



Stargazing

88 – 26 April 2021

Key points

- We think there is a case for a higher level of the *natural* interest rate post-pandemic in the US.

The natural interest rate – the real rate consistent with an economy at full capacity and stable inflation – has been declining over the last two decades, starkly reducing the capacity of monetary policy to steer the cycle and deliver price stability without resorting to unconventional instruments which often end up raising political or financial stability issues. Although high uncertainty prevails on these matters and we want to be cautious, we think there is a plausible case for some rebound in this equilibrium rate (r -star, or r^*) post-pandemic in the US.

The drivers of r^* are trend growth, which itself depends on productivity gains and the changes in working-age population, as well as the preference for saving, particularly in the form of “safe assets”. While demographic developments are unlikely to help, the jury is out on productivity post-covid, with the combination of new working practices and public investment programs focusing on infrastructure and fundamental research. “Scarring” could be limited in the US because of the speed of the recovery. True, productivity trends have been disappointing for two decades and we should remain cautious, but it just might not persist.

Where we think we can be more conclusive is on a change in the supply and demand of safe assets – in practice US public debt. Beyond the recent announcements by the US administration, the “pendulum has shifted” on public expenditure. In front of this higher issuance, we believe the “safe asset glut” from emerging countries recycling their current account surpluses has faded – provided no emerging market crisis eventually triggers another massive accumulation of official reserves.

Moreover, while the decline in r^* pre-dates 2008, it has been significantly magnified by the Great Financial Crisis (GFC). The need to deal with accumulated debt in the private sector made spending less sensitive to lower interest rates. The current crisis is very different. US households are going to exit from the pandemic with much lower debt than during the GFC. They may be able to withstand a higher level of effective interest rates without triggering a deflationary slump.

We don't posit a massive rise in r -star, given the weight of the demographic issues, but at the same time the mere possibility that the demand/supply configuration on the US bond market changes on trend should be taken into consideration by the market. This would be consistent with US effective real rates rising.

Why r^* fell

We want to temporarily distance ourselves from commenting on the short-term gyrations of long-term yields on the two sides of the Atlantic to explore what could be the possible trajectory of the natural interest rate (or r^* , r^* in this paper) – the real interest rate which prevails when an economy is at full capacity utilisation and inflation is stable – in a post-Covid world.

This is key for central banks. If r^* continues to fall, they will hit more frequently the lower bound of their policy rate. They would have four options to deal with this, none of them palatable in the long run. First, take the effective lower bound further down, i.e., in the case of the European Central Bank (ECB) and the Bank of Japan (BoJ) digging deeper into negative deposit rates, with adverse consequences for the financial industry. Second, accept a more frequent recourse to unconventional policy, especially quantitative easing, with the risk of increasingly blurring the lines between monetary and fiscal policy and fuelling asset price bubbles, as well as hitting institutional limits in some cases (the capacity to buy government bonds is not infinite at the ECB). Third, raise their inflation target, to try to reduce ex ante long-term interest rates in real terms, with significant political ramifications – particularly in the Euro area. Fourth, refuse to engage in any of the first three avenues at the risk of being unable to deliver on their price stability objective, by failing to provide sufficient monetary stimulus in times of adverse cyclical conditions. A declining r^* and the coincident reduction in the capacity of monetary policy to steer the cycle is not an issue for central banks alone. This is a challenge for governments as well, since it would shift a lot of the heavy lifting to fiscal policy.

In a nutshell, if r^* continues to fall, the current policy set-up, which was deemed to be exceptional, will be used more frequently. Indeed, the ultra-activist monetary policies – which pre-date the Covid crisis – is already a reflection of the decline in the natural interest rate over the last two decades. Of course, it is a theoretical construct which can't be directly observed, but the plausibility of its decline is plain to see, as effective interest rates have been falling on trend, with an acceleration after the Great Financial Crisis, while inflation has remained stubbornly weak.

The first driver of a drop in r^* is a decline in potential GDP growth, which has been widely documented for developed countries using a wide array of methods. This decline can be broken down in two, the growth rate in working age population and productivity gains. For a decade now these two factors have been going in the same – bad - direction. The impact of the pandemic crisis on demographic change is probably small – although the current drop-in birth rate is not going to help in twenty years from now – but the trend in population ageing is fairly predictable anyway. The slowdown in productivity since the early 2000s, possibly because of decelerating technological progress, is a key ingredient in now pervasive “secular stagnation” narrative.

