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Managing the Risks of Negative Interest Rates

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Managing the Risks of Negative Interest Rates

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Abstract

The acceleration in the issuance of government debt since the global financial crisis has led central bankers to engineer interest rates that are historically low in nominal terms and consistently lower than inflation rates. Although the ostensible aim of this policy is to stimulate economic growth, maintaining negative real rates also goes a long way so that government debt is manageable and will decline in the long run, relative to the size of the economy.

Financial institutions hold the great majority of government debt, and their books of retail and corporate loans are expanding briskly at a time when ultra-low interest rates make borrowing especially attractive. Rates paid on deposits are low, in advanced economies, even negative in the euro zone in nominal terms. That helps to offset the reduction in income that banks earn on their lending. Even so, the extreme and unique conditions resulting from persistent negative real interest rates mean that banks must take particular care to manage their interest-rate risk in the context of other risk types and the banks' profit-and-loss analysis.

1. The course of interest rates

There are three key measures to observe when considering the evolution of interest rates: 1. The Consumer Price Index (CPI), which reflects inflation in a given economy; 2. the average money-market rate, which reflects the interbank rate; and 3. the real money-market rate, which is the second figure minus the first.

As illustrated in **Figure 1**, since 2007, when the financial crisis began, nominal money-market rates, in Italy and the euro zone more broadly, have significantly deteriorated, turning negative in the last six years. The CPI has experienced more muted declines, punctuated by intermittent spikes, including during the last year. Until the financial crisis, money-market rates closely tracked the CPI. The decoupling since the crisis has left real money-market rates significantly negative. These negative real rates have made borrowing more appealing, but lenders are having to cope with thinner interest margins.

