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EMEA MACRO INSIGHTS

WRITTEN BY



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ECB Monetary Shifts: Tracking R-Star

After decades of decreasing trend, both short and long-term real interest rates have increased significantly from 2022 onwards. Examining the unidirectional causality from low real interest rates to saving and investment yields a counterintuitive result: the prolonged low-interest rate environment simultaneously depressed investment whilst boosting private sector saving across both the United States and the euro area. This apparent paradox may reflect rigidities in required returns on capital and deleveraging pressures — weighing on investment — alongside precautionary saving motives, including fears of higher unemployment and the partial substitution of lost fixed-income returns, particularly in the euro area.

Crucially, this challenges the standard monetary policy transmission mechanism. Rather than generating the positive correlation with saving and negative correlation with investment posited in the academic literature, the evidence suggests that, under certain conditions, monetary easing may paradoxically raise saving whilst depressing investment.

The sharp rebound in real interest rates since 2022 has rekindled debate among academics and policymakers over the nature of R-star — the inflation-adjusted rate consistent with full resource utilisation and inflation at target. Our estimates find that R-star in the euro area is at 2.2% today, suggesting that the current ECB monetary policy stance is moderately restrictive.

Looking ahead, ECB liquidity is likely to sustain short- and long-term real interest rates below R-star in the near term, assuming that rising sovereign debt concerns, are already fully embodied in current market prices. In addition, whilst anticipated productivity gains from AI and innovation investment may exert upward pressure on R-star over the medium term, this impulse is likely to be materially tempered by the euro area's adverse demographic trajectory.

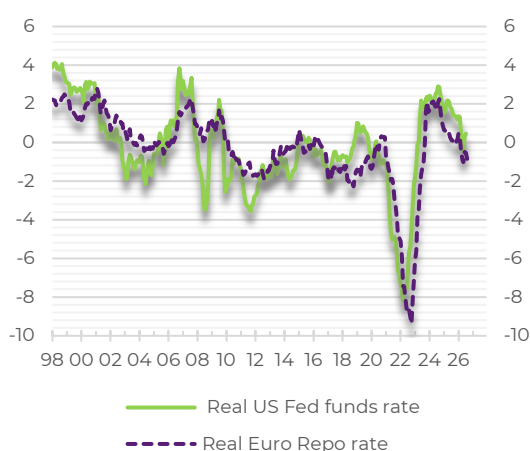
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From secular slides to shocks: The shifting landscape of real interest rates

Low for long? Not really

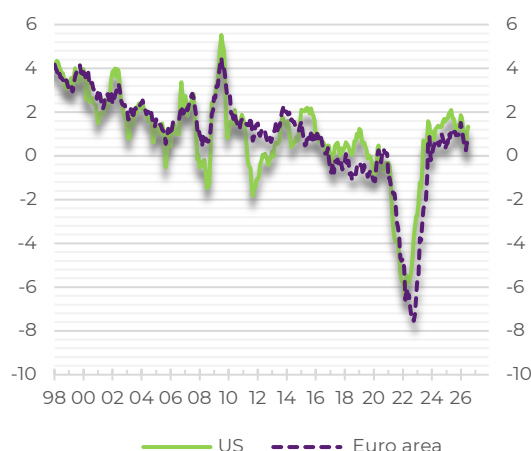
Over several decades, real interest rates — both short- and long-term — declined gradually and persistently across the globe. Setting aside financial crisis episodes, the fall was particularly pronounced between the late 1990s and 2010. This co-movement was evident across both the United States (US) and the euro area, spanning short-term (**Chart 1**) and long-term (**Chart 2**) maturities alike.

Chart 1: Real Fed fund and euro repo interest rates (%)



Source: Refinitiv LSEG, EC, IMF, Natixis CIB Research

Chart 2: Real 10-year US and euro area interest rates (%)



Source: Refinitiv LSEG, EC, IMF, Natixis CIB Research

Co-movement across maturities is unsurprising. It reflects the dominance of structural forces over transient demand and supply shocks over the long run. A broad body of cross-country research further confirms that real interest rate dynamics are a global phenomenon.¹ This thus suggests that real interest rates are overly driven by long-term global forces instead of country-specific cyclical factors.²

Prior to examining the structural drivers behind the decline and subsequent rise in real interest rates, it is worth noting that these forces have equally shaped the trajectory of both saving and investment.

¹ See Holston, K., Laubach, T. and Williams, J.C. (2016). "Measuring the Natural Rate of Interest: International Trends and Determinants." Federal Reserve Bank of San Francisco Working Paper 2016-11, December.

