What Interest Rate Normalization Means for Global Real Estate Investors

EXECUTIVE SUMMARY

• Long-term interest rates have fallen to very low levels in recent years, driving a substantial across-the-board increase in property prices in nominal and real (inflation-adjusted) terms. Since 2009, global commercial real estate prices have risen by 85%.

• This fall in interest rates has been attributed to quantitative easing (QE) programs in operation since the Great Financial Crisis (GFC). With the global economy now in full recovery, some investors are concerned that interest rates will revert to pre-GFC levels, causing real estate prices to fall. This process has become known as interest rate normalization.

• It is unlikely that the rise in interest rates will be anywhere near as sharp as some investors fear. Interest rates were falling long before the GFC, and demographic trends will depress global interest rates for many years to come.

• Our analysis suggests that real (inflation-adjusted) U.S. long-term interest rates will increase to just 0.9% in 10 years’ time, much less than the consensus forecast of 1.6% and the 2.4% predicted by the normalization hypothesis. With inflation stable at 2%, this equates to a 2.9% yield on 10-year U.S. Treasury bills—no change from the current rate.

• Our predicted increases in government bond yields to 2.5% nominal (0.5% real) for the U.K. and 2.0% nominal (1.8% real) for Germany are also well below both the consensus forecasts and what full normalization (to pre-GFC rates) would suggest.

• Our forecasts for nominal long-term interest rates effectively put a ceiling on the level to which short-term interest rates will rise during this cycle. This still implies higher (policy) rates than today, but at well below pre-GFC norms.

• Recent and predicted increases in real long-term interest rates might put some upward pressure on property capitalization rates/yields over the next 10 years, but the potential impact is small—particularly if economic growth continues—because the spread between cap rates and real interest rates will fall toward pre-GFC levels.
WHAT DOES THE END OF QUANTITATIVE EASING MEAN FOR INTEREST RATES AND REAL ESTATE?

Despite the long period of economic weakness created by the GFC, real estate has remained in high demand and capitalization rates have fallen substantially. Some economists argue that this is due to emergency stimulus by central banks—a policy known as “quantitative easing” (QE). As interest rates on government bonds have fallen to extremely low levels, investors have turned to the next most secure asset—real estate.

Over the past 12 months, the global economy has returned to robust growth, and central banks have signaled an end to QE and the start of quantitative tightening (QT). While QE is being unwound slowly and cautiously, there is a strong desire by central banks and some politicians to push interest rates back to their normal levels.

No one is very clear about what interest rate “normalization” means. In part, it implies a world in which people can get a relatively good interest rate on their savings. It also means that central banks would cease to buy government bonds, allowing the market to set long-term interest rates. In all, normalization implies that interest rates will return to pre-GFC levels. At the peak of the last interest-rate cycle in 2006, the U.S. federal funds rate was 5.25% and 10-year Treasury bill yields reached 5%. Interest rates in the U.K. were even higher.

As interest rates on government bonds fell to extremely low levels, investors turned to the next most secure asset—real estate.

A return to these interest-rate levels would have serious implications for real estate, but will it actually occur?

CBRE Research concludes that interest rates were falling long before the GFC, due to global demographic factors. These powerful factors remain in play and will limit the extent to which central banks or politicians can raise interest rates. This is good news for real estate, but it also suggests that savers will continue to receive only a meager return on their cash.

DEFINING TERMS: WHAT ARE ‘REAL LONG-TERM INTEREST RATES’?

Interest rates on bank savings accounts are quoted in nominal terms: Place $100 in a bank with a 3% per annum interest rate and your savings will amount to $103 at year’s end. If prices have
been stable over the year, you can buy 3% more because you saved. However, if prices, say of books or food, have risen by 2%, you are only able to buy 1% more. If interest rates are 3% and inflation is 2%, your “real” interest rate is only 1%. Therefore, the real interest rate that you earn by saving is the nominal quoted interest rate less the rate of inflation over the year. So, when investors think about saving over the next one to five years, they look at the nominal interest rate minus the forecast, or expected, rate of inflation.

This calculation applies to short-term interest rates, where investors lock their money up for three or six months, and to longer-term interest rates, where investors lock their money up for three, five or even 10 years (see Appendix 1 for more detail).

Longer-term interest rates are usually higher than short-term rates because investors get a “term premium” for locking up their money for a longer period. The term premium applies to nominal quoted interest rates and real inflation-adjusted interest rates.

