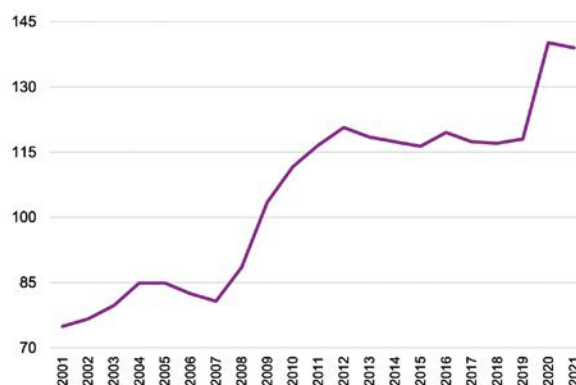
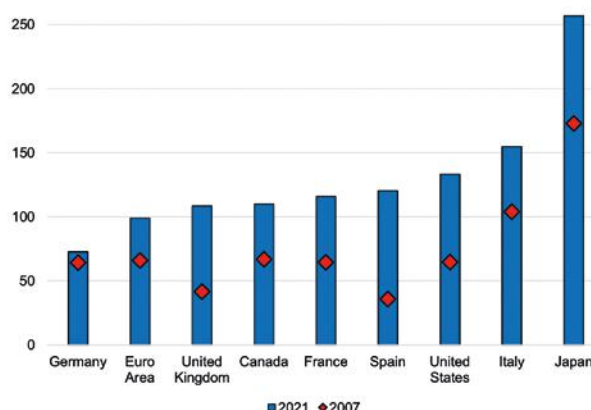


Chart 16.b:
G7 Members Breakdown

Source: IMF



2.2.2 The corporate sector entered the Covid 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 tn in the fourth quarter of 2019, compared to \$20.17 tn in 1999, according to the BIS (see Chart 17). Expressed as percentage of total GDP, the figure reached 91.2% in Q4 2019, compared to 76.3% in 1999 (see Chart 17.a). As of June 2021, the debt of non-financial corporations increased to \$48.6 tn, corresponding to 98.5% of GDP.

International debt issued by non-financial corporates (NFCs) has expanded significantly over the past 30 years. Indeed, outstanding amounts grew from around \$0.5 trillion in 1990 to \$7.7 trillion at end- 2020, according to the BIS¹⁷.

The international debt securities of NFCs have expanded since the Great Financial Crisis, rising from 3.9% to 6.8% of GDP in advanced economies (AEs) between 2009 and 2020, according to the BIS. Since the pandemic's outbreak, overall debt issuance by NFCs from AEs and hard-hit EME sectors has surged, while average credit spreads have been wider than over the preceding year.

17. BIS Quarterly Review, June 2021.

CHART 17.**Credit to Non-Financial Corporations, % of nominal GDP**

Chart 17.a:
Advanced Economies Aggregate

Source: BIS

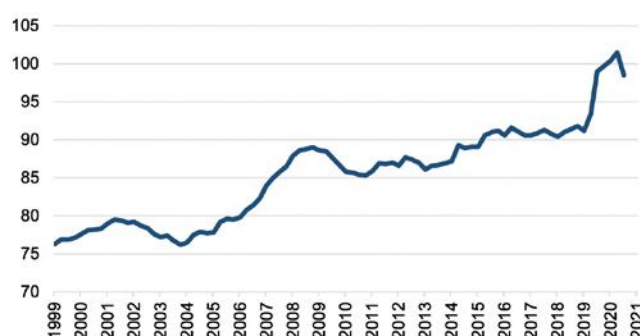
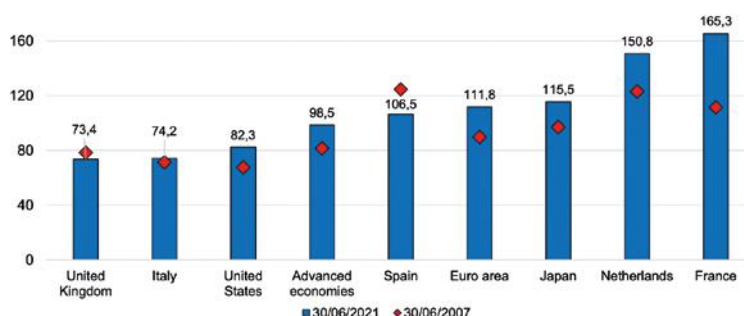


Chart 17.b:
Selected Advanced Economies

Source: IMF



The global outstanding stock of non-financial corporate bonds at the end of 2019 reached an all-time high of \$13.5 tn. 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 quality¹⁸. Hence, the corporate sector entered the Covid crisis with high levels of debt.

The corporate sector necessarily borrowed more to navigate the crisis, raising concerns for a significant number of borrowers.

2.3 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 it has been purchasing the majority of new public debt issuances to meet the financing needs of governments (see Chart 18).

Of the EUR 1082.9 bn of gross public debt issued by the 19 eurozone members in 2020, the Eurosystem (ECB + National Central Banks) purchased EUR 849 bn, i.e. 78.4% of the total amount issued¹⁹. The share of debt issuance purchased by the Eurosystem in 2020 reached 79.6% in Germany, 64% in France, 70.7% in Spain.

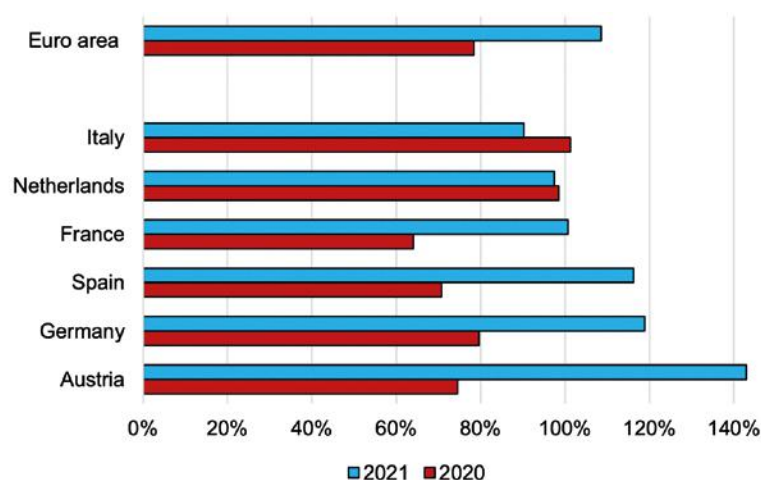
The Eurosystem repurchased the totality of the debt issued in 2020 by the Italian, Greek, Irish, Dutch and Portuguese governments (see Table 2).

CHART 18.

**Share of Public Debt
Purchased by the Eurosystem
in 2020 and 2021**

Source: ECB, AMECO,
Eurofi Calculations

Note: Calculations for 2021
are based on the AMECO's public
debt forecasts



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

19. Assuming that the annual change of gross public debt in nominal value corresponds to the volume of debt issuances.

TABLE 2.**Share of Eurosystem's Purchases in Public Debt Issuance in 2020**

Source: Eurofi calculations,
with AMECO, ECB

	Public Debt Change between 2019 and 2020, bn EUR	Purchase of Public debt by the Eurosystem in 2020, bn EUR	Share of total Eurosystem Purchases in Public debt issuance in 2020
Greece	10,0	16,3	163,1%
Ireland	13,9	15,1	108,8%
Netherlands	40,2	39,6	98,5%
Italy	163,5	165,6	101,3%
Portugal	20,5	19,5	95,2%
Germany	267,6	213,0	79,6%
Austria	35,1	26,2	74,5%
Spain	157,0	111,0	70,7%
Belgium	48,0	33,8	70,5%
France	273,6	175,2	64,0%
Finland	21,3	13,2	61,9%
Euro area	1 082,9	848,7	78,4%

In 2021, the Eurosystem purchased a larger share of new debt issuance than it did in 2020, according to estimations based on forecasts from the European Commission (see Chart 18). At the euro area level, 108.2% of issued debt has been bought by the Eurosystem. According to Eurofi calculations more than the totality of the public debt issued in 2021 by the French, German and Spanish governments would have also been acquired last year by the Eurosystem (see Table 3). It reached 90% in Italy²⁰.

Approximately 70% of the Eurosystem's purchases under the PEPP were sovereign bonds issued by France, Germany, Italy and Spain in 2021 compared to 60% in 2020.

TABLE 3.**Share of Eurosystem's purchases in public debt issuance in 2021**

Source: Eurofi calculations,
with AMECO, ECB

Notes: Public debt changes calculations are based on the forecast of AMECO's gross public debt for 2021

	Public Debt Change between 2020 and 2021, bn EUR	Purchase of Public debt by the Eurosystem in 2021, bn EUR	Share of total Eurosystem Purchases in Public debt issuance in 2021
Greece	17,8	18,6	104,6%
Ireland	19,0	16,7	88,1%
Netherlands	55,5	54,1	97,5%
Italy	167,3	150,9	90,2%
Portugal	5,3	23,4	442,1%
Germany	219,3	260,6	118,8%
Austria	18,9	27,0	142,9%
Spain	90,9	105,6	116,2%
Belgium	41,5	33,1	79,8%
France	185,9	187,1	100,6%
Finland	13,0	19,6	150,8%
Euro area	844,1	913,0	108,2%

Chart 18.a illustrates the growing share of government debt held by the country's central bank. The latter has been increasing continuously since 2014. Between January 2015 and December 2019, the share of public debt held by the Eurosystem grew to 19.6% at the euro area level, from 4.4% in December 2015. As of June 2021, following the Covid-19 crisis, the figure rose to 28.1%.

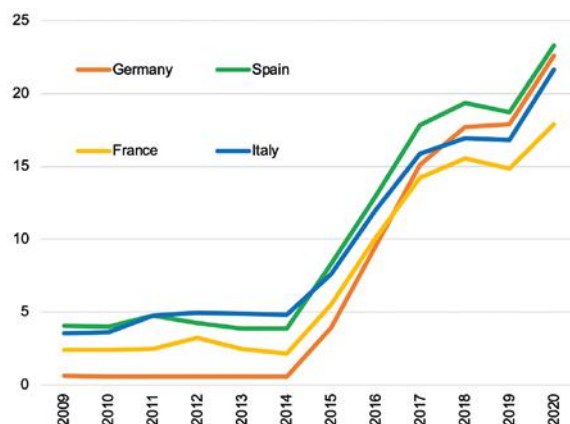
At the beginning of 2021, the Eurosystem held 24.5% of the French public debt, 29.4% of the Spanish debt, and 22.4% of the Italian debt as of June 2021. Holdings of Dutch, German and Finnish government debts exceed the 33% threshold, initially set under the APP but suspended under the PEPP.