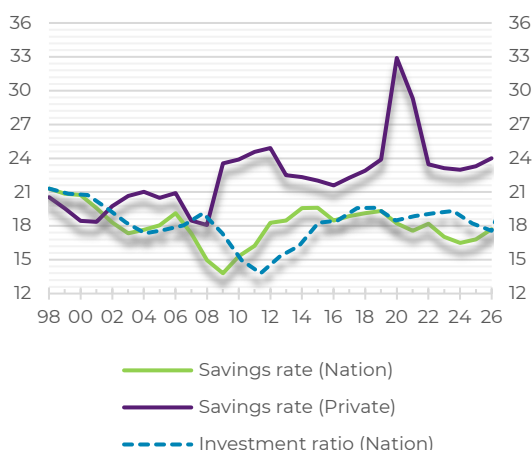
² For example, despite the U.S. economy fully recovered from the recession following the 2008 financial crisis, there were no signs of real interest rates rebounding in the near to medium term. See discussion in Williams, J.C. (2017), "Three Questions on R-star", Federal Reserve Bank of San Francisco Economic Letter, No. 2017-05.

One compelling explanation for the global — rather than country-specific — pattern of real interest rates lies in the balance between global saving and investment. Within a standard macroeconomic framework, equilibrium real interest rates are determined by structural shifts in the saving-investment balance.³ A rise in desired investment, holding desired savings constant, exerts upward pressure on real interest rates. With capital flowing freely across borders, real interest rates are determined at the global level — consistent with the strong co-movement observed across major advanced economies.⁴ In the long run, absent financial market frictions, a single equilibrium interest rate clears the global capital market.⁵

Twin rise in saving and investment alongside higher real rates

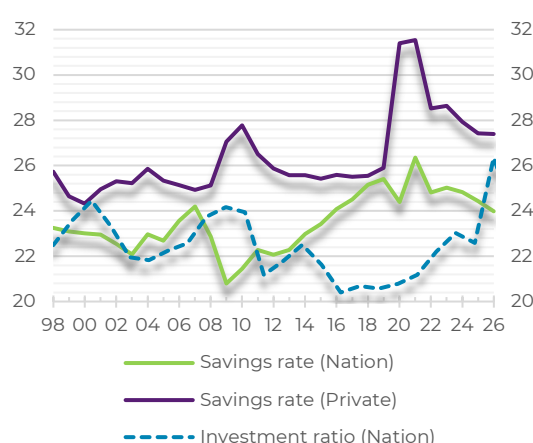
In theory, we expect a positive (negative) correlation between the change in real interest rates and saving (investment). After the subprime financial crisis and until 2019, private saving increased more than investment, again both in the US (**Chart 3**) and the euro area (**Chart 4**), whereas real interest rates were broadly flat in both regions.⁶ That said, a different pattern in investment can be underscored between the US and the euro area. In fact, investment in the US rose by 2 percentage points between 2010 and 2014, returning to the high level of the late 1990s. By contrast, it decreased in the euro area over that period, recovering only recently.

Chart 3: US saving and investment ratio of the nation (% of GDP)



Source: Refinitiv LSEG, EC, IMF, Natixis CIB Research

Chart 4: Euro area saving and investment ratio of the nation (% of GDP)



Source: Refinitiv LSEG, EC, IMF, Natixis CIB Research

Although the behaviour of saving is puzzling in both regions, the evolution of investment is broadly in line with theory and until 2012 at least. In the former case, flat – even slightly decreasing – real interest rates should have depressed saving, the opposite occurred in both the US and the euro area. However, this result coincides with decreasing revenues of interest received mostly by euro area households (**Chart 5**). At the same time, both US and euro area households reimbursed part of their debt, exerting downward pressures on their savings (**Chart 6**)

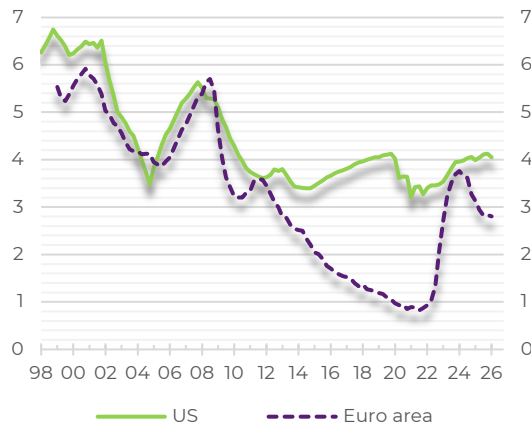
³ See Obstfeld, M. (2023), "Natural and Neutral Real Interest Rates: Past and Future", NBER Working Paper, No 31949, December.

⁴ See Del Negro, M., Giannone, D., Giannoni, M.P. and Tambalotti, A. (2019), "Global trends in interest rates", Journal of International Economics, Vol. 118, pp. 248–262.