Exhibit 1 – a widening gap with trend growth in the US

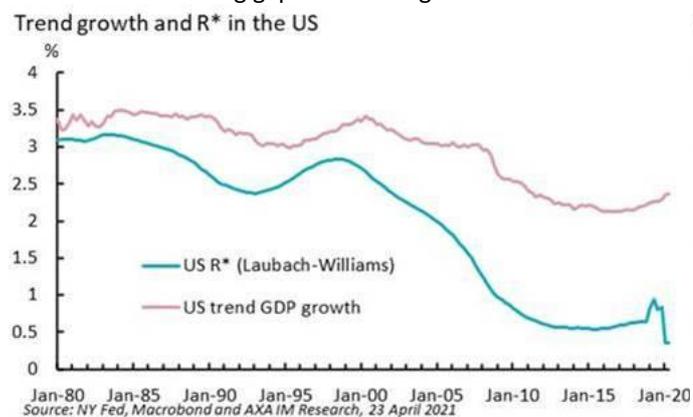
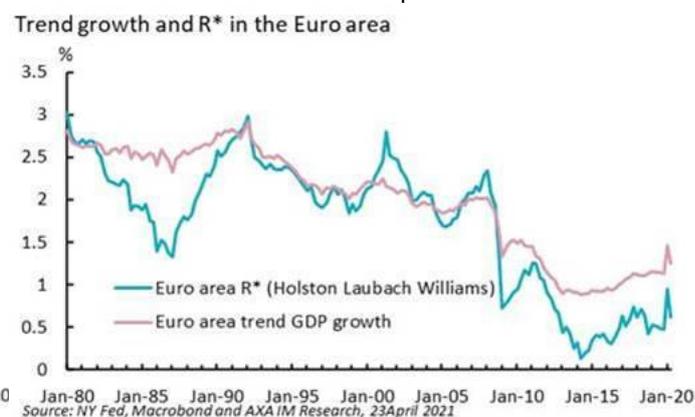


Exhibit 2 – to a lesser extent in Europe

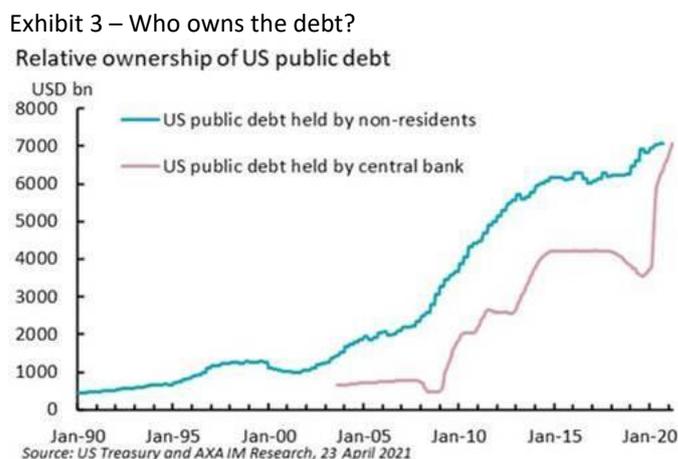


Still, as Exhibits 1 and 2 suggest, **the decline in r^* – we use here the canonical estimate from the Laubach-Williams model – has been steeper than what the deceleration in potential growth would imply. This is usually explained by a rising preference for saving.** Again, this can be broken down in two elements.

One is another effect of demographic change. The lengthening in working life has not kept up with life expectancy, forcing future pensioners to step up their saving effort. [A 2017 paper by Carvalho, Ferrero and Nechio from the San Francisco Fed](#), suggests a strong fit between ageing in the US and the decline in r^* over the last decade.

The other element is an imbalance between the supply of safe assets, generally by slow-growing developed countries, and demand, usually from faster-growing emerging countries recycling their current account surpluses, at the heart of the seminal paper by Caballero, Farhi and Gourinchas in 2016 ([they produced a non-technical version of their paper in the Journal of Economic Perspectives a year later](#)).

