TD Global Investment Solutions

Investor Knowledge 20 Minutes

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Finding Guidance with the R-star's Glow to Manage Long-Term Rate Expectations

What happened to the lower-for-longer interest rate narrative? This narrative has been sidelined over the past two years as central banks hiked interest rates to rein in surging inflation. But now that we're seeing a pause in interest rate hikes, what kind of interest rates should investors anticipate in the long run?

To provide some insight and to help answer the question, we will discuss the concept of the R-star and how it can guide views for long-term interest rate expectations.

The R-star is the level of interest rate when an economy is at full strength and inflation is stable in the long run (the optimal rate). The concept of the R-star has been developed by several economists over time and traces its origins to the early 20th century work of Swedish economist Knut Wicksell. It's not a new concept but the R-star gained in prominence by the US Federal Reserve (the Fed) in early 2000 through the work of Lael Brainard, former vice chair and member of the Fed board. It has since become a widely used data point.

In this article, we will interchangeably use the R-star and the natural interest rate or the neutral rate. The International Monetary Fund (IMF) defines the natural rate of interest as **"the real interest rate that neither stimulates nor contracts the economy."**

The natural rate of interest can be modelled using various techniques, the most common being the Holston-Laubach-Williams model, which considers that the R-star evolves over time. It's a sophisticated framework that dissects the natural rate of interest into its components, allowing the Fed and other central banks to get better insight into the underlying economic forces and the appropriate monetary policy responses.

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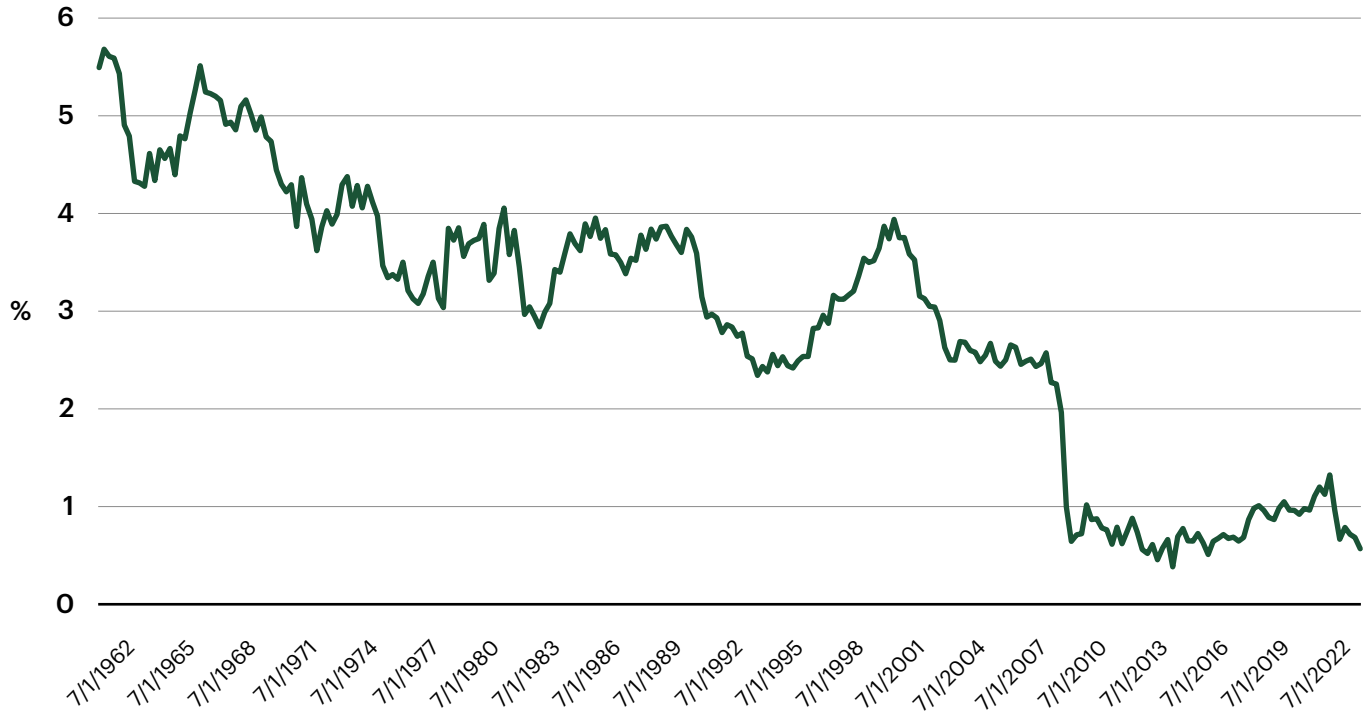
The Trend

