

EXECUTIVE SUMMARY

Ultra-low interest rates, inflation below target, underwhelming potential output growth – this has been the situation in the eurozone at least since interest rates fell close to zero in 2013, raising the question of whether this is some kind of “new normal.” In other words – to use the term popularised by Larry Summers – is the eurozone in secular stagnation?

Our analysis suggests that the answer is yes. Lower fertility, higher longevity, sluggish TFP growth, a global savings glut, and several other secular forces have combined in a kind of perfect storm to push interest rates below zero. Simultaneously, these secular forces have led to a situation of persistently deficient aggregate demand, which the ECB now cannot stimulate anymore with conventional tools as its policy rates are close to their effective lower bounds. To a lesser degree, the same forces also induce a weakness in aggregate supply, where falling productivity, a shrinking labour force, and subdued investment depress potential growth. Hence, while the eurozone’s secular stagnation is primarily demand-driven, it also depresses the supply side, so that inflation will remain below target even when the output gap closes.

Ultimately, the key issue for policymakers and business leaders is how long this situation will persist and what the economy needs to get back to normal. Answering this question is the objective of this paper, where we disentangle the many forces that have been pushing interest rates in the eurozone down since the 1980s and quantify their impact. This enables us to compute counterfactuals of what’s needed for real short-term market rates to rise back to normal, say to 1%.

To do that, we build on and extend the influential work of Eggertsson, Mehrotra, and Robbins (2019). In what amounts to a major innovation, they introduced an overlapping generations (OLG) structure in a New-Keynesian (NK) framework, a combination that for the first time allows researchers to jointly address the twin issues of persistently negative interest rates and secular stagnation. We are the first to apply their model to the eurozone, and we extend it by including two more macro drivers that we consider crucial: the global savings glut and quantitative easing. Hence, we quantify the impact of nine macro drivers, many more than other studies of the eurozone. As a result, we’re able to explain all of the observed fall in interest rates since the 1980s.

We find that the real neutral rate, i.e., the real interest rate consistent with a closed output gap and inflation at target, has fallen from 6.6% in 1980 to roughly -2% in 2018. The results from our new OLG-NK model complement our [earlier research](#) using an extension of the widespread Holston-Laubach-Williams (HLW) model. Methodologically, the two approaches are completely independent from each other, as HLW is a reduced-form estimation, whereas the OLG-NK approach relies on a fully structural model. For that reason, it’s a very powerful result that the two methodologies yield estimates that are not only close in 2018 but also show a very similar trend since 1980.

Of the nine secular forces we study, trends in fertility and longevity turn out to be the most important by far. The model helps explain why. The dramatic fall in the eurozone’s total fertility rate since 1980 means each

generation is smaller than the previous one. This implies less spending and less loan demand by the young, putting downward pressure on rates. At the same time, longevity means the middle-aged need to save more for retirement, adding to the supply of lendable funds, further depressing rates. In addition, the shrinking labour force means, at least for a while, a relative abundance of capital – think of fewer workers sharing a large office. As a result, the marginal product of capital falls, reducing equity returns, which makes some investors shift funds from equities to bonds, depressing interest rates. Hence, demographic change deals a triple whammy to interest rates.

According to our results, the slowdown in productivity and the fall in the relative price of investment goods are significantly less important.

Together they make up about as much as the fertility and mortality trends individually. The main counteracting force has been the increase in government debt since 1980, which raised the supply of bonds enough to lift the neutral interest rate by around 2.3ppts. Perhaps most surprisingly, the global savings glut has played a lesser role for the eurozone because some of its members are large capital exporters. While rising global demand for safe assets did reduce the eurozone's neutral interest rate by up to 1ppt until 2008, the trend reversed after the Global Financial Crisis (GFC), with the eurozone on track to become a net contributor to the global savings glut.

The aggregate demand and aggregate supply curves suggest that the eurozone is in a situation of persistently deficient demand. Neutral rates have been negative for so long that a secular stagnation has emerged. The lifecycle savings motives of an ageing population and the New-Keynesian nominal frictions interact with deeply negative real rates so as to make the low-growth, low-inflation equilibrium persistent, as long as the secular forces do not dramatically revert or drastic policy action is taken.

The changes required to bring interest rates back to normal are daunting.

We estimate that the total fertility rate would need to go from its current value of 1.5 to 1.8 for real interest rates to rise to -1%. Such a high fertility rate was last reached in 1979. Alternatively, total factor productivity (TFP) growth would need to rise from its current low of 0.3% y/y to 1%, a value last seen in 1996 according to Oxford Economics' estimates.

The eurozone's debt-to-GDP ratio would need to rise permanently from roughly 89% of eurozone GDP in 2018 to 112% to get a -1% real interest rate. To get to a 1% real rate, it would even need to rise to 153%. The primary effect is through the supply of bonds, which helps absorb the savings glut, but also the boost to demand and the growth-reducing crowding out of capital are accounted for. While these are huge numbers, some member states do have debts of this size. And views on the cost of debt are changing because with ultra-low interest rates, economies may be able to outgrow their debt even with subdued GDP growth, although caveats remain. In light of these results, the European Commission's new Next Generation EU recovery instrument is a step in the right direction.

In facilitating higher levels of public debt, the ECB's QE strategy can be understood as monetary support to fight secular stagnation, which is a direct threat to its ability to meet its 2% inflation target. The eurozone's structurally deficient demand creates persistent deflationary pressure, so QE

has the dual effect of stimulating demand cyclically and supporting expansionary fiscal policy that can reverse secular stagnation. The duration and scale of asset purchases make QE at least partly a new secular force, depressing the neutral interest rate by at least 0.6ppts and thereby creating space for stronger fiscal expansion. In terms of forward guidance, ECB communication should emphasise more that to achieve its inflation mandate in the current secular stagnation, it needs fiscal policy to absorb some of the oversupply of savings and offset some of the deficient private demand.

Only a combination of several large and daring policy measures can lift the eurozone out of secular stagnation and interest rates out of negative territory. In follow-up work, we will run scenarios to quantify combinations of the above-mentioned fiscal, monetary, and structural policies. For example, what if the government uses the proceeds from higher public debt for infrastructure investment aimed at boosting productivity, with positive effects on both aggregate demand and aggregate supply? Or, how will demographic change affect neutral interest rates in the future?

Moreover, we may extend the analysis by including more macro drivers that are still missing. The most important ones are mortgage debt, corporate debt, and wealth and income inequality.