According to estimations based on the public debt forecast from the European Commission, the Eurosystem was owning roughly a third of Euro area government debt as of end-2021.

CHART 19.**Share of Government Debt Held by the Central Banks, %**

CHART 19.a:
Share of Public Debt Held by the National Central Banks, %

Source: Eurofi calculations,
with AMECO, ECB



20. Gross issuance is by definition much higher than net issuance. Gross issuance = net issuance – redemptions. So, the ECB's purchases can obviously exceed the amount of newly issued debt during a given year.

CHART 19.b:
Share of Public Debt Held
by the Eurosystem, %

Source: Eurofi calculations,
with AMECO, ECB

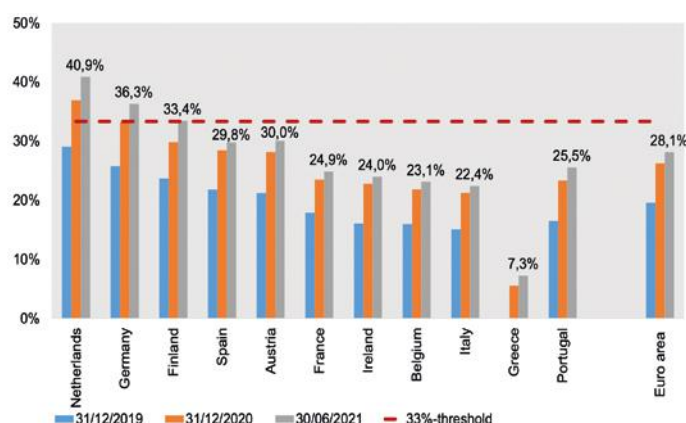


TABLE 4.

**Share of Government Debt Held
by the Eurosystem**

Source: Eurofi calculations,
with AMECO, ECB

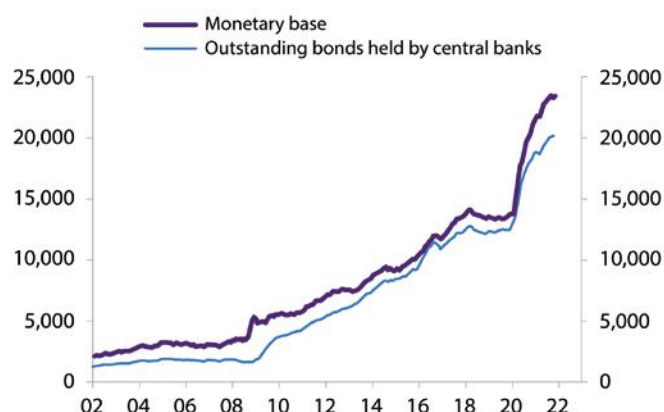
Note: Data for December 2021
are calculated on the basis of the
AMECO's gross public debt forecast
released in November 2021

	31/12/2015	31/12/2019	31/12/2020	31/12/2021	Change between 12/2019 and 12/2021, pp
Netherlands	5,7%	29,1%	35,5%	42,5%	13,4
Germany	5,3%	25,8%	32,0%	39,5%	13,7
Finland	6,0%	23,7%	28,7%	37,6%	13,9
Spain	5,3%	21,8%	27,5%	33,1%	11,3
Austria	4,3%	21,2%	27,2%	33,7%	12,5
France	4,4%	17,9%	22,7%	27,8%	9,9
Ireland	3,8%	16,0%	22,0%	27,3%	11,2
Belgium	3,6%	16,0%	21,1%	25,5%	9,5
Italy	3,5%	15,1%	20,6%	24,8%	9,7
Greece	0,0%	0,0%	4,8%	9,7%	9,7
Portugal	4,8%	16,5%	22,4%	30,5%	14,0
Euro area	4,4%	19,2%	24,9%	30,6%	11,4

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

CHART 20.

**OECD: Monetary Base
and Outstanding Bonds Held
by Central Banks, USD bn**



The above chart (Chart 20) illustrates the intensification 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 as usual".

It should be 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 be considered.

The "fiscal dominance" that is presently taking place carries two big dangers. First, it puts in question the independence of central banks. Then, it is a major disincentive for governments to replace unproductive expenditures by productive public spending and engage in the structural reforms that are indispensable to meet the fundamental challenges of the ecological transformation 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 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.

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 illusion²¹. 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.

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 fueled 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 and a weak profitability of the EU banking and life insurance sectors.

3.1 Lasting zero interest rates damage productive investment and growth in Europe.

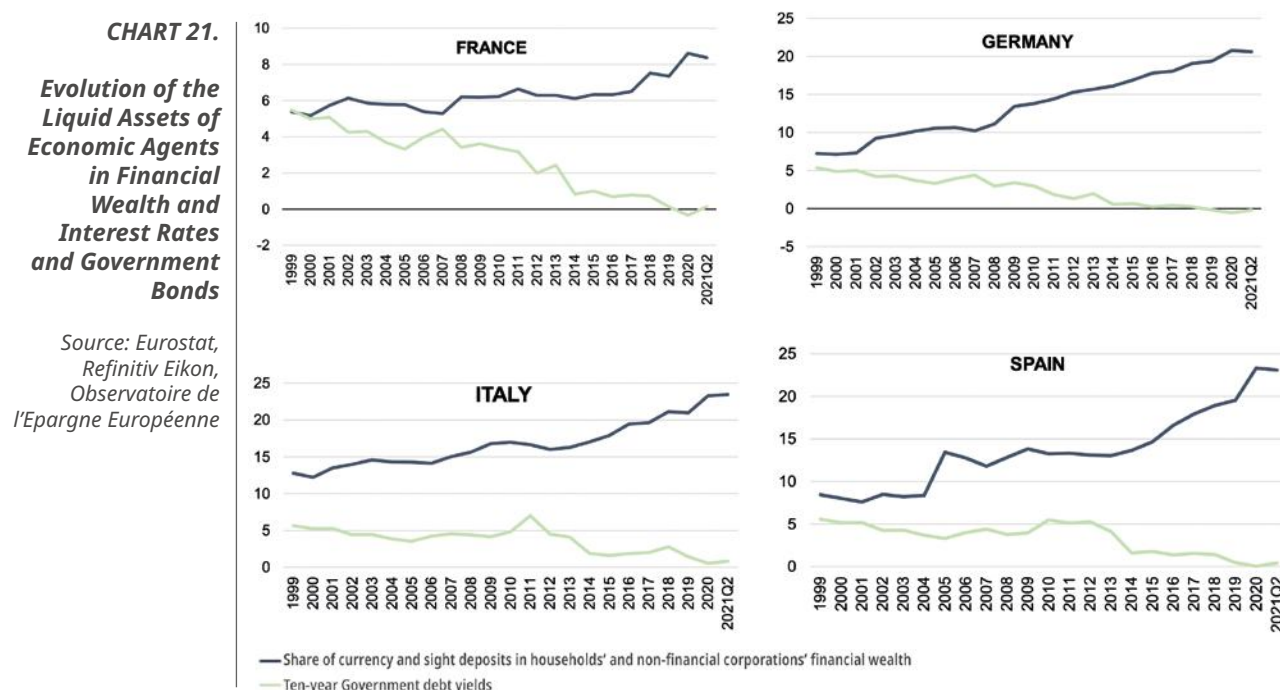
Abundant liquidity and low interest rates have not resulted in higher productive investment but in liquidity hoarding. Interest rates that remain at zero for an indefinite period discourage investors from investing in risky projects, who instead move into yielding and speculative assets. Household and 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 Keynes²² 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 BIS²³, "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.

Chart 21 indicates 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.



21. See the Eurofi note, "Addressing the dangers of the monetary policy deadlock", September 2020.

22. 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.

23. BIS, Annual economic report, June 2021.

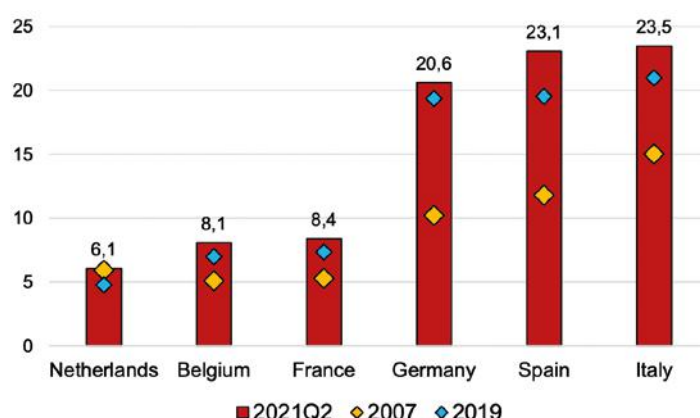
Indeed, the liquid share of financial assets held by households and non-financial corporations increased from 10.2% in 2007 to 19.4% in 2019 in Germany and from 5.3% in 2007 to 7.4% in 2019 in France. The increase was also important in Spain and Italy over the same period of time (respectively +7.7 percentage points and +5.9 percentage points). Following the Covid-19 crisis, the figure reached 20.6% in Germany as of June 2021, 8.4% in France, 23.1% in Spain and 23.5% in Italy.

Moreover, it should be noted that the flight to liquidity effect measured by this liquidity ratio is underestimated for the recent period. Indeed, after the Covid-19-krach, strong valuation effects on stock markets significantly impacted the denominator (total financial wealth) but not the numerator (liquid assets).

CHART 22.

Share of Financial Liquid Assets Held by Households and Non-Financial Corporations, % of financial wealth

Source: Eurostat, Refinitiv Eikon, Observatoire de l'Épargne Européenne



As noted by G. Naacke and L. Gabaut²⁴, “the Covid 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.”

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

Productive investment has declined despite rock-bottom interest rates over the past two decades, raising the possibility that low rates even discourage risky investment.

Lasting low interest rates do not foster by themselves, more productive investment. Chart 23.a underlines that in advanced countries the level of gross non-residential investment in tangible assets has declined significantly over the past two decades, from 14.4% of GDP in 2000 to 11.5% in 2019. 60% of this decline occurred between 2008 and 2019.