Over the last 20 years the modeled natural rate of interest has been declining. We will answer the why later in the article, but for now we want to stress that the absolute level of natural rate doesn't mean anything as that number fluctuates through time. A real policy rate of 3.5% in 1999 can be expansionary, while a real policy rate of 1% in 2015 can be contractionary – which may seem counter-intuitive. The reason this occurs is simple: the R-star is independent of a central bank's direct control; instead, it is driven by long-term economic factors like productivity and demographics and medium-term financial drivers like capital flows. At the end of 2023, as central banks are seeking to quash inflationary pressures, the real Fed funds rate is at around 1.8% versus an R-star of about 1.3%. This can be defined as a contractionary monetary policy environment.

In the last two decades, the R-star in the US and Canada has been declining as productivity growth has shrunk and the population has aged materially. The decline in productivity growth can be attributed to the fact that technology has been widely adopted and the scope for rapid gains has diminished when compared to the internet boom and the post-World-War-II reconversion from military to civilian production.

Figure 1: R-star for the US



Source: Holston, Laubach, and Williams Estimates, Federal Reserve of New York, as at Q2 2023.

Long-term Economic Factors

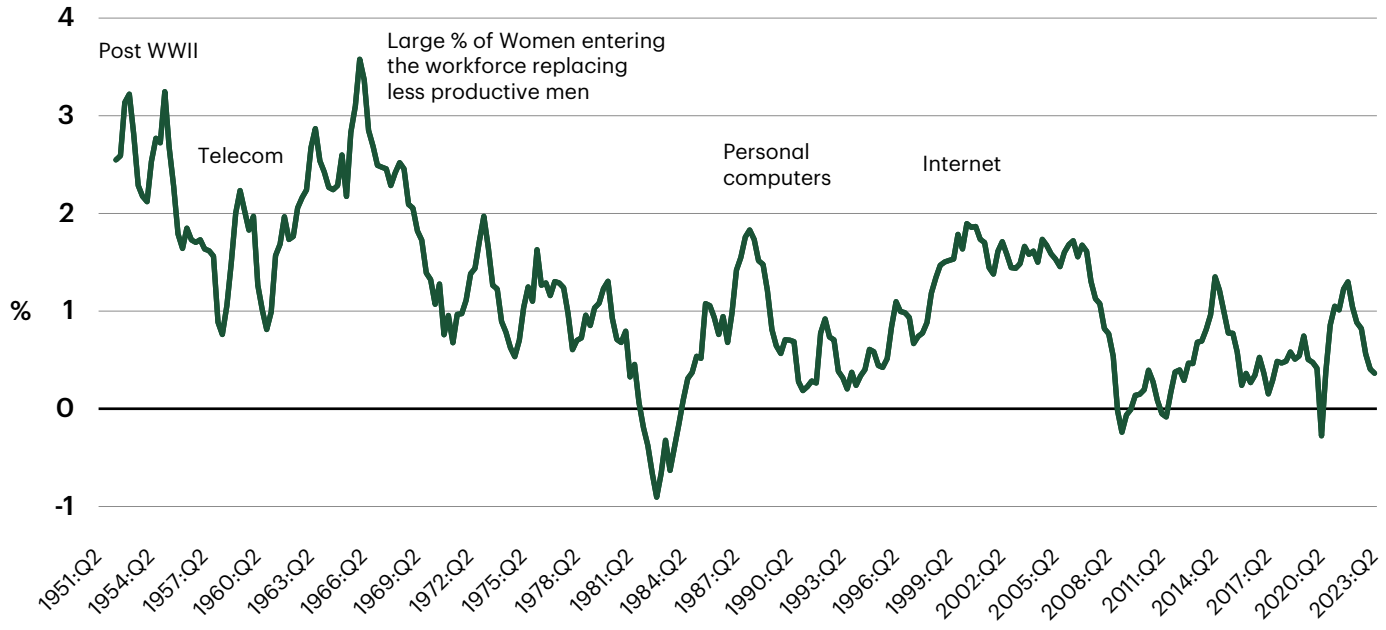
The world is in constant flux and the factors that impact growth are constantly changing. Key factors affecting the long-term economic outlook include productivity growth and the aging of the population.

Productivity Growth:

This is a measure that looks at how efficiently labour and capital are used to generate an output. Basically, it reflects the output that can't be explained by the input alone. Here is an example that most can relate to: your child is preparing for an exam and they spend a significant amount of time studying a subject. You realize their study habits can be more efficient through better time management and improved study techniques, which would allow them to achieve the same result with less effort.