Two factors exacerbated this imbalance. First, “pseudo safe assets” were destroyed during the global financial crisis of 2008-2009 and the sovereign crisis which hit the Euro area in 2011-2013. Supposedly risk-free housing-related assets were wiped out in the US after 2007, and peripheral government bonds lost their attractiveness as “safe havens” in Europe. Second, central banks resorting to quantitative easing removed a significant share of the remaining safe assets from the market. The rise in non-residents’ demand for US treasury notes coincided with the rise in the share of US public debt held by the federal Reserve (Fed) (Exhibit 3). Incidentally, the role of the US government debt as the global safe asset would help explain why the gap between potential growth and r^* has been wider in the US than in the Euro area.



While Williams, currently President of the New York Federal Reserve Bank, who rekindled interest in r^* and brought it to the centre of monetary policymaking, includes this “preference for safe assets” in his list of likely causes behind the decline in the natural interest rate ([he nicely summarized his views in a 2018 speech](#)). We probably need to pause here in the reasoning. This factor can easily explain why *effective* yields fell, not necessarily why the *natural* interest rate did. Indeed, one may wonder why the decline in Treasury yields spurred by the savings glut outside the US did not trigger an acceleration in inflation there (remember, r^* is the interest rate consistent with stable inflation).

One explanation may be that the drop in effective yields triggered by the search for safety had gone so far that the central bank could not provide the necessary accommodation to bring inflation back up after an adverse shock without hitting its effective lower bound (here we loop back to the monetary policy issues we started with). However, [a paper by Krugman and Eggertson in 2010](#) provides an appealing alternative explanation: debt. They introduce the role of accumulated debt in the sensitivity of economic agents’ spending to the interest rate. Faced with a higher debt to income level, some businesses and households would need a lower than usual interest rate to spur a rebound in their spending. We can add the banking sector in this equation: higher accumulated debt raises the probability of defaults, normally prompting credit supply to fall for any given level of the interest rate, especially after the overhaul of banking regulation following the Great Financial Crisis (GFC).

That R-star cannot rebound is not obvious

Williams in his 2018 speech was quite pessimistic on the chances to see r^* rise again, **and indeed if we try to look ahead on the determinants of the natural interest rate, the demographic factors are unlikely to change within the next few years, continuing to exert a downward pressure.** True, a limit there is the fact that at some point, pensioners drawing on their accumulated savings will offset the impact of the widening gap between the working life span and life expectancy. Note however that the rise in longevity creates its own uncertainty. Once in retirement, pensioners cannot know for sure how long they will need their accumulated savings to last, while their expenditure needs could rise drastically towards the end of their life given the high cost of assisted living. This could make them reduce their consumption early in retirement to preserve as much as possible their “pot of money”. The reversal of the impact of demographic change on the aggregate saving behaviour would then occur only very late into the retirement phase of the baby-boomers. Note as well that, beyond the saving channel, the slowdown in population growth in developed markets – as well as in some emerging countries – will in any case depress potential growth through the deceleration in labour supply.

There is however a question mark on the direction of productivity. First, it is possible that *statistically* the measure of productivity improves for a while in the developed countries. Indeed, the pandemic has disproportionately hit low-productivity industries – e.g. hospitality – while it left high-productivity sectors – e.g. manufacturing – largely intact. To provide some perspective on this, an Office for National Statistics (ONS) dataset suggests the output per worker across these two industries varies by a factor of 2.5 in the UK, which can be extrapolated across other mature economies. The reallocation of output and labour triggered by the pandemic could thus lift aggregate productivity. Such sectoral effect is likely to be a temporary phenomenon though. To become structural, the reallocation of labour and capital would need to be permanent. It is not necessarily the best candidate for reviving r^* .

More promising could be the combination of a genuine improvement in labour efficiency brought about the Covid-fighting sanitary restrictions with governments’ investment plans. There is some tentative research into the possibility that curbing physical contact and mobility could have a lasting positive impact on productivity through the intensification of digitalization and the diffusion of new business organizational practices. [A recent working paper by Barrero, Bloom and Davis](#) argues that productivity post-Covid could improve by 5%, even though only a fifth of this impact would be captured by conventional measures of productivity because they neglect the time saved on commuting (they think 20% of working time post-Covid will be spent at home). This “structural shift” would coincide with the USD2.3trn investment plan advocated by Joe Biden which, with its focus on infrastructure but also fundamental research, could herald a rebound in productivity. In his 2018 speech, Williams was pessimistic on the capacity of economic policy to help, estimating the impact of Trump’s tax cut plan on r^* at 0.25% by the end of this decade. The Trump tax cuts are going to be partly reversed by Biden, but the investment plan may more than offset this.