**WHY DO REAL INTEREST RATES MATTER FOR REAL ESTATE?**

First and foremost, there is a very close statistical relationship between real interest rates and cap rates or yields¹ (Figure 1 shows this for the U.S.). The long downward trend in cap rates dates from the mid-1990s and is not just a product of QE and the post-GFC world, but is also heavily linked to the fall in real interest rates.

**FIGURE 1: U.S. | CAP RATES AND INTEREST RATES**

![Cap Rate vs Real Interest Rate Graph](image)

Source: CBRE/Macrobond, NCREIF, August 2018.

Secondly, cap rates (or yields) are closer in economic terms to real interest rates than to nominal ones. To understand this, consider the following three points:

---

¹ We refer to cap rates in the U.S. and to yields elsewhere, although they are essentially the same thing. We have used the term cap rates when making generic arguments.
• Property A has a value of $2,000 with net operating income (NOI) of $100 in year one and a cap rate of 5%.

• If inflation is 2% and the NOI of Property A keeps up with inflation, then the NOI of Property A will be $102 a year later.

• With a cap rate of 5%, the property is priced at $2,040.

Viewed another way, the owner of Property A has achieved a 5% return over and above inflation. In other words, the cap rate is a real rate of interest, and therefore directly related to the rate of interest provided by banks less expected inflation. Real estate typically provides a higher real rate of interest than do banks because of the risks and costs associated with owning real estate. This spread of cap rates has some cyclicalality, but is relatively constant in the long term, reflecting the stable nature of real estate as factor of production.

Since 1990, inflation has been low and stable, so the difference between real and nominal interest rates also has been relatively low and stable. Cap rates move quite closely with both variables. However, economically and statistically, it is real interest rates that drive cap rates.

**FIGURE 2: U.K. | PROPERTY YIELDS AND REAL INTEREST RATES**

![Graph showing property yields and real interest rates in the U.K.](image)

Source: CBRE/Macrobond, MSCI/IPD, August 2018.

In the U.K., the historic relationship between cap rates/yields and real long-term interest rates is complicated by the monetary turbulence of the 1970s, and the cyclical pattern in yields is very pronounced (particularly during the recessions of the mid-1970s, the early 1990s and the GFC of 2008). Nonetheless, the long-term relationship between yields and real interest rates shows through clearly and there is statistical evidence of a 1-for-1 relationship in the long run, albeit with a lag.
Japanese all-property cap rates fell by 210 basis points (bps) between late 2002 (when the data begins) and late 2017. This was the same as the fall in real long-term interest rates and considerably more than the 100-bp fall in nominal rates. Even in Germany, where yields have been extremely stable in the past, there is statistical evidence of a 1-for-1 relationship with real long-term interest rates, again with a (quite lengthy) lag.

Figures 1 and 2 show that there are other factors that influence cap rates, even if they follow real interest rates in the long term. Sometimes there is a large cap rate spread over real interest rates; sometimes there is a lower spread. Usually, this spread is related to expectations about rent growth, which, in turn, are related to supply-and-demand conditions. If demand for real estate is high relative to availability, cap rates tend to fall. Where availability is high, perhaps due to a wave of new completions, cap rates tend to rise. Cap rates can also reflect the availability of debt and other types of liquidity, which sometimes varies with the cycle and at other times with central-bank guidance. Broadly, investors should consider this formula:

\[
\text{CAP RATE} = \text{REAL INTEREST RATE} + \text{SPREAD}
\]

\[
\text{Spread} = f(\text{expected rent growth, debt availability, performance of other assets})
\]

Real long-term interest rates are the key driver of cap rates. In effect, cap rates move 1-for-1 with real interest rates in the long run.

**WHAT DRIVES LONG-TERM REAL INTEREST RATES?**

Figures 3, 4 and 5 show the path of nominal and real long-term interest rates in the U.S., U.K. and Germany since 1961. The gap between the two lines is expected inflation. Nominal rates can change either because real rates change, or because expected inflation changes. The reasons behind the fall in real interest, which dates to the early-to-mid 1980s, have been much debated by economists. While the simple explanation is that there is too much savings chasing too few investments, consider these other factors:

- Demographic trends, such as aging baby boomers saving for their retirement in the West and similarly big shifts in the age structure elsewhere (increased supply of capital).
- The shift of manufacturing activity from low savings economies in the West to China and elsewhere in Asia, where savings rates are higher (increased supply of capital).
- A rise in the global population of high-net-worth individuals (increased supply of capital).
- The falling cost of investing in physical capital (e.g., computers), leaving companies with more profit retention (reduced demand for capital).
- Slowing global growth, due to an aging population and/or fewer innovations (reduced demand for capital).
FIGURE 3: REAL AND NOMINAL YIELDS ON 10-YEAR U.S. TREASURY BONDS

Source: CBRE/Macrobond, August 2018.