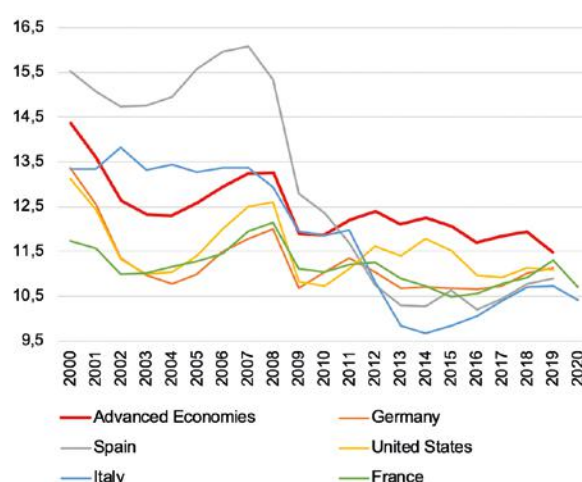
The rise in intangible investment over the same period was less than the decline in tangible non-residential investment. Indeed, Non-residential intangible investments that include patent, brand, trademark, copyright or software, have stagnated or increased slightly over the past two decades, reflecting the digitalisation of advanced economies. In AEs, it has increased from 4.3% of GDP in 2000 to 5% in 2019. But this dynamic did not compensate for the decline of total non-residential investment, that went from 19% of GDP in 2000 to 16.5% in 2019.

CHART 23.a

Non-Residential Tangible Investments in Selected Advanced Economies, % of GDP

Source: OECD, IMF staff calculations

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



24. G. Naacke, L. Gabaut, “La baisse du taux d’épargne n’est pas pour demain”, Revue Banque, January 2022.

As a major contributor to GDP, nonresidential 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 2.03 percentage points since 2000, to reach 11.1% of GDP in 2019. In Germany, it fell by 2.2 pp since 2000, to 11.13% 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 2.6 pp and 4.6 pp since 2000, to reach 10.7% of GDP and 10.9% of GDP in 2019. French non-residential tangible investment has registered one of the lowest changes in the past two decades (-0.4 pp). In countries for which data is available (Germany, France, Italy) this trend is again observed; in 2020, it even accelerates.

A recent note issued by Natixis²⁵ 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. Considering this ratio allows to understand the shortfall in net corporate investment since the GFC. This note 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 (see *Chart 23 bis*). Moreover, in the eurozone, this ratio has consistently been lagging behind the American 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.

CHART 23.b
**Net Corporate Investment,
as % of nominal GDP**

Source: Natixis, with Refinitiv,
BEA and Eurostat data



3.1.2 'Too low for too long' policies have fueled 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.

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)²⁶ have detailed the process: in sectors where zombie firms prevail, prices decline (as 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.

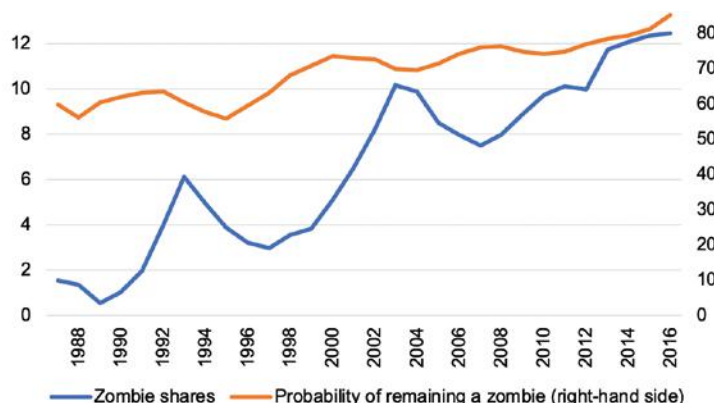
Chart 22 illustrates the fact the share of zombie firms in OECD economies has grown from 1% in 1900 to 15% in 2017. Thus, productivity is hampered by zombie firms, which will dedicate their time and treasuries to reimburse their debt rather than invest in productive initiatives, impeding the reallocation of resources necessary for innovation and growth.

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

26. V. Acharya, M. Crosignani, T. Eisner, C. Eufinger, "Zombie credit and dis-inflation: evidence from Europe", National Bureau of Economic Research, May 2020.

CHART 24.
Zombie Firms of 14 Advanced Economies, %

Source: Banerjee and Holfmann
(BIS Paper, 2018)



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 points²⁷.

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. The 2021 OECD report²⁸ 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 pandemic may directly affect the development in payout policy and adjustments in the companies’ capital structures”.

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 come from the financial sector, whose profitability has been impacted by lasting low interest rates.

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 2019²⁹.

CHART 25.
Share Buybacks by Non-Financial Corporations

CHART 25.a:
US companies, in Volume, USD bn

Source: Les Echos, Bloomberg

*As of 12 November, 2021

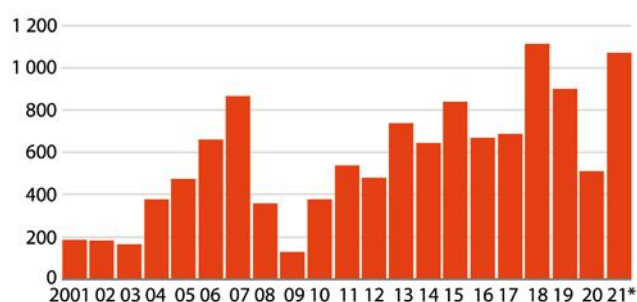
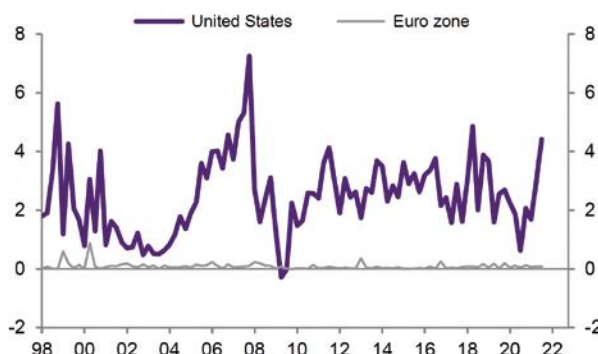


CHART 25.b
Gross Issuance - Net Issuance of Listed Shares, % of nominal GDP

Source: Refinitiv, Fed, ECB, Natixis



27. H. Baudchon, “Le choc de la Covid et la crainte d’une zombification accélérée”, March 2021.

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

29. Idem.

As shown in Chart 25, US companies' shares repurchase accounted for roughly \$1.1 tn in 2018, more than twice the 2010 amount.

As reported by a recent study from Natixis, share buybacks are significant and worrisome in the United States because they are financed by debt and by cash flows resulting from the skewing of income distribution³⁰.

As of November 2021, the volume of share buybacks amounted to \$1 000 bn in the US, approaching its record of 2018. In the second quarter of 2021, the top 20 companies by buyback volumes in the S&P accounted for more than half of all the buybacks completed. The top five companies (Apple, Alphabet, Oracle, Facebook and Microsoft) accounted for 30 per cent³¹.

3.2 Persistent low rates have been exacerbating financial vulnerabilities

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

In a market-based economy, financial markets should discriminate against 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 1.3, 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.

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 already the phenomenon observed prior to the 2007-08 crisis.

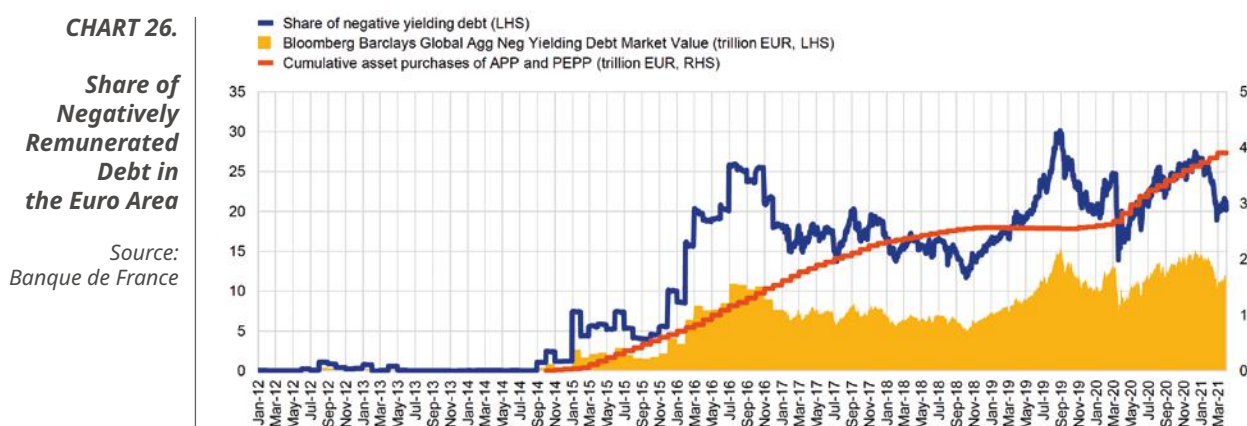


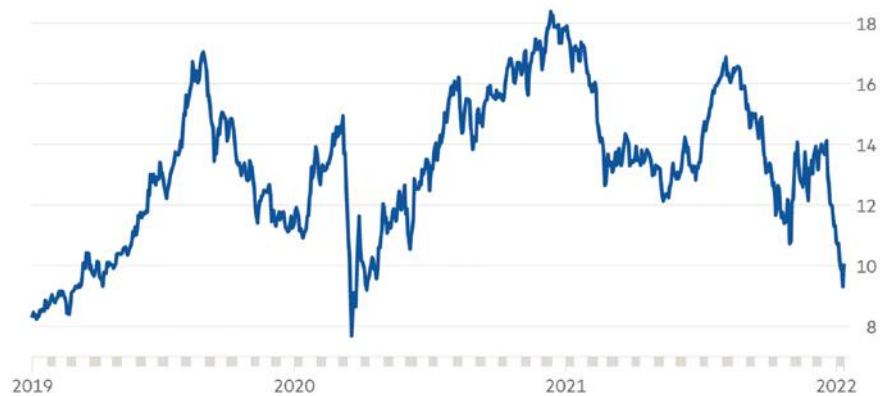
Chart 26 exhibits that as of April 2021, roughly 20% of bond yield returns in Europe were negative, and around 60% were below 1%. As an example, the Greek 5-year bond yield turned negative for the first time in May 2021. Such a proportion of ultra-low remunerative assets has brought financial markets 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.

However, after reaching \$18.5 tn in late 2020, the total amount of negative yielding bonds worldwide was down to \$10 tn as of January 2022 (see Chart 27). Negative yielding debt now makes up about 18 per cent of the Bloomberg Global Aggregate bond index, compared with 30 per cent a year ago.