True, it’s difficult to be enthusiastic about productivity after years of deceleration, and it may well be that “scarring”, e.g., the decline in human capital triggered by the rise in unemployment at the peak of the pandemic crisis, would offset the combination of structural changes to work practices with targeted investment. That working from home has any lasting positive impact on productivity at all is hotly debated. Let’s just say for now that it is not obvious to us that post-Covid, potential growth should *fall* further, especially in the US since the recession and the “below par” growth has been short, relative to Europe, limiting the scarring effects.

Where however we think it is possible to be more conclusive it’s on a “regime change” on the supply and demand of the safe asset market. The Eggertson-Krugman model does not seem to apply to the US government this time. The US administration is seeing through the already impressive rise in public debt and is maintaining a resolutely accommodative stance, with its investment plan following the “emergency stimulus” which started this month. True, Joe Biden has pledged to make his plan fiscally neutral thanks to higher corporate tax and levies on capital gains for wealthy individuals, but if history is a guide this type of tax hikes tend to fall short of expectations in terms of receipts. Structural deficits are likelier to rise than not, and so will the supply of US public debt. Beyond the current decisions and announcements by the US administration, we think it is likely there is a general and lasting pendulum shift towards more public spending beyond the immediate policy approach to dealing with the pandemic.

Some structural choices have appeared in the “emergency stimulus”, e.g., the boost to child credits which is at odds with the policies pursued in the US, across the political spectrum, over the last 40 years.

The new fiscal stance in the US is very different from what prevailed at the time of the Great Financial Crisis.

Indeed, the fiscal stimulus then was short-lived and very quickly – in 2010 already – the US administration opted for fiscal discipline, taking most of the developed world along, curbing the supply of safe assets, while at the same time the Fed was extending its quantitative easing programme – thus removing safe assets from the market - partly to offset the deflationary effect of the fiscal consolidation. This time, the US administration is in no hurry to start consolidating, while the Fed is likely to start “tapering” its quantitative easing programme next year already.

Of course, r^* will not shift upward if this higher supply of US treasuries is met by an equally higher demand from non-residents. We don’t think this is the likeliest scenario. True, the rise in US yields since the elections will attract foreign investors, but the issue is whether this demand would be there *without* higher rates. This used to be the behaviour of some key emerging countries, including China, which recycled their current account surpluses into USTs without consideration for the yield. However, even well before the pandemic, China’s purchases of US notes had declined (China’s holding of US public debt has fallen below that of Japan). China’s current account has been falling not just as a percentage of GDP but also in absolute terms, which means that “recycling needs” when compared with the size of the US bond market are lower. This trend is likely to continue, with the authorities in Beijing intent on steering their economy towards slower but more balanced growth ([see our colleague Aidan Yao’s paper on this](#)).

Another aspect is that the “safe asset glut” is that it often reflects the imperfect development of domestic financial markets in some emerging countries. The accumulation of US treasuries in the form of official reserves by China was the symptom of a difficulty to efficiently channel savings into domestic investment through the local banking and disintermediated markets. Although it is still very much a work in progress, Beijing has been improving its financial market framework, to the point it is increasingly attracting non-residents. Finally, political considerations are reducing appetite for dollar-denominated investment in some EMs. The Economist published a striking graph in its last week issue: under Trump, the number of additions to the OFAC sanction list exceeded an annual average of 1,000, against about 500 under the two terms of Obama. Given the firm attitude of Biden administration towards China and Russia, a reversal of trend on these matters is not the likeliest scenario.