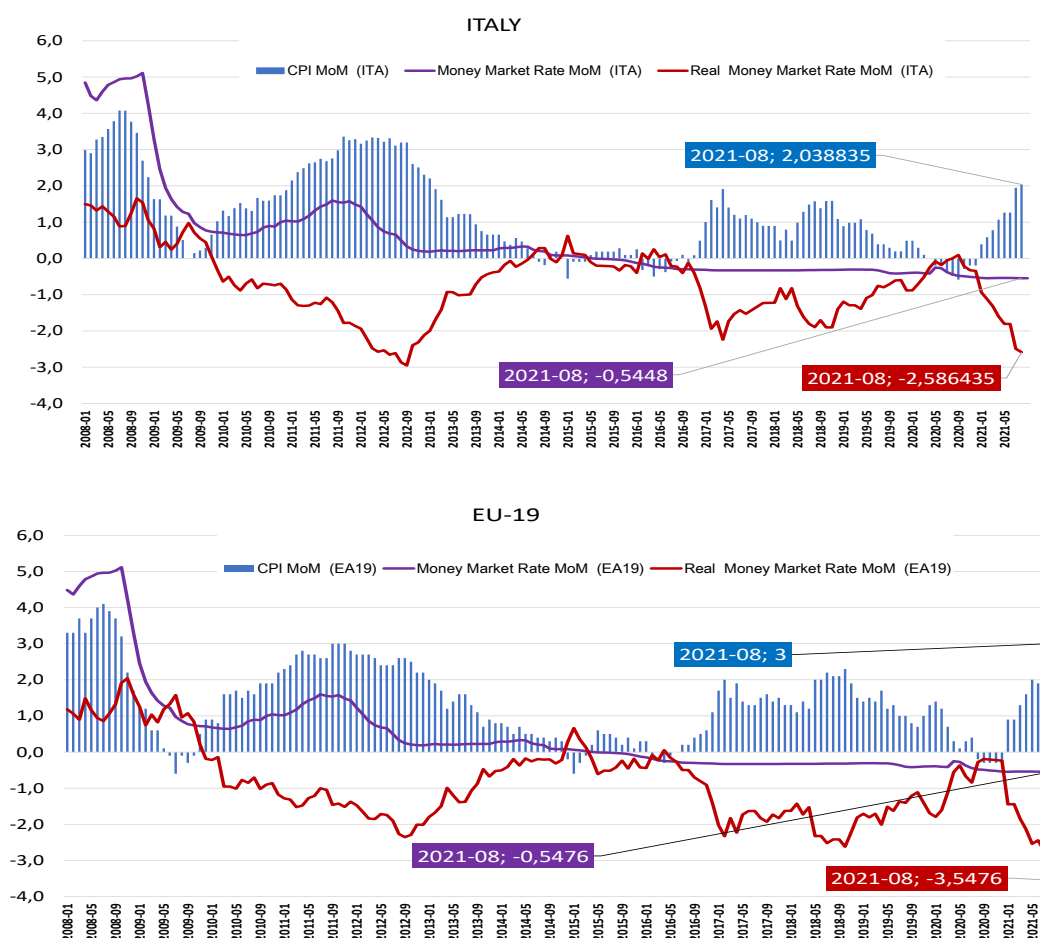


Figure 1: Consumer Price Index (CPI), nominal and real money-market rates in Italy and the euro zone

2. The ratios of government and corporate debt to GDP

Government and corporate debt as a share of gross domestic product has expanded since 2008, as illustrated in **Figure 2**, albeit to different degrees. The ratio of government debt to GDP exceeds 100% in advanced economies, and barely half that level in

developing economies. Banks and insurance companies hold a significant amount of negative- or low-positive-yielding government bonds issued in advanced economies. Although those bonds are of high quality and are highly liquid, they are not profitable at all.

Corporate debt in advanced economies has held fairly steady, just below 100% of GDP. Corporate debt issued in emerging economies has grown from 60% of GDP to almost 110%. During the last decade, financial institutions have been supplying credit to corporate customers in both local and global markets. European banks have lent several trillion Euros to borrowers in emerging markets, putting them at greater risk if financial market turmoil in countries such as Turkey, Brazil, India and South Africa intensifies.

For instance, UniCredit, Italy's biggest bank, and other lenders are highly exposed to Turkish banks, whose credit quality is in question, heightening the risk the lenders have taken on. Businesses operating in developing countries generally may face challenges fulfilling credit obligations due to foreign-exchange risk and economic risk resulting from crises such as the Covid-19 pandemic. The fact that businesses in developing economies have invested much of the money they have borrowed in mergers and acquisitions instead of research and development also adds concentration risk and systemic risk.