This recent development reflects the upwards adjustment of bond yields in the light of higher inflation and the prospect of monetary tightening notably in the US (see last section).

30. P. Artus, "What to make of share buybacks?", Natixis Economic Research, January 2022.

31. R. Armstrong, "The Fed: nothing between the lines; Also, buybacks and stablecoins", Financial Times, November 2021.

CHART 27.**Amount of Global Negative Yielding Bonds, USD bn***Source: Financial Times, Bloomberg***3.2.2 High leverage has massively increased market valuations: 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 abandon of a leaning-against-the-wind stance has nourished financial imbalances. The disconnection between financial and housing assets' prices on the one side and the economic fundamentals on the other side is leading to bubbles. Indeed, lasting low interest rates open the floodgates of credit to both governments and the private sector, encourage search-for-yield behavior 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 28 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, the cumulated growth of stock prices has been multiplied by 2.07, against 1.16 for real GDP. Their disconnection from the economy was also illustrated by the rise of 16.26%³² of the S&P500 and 43.6% of the Nasdaq in 2020, while the world experienced a 4.2% recession that year.

CHART 28.**Stock Prices Development in OECD Economies**

CHART 28.a:
Stock Prices Versus Real GDP in
OECD Economies* (2000-Q1 = 100)
* Including the US, the eurozone,
Canada, Australia and the UK

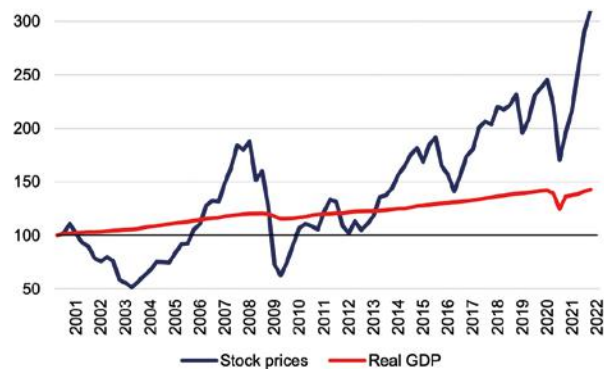
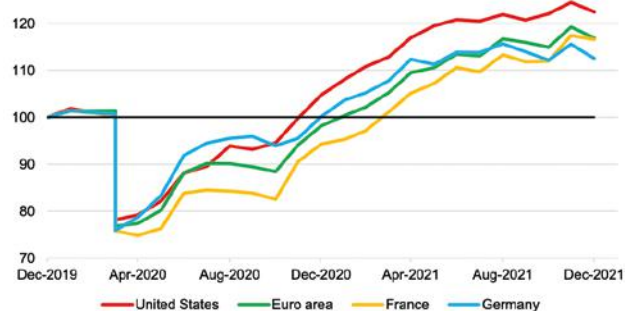
*Note: Data are quarterly**Source: OECD*

CHART 28.b:
Stock Prices of Selected Advanced
Economies (Dec-2019 = 100)

*Note: National and supra-national
share prices index are compiled
by the OECD and contain all the tradable
stocks in each country*

Source: OECD

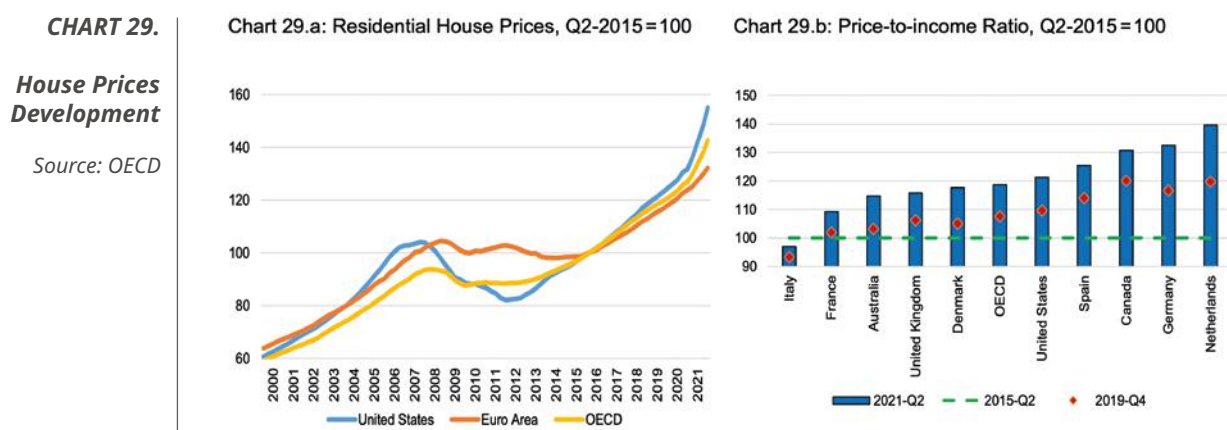
32. Excluding dividends for S&P500 and Nasdaq.

This chart also underscores that, given the permanent loose monetary policies during the past decade and the negative real interest rates since 2017, 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 29) displays the steep rise in house prices, both in the United States and the euro area, which has been stimulated by the abundance of the money supply growth during the past years. Between 2015 and 2019, house prices rose by roughly 23% in OECD economies (*see Chart 29.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 42% higher than their 2015 level as of June 2021 in OECD economies, up to 32% up in the euro area and to 55% for the US.

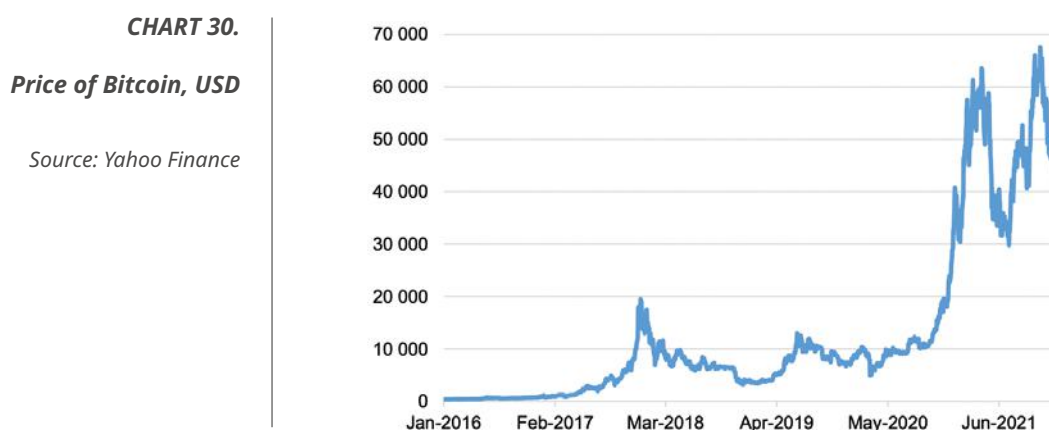
The surge in house prices illustrates the implied difficulty for households to access housing, in particular for the youth. A measure of the affordability of homes for households is the price-to-income ratio (*see Chart 29.b*). Its increase indicates that home prices are rising faster than their disposable income. Between 2015 and 2019, the ratio increased by 7% in OECD economies. Following the COVID-19 crisis, it has increased to 18.6% as of June 2021. Already up by 9% in 2019 compared to 2015, the ratio was 20% greater than in 2015 in the United States. 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 16.6 pp and 19.5 pp respectively. Two years later as of June 2021, these numbers have increase by an additional 15.8 pp in Germany and 19.7 pp in the Netherlands.



The systematically loose monetary policy has contributed to the building of the enormous credit bubble that nearly broke down the financial system in 2008. All financial indicators were flashing. But the CPI was low, and central banks were not worrying. Such bubbles are indeed the present manifestation of inflation in an environment of technological price disinflation.

Cryptocurrency development

The search-for-yield attitude also spreads across cryptocurrencies — the Bitcoin notably, whose price index soared by more than 4 000% between 2016 and January 2022. Excess money supply has brought volatility in these markets. After reaching \$60 000 in the first months of 2020, the price of Bitcoin has fallen by 50% in only few weeks (*see Chart 30*).



3.2.3 Lasting loose monetary policies have significantly increased wealth inequalities

The social significance of persistent low interest rates should not be underplayed. Did they help reduce societal inequalities? In fact, the opposite is true; they tend to make societal disequilibria worse because the beneficiaries have been those who have the income and capital to profit from inflated financial and asset markets. Not poor people.

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 them 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 elder or retired people can far more easily help their offspring to buy accommodation in residential places, also giving more chances to their grandchildren to go in the best schools and universities.

A report issued by the McKinsey Global Institute³³, 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.

Moreover, "asset values are now nearly 50 per cent higher than the long-run average relative to income", the report continued. "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 said.

3.2.4 The weakening profitability of the banking and insurance system in the EU compared to the US one

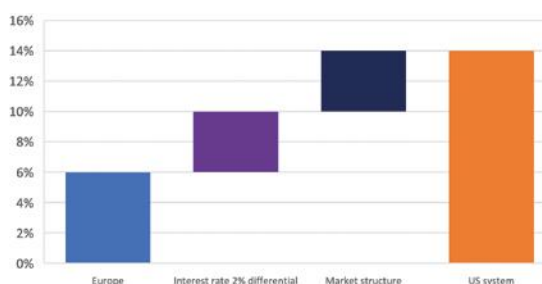
The lasting ultra-low interest rates policy weakens the profitability of the EU banking sector³⁴.

A report from Bank of America Securities³⁵ highlights the drivers of the yawning profitability gap between the euro banks at a 6% ROE in 2019 and the US at 14%. About half is the difference in market structure. The other half is simply the 200bp gap in interest rates.

CHART 31.

**Return on Equity Differential
Between the US and the EU, %**

Source: Eurofi,
with BofA estimations



Lasting zero-interest rates also pose a problem for insurance companies and pension funds. Faced with long-term commitments, safe bond assets no longer yield much. This is a source of weakness that insurance companies must manage by increasing their equity, diversifying their investments into less liquid and more risky assets. For customers, low rates mean higher non-life insurance prices, lower guarantees and fewer long-term savings.

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

Inflation has been rising in many countries for several months. Bottlenecks and energy prices have played a role. However, the current inflation spike is driven by structural factors and could last longer than expected.

First signs of normalisation emerge as inflation takes up but monetary policies are still expansionary in the main advanced economies.