⁵ See Cesa-Bianchi, A., Harrison, R. and Sajedi, R. (2022), "Decomposing the drivers of Global R", Staff Working Paper, No 990, Bank of England, July.

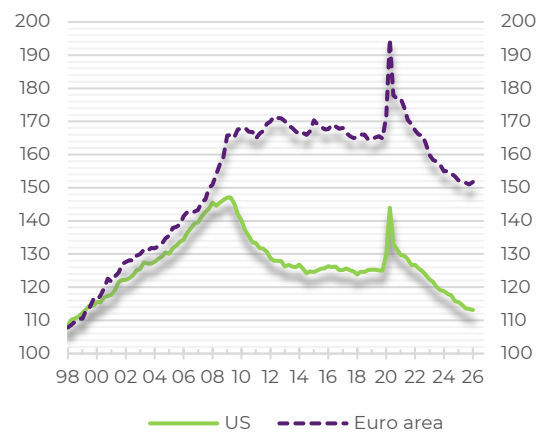
⁶ This observation does not hold true for the nation saving rate, which includes the public sector. Given the rising public deficit in the aftermath of the financial crisis, this depressed total savings. This is particularly striking in the euro area where the "whatever it costs" policies (like in France) were costly, boosting the public debt level substantially in all euro area countries.

Chart 5: Interests perceived by households in % of disposable income



Source: Refinitiv LSEG, US Federal Reserve, BEA, ECB, Eurostat, Natixis CIB Research

Chart 6: Debt level of households (% of nominal GDP)

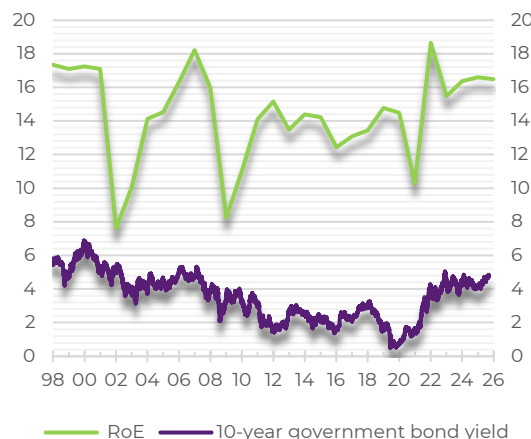


Source: Refinitiv LSEG, US Federal Reserve, BEA, ECB, Eurostat, Natixis CIB Research

Whilst the interests received by US households broadly stabilised from 2012 onwards, its euro area counterpart continued to decline, reaching a historic low of 1% of disposable income in 2022. This divergence reflects, above all, differing household saving behaviours across the two regions. US households allocate savings more broadly across a range of financial assets, whereas euro area households remain heavily concentrated in fixed-income instruments — a positioning that proved particularly damaging during the negative interest rate era.

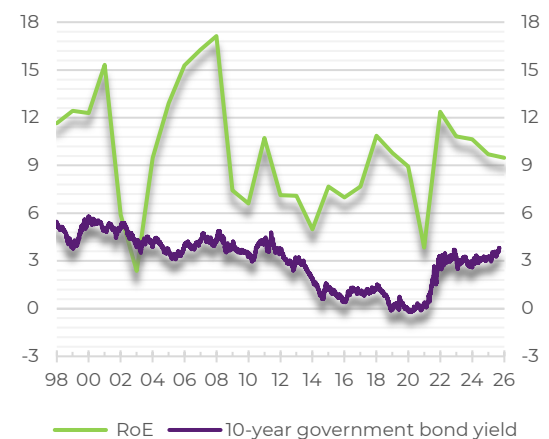
By contrast, subdued investment across both regions coincided with a period of persistently high — and latterly rising — required returns on equity, which likely weighed on capital expenditure (**Charts 7 and 8**).

Chart 7: Return of equity (RoE) and 10-year government bond yields in the US (%)