These likely changes in the demand and supply of safe asset will lift *effective* yields, but they won’t necessarily raise the *natural* interest rates if households and businesses react by reducing their expenditure. It seems straightforward to use the Krugman-Eggertson framework again. Just like the Great Financial Crisis may have depressed spending for a long time because of the need to repair balance sheets, the same could happen after the pandemic. **However, at least in the case of the US, the impact of the ongoing crisis on private debt is not straightforward.**

Exhibit 4 – Back to pre-GFC levels for US corporate net debt

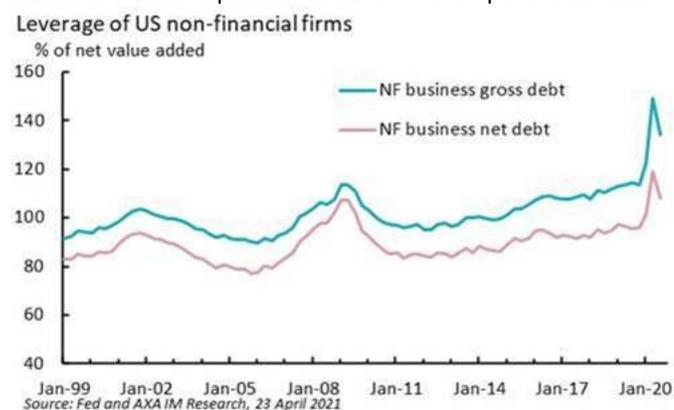
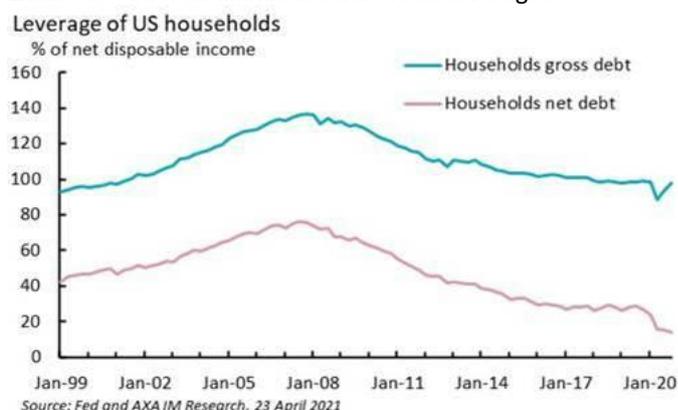


Exhibit 5 – US households are much less leveraged



True, businesses responded to the “sudden drop” in revenues by taking more debt, to a historical peak when measured against their output. The rise is less spectacular though if one considers the explosion in precautionary cash holdings (see Exhibit 4). But for households the difference with the Great Financial Crisis is striking. Relative to income, their debt is now nearly 40 points below the 2007 pre-GFC peak, and taking into account cash holdings, there is almost no net household debt to speak of (see Exhibit 5). Possibly counter-intuitively, US families – on average – will likely exit from the pandemic crisis with the best financial position in decades.

The net effect of the different forces we explored is of course very difficult to assess, but our point here is that it is possible to make a plausible case for the natural interest rate to rise post-covid, rather than fall. In our exploration of the causes of the drop in r^* , the specificities of the Great Financial Crisis played a prominent role. The decline in the natural rate pre-dates the 2008 recession, but it was certainly significantly magnified by the very particular features of the GFC, both from the point of view of deteriorated balance sheets and sub-optimal policy-mix. The covid crisis is very different from the GFC.

We certainly do not expect a massive upward revision and we think it will remain significantly below trend GDP growth – given the impact of the demographic factors – but the mere possibility that the demand/supply configuration on the US bond market changes on trend should be taken into consideration by the market. This would be consistent with US real rates rising, compounding the impact of a – transitory – acceleration in inflation triggered by the current fiscal stimulus to lift nominal long-term yields.

What could derail this? The biggest risk to this scenario is another rise in international demand for safe assets. This could be the consequence of a financial crisis in the emerging markets which ultimately, just like after the Asian crisis of the 1990s, would make these countries re-accumulate massive amounts of official reserves in the form of US Treasury notes to regain market credibility. In a first stage though, they would be forced to sell some of their US-denominated assets to defend their currency. Still, maybe paradoxically, for the natural interest rate to rise again in the US ultimately, the ongoing rebound in effective US yields must be gradual, to avoid disrupting capital flows to the emerging world.