33. The McKinsey Global Institute, "The rise and rise of the global balance sheet", November 2021.

34. See the Eurofi note, "Banking fragmentation issues", September 2021.

35. Bank of America Securities Global Research, "Fit for an island continent", February 2020.

4.1 High inflation could last longer than expected

We are experiencing another episode of inflation for several months, breaking with the trend of slow price growth that prevailed during the decade prior to the Covid-19 crisis. Inflation rates in the world's rich economies have hit a 25-year record fueling concern about the rising cost of living for households. Households have significantly less money in their pockets, and inflation has a much greater impact on the poorest. Indeed, low-income households spend a greater proportion of their expenditure on consumption and notably basic products such as food, housing and transport. This return to inflation questions social cohesion and becomes a major concern of political leaders.

The causes are many and complex and the medium-term outlook for prices is uncertain. There is a widespread consensus among officials, economists and academics that the recent upticks in inflation are anomalous and "transitory" because they are largely results attributable to one-off effects: supply chain disruptions. But there are other reasons as well and these accelerations of present inflation may be the result of the substantial excess of broad money growth over the past years. This "monetary phenomenon" may turn out to be "persistent".

4.1.1 Inflation has risen sharply in many countries in recent months

Since April 2021, corresponding to the start of global economic re-opening, consumer price index inflation (CPI) has been running above 2% in advanced economies, and still rising by more than expected ever since. Inflation in the OECD area surged to 5.8% in the 12 months to November 2021, compared with 5.2% in October, and just 1.2% in November 2020, reaching the highest rate since May 1996³⁶.

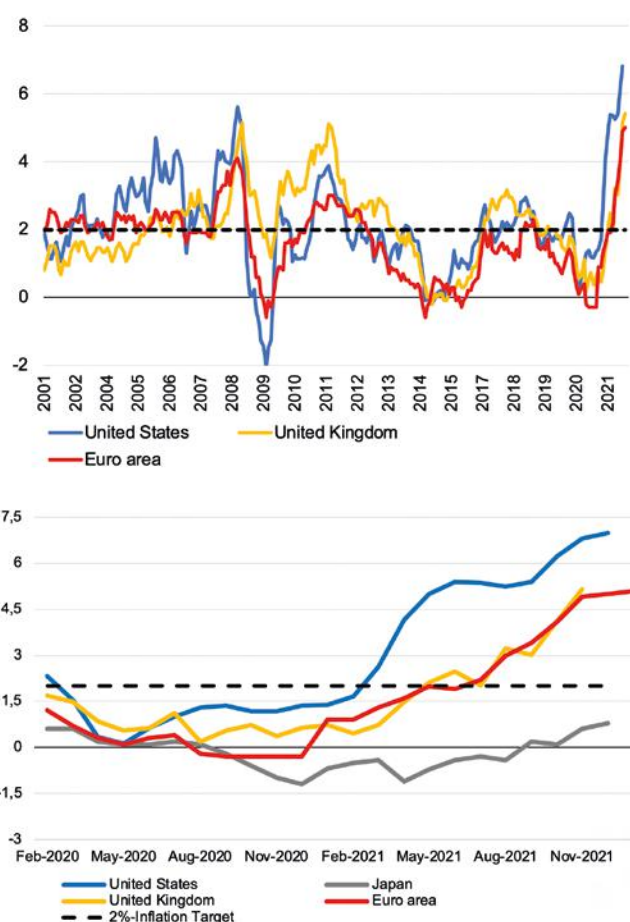
In the United States, inflation hits fastest annual pace since 1982, rising by a 7% year-on-year pace in December 2021, the biggest jump since June 1982. It reached 5% in the eurozone as of January 2022, a record high since the single currency was created more than two decades ago. At 5.4% year-on-year in December 2021, the inflation in the UK also topped its highest level in a decade. Among advanced economies, only Japan did not deliver a high number, with inflation fluctuating between -0.7% and +0.2% since May 2021. Nonetheless, it has recently jumped to 0.8% as of December 2021, and the BOJ raised its inflation forecast for 2022 to 1.1%, low by international standards but uncommon in a country that has battled deflation for decades.

CHART 32.

Consumer Price Index growth in Major Advanced Economies, % annual change

Source: BIS, Eurostat

Note: As of December 2021
for the US, UK
and Japan, and January 2022
for the Euro area



36. OECD, "Inflation in the OECD area continues to surge to 5.8% in November 2021, the highest rate in 25 years", 11 January, 2021. Energy prices soared by 27.7% in the OECD area in the year to November 2021, more than three percentage points (pp) higher than in October (24.3%) and the highest rate since June 1980. Food price inflation in the OECD area picked up strongly to 5.5% in November, compared with 4.6% in October. Excluding food and energy, OECD year-on-year inflation rose more moderately, to 3.8%, compared with 3.5% in October, though it contributed significantly to headline inflation in a number of large economies.

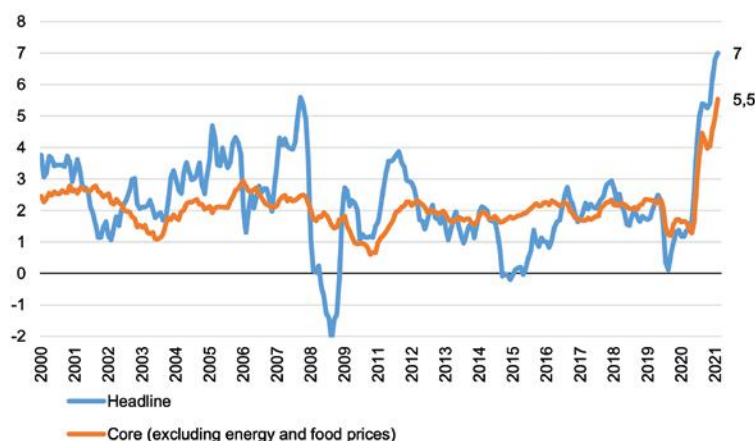
Inflation in the United States: hitting a 39-year record-high

The annual headline inflation has been exceeding the Fed's 2% target since March 2021, to gradually reach about 7% in December 2021, a 39-year-high record. Although energy prices accounted for a third of the headline (+29.3% yoy), the core inflation — excluding food and energy prices — has been continuously accelerating towards 5.5% in December 2021, a level not seen since 1982 as well. In the consumption basket³⁷, used car and truck prices have increased significantly by 37.4% yoy, contributing to 0.9 pp to the December CPI. A notable rise also is the index of owner's equivalent rent component, that accounts for roughly 32% of the basket. In December 2021, it increased by 4.1%, reflecting the current surge in rent prices (+14.3% yoy), and home prices (19.5%).

CHART 33.

Headline and Core Inflation in the United States, year-on-year, % change

Source: US Bureau of Labor Statistics



Inflation in the euro area: more than twice the ECB target

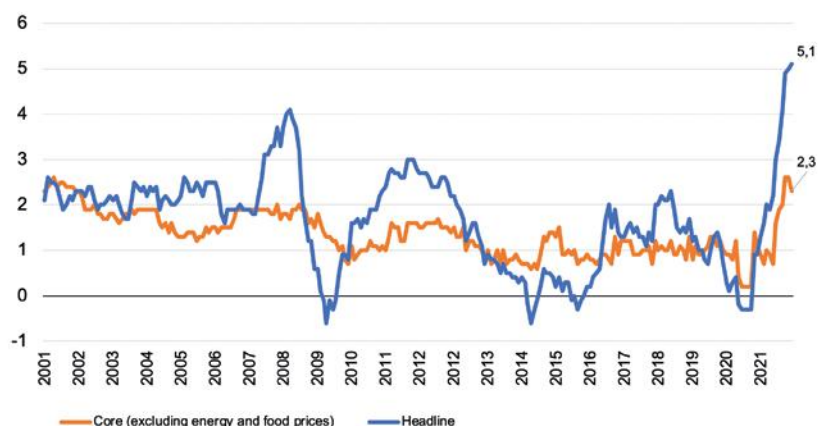
In the euro area, the HICP growth rate has been surpassing the ECB's 2% target since May 2021, has kept rising towards 4.9% in November, rose to 5 per cent in December and reached 5.1% in January 2022; a record-high since the creation of the Monetary Union.

CHART 34.

Headline and Core Inflation in the Euro Area, year-on-year, % change

Source: Eurostat

Note: As of January 2022



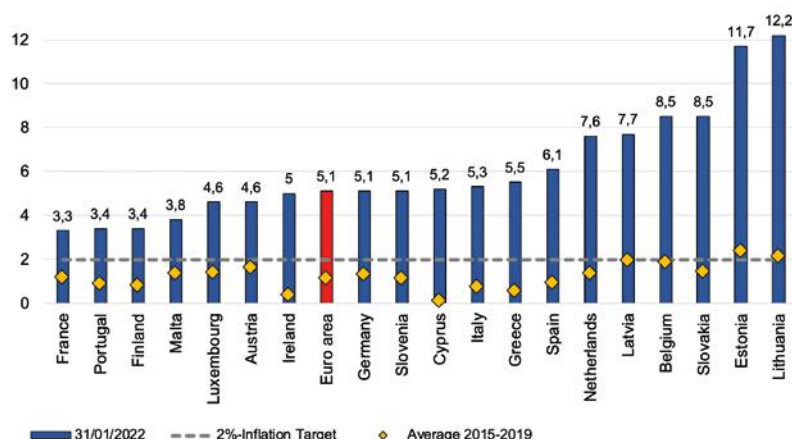
Still, this figure badly reflects the high dispersion across eurozone Member States, with the inflation rate ranging from 3.3 % in France to 12.2 % in Lithuania, as of January 2022 (see Chart 35). In December 2021, the average gap between the domestic inflation rate and the HICP stood at 1.8 pp, a record high. Among the major eurozone economies, Belgium (8.5%), Italy (5.3 %), Germany (5.1%) and Spain (6.1%) have registered a number greater than 5%.

CHART 35.