FIGURE 4: REAL AND NOMINAL YIELDS ON 10-YEAR U.K. GILTS

Source: CBRE/Macrobond, August 2018.
This analysis uses credible data and econometric modeling techniques to determine the supply or demand drivers of real and nominal interest rate movements over a lengthy period. The main components of this approach:

- Use of 10-year interest rates in the U.S., U.K. and Germany.
- Analysis of nominal interest rates with inflation embedded in the model to determine real interest rates (Appendix 1).
- Use of data from the 1960s onward to cover a period when interest rates (real and nominal) both rise and fall.
- Testing of a range of demographic variables as proxies for the demographic impact on the global savings/investment imbalance to find the one that best fits the data and produces the best model.
- Focus on long-term properties and ensuring the model passes stringent statistical tests.
KEY FINDINGS

• Global demographics are the key to falling interest rates. The share of the world’s population aged 40 to 54 is the key demographic variable. It is statistically significant and has a similar impact in all three countries.

• GDP growth is also important for the U.S. and Germany but not as important as some economists suggest (i.e., that real interest rates move in line with GDP growth). A 100-bp increase in real GDP increases U.S. long-term interest rates by 18 bps (at most in the various cases considered) and by 10 bps in Germany. There is no statistical relationship between GDP growth and real long-term interest rates in the U.K.

• The evidence that QE has a significant impact on interest rates is weak in all three countries. The results indicate that a 100-bp change in the ratio of QE in government bonds to GDP changes real and nominal long-term interest rates by between only 6 and 8 bps.

• The rise of high-net-worth individuals has had no impact on interest rates.

• The Chinese balance-of-payments surplus as a percentage of world GDP was used as a proxy for the rise of China and had no significant effect on U.S. interest rates.

The evidence that QE has a significant impact on long-term interest rates is weak in all three countries.

CBRE’s analysis suggests that global demographics have been the major reason why real interest rates have fallen since the mid-1980s. QE plays a bigger role when focusing on the period since the GFC. In the U.S., ongoing demographic change was about twice as important as QE in driving down real interest rates after the GFC, possibly due to the global nature of the U.S. bond market. In the U.K. and Germany, however, the implied contributions from QE and demographic change were approximately equal.

A CLOSER LOOK AT DEMOGRAPHICS AND INTEREST RATES

People tend to adjust their savings and borrowing over their lifetimes to match their spending ambitions with their earnings potential. This is known as the life-cycle hypothesis.

Children neither save nor borrow (although their parents may do so on their behalf); young adults borrow to fund house purchases, education and lifestyle; middle-aged adults are the biggest savers to provide themselves with retirement accounts; older/retired adults use their savings to support themselves.
This CBRE Research modeling exercise implies that the surge in the share of the world’s population aged 40 to 54 was a major factor behind the fall in real long-term interest rates since the mid-1980s (figures 6 and 7). In other words, it is savings accumulated for retirement accounts that have driven down interest rates. Looking ahead, although the share of this age cohort has leveled off, U.N. projections show no major reduction over the next decade (Figure 8). The share of the population aged 40 to 54 in China will trend down in the future, but will be more than compensated for by increases in the rest of Asia, Africa and Latin America. There is also a possibility that postponed retirement in developed economies will further extend the population of savers.
Figure 9 shows the share of the U.S. population aged 40 to 59, which is a way of tracking the baby boomer generation’s peak share of total U.S. population between 2005 and 2009 (baby boomers are often linked to the downward trend in interest rates). In reality, this indicator does not correlate well with real or nominal long-term interest rates. It appears that this demographic’s impact on the savings-investment balance is global rather than national.

The impact on the global savings/investment balance also depends on incomes. Growing incomes in emerging economies tend to increase the impact of demographic trends on the savings/investment balance.