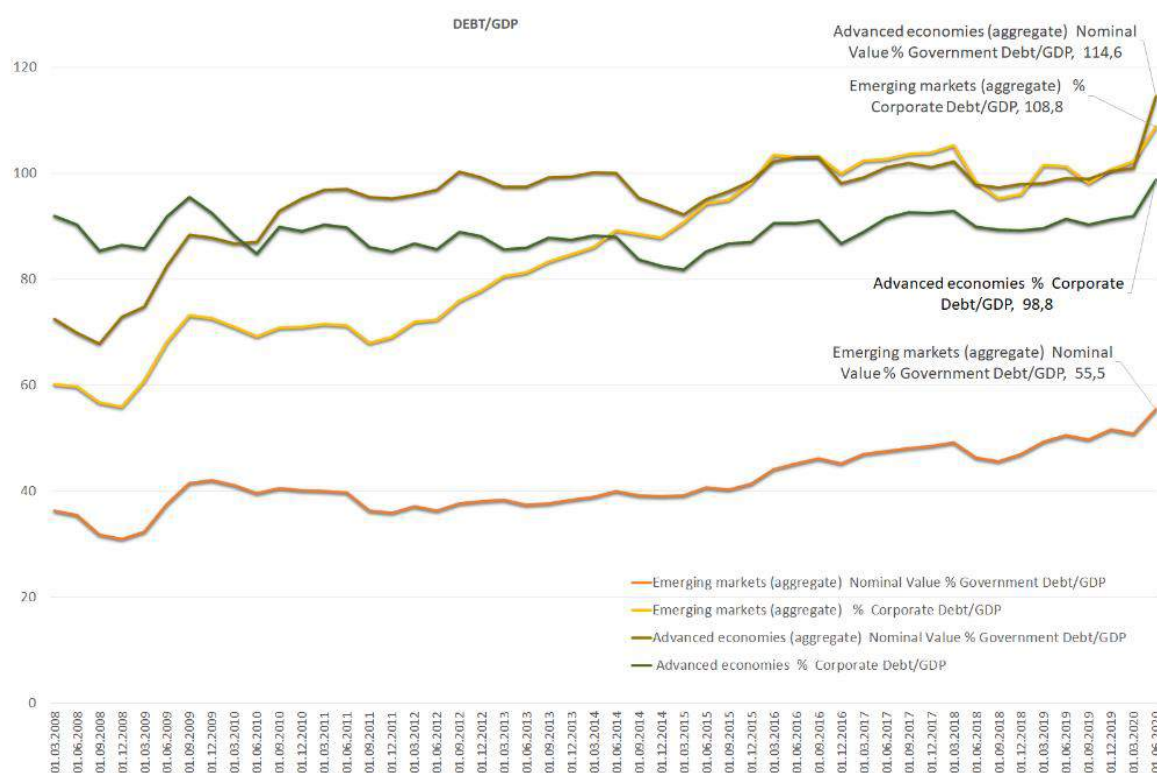


Figure 2: Government and corporate debt-to-GDP ratios in advanced and emerging economies

3. Household loans

Loan interest rates have fallen substantially in the last decade. As shown in **Figure 3**, a typical medium- to long-term mortgage in Italy and the euro zone in general carried a rate of 4% to 6% between 2001 and 2008. Rates today average about 1.3%.

Such dramatically lower rates have brought in significantly more borrowers, raising banks' exposure to retail mortgage portfolios. **Figure 4** shows that euro zone banks' exposure to home loans has soared from about 1.8 trillion euros in 2001 to almost 3.5 trillion euros in 2007 and close to 5 trillion euros today.

The same graph illustrates that home loans consistently have accounted for a majority of banks' credit exposure – 78% at the latest reading – creating concentration risk from mortgages and therefore the housing market.

The availability of low-rate loans, moreover, might be expected to stimulate demand for housing, raising prices, increasing loan demand further, and stretching lenders' exposure even more.

Indeed, after remaining stable between 2009 and 2015, home prices across Europe rose more than 20% over the next five years, as shown in **Figure 5**, although prices in Italy have been flat.

While banks might benefit from the increase in mortgage loan volume and the credit spreads of those portfolios, it is not enough to compensate for the steep decline in interest income.

More important, any spike in interest rates may increase the probability of default on some of those loans.

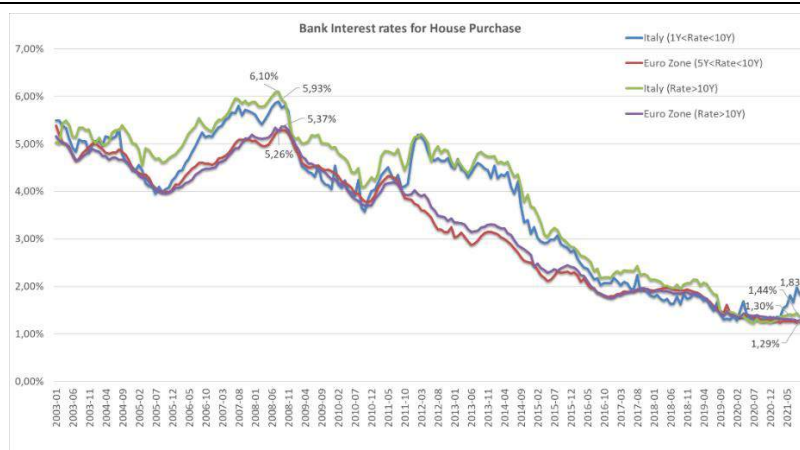


Figure 3: Bank interest rates for home purchase loans in Italy and the euro zone (Source: euro-area-statistics.org)