Headline Inflation Across Eurozone Member States as of January 2022, % annual change

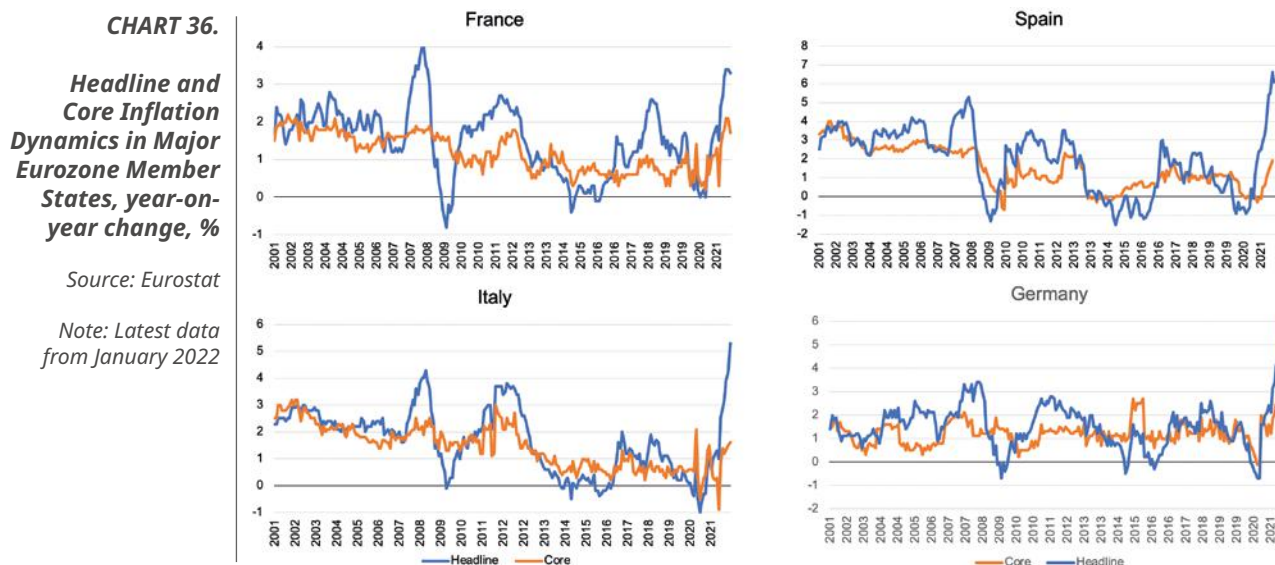
Source: Eurostat

Note: All data are from January 2022, except for Slovenia which dates from December 2021



37. BLS, "Consumer Price Index – December 2021", 12 January 2022.

Increasing by 2.6 % in November 2021 compared to last year, the core inflation — excluding energy and food prices — has also reached its highest level since the creation of the euro³⁸. It has risen by 3.9 % in Germany, reflecting the prevalence of shortages materials — semiconductor in particular — the manufacturing-based economy has been suffering since the re-opening. Core inflation came down to 2.3 % In January 2022.



4.1.2 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. Actually, headline consumer price inflation has picked up around the world, in 2021, pushed up by higher commodity prices, supply side constraints, stronger consumer demand as economies reopen. But the inflation problem may be a bigger and 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”³⁹.

The surge in energy price: a persistent driver of inflation

Energy prices are often mentioned to be a prominent driver. Indeed, the upswing in inflation primarily reflects a sharp rise in prices for fuel, gas and electricity. In January 2022, energy inflation accounted for more than half of headline inflation in the euro area. Energy prices in the 19 countries that share the euro rose by 28.6% in January compared to a year earlier. According to the ECB, natural gas prices hit record highs in the region last year, driving wholesale electricity prices to €196 per megawatt hour in November — nearly quadruple average pre-pandemic levels.

The green transition should drive inflation higher. 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 insight⁴⁰ 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 are bound to rise sharply: copper and nickel, cobalt and lithium. All these factors should drive companies to increase their selling prices.

38. According to Eurostat data.

39. P. Krugman, “The year of Inflation Infamy”, the New-York Times, 16 December, 2021.

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

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

Bottlenecks started as supply disruptions due to the Covid shock in 2020. Supply chain bottlenecks — disrupted chains of international production, weakening of globalisation, equipment inefficiencies at ports and loading stations — cause delays and higher costs for manufacturers, pushing up the price of many consumer goods. They have morphed into something more persistent.

Moreover, the shift in consumer spending patterns on the aggregate demand side has increased the prices of goods at the expense of services. With many people staying at home during lockdowns to shelter from the pandemic and unable to spend on travel, restaurants and entertainment away from home, orders for deliverable goods or durables purchased online have increased massively. Resulting from a highly internationalised production process, durable goods cannot be delivered in time because of multiple shortages of intermediate goods and commodities and supply chain disruptions. Induced bottlenecks have increased the price of inputs, crippled manufacturing industries as automobile and so impeded producers to serve strong demand.

Demand continues to outpace constrained supply in certain sectors. But the robust growth in aggregate demand driven by excessive monetary and fiscal stimulus has also been a primary source of inflation. If demand outstrips supply, prices go up. This inflation will be persistent if the reorganisation of world output takes time and economic support continues. It will also be so if economic actors foresee it and adjust their behaviour accordingly, either by raising selling prices or by increasing wage demands.

The indexation of wage to prices will be a key determinant of the course of inflation

A key concern for the future path of inflation lies in the labor market tightness in several major advanced economies (AEs) and the prospects of rising wages. It is rational to believe that wage-earners will react to higher prices. J. de Larosière and D. Marsh⁴¹ explained that “[i]f wages react like this, enterprises will feel free to increase their prices accordingly. Having been price-takers in a hyper-competitive environment, they become price-makers with a tendency to maximise profits. In theory, if inflation abates, price adjustments and indexation should disappear. But experience shows that it takes a long time to get rid of indexation, because it becomes a habit and even a social right.”

In the third quarter of 2021, wages and salaries of US workers in the private sector have risen by 4.6% compared with the same quarter of the previous year, a record-high number in a decade. In the euro area, growth is still moderate compared to the previous decade, at 2.8% yoy, but is moving to the upwards.

In response to high inflation, employees, mainly in some low-wage areas such as leisure and hospitality so far are demanding higher compensations to stabilise their real purchasing power, that is being deteriorated by soaring prices. This situation is exacerbated in the context of labour 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. As of December 2021, the US employment was still short of 4.2 m people, equivalent to nearly 3% of total employment. The figure is up to 400 000 in the UK. Such ‘Great Resignation’ that is more visible in the US, is translating into improving bargaining power in favor of workers and also in higher wages.

However, price growth has been more rapid than wages growth so far, pushing real compensation growth to fall into negative level, -0.7% in the US and -0.4% in the eurozone as of November 2021. A study from the PIIIE⁴² pointed out that wages have been falling down 2 percent compared to the pre-pandemic in the US. To catch-up with inflation, nominal wages should accelerate. There is a way out, especially for high-wage professions. R. Armstrong noted⁴³ that “people are asking for flexible work. They do want to work at home Monday and Friday [...] it is one more pressure-release value”.

The following charts (37a and 37b) show — given the difficulty of the statistical noise created by short-time working in the euro zone — that the under-indexation of nominal wages to prices persists, with nominal wages accelerating much less than prices.

An undesirable wage-price spiral is to be expected if firms were to pass higher input and labour costs in final prices to preserve their margins. This would translate into declining real wages and so pave the way for a 1970s-style inflation. In any cases, it is naive to consider that a prolonged period of high inflation would not impact wage settlements.

41. J. de Larosière, D. Marsh, “ECB should follow Fed and tighten policy”, OMFIF, 7 December, 2021.

42. J. Furman, W. Powell, “Worker bargaining power has been no match for high inflation”, 29 October, 2022.

43. R. Armstrong, “Inflation: it is not just for goods any more”, Financial Times, 13 January, 2022.

CHART 37.

CHART 37.a:
US Nominal Per Capita
Wage and CPI, yoy, as %

Source: Flash Economics,
P. Artus (06/01/22), with Refinitiv,
BLS, Natixis data

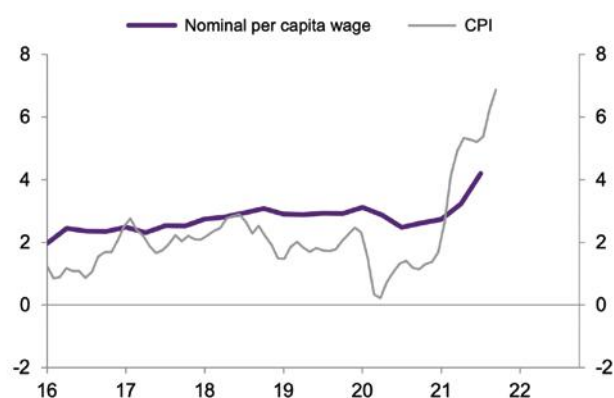


CHART 37.b :
Euro Zone Nominal
Per Capita Wage
and CPI, yoy, as %

Source: Flash Economics,
P. Artus (06/01/22), with Refinitiv,
Eurostat, Natixis data



Effects of the current abundance of M0 creation on inflation in a context of low growth

In a recent paper⁴⁴, Mervin King noted that money has disappeared from modern models of inflation and explained that it would be a mistake to pretend that money has nothing to do with inflation and to believe that monetary stimulus is an appropriate response to all economic problems.

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 may have led inflation to be a monetary phenomenon. If this is true, the inertia of central banks in withdrawing extraordinary policy would be the proximate cause of surging prices.

The current period of high inflation has been coinciding with a substantial increase in the quantity of money emanating from aggressive central banks' interventions since March 2020. The coincidence may be reviving the monetarist view, considering "inflation [as] always and everywhere a monetary phenomenon" in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output.

According to K. Warsh⁴⁵, "inflation is a choice, for which the Fed is chiefly responsible. The risk of inflation spiral arises when policy makers first dismiss the problem and then cast blame elsewhere. Inflation becomes embedded in the price formation process when the central bank acts belatedly or with insufficient conviction. To date, the Fed has acted as an enabler".

While inflation has been mostly visible in the prices of financial assets and real estate over the past decade, it is now shifting towards the prices of goods and services. And the excess quantity of money — the amount of money that exceeds the real needs of economic agents — may have had a major role in this dynamic. In other words, the continuous rise in money growth seen during the previous decade may have paved the way for a future surge in prices, either on financial and real estate's ones, or in goods and services. "Common sense suggests that when too much money is chasing too few goods the result is inflation."

44. M. King, "Monetary policy is an world of radical uncertainty", Institute of International Monetary research annual Public lecture, 23 November, 2021.

45. K. Warsh, "The Fed is the main culprit", Wall Street Journal, 12 December, 2021.

This view is notably shouldered by Steve H. Hanke and John Greenwood⁴⁶, saying that “the magnitude of price increase is a function of the amount of excess broad money that has been created during the past 18 months”. And the worse is yet to come, alert the authors: given the typical two-year lag in effect between accelerations in the rate of monetary growth and the emergence of higher inflation, some countries with huge amount of excess money are likely to see increases in their overall price levels over the next 2-3 years. Having registered a cumulated broad money growth of 36.4% between February 2020 and September 2021, the US is set to experience a surge in its overall price level of approximately 28% by 2023-24, according to the authors’ estimations. As for the euro area, the cumulated +15.6% rise of M3 growth rate would translate into a +7% in overall prices.