**FIGURE 8: THE WORLD’S POPULATION AGED 40-54**


**FIGURE 9: COMPARATIVE DEMOGRAPHIC SHARES**

WHAT IS THE FUTURE PATH OF REAL LONG-TERM INTEREST RATES?

The outlook for long-term interest rates depends on what happens to the key variables outlined in this analysis: demographics, GDP growth, QE and expected inflation (for nominal rates). Our forecast of these variables is as follows:

- Real and nominal long-term interest rates likely will increase compared to end-2017 levels.

- The declining share of world population aged 40 to 54 will cause an approximately 20-to-30-bps increase in interest rates over the next 10 years (Figure 8).

- While central banks’ balance sheet normalization (quantitative tightening) will also have an upward effect, any increases likely will be limited and well below the estimates of normalization hawks or the consensus forecasts.

- The future of QE (central banks’ balance sheet normalization) is the hardest to predict. QE is meant to be temporary, but the pace at which it will be withdrawn is not clear and it will be rapidly reintroduced if there is another recession.

The tables below show various possible outcomes for long-term interest rates over the next 10 years. Being precise about a single year is difficult. Cyclical changes, economic policy changes and political risk can alter these predictions, so this analysis is best considered as a general long-term outlook.

**FIGURE 10: REAL LONG-TERM INTEREST RATES**

<table>
<thead>
<tr>
<th></th>
<th>U.S.</th>
<th>U.K.</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>end-2017</td>
<td>0.5</td>
<td>-0.5</td>
<td>-0.8</td>
</tr>
<tr>
<td>2028</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBRE analysis</td>
<td>0.9</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>&quot;Consensus&quot;</td>
<td>1.6</td>
<td>1.4</td>
<td>1.0</td>
</tr>
<tr>
<td>Full Normalization*</td>
<td>2.4</td>
<td>3.1</td>
<td>2.7</td>
</tr>
</tbody>
</table>

*assumes a 50% reversal of QE from end-2017

*Full normalization is defined as interest rates returning to their 2000-2007 average.

Source: CBRE, August 2018, Consensus Economics, April 2018.
FIGURE 11: NOMINAL LONG-TERM INTEREST RATES

<table>
<thead>
<tr>
<th></th>
<th>U.S.</th>
<th>U.K.</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>end-2017</td>
<td>2.4</td>
<td>1.3</td>
<td>0.4</td>
</tr>
<tr>
<td>2028</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBRE analysis</td>
<td>2.9</td>
<td>2.5</td>
<td>2.0</td>
</tr>
<tr>
<td>&quot;Consensus&quot;</td>
<td>3.7</td>
<td>3.5</td>
<td>2.8</td>
</tr>
<tr>
<td>Full Normalization*</td>
<td>4.5</td>
<td>4.7</td>
<td>4.3</td>
</tr>
</tbody>
</table>

assumes a 50% reversal of QE from end-2017

*Full normalization is defined as interest rates returning to their 2000-2007 average.

Source: CBRE, August 2018, Consensus Economics, April 2018.

CONCLUSIONS

Concerns about rising real and nominal long-term interest rates are overblown. The likely increase in rates will be less than the consensus of economic forecasters and they will level off at well below pre-GFC levels.

A 100% normalization of central banks’ balance sheets would not dramatically affect these findings. In the U.S., full normalization of the Fed’s balance sheet would push real long-term rates to 1.2% and nominal rates to 3.2%—still well below the consensus forecasts. In Germany, a full reversal of the European Central Bank’s QE program would be more serious and would push nominal and real long-term rates close to the consensus forecasts. The U.K. would be somewhere in between, with real and nominal rates closer to but still below the consensus. We emphasize, though, that full central bank balance sheet normalization is unlikely over the next 10 years.

Concerns about rising real and nominal long-term interest rates are overblown. The likely increase in rates will be less than the consensus of economic forecasters and they will level off at well below pre-GFC levels.
While the focus of this analysis is on the U.S., U.K. and Germany, its general conclusions apply to other developed economies unless political or government default risk intervenes. Japan is a special case. The Bank of Japan is effectively using QE to target zero nominal long-term interest rates. While this policy persists, real long-term rates can only go up if inflation expectations fall. This is not impossible though it looks unlikely over a sustained period.