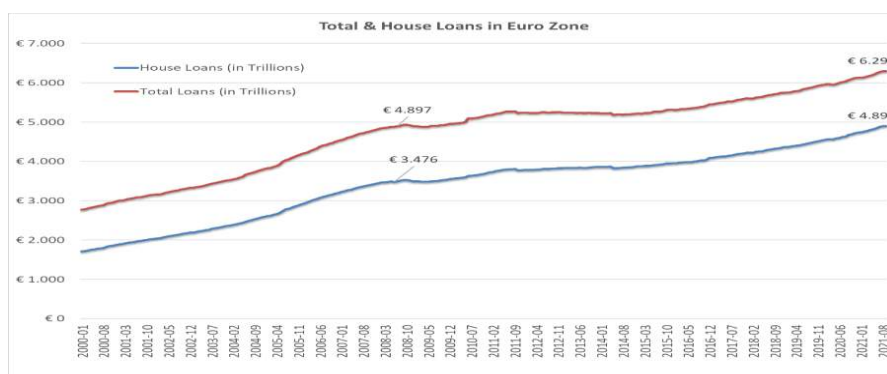


Figure 4: Total value of mortgages and all loans in the euro zone (Source: euro-area-statistics.org)

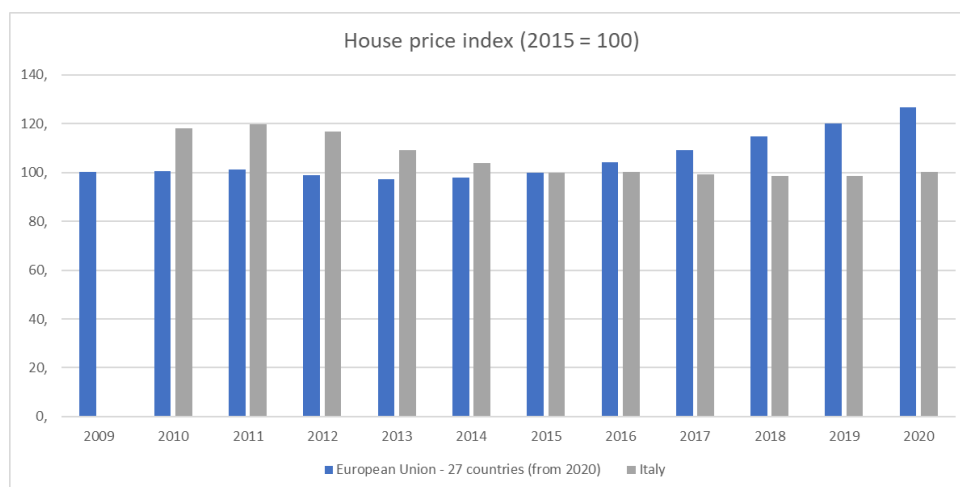


Figure 5: EU House Price Index (Source: Eurostat)

4. Trillions in exposure to household deposits

Interest rates on household deposits have been negligible, reaching almost 0% in the last few years, and real returns have been negative, giving depositors substantial inflation-adjusted losses, making also one of the least attractive investments.

Even so, the volume of deposits has grown at an accelerating pace, although some of the increase lately must be a byproduct of the massive government payments issued in many jurisdictions to blunt the impact of economic shutdowns related to the pandemic.

As shown in **Figure 6**, since 2007, household deposit accounts have risen from 5 trillion euros to 8.6 trillion euros in the euro zone and \$5.9 trillion to \$12.4 trillion in the United States.

Given the extremely low money-market rates illustrated in Figure 1, the banks' depositors must have substantial losses on the household deposit accounts, making them one of the least attractive investments