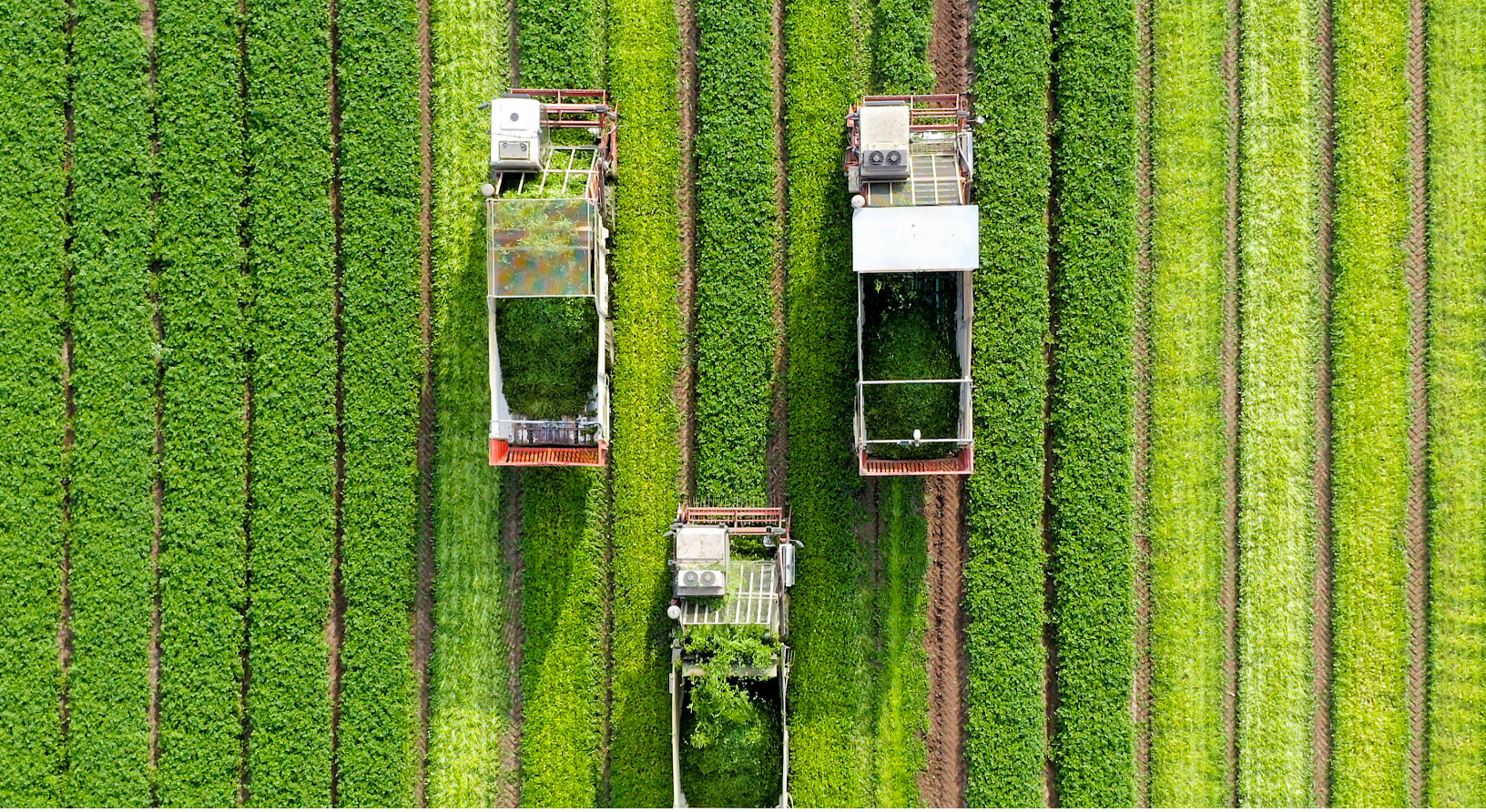
Productivity has been constantly improving with various examples highlighted in **Figure 2**. As a large proportion of women entered the workforce in the 1960s, it increased the pool of educated talent and this allowed some women to replace less productive men. In the late 1990s, the internet had a significant impact on productivity across many sectors because it provided immediate access to information that had been previously difficult to obtain and it altered shopping behaviour by streamlining the buying process through e-commerce.