**WHAT ABOUT SHORT-TERM OR POLICY RATES?**

Short-term interest rates—such as the U.S. federal funds rate, the Bank of England’s bank rate and the ECB intervention rate—can exceed long-term rates, but when this rarely occurs, the gap is usually small. Short-term rates that are higher than long-term rates are referred to as a “yield-curve inversion,” which causes problems for the banking system and is often a precursor of recessions. When an inversion does happen, or when short-term rates approach but do not pass long-term rates, it is not long-lived.

This effectively means that the predictions for nominal long-term rates put a ceiling on future policy rates. They may even be lower depending on the stage of the economic cycle in any given year (policy rates are usually below long-term rates when output is running below capacity).

At present, the U.S. Fed and the Bank of England are keen to push policy rates up if only to have scope to reduce them again if another recession hits. Our analysis implies that policy rates are unlikely to exceed 2.9% in the U.S., 2.5% in the U.K. and 2.0% in the euro area in 10 years' time and may be lower.

Policy rates in the U.S. may go up substantially over the next year or two, but part of this will be cyclical and rates will ease back if the economy slows. The Bank of England may want to increase policy rates, but attempts to do so are being constrained by Brexit-related uncertainty and weak economic growth. It may be after the final Brexit settlement becomes clear before substantial normalization happens.

Forward guidance by the ECB indicates that any rise in policy rates will be very gradual and the low levels of core inflation will support the doves on the ECB in future decisions.

*Our analysis implies that policy rates are unlikely to exceed 2.9% in the U.S., 2.5% in the U.K. and 2.0% in the euro area in 10 years' time and may be lower.*
ARE CAP RATES SECURE?

The years of high returns from rapid cap rate/yield compression may have passed, but a period of heavy cap rate/yield decompression is unlikely. We are not saying that cap rates/yields will be completely stable. We made it clear in the section above that they will respond to rent-growth expectations and other factors.

However, it is real long-term interest rates that matter for the long-term determination of cap rates or yields. The increases depicted in Figure 1 suggest some potential upward pressure on cap rates/yields over the next 10 years, but not by a large amount over such a long time.

There are other factors to consider. Institutional investors, who are loaded up on bonds, may struggle to meet retirement-income requirements in a period of sustained low real interest rates. As is now widely recognized, real estate is part of the solution. We expect, therefore, a long-term structural compression of spreads to accommodate the mild increase in interest rates.

It is unlikely that the cycle in cap rates will ever disappear, but there are good reasons to believe that there have been structural changes to the level of real interest and cap rates that are not going away in the foreseeable future.

It is real long-term interest rates that matter for the long-term determination of cap rates or yields.
APPENDIX 1: ESTIMATING EXPECTED INFLATION AND REAL INTEREST RATES

Real interest rates (ex-ante) are equal to nominal interest rates less what market participants think inflation will be in the future. The problem is that we cannot easily measure expected inflation over a long time.

The model used by CBRE implicitly assumes that expected inflation is a smoothed version of actual inflation in the recent past, and this smooth version of actual inflation is used as a proxy for expected inflation in the charts with a couple of exceptions. In the U.S., the TIPS break-even point provides a plausible measure of expected inflation. This is used directly where available (i.e., back to 1997).

Inflation volatility in the U.K. in the 1970s makes it very difficult to infer inflation expectations. As an alternative, a modelled version based on the CBI’s Industrial Trend Survey question on inflation expectations was used for U.K. expected inflation for 1974 to 1983. A U.K. version of the U.S. TIPS break-even point based on the difference in the yield on nominal and index-linked gilts is available back to 1980. It was not used directly, as it refers to RPI rather than CPI inflation. This complicates things because RPI inflation is not only different from CPI inflation, it also embodies an element of interest rate expectations (as interest rates affect the mortgage component of the RPI). The modelled estimate of U.K. inflation expectations shown are, however, not inconsistent with the version derived from nominal and index-linked gilts.

CONTACTS:

Richard Barkham, Ph.D.
Global Chief Economist
CBRE Research
+1 617 912 5215
richard.barkham@cbre.com

Neil Blake, Ph.D.
Global Head,
Forecasting and Analytics
CBRE Research
+44 20 7182 2133
neil.blake@cbre.com

Disclaimer: Information contained herein, including projections, has been obtained from sources believed to be reliable. While we do not doubt its accuracy, we have not verified it and make no guarantee, warranty or representation about it. It is your responsibility to confirm independently its accuracy and completeness. This information is presented exclusively for use by CBRE clients and professionals and all rights to the material are reserved and cannot be reproduced without prior written permission of CBRE.