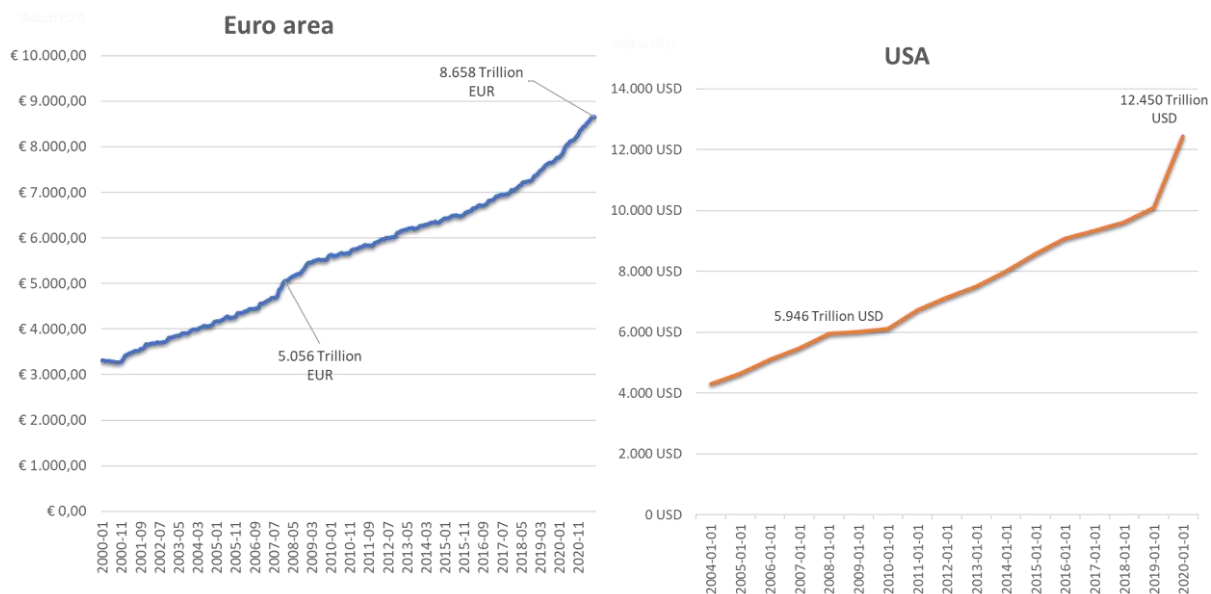


Figure 6: Household deposits in the euro zone and the United States (Source: euro-area-statistics.org)

5. Risk management in an ultra-low-rate world

Credit institutions and financial markets face almost unprecedented challenges from low and negative interest rates. To handle them effectively, banks should define scenarios to identify and measure their impact should the present rate environment persist, and if rates were to rise significantly, either steadily or in spikes, with real rates turning positive. A holistic approach should be taken, in which interest-rate risk is assessed not just on its own but in the context of correlated risks, such as credit, counterparty and behavioral. All strategies involving current and new business must consider interest-rate scenarios that are likely to affect the profit-and-loss statement. **Figure 7** illustrates various developments and circumstances that financial institutions might consider in analyzing interest rates.