As a result, according to S. H. Hanke and J. Greenwood, “the inflation will only be reduced when the underlying cause — excess broad money growth — is addressed and reduced to a rate more compatible with an inflation target”.

4.2 Monetary policies are still expansionary in the main advanced economies

To varying degrees, the Federal Reserve, the ECB and the Bank of England are exiting their ultra-expansionary monetary policies. But monetary policies and monetary and financial conditions remain clearly expansionary so far; real interest rates remain deeply negative in advanced economies so far.

4.2.1 Normalisation process as of end-December 2021: state of play

Over the third quarter of 2021, major central banks have explicitly announced their intention to exit emergency support programmes and start normalising their monetary policy in the context of high inflation pressures. Although they all target a twelve-month 2% inflation rate to achieve their price stability mandate, major central banks have not the same reading of the current inflationary upsurge and so not normalise at the same pace.

The Bank of England continues to buy assets but began to raise its interest rates in December 2021.

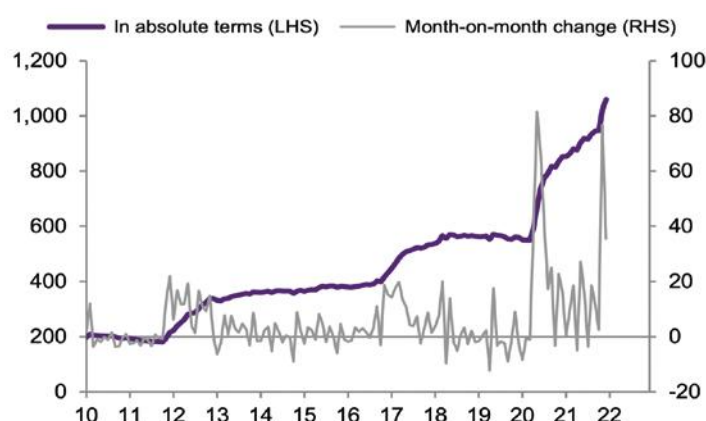
In the UK, the Bank of England⁴⁷ decided to raise the Bank Rate, from 0.1 per cent to 0.25 percent in December 2021, becoming the first G7 economy to do so since the pandemic began. The Committee judged the decision to be “warranted in order to return CPI inflation sustainably to the 2% target”. As the twelve-month CPI inflation had risen from 3.1% in September to 5.1% in November and the labour market tightening further, it considered that “maintaining the current monetary policy stance when CPI inflation was materially above the 2% target and the output gap appeared to be closed might cause medium-term inflation expectations to drift up further.”

On 3 February 2022, the Bank of England raised interest rate to 0.5% in effort to tame inflation.

In an effort to increase the power of monetary tightening, the Monetary Policy Committee voted unanimously not to reinvest any of the £875 bn of government bonds it has bought under quantitative easing programmes when they mature.

CHART 38.
UK Monetary Base, GBP bn

Source: Flash Economics,
P. Artus (06/01/22), with Refinitiv,
BoE, Natixis data



The Federal Reserve is expected to stabilise the size of its balance sheet towards the end of the first quarter of 2022 and will then gradually raise its interest rates.

By far, the Federal Reserve⁴⁸ follows the same path in terms of normalisation process. During the December Meeting, the FOMC’s participants explicitly acknowledged that inflation could remain above 2% at least until 2023 and thus speeded up the tapering to now cease net purchases by mid-March. This shifting view comes after Chair Powell⁴⁹ pledged to retire the word “transitory” to characterize the current inflationary spike, in late November 2021.

46. J. Greenwood and S. H. Hanke, “On monetary growth and inflation in leading economies, 2021-2022: relative prices and the overall price level”, *Studies in Applied Economics*, November 2021.

47. Monetary Policy Summary and minutes of the Monetary Policy Committee meeting, 16 December, 2021.

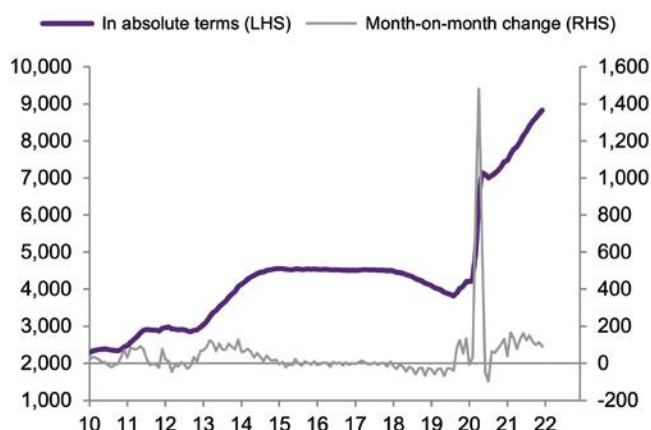
48. Transcript of Chair Powell’s Press Conference, 15 December, 2021.

49. “Senate Banking, Housing and Urban Affairs Committee Holds Hearing on Federal Reserve CARES Act”, 30 November, 2021.

With these elevated inflation pressures and a rapidly strengthening labour market, he admitted that the “economy no longer needs increasing amounts of policy support”. Accordingly, the Fed is gradually exiting its pandemic-era \$120 bn a month bond-buying programme in place since December 2020, with which it purchased \$80 bn of US Treasuries and \$40 bn of agency mortgage-backed securities (MBS). Since mid-December 2021, it has reduced the monthly pace of net asset purchases to \$60 bn for Treasury securities and \$30 bn for MBS.

CHART 39.a
US Monetary Base, USD bn

Source: Flash Economics,
P. Artus (06/01/22), with Refinitiv,
Fed, Natixis data

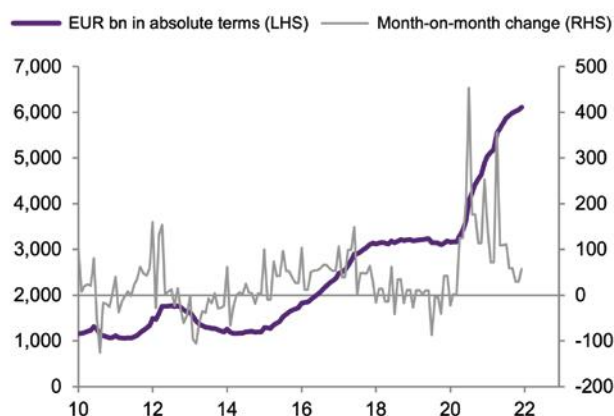


The ECB is not going to rapidly raise its interest rates, but it has announced a reduction in the size of its asset purchase programme from April 2022.

The European Central Bank⁵⁰ announced in its December meeting the withdrawal of the emergency programmes but also reiterated the need for a lasting monetary accommodation. Although the current economic recovery and inflation dynamic permit “a step-by-step reduction in the pace of its asset purchases over the coming quarters”, the ECB considers that “monetary accommodation is still needed for inflation to stabilise at the 2% inflation target over the medium-term”. According to its long-term projections, HICP inflation is likely to fall back at 1.8% by 2023, from 3.2% in 2022. By March 2022, it will fully exit the PEPP but will reinvest the principal payments from maturing securities purchased under the programme “until at least the end of 2024”. In the meantime, it will continue purchasing governments and private securities under the initial APP, increasing the monthly net purchase pace of €40 bn in the second quarter and €30 bn in the third quarter of 2022, from a monthly average of €20 bn between January and November 2021. According to the ECB monetary policy decisions taken in December 2021, key interest rates are left unchanged, as the Governing Council “expects net purchases to end shortly before it starts raising [it]”.

CHART 39.b
Euro Zone Monetary Base, EUR bn

Source: Flash Economics,
P. Artus (06/01/22), with Refinitiv,
ECB, Natixis data



Signs of monetary policy normalisation also take place at a more advanced stage in other developed and emerging market economies. In December 2021, the Committee of **the Norway’s Central Bank** has unanimously decided to raise the policy rate from 0.25 percent to 0.5 percent, and suggested further rates hikes for the coming months. “A gradual normalisation of the policy rate is consistent with continued high employment. Higher interest rates will also help to counter a build-up of financial imbalances”, underlined the statement of the December meeting. The action follows the path of **the New Zealand Central Bank**, that raised its policy rate for the second time since September, after ending QE in July 2021. 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 will continue to purchase government securities at a pace of \$4 bn a week until at least mid-February 2022. As the first central bank to announce a withdrawal of its monetary stimulus in July 2021, **the Bank of Canada** officially ended its QE programme in October 2021. Still, the Bank is continuing its reinvestment phase, keeping its overall holdings of Government of Canada bonds roughly constant. No rate hike has been announced yet.

50. ECB Statement from 16 December 2021.

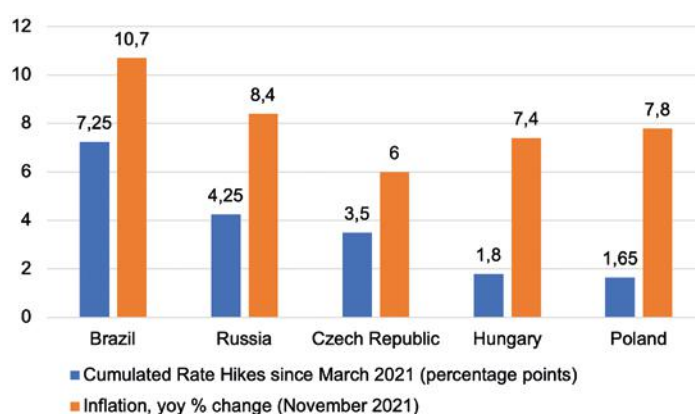
As for Emerging Market Economies, in Eastern and Central Europe, central banks have been reacting rapidly. In December 2021 **the Czech National Bank** lifted its main interest rate by 100 basis points to 3.75%, as the headline rate hitting a 13-year high of 6.0% in November. The move follows a 175-bps rate hike a month earlier — the highest hike since 1997 — bringing cumulative hikes to 3.5 percentage points since June. Over the same period, **the National Bank of Poland** raised the main rate by 50 basis points to 2.25% as annual inflation hit 7.8% in November, the highest level for two decades, and the fourth highest in the EU. Ahead of a 7.4% surge in inflation in November, **Hungary's central bank** raised its base rate by 30 basis points to 2.4% on December 2021, its highest level since May 2014, and the seventh hike since June.