Figure 2: Total Factor Productivity in the US (5-year average)



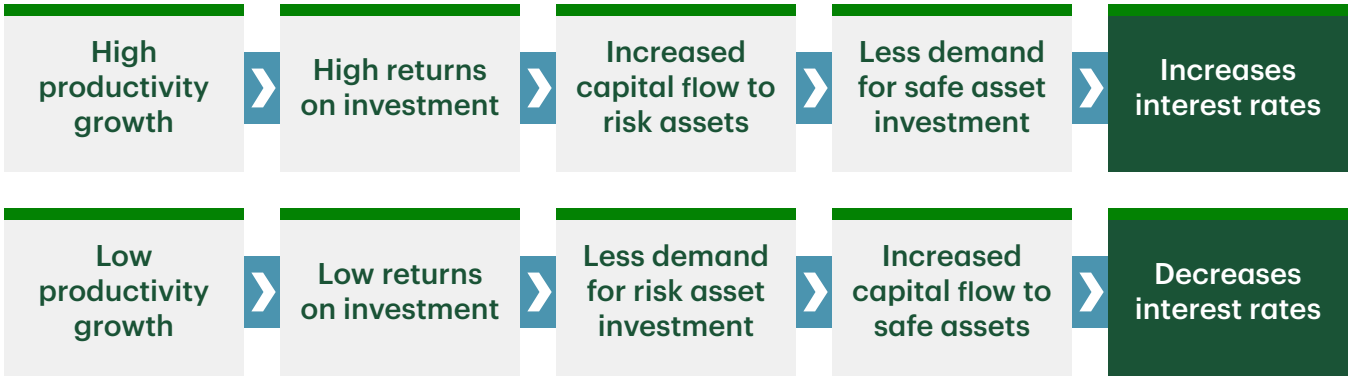
Source: Utilization-adjusted quarterly-TFP series for the U.S. Business Sector, produced by John Fernald, Federal Reserve Bank of San Francisco, as at Q1 2023.

Efficiency



It's important to note that it's easy to innovate but more difficult to create something that will generate a massive number of improvements and efficiencies. The marginal contribution of innovation decreases over time and to have a constantly growing total factor productivity, humanity needs to continuously innovate to create efficiencies. Every so often, humans revolutionize the world through innovation that boosts total factor productivity growth.

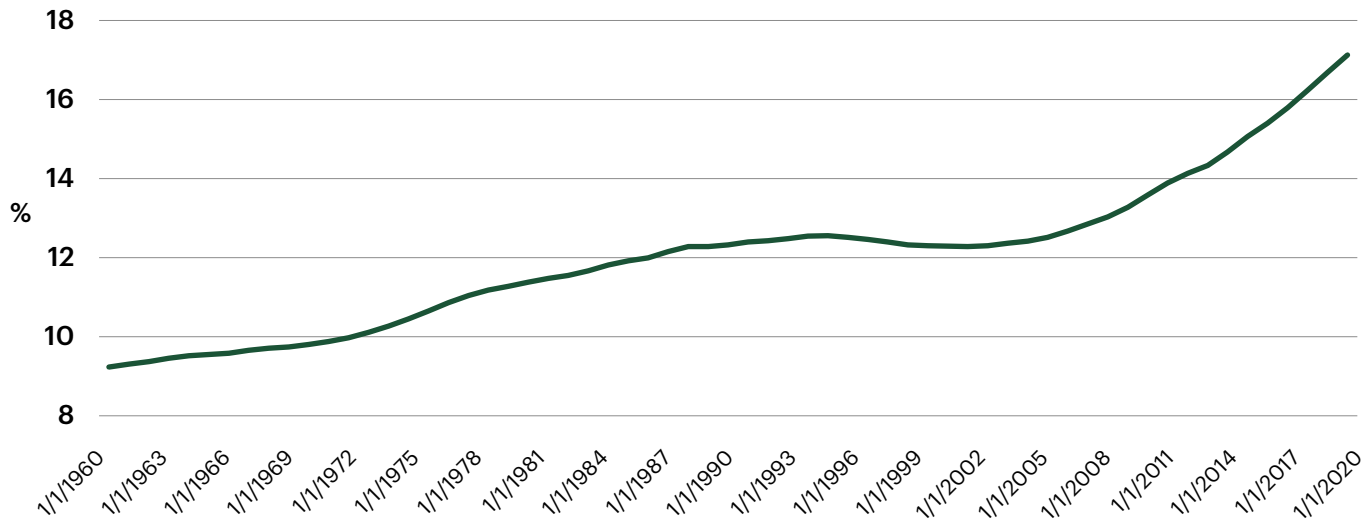
Figure 3: Productivity Growth and Interest Rates



How will total factor productivity drive the natural rate of interest? Generally, attractive investments attract capital because those investment opportunities yield appealing returns. If attractive investments are less abundant, some of the capital will be redirected to safe assets/bonds. So, lower productivity growth doesn't attract as much capital investments and investors allocate more to safe haven assets. As demand for safe assets increases, this will drive down required return in those assets, which in turn will suppress the natural interest rate.