Source: Refinitiv LSEG, Natixis CIB Research

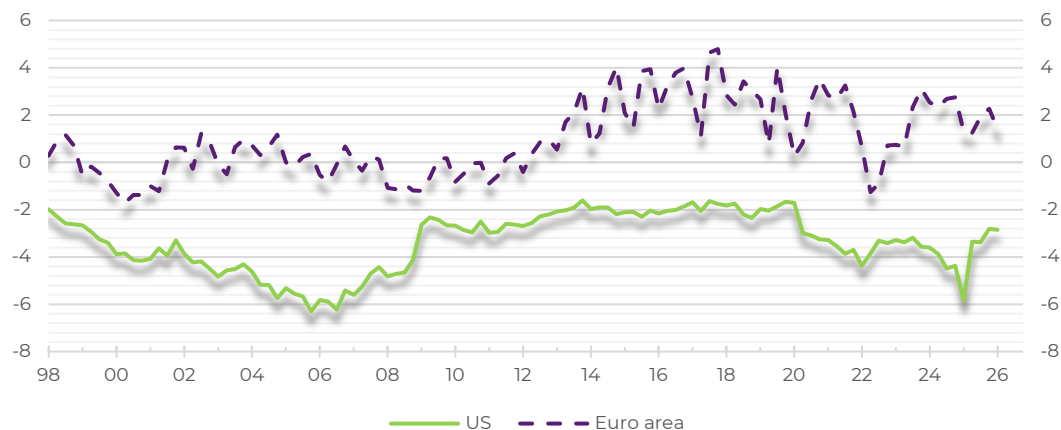
Chart 8: Return of equity (RoE) and 10-year government bond yields in the euro area (%)



Source: Refinitiv LSEG, Natixis CIB Research

As reported below, the resulting outcome of a differentiated pattern of saving and investment is an improvement of the current account balance both in the US and the euro area from 2006 to 2022, corresponding to a period of loose monetary policy stance (**Chart 9**).

Chart 9: Current account balance (in % of GDP)



Source: Refinitiv LSEG, BEA, ECB, Eurostat, Natixis CIB Research

In sum, examining the unidirectional causality from low real interest rates to saving and investment yields a counterintuitive result: the prolonged low interest rate environment simultaneously depressed investment whilst boosting private sector saving across both the United States and the euro area. This apparent paradox may reflect rigidities in required returns on capital and deleveraging pressures — weighing on investment — alongside precautionary saving motives, including fears of higher unemployment and the partial substitution of lost fixed-income returns, particularly in the euro area. Crucially, this challenges the standard monetary policy transmission mechanism. Rather than generating the positive correlation with saving and negative correlation with investment posited in the academic literature, the evidence suggests that, under certain conditions, monetary easing may paradoxically raise saving whilst depressing investment.

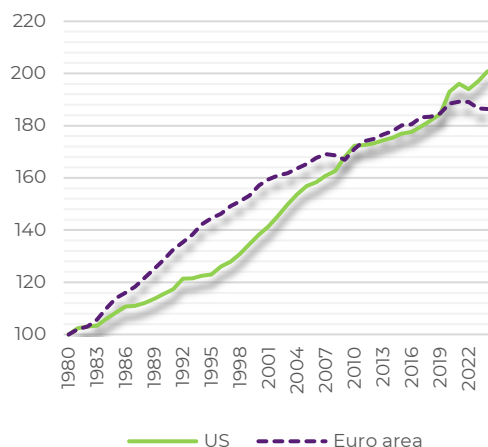
Tracking the real interest rate against its natural counterpart

Global downward drift: Real interest rates and their macro drivers

The global — rather than country-specific — nature of real interest rate dynamics implies that all economies share common structural drivers. Productivity is widely recognised as a key long-term determinant of the return on capital and, by extension, of interest rates. Bergeaud et al. (2019), however, identify a circular relationship: a decline in long-term real interest rates — driven, inter alia, by demographic ageing — may itself depress productivity growth. These authors attribute this to the capacity of persistently low interest rates to sustain otherwise unviable firms and projects, thereby misallocating capital and suppressing aggregate productivity. This channel extends beyond traditional, demand-driven secular stagnation.⁷ It suggests that the post-1990s decline in real interest rates — itself anchored in demographic dependency ratios and low inflation volatility — accounts for the bulk of the subsequent slowdown in total factor productivity.⁸

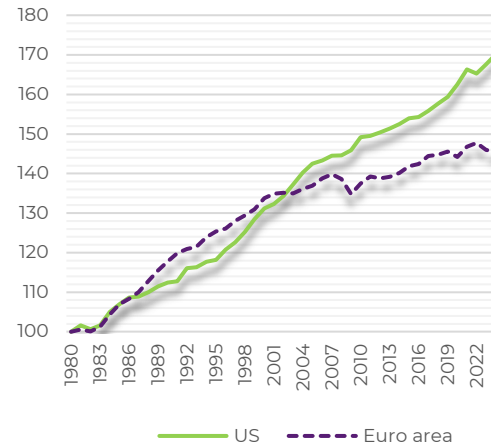
Following the method in Bergeaud et al. (2016), we plot below the trend for both the labour and total factor productivity in the US and the euro area. Although the level of labour productivity in the euro area converges towards the US (and stood even higher than in the US from 1980 to 2004), a gap in the TFP level has widened since late 1990s between the two regions (**Charts 10 and 11**).⁹

Chart 10: Level of labour productivity (1980=100)



Source: Bergeaud et al. (2016)

Chart 11: Level of TFP (1980=100)



Source: Bergeaud et al. (2016)

⁷ See in particular Summers, L.H. (2014), "US economic prospects: Secular stagnation, hysteresis, and the zero lower bound", Business Economics, 2014, Vol.49 (2), pp.65–73.