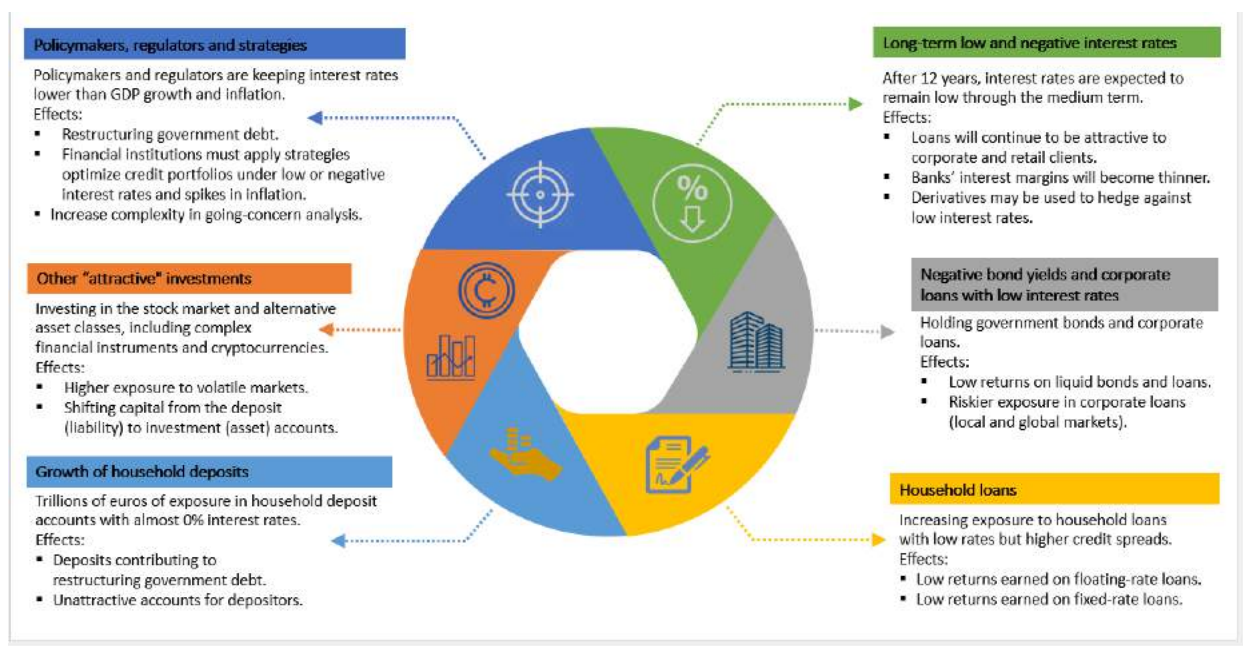


Figure 7: Elements for analyzing risk in a low-interest-rate environment

Here are some specific hypothetical scenarios that highlight the many complexities – and risks – that financial institutions must confront while operating amid persistent, extremely low interest rates:

Scenario A: Real interest rates are kept low to restructure government, corporate and retail debts

Policymakers and regulators in advanced economies maintain interest rates lower than the rates of GDP growth and inflation. As a result, financial institutions holding government and corporate bonds, retail loans, and household deposit accounts contribute to restructuring government and other long-term debt.

Banks increase exposures in liquid, highly rated bonds and loan portfolios, but given the negative or negligible nominal interest rates, they produce negative income. Moreover, stress arises from a reduction in deposits due to withdrawals and the comparative appeal of the stock market or other alternative asset classes, including complex financial instruments, peer-to-peer loans or cryptocurrencies.

Scenario B: Inflation rises, as do interest rates on deposits and retail and corporate loans, but rates on government debt remain low or negative

Consumer prices are rising, but not due to economic growth, and interest rates on government and corporate debt remain low to negative. Banks may define scenarios stressing macroeconomic factors such as inflation rates and stock, house and commodity prices. The increase in house prices reduces the net exposures of mortgage portfolios. There is pressure to raise interest rates on deposits to limit withdrawals. Banks may stress the behavioral risk related to depositor withdrawals due to low interest rates, but banks should also apply strategies to develop new products to win back these depositors. Similarly, interest rates on retail and corporate loans may increase to balance the rise in deposit rates, but higher loan rates may increase the default probability of existing floating-rate loans, and fixed-rate loans may result in high losses. Banks should adjust their strategy on new loans based on higher interest rates, resulting in higher interest income.

Scenario C: Interest rates spike

In this scenario, spikes send interest rates from negative to positive and back again. This may occur due to jumps in inflation, as well as decisions by policymakers. Such volatility could increase behavioral risk in asset and liability accounts. Higher rates may lead to rising loan prepayments and greater demand for fixed-interest-rate loans. Declining interest rates may cause the opposite behavior. Banks must apply hedging strategies against interest-rate volatility. Spikes in rates indicate economic instability and low economic growth; banks should adjust the development of new portfolios accordingly.

6. Managing the present and preparing for the future

In conclusion, low and negative interest rates have become the new, and more challenging, normal in the last decade. Movements in interest rates are driven by macroeconomic factors, and they are highly correlated with behavioral, market and credit risks. The exceptional rate environment, which of course could change at any moment, is forcing banks to reassess their business strategies and the composition of their asset and liability portfolios, or at least it should. Banks must evaluate the impact of negative interest rates, and the prospect of rising or volatile rates, as well as the interplay among various sources of risk, in developing stress scenarios and in their strategic decision making.