Demographics:

Figure 4: Population Ages 65 and Above for US (Percent of Total)



Source: Federal Reserve Bank of St Louis, as at Q1 2023.

In the US, the percentage of the population over the age of 65 has soared over the last 20 years due to increased life expectancy and a declining birth rate, a trend which has been observed in other developed markets as well. This phenomenon stimulates aggregate saving as people conserve capital for retirement and take less risk. The investment portfolio of a retired individual has a greater proportion invested in bonds than equities. This increases the long-term demand for safe assets and drives down the R-star.

Total factor productivity and demographics are macro drivers that have lasting impacts on interest rates, but financial drivers can create medium-term volatility in the R-star.

Financial Drivers

The main financial drivers of the R-star are the availability of safe assets and the demand for safe assets. The supply and demand dynamics of risk-free assets will drive medium-term volatility in the natural rate of interest. On one side, the demand for such assets will increase or decrease based on cross-border capital flows and investors risk aversion. On the other, the supply of treasury securities is driven by the financing needs of the government, which is influenced by its budget deficit, government spending, economic conditions and monetary policy.

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An asset is considered safe or risk-free if it's liquid, backed by a stable currency and issued by a strong sovereign issuer. If the available supply of safe assets has not kept pace with increasing demand for those assets, the value of those securities will increase, lowering interest rates. If an increasing number of investors are willing to lend money to a country, the interest rate that country will be willing to pay will decrease and in turn lower the natural rate. For example, international buyers see US government bonds as safe because treasuries are backed by the full faith and credit of the US government, the world's largest and most stable economy. In addition, the US dollar is the world's primary reserve currency. As treasury demand has been consistently increasing and outpacing supply, the R-star has been steadily declining.

On the other hand, when a country's debt increases, this may cause investors to perceive its bonds as less safe, which in turn increases the natural rate as fewer investors are willing to lend capital to that country.

Over the shorter term, the demand for safe assets is impacted by investors' risk aversion due to the fact that the value of safe assets increases in periods of stress as market participants decrease the risk in their investment portfolios. This boosts demand for government bonds, which will in turn drive down the R-star. It's important to note, short-term fluctuations are not material to the long-term outlook of R-star.

Outlook for the R-star

Our firm expects that the long-term outlook for the R-star in Canada and the US will remain unchanged and stay between 0 and 2%, which is where it has been for the last 20 years.

This is assuming that demographic trends are unlikely to reverse their course as the population will continue to age for decades to come. There's one caveat. Because the demographic transition is already well entrenched, the demand for safe assets will continue to increase, but the pace of the increase will moderate and the downward impact on the R-star will be less pronounced.

From a productivity perspective, it is possible that productivity growth can surprise to the upside, but this is difficult to forecast. What we know for certain is that there is nothing significant in the pipeline other than Artificial Intelligence (AI), which can be a candidate to revolutionize practices in every industry. We believe it's way too early to tell how quickly and how much AI will impact productivity.

From a financial drivers standpoint, US treasuries are likely to maintain their status as the world's safe store of value. Demand for developed economy government bonds will likely continue to rise as emerging economies seek to store their wealth, given that the GDP per capita for those economies is expected to increase at a faster pace compared to advanced economies. This will put downward pressure on advanced economies' R-star.

At the same time, higher government debt is expected to act as a counterweight, pushing up the natural rate. The IMF has noted that modeled R-star deviations can occur through a multitude of alternative scenarios – for example, if government debt increases significantly to fund financial assistance programs or if the energy transition pushes down the natural rate in the medium term as higher energy prices reduce productivity of capital.[1]

The R-star is a critical data point because it guides monetary policy decisions and offers insight into economic conditions. It serves as a valuable tool for policy makers and investors looking to understand and navigate the intricacies of the broader macroeconomic environment.

Predicting the future is always tricky. But for investors seeking direction on where long-term interest rates will go, considering the R-star concept can be helpful, especially since short-term fluctuations don't impact the long-term outlook for the natural interest rate. ■

[1] https://www.imf.org/-/media/Files/Publications/WEO/2023/April/English/ch2.ashx

Growth

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