⁸ See Bergeaud, A., Cetté, G. and Lecat, R. (2019), « The Circular Relationship Between Productivity Growth and Real Interest Rates », Bank of France Working Paper, No.734.

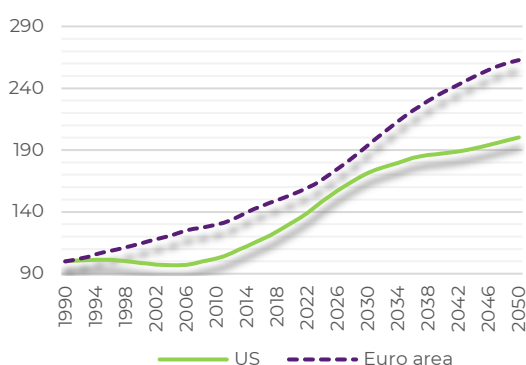
⁹ See Bergeaud, A., Cetté, G., and Lecat, R. (2016), "Productivity trends in advanced countries between 1890 and 2012," Review of Income and Wealth, Vol. 62 (3), pp. 420–444.

Several factors drive the divergent trajectories of labour productivity and TFP, chief among which are education and demographic ageing. Whilst the standard neoclassical framework¹⁰ stresses that a more educated workforce produces more output per hour worked, independently of technological change, Vandenbussche et al. (2006)¹¹ demonstrate that the composition of education is critical: higher education primarily boosts TFP via innovation, whereas secondary education drives labour productivity gains by facilitating technology adoption. The productivity impact of demographic ageing remains more nuanced. Whilst older workers bring accumulated experience and deeper tacit knowledge — potentially offsetting physical and cognitive decline¹² — they may also prove less adaptable to technological change and more vulnerable to displacement by automation.¹³

Note that demographic ageing has been more pronounced in the euro area than in the United States over this period and the divergence is projected to widen further through 2025. The old-age dependency ratio — defined as the ratio of those aged 65 and above to those aged 20–64 — is forecast by the United Nations (UN) to nearly triple in the euro area between 1990 and 2050, against a doubling in the United States (**Chart 12**). This reflects a projected 12% contraction in the euro area's working-age population over the same period, compared with a 41% expansion in the US — notwithstanding faster growth in the over-65 cohort in the US. This could explain the divergence in productivity between the US and the euro area in line with the findings of Feyer (2007).¹⁴

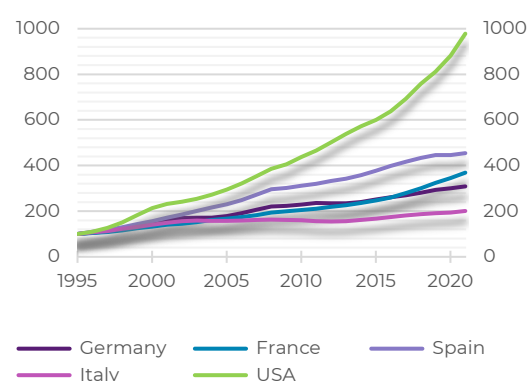
Narrowing the focus to the largest euro area economies versus the United States from the mid-1990s onwards, the widening of the labour productivity and TFP gaps directly coincides with the IT investment boom¹⁵ in the US (**Chart 13**) as reported by Bontadini et al. (2023).¹⁶

Chart 12: Evolution of the dependency ratio and its projections (1990=100)



Source: UNO, Natixis CIB Research

Chart 13: Real IT related capital stock (1995=100)



Source: Euklems, Natixis CIB Research

¹⁰ See Mankiw, N.G., Romer, D. and Weil, D.N. (1992), "A Contribution to the Empirics of Economic Growth", The Quarterly Journal of Economics, May, pp. 407-437.

¹¹ See Vandenbussche, J., Aghion, P. and Meghir C. (2006), "Growth, distance to frontier and composition of human capital", Journal of Economic Growth, Vol. 11, pp. 97-127.

¹² See Skirbekk, V. (2004), "Age and Individual Productivity: A Literature Survey", Vienna Yearbook of Population Research, Vol. 2, pp. 133-153.

¹³ See Acemoglu, D. and Restrepo, P. (2017), "Robots and Jobs: Evidence from US Labor Markets", NBER Working Paper, No. 23285.

¹⁴ See Feyrer, J. (2007), "Demographics and Productivity" The Review of Economics and Statistics, Vol. 89 (1), pp. 100-109.