Among other EMEs outside of Europe, **the Central Bank of Brazil** gradually increased its policy rate, from 2.75% to 9.25% between March and December 2021. The Bank considers “appropriate to advance the process of monetary tightening significantly into the restrictive territory”, while inflation has been running above 5% on annual basis since February, and above 10% since October 2021. In the meantime, **the Bank of Russia** also gradually increased its key rates from 4.25% in March 2021 to 8.5% in December 2021. It has “opened the prospect of a further key rate increase at the upcoming meetings”, as the inflation rate has been exceeding 5% since January 2021 and has kept rising towards 8.4% as of December 2021.

CHART 40.

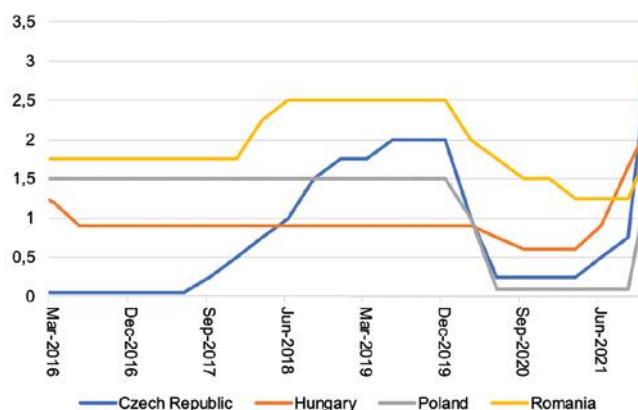
*CHART 40.a:
Cumulative Rate Increases and
Inflation in Selected EMEs*

Source: BIS



*CHART 40.b:
Nominal Short-term Key Interest
Rates of Selected Eastern and
Central European Economies*

Source: BIS



4.2.2 Monetary policies and monetary and financial conditions remain clearly expansionary

J.P. Rathbone and V. Romei noted⁵¹ 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”.

Real interest rates, which subtract inflation from central bank policy 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.

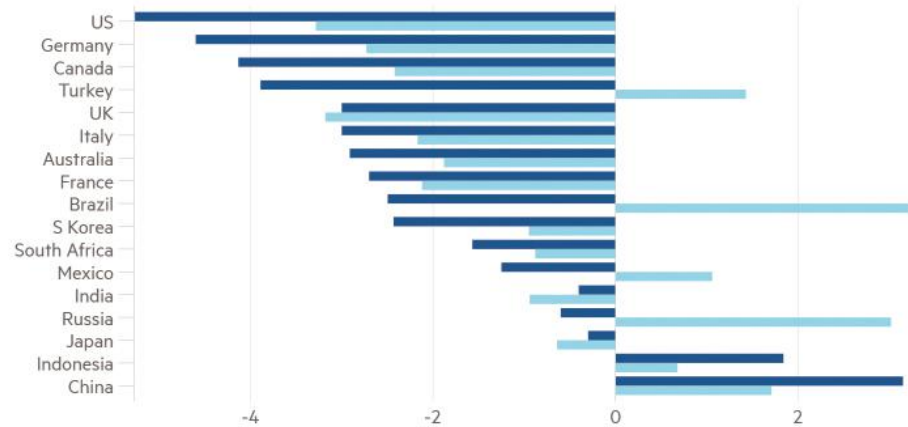
51. J.-P. Rathbone and V. Romei, “Inflation surge fuels negative real interest rates for leading economies”, the Financial Times, 9 November, 2021.

CHART 41.

**Real Policy Rates
in Selected AEs
and EMEs as of
December 2021,
percentage points**

Note: Nominal
policy rate minus
inflation rate

Source:
Financial Times



Real interest rates are deeply negative in developed economies and keep financing conditions very accommodative. K-M Yi and J. Zhang⁵² 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 Germany, 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.

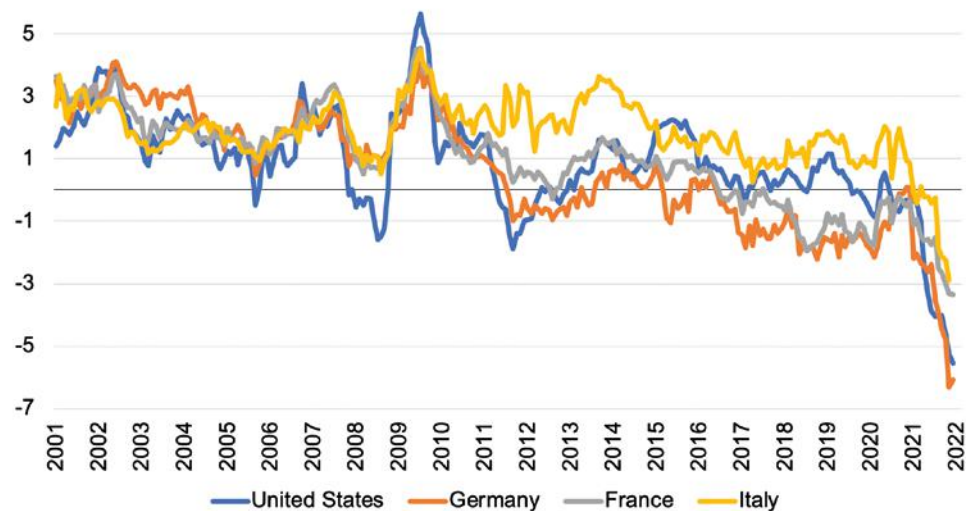
Negative interest rates are a source of financial instability, of misallocation of capital and less growth. In its Financial stability review (2021), the ECB stated that these lasting highly favourable monetary conditions has also led to a build-up of longer-term risks. Rising inflation and falling real 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.

“A correction in markets could be triggered by a weaker than expected economic recovery, spillovers from adverse developments in emerging market economies, a re-intensification of stress in the non-financial corporate sector or abrupt adjustments in market expectations regarding the prospective path of monetary policy normalisation.”

CHART 42.

**Real 10-year
Government
Yields of Selected
Advanced
Economies,
percentage points**

Source: OECD



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

CONCLUSION

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

Meanwhile 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: capital is then misallocated and growth impaired.

Can money creation indefinitely outpace the pace of economic growth? Can we ignore the financial vulnerabilities created by zero interest rates, the inexorable rise in global debt and the “search for yield” when productive investment has performed poorly over the past 15 years? Does the resumption of activity in Europe require the extremely accommodative stance of monetary policy? Can we stop inflation in Europe with increasingly negative real interest rates and continued QE programmes? Is the priority mission of central banks to protect States from fiscal difficulties by financing their deficits rather than to protect the purchasing power of citizens by fighting inflation, even if it means risking a social crisis to avoid a financial crisis?

The continuation of very low interest rates in the euro area would intensify already negative consequences for financial stability, growth and employment. 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 enhances incentives to borrow more and increase financial leverage, disincentives governments to undertake structural reforms since borrowing “no longer costs anything”. Productive investment has declined despite rock-bottom interest rates over the past two decades. 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 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. Did they help reduce societal inequalities? In fact, the opposite is true; they tend to make societal disequilibria worse because the beneficiaries have been those who have the income and capital to profit from inflated financial and asset markets. Not poor people.

Thinking that monetary creation can notably solve the problems arising from excessive debt is an illusion. Yet this is what has been too often tried by pursuing lax fiscal, monetary and political policies that will inevitably pose systemic risks to financial stability and therefore to future growth. Actually, the huge monetary and fiscal stances of the last decades have not led to investment or higher growth. In other words, supply-side obstacles cannot be resolved by throwing conjunctural money at problems.

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-capital 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.

Policy makers need to rebuild safety margins. As stated by the BIS in its Annual Economic Report (June 2021), “an economy that operates with thin safety margins is vulnerable to both unexpected events and future recessions which inevitably come. These margins have been narrowing over time. Rebuilding them means re-normalising policy”.

Inflation has risen sharply in recent months and could be more persistent than thought which would endanger the economic rebound: indeed, inflation is lowering notably real revenues and the earnings of companies with negative consequences not only for consumption, but also for investment.

Easy money policies have become even more accommodative because of rising inflation, which has caused negative real rates to fall still further. It is rational to believe that wage-earners will react substantially to higher prices. Trade unions will insist on some form of compensation or indexation to adjust wages. In theory if inflation abates, price adjustments should disappear. But experience shows that it takes a long time to get rid of indexation, because it comes a habit and even a social right.

Central banks are behind the curve and need to move more quickly. In such a context, Federal Reserve Chairman Jerome Powell has announced an accelerated ending to the Fed's quantitative easing through massive government bond purchases. This delivers an urgent message worldwide. If central banks fail to act now, the economic rebound could be running into severe problems. Inflation will lower real revenues, prompting destabilising wage demands, from income-pressed workers.

The world should move gradually and cautiously towards monetary normalisation, in order to avoid a cliff effect. Central banks should pursue without compromise their primary objective of monetary stability, especially without taking governments' funding costs into consideration as well as the kind of addiction and dominance of markets that is hard to give up. Indeed, markets are regularly challenging central banks with instability and the threat of correction as an — even modest — tightening in monetary conditions, thus acting as inhibitors⁵³.

As W. White stated⁵⁴, “until now, central banks have been lured into a ‘debt trap’ where they refrain from tightening, to avoid triggering the crisis that they wish to avoid, but that restraint only makes the underlying problems worse”.

Normally, central banks policies should tighten when inflation threatens, and overheating is apparent. Instead, we see the opposite: a significant de facto loosening. The climbing of inflation from 1% to 5% in Europe with still no significant upward adjustment in interest rates results in a huge further monetary stimulus. Responding this with assurances that price pressures are ‘transient’ is not sufficient.

Waiting too long will not make life easier: neither for central banks nor for the economy. Indeed, the risk is that hesitation could force central banks to tighten credit far more abruptly later on, causing more pain than if they acted in timely fashion. Preparing for European interest rates to return to more normal levels would not only be a signal of central bank independence from both states and markets, but also be the first step to a more productive post-pandemic period of higher growth and productive investment.

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 rates, nor QE.

Completed on 3 February, 2022

53. I. Job-Bazille, “Central banks under influence”, Credit Agricole, 25 November, 2021.

54. W. White, Working paper N°151, Institute for New Economic Thinking, March 2021.

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