Country/Region	What we focused on last week	What we will focus on in next weeks
	<ul style="list-style-type: none"> US hosts Climate Summit: announces aim to cut GHG emissions by 50% (2005 lvl) by 2030 Pres Biden proposes increase in capital gains tax for >\$1mn earners to 39.4% New Covid cases levelled off, inc in Michigan Jobless claims fell further to 547k from 586k Existing home sales -3.7% (Mar) from -6.3% in February as rates rose Short-end LIBOR, repo and TBill rates subdued 	<ul style="list-style-type: none"> FOMC meeting. No expected policy change, IoER rate watched given short-end pressure. Q1 US GDP release, we expect 8.5% annualised rate, ahead of consensus 6.5% after strong retail sales PCE inflation (core) expected to rise in March (to 2.3% and 1.8%, from 1.6% and 1.4%) Personal income expected to post 20.1% rise on the month after fiscal stimulus. Chicago PMI for April to provide steer for ISM survey.
	<ul style="list-style-type: none"> Dovish ECB kept stimulus unchanged German leading parties choose their candidate for chancellorship: Laschet for the CDU/CSU and Bärbock for the Greens Germany Constitutional Court clears ratification of the Recovery fund Agreement on European Climate Law 	<ul style="list-style-type: none"> German IFO and European Commission surveys to show further slight improvement Preliminary Q1 GDP: expect EA at -0.5%qoq, Germany at -1.6% and France at +0.9%qoq Flash EA inflation, expect core at 0.7%yoy Countries to submit their Recovery and Resilience plans
	<ul style="list-style-type: none"> Fast data show rise post-12 Apr re-open Unemployment rate dipped to 4.9% in to Feb. CPI inflation rose to 0.7% (Mar) from 0.4% Feb Retail sales surged 5.4%mom in Mar, suggest upside risk to Q1 GDP forecast of -2%qoq 14.5% PSNB deficit (20-21), record since WWII PMIs (M&S) rise >60 in April prelim estimates 	<ul style="list-style-type: none"> Nationwide house price index (Apr), HMRC recorded record transactions in March. BRC shop price index (Apr), prelim data on April CPI outlook Lloyds business barometer (Apr)
	<ul style="list-style-type: none"> Mar trade figures surprised on the upside with exports rising by 16.1%yoy (cons: +11.6%) while imports rose by +5.7% (cons: 4.7%) March CPI rose to -0.2%yoy from -0.4% as the "Go to" campaign remains in standby Apr Mfg PMI Flash is up at 53.3 from 52.7 	<ul style="list-style-type: none"> The government will reinforce restrictions as new cases of covid-19 are rising too fast. The BoJ holds its monetary policy meeting but we do not expect any changes March industrial prod struggled with shortage March retail sales is expected to rebound
	<ul style="list-style-type: none"> President Xi pledges to strengthen global cooperation at the Boao Forum and reiterates China's commitment to decarbonise the economy by 2060 	<ul style="list-style-type: none"> April manufacturing and services PMIs to suggest continued solid expansion in domestic demand
	<ul style="list-style-type: none"> Korea's first 20-day export growth shows continued resilience, surging 45.4% from 12.4% in March. This is largely due to soft base as a result of COVID-19. India's second wave of virus intensifies, with new increases surpassing 330 thousand cases a day. 	<ul style="list-style-type: none"> Korea's full-month export growth data to remain solid
Upcoming events	<p>US: Mon: Durable goods orders (prel., Mar); Tue: CS & FHFA house price index (Feb), Conf Board cons confi (Apr); Wed: FOMC meeting (unch); Thu: GDP (Q1); Fri: Core PCE price index (Mar)</p> <p>Euro Area: Tue: ISTAT busi & cons confi (Apr); Wed: Fr Insee cons conf (Apr); Thu: EA busi confi (Apr), Ge Sp HICP (prel., Apr); Fri: EA GDP (adv., Q1), Ge, Fr, It, Sp GDP (prel., Q1)</p> <p>UK: Tue: CBI Distributive Trade survey (Apr)</p> <p>Japan: Tue: BoJ meeting (unch); Fri: Unemployment (Mar), Consumer Confidence (Apr), Housing starts (Mar)</p> <p>China: Tue: Industrial profits (Mar), Fri: Official mfg & non-mfg PMI (Apr)</p>	

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