¹⁵ Note that IT-related capital stock in Chart 13 is the sum of computing equipment and computer software & databases for all NACE industries. See Schivardi, F. and Schmitz, T. (2020), "The IT Revolution and Southern Europe's Two Lost Decades", Journal of the European Economic Association, Vol. 18 (5), pp. 2441-2486.

¹⁶ See Bontadini, F., Corrado, C., Haskel, J., Iommi, M. and Jona-Lasinio, C. (2023), "EUKLEMS & INTANProd: industry productivity accounts with intangibles - Sources of growth and productivity trends: methods and main measurement challenges", Procurement procedure ECFIN/2020/O.P./0001 and Luiss Lab of European Economics.

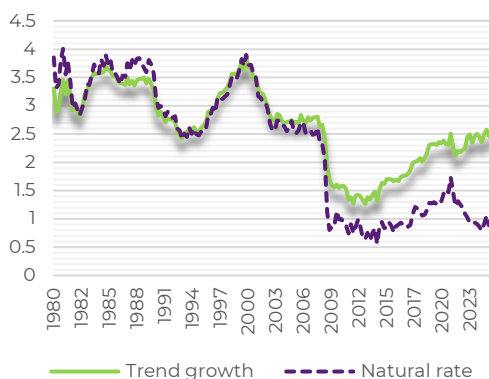
Real interest rates and R-star: A synchronized path

As Schnabel (2024) notes, the sharp rebound in real interest rates since 2022 has rekindled debate among academics and policymakers over the nature of R-star — the inflation-adjusted rate consistent with full resource utilisation and inflation at target.¹⁷ The central question is whether R-star provides a reliable benchmark for monetary policy guidance: by definition, it represents the real rate that policymakers should seek to achieve once transitory shocks have dissipated and macroeconomic objectives have been met.¹⁸

Following Lansing (2016)¹⁹, standard economic models anchor R-star to two fundamental determinants: household patience — governing the trade-off between current consumption and saving — and expected potential GDP growth, which shapes the expected return on capital.²⁰ Neither determinant, however, is directly observable. R-star must therefore be inferred from measurable macroeconomic variables, including nominal interest rates, inflation, and real GDP growth. Consistent with the global pattern documented for real interest rates, R-star equally exhibits cross-country commonality rather than country-specific variation.²¹

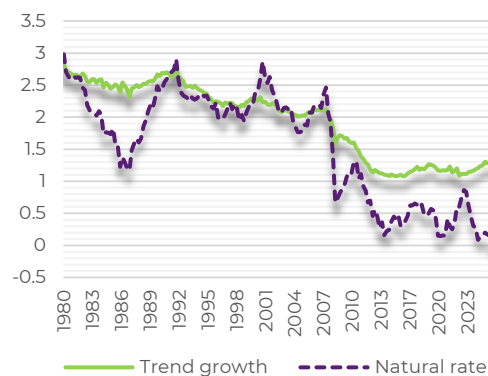
The updated estimates of the model described in Holston et al. (2023) emphasise the positive correlation between the trend growth and the natural rate, namely R-star in both the US and the euro area.²² Whilst both variables co-moved closely prior to the Global Financial Crisis (GFC), their relationship has weakened materially since.²³ This decoupling is particularly pronounced in the euro area (Charts 14 and 15), and stands in sharp contrast to the broad-based rebound in real interest rates — across both short- and long-term maturities — observed since 2022 (Charts 1 and 2).

Chart 14: Natural rate (R-star) and trend growth in the US (%)



Source: Holston et al. (2023)

Chart 15: Natural rate (R-star) and trend growth in the euro area (%)



Source: Holston et al. (2023)

¹⁷ See Schnabel, I. (2024), "R(ising) star?", Speech at the ECB and its Watchers XXIV Conference, Geopolitics and Structural: March 20.

¹⁸ See Hamilton, J., Harris, E., Hatzius, J. and West, K. (2015), "The Equilibrium Real Funds Rate: Past, Present and Future." Brookings, Hutchins Center Working Paper.

¹⁹ Op. cit.

²⁰ Lansing, K.J. (2016), "Projecting the Long-Run Natural Rate of Interest", Federal Reserve Bank of San Francisco Economic Letter, No. 2016-25.

²¹ See Holston, K., T. Laubach and Williams, J.C. (2017), "Measuring the natural rate of interest: International trends and determinants", Journal of International Economics, Vol. 108, pp. 59–75.

²² See Holston, K., Laubach, T. and Williams, J.C. (2023), "Measuring the Natural Rate of Interest after COVID-19," Federal Reserve Bank of New York Staff Reports, No. 1063, June. Estimates prior to 2022:Q4 come from the model described in "Measuring the Natural rate of Interest: International Trends and Determinants," by Holston (2017), op. cit..

²³ See also our previous work for the US, Asia and LatAm countries: Natixis CIB Research (2024), "The neutral rate: a (moving) lodestar for central banks and markets", Cross-Expertise Report.

Drawing on the analytical framework set out in previous sections and the savings-investment hypothesis advanced by Schnabel (2024)²⁴, several observations merit emphasis. First, the rise in trend growth closely tracks total factor productivity (TFP) dynamics, likely reflecting the gradual diffusion of IT innovation across sectors from the early 2000s onwards. This bears directly on the current AI revolution: its ultimate impact on investment will hinge on how it reshapes task allocation and labour demand.²⁵ Where productivity gains accrue to existing capital, marginal costs decline and investment may soften. Conversely, where productivity gains can only be realised through new capital formation, investment rises accordingly — lifting the natural rate in turn.²⁶

At the same time, higher productivity does not automatically lead to higher R-star as recalled by Ambrosino et al. (2026).²⁷ For instance, it may increase desired precautionary savings by households (through expectations of higher unemployment), possibly outweighing the increase in desired investment, which would in turn decrease the natural rate.

A further plausible explanation for the divergence between R-star and its fundamental economic drivers lies in financial factors.

If the demand by international investors for safe assets – like government bonds – which has lowered their returns relative to more risky assets, this could lead to a decline in R-star.²⁸ Cross-referencing **Charts 1** and **2** with **Charts 5, 7, and 8** lends empirical support to this hypothesis. A surge in demand for risky assets — potentially accompanied by productivity gains from increased investment in new technologies — would likely exert upward pressure on R-star. Corroborating this view, model-based estimates of expected equity returns remained broadly stable throughout the period of declining R-star.²⁹

²⁴ Op. cit.

²⁵ See Acemoglu, D. (2025), “The simple macroeconomics of AI”, *Economic Policy*, Vol. 40 (121), pp. 13–58.

²⁶ See Ambrosino, L., Chan, J. and Tenreiro, S. (2026), “Productivity and Inflation Dynamics”, August 1, mimeo.

²⁷ Ibidem.

²⁸ Gourinchas, P.O. and Rey, H. (2016), “Real Interest Rates, Imbalances and the Curse of Regional Safe Asset Providers at the Zero Lower Bound”, NBER Working Paper Series, No. 22618.

²⁹ See Duarte, F. and Rosa, C. (2015), “The Equity Risk Premium: A Review of Models.” Federal Reserve Bank of New York, Staff Reports No.714, February.

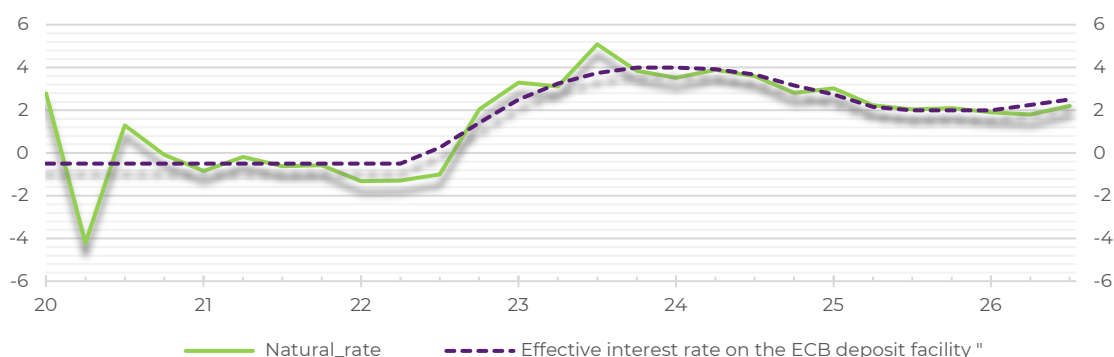
Chasing yield in a liquidity fog

Reviving R-star may (not?) last

We adjusted the model of Holston et al. (2023)³⁰ to allow for greater flexibility in the dynamics of key macroeconomic variables — notably inflation, real GDP growth, and the ECB deposit rate. Whilst Holston's original specification spans Q1 1972 to Q1 2026 on a one-sided estimation basis, our framework restricts the sample to Q1 1999–Q1 2026 and employs two-sided estimates

In nominal terms, our estimates place euro area R-star at 2.2% — marginally below the current ECB deposit rate of 2.5%³¹ — suggesting that the current ECB monetary policy stance remains only modestly restrictive (**Chart 16**).³²

Chart 16: Estimates of the natural interest rate and the effective ECB deposit rate (%)



Source: Natixis CIB Research

This points to a second plausible explanation for the gap between real interest rates and R-star: the role of monetary policy. As Schnabel (2024) notes, there is little empirical evidence of a stable relationship between real interest rates and standard proxies for the key determinants of saving and investment over extended sample periods.³³

Whilst several factors³⁴ may account for the divergence between real interest rates and R-star, monetary policy stance, transmission lags, and market frictions can prove material drivers in specific episodes. When central banks set policy rates above R-star, real interest rates are pushed above equilibrium; conversely, rates set below R-star pull real interest rates below the neutral level.³⁵ Even where monetary policy aims to align real rates with R-star, transmission lags, financial market rigidities, and shifting inflation expectations can drive a persistent wedge between observed real interest rates and the equilibrium rate. Beyond monetary policy, large transitory shocks — such as financial crises, abrupt productivity shifts, or significant fiscal realignments — alongside structural forces — including productivity growth, demographic trends, and

³⁰ Op. cit. We also uploaded the data from the ECB portal.

³¹ Durré, A. (2026), "ECB September Meeting: Higher for Longer?", EMEA Snapshot: September 10.

³² Our estimate is close to the midpoint of the new ECB interval for the natural rate in the euro area (namely [1.75%-2.5]). More recently, Philip Lane even stressed that "we look at a range of models of neutral, and the upper end of that range we think has crept up from 2.25 to 2.5." See Lane, P., Natixis CIB's 3rd Annual SSA Conference, 23 June 2026.

³³ See Borio, C., Disyatat, P., Juselius, M. and Rungcharoenkitkul, P. (2022), "Why So Low for So Long? A Long-Term View of Real Interest Rates", International Journal of Central Banking, Vol. 18 (3), pp. 47-87.

³⁴ Among those, there is the uncertainty surrounding the estimation of R-star, which is time-varying and unobservable, thereby complicating its use for monetary policy purposes. See Brand, C., Bielecki, M. and Penalver, A. (2018), "The natural rate of interest: Estimates, drivers, and challenges to monetary policy", ECB Occasional Paper No. 217.

³⁵ Williams, J.C. (2016), "Monetary Policy in a Low R-star World", Federal Reserve Bank of San Francisco Economic Letter, No. 20167-23.

global saving-investment imbalances — remain material determinants of this divergence.

Liquidity's Grip: Risk Appetite and the Elusive Convergence to R-star

Several factors support the view that expected investment demand has structurally outpaced saving. First, rising sovereign indebtedness has triggered a recent sell-off in government bonds, whilst structural pressures — the green transition, escalating defence expenditure, and demographic-driven increases in pension and healthcare obligations — are set to deteriorate fiscal positions further across most major economies, most notably in the United States and the euro area. Concurrently, the imperative to harness new technologies and drive productivity gains has materially lifted private investment demand.

Second, monetary policy across most major economies — particularly the United States and the euro area — remains accommodative, underpinned by the persistence of excess liquidity. The combination of anticipated productivity gains and ample central bank liquidity has, in turn, naturally redirected capital towards risky assets at the expense of safe-haven instruments.

The demand for risky assets is, however, best characterised as a symptom and amplifier of excess liquidity rather than an independent explanatory variable. The gap between R-star and long-term real rates is more precisely understood as the compound result of prevailing liquidity conditions, structural saving dynamics, and term premium suppression — with risk appetite serving ultimately as the market expression of these deeper underlying forces.

In sum, both the real interest rates and R-star are driven by the same fundamental global economic forces over the long run, namely productivity growth, demographics, the global saving-investment balance and fiscal policy. In a frictionless neoclassical framework, the observed (market) real interest rate would adjust instantly to the nature rate (R-star). But in reality, several market developments may explain persistent significant wedges, among which the monetary policy decisions play an important role. We know that changes in the monetary policy interest rates takes between 12 and 18 months to impact fully the economy, notably due to structural factors (in the banking sector, labour market and private debt among others). On top, our view is also that the existing of ample liquidity still provided by all major central banks (including the ECB) is still influencing the behaviour investors toward riskier assets owing to reduced term premium.

The implication of this analysis for the euro area is twofold. First, abundant central bank liquidity is likely to sustain short- and long-term real rates below R-star in the near term. This configuration is, however, increasingly challenged by rising sovereign debt concerns, which — by lifting term premiums — risk accelerating the convergence of real rates towards the neutral rate. Second, whilst anticipated productivity gains from AI and innovation investment may exert upward pressure on R-star over the medium term, this impulse is likely to be materially tempered by the euro area's adverse demographic trajectory — which, as the evidence above suggests, continues to represent a structural drag on TFP growth and, by extension, on the neutral rate itself.

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