

VIEWPOINT DEMOGRAPHICS AND YIELDS

Do demographics affect property yields?

CBRE



Richard Barkham, Ph.D.

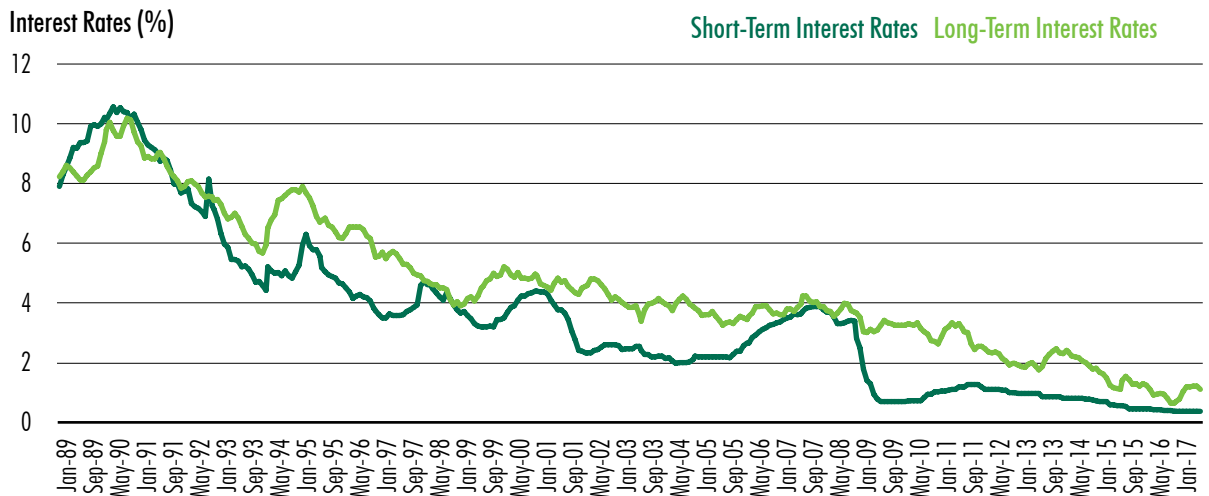
Chief Economist, Global

Siena Carver

Analyst, Global Research

Over the past 25 years, yields in every commercial property sector have declined in line with short- and long-term interest rates. Why interest rates have fallen in the long term is the subject of some debate among economists. The link between declining nominal interest rates and the fall in inflation is quite clear. The reasons why the real interest rate has fallen (i.e., nominal rates less inflation) is much more debatable. Three recent reports suggest the decline in real interest rates is due to changing demographics. We don't think this is the full story: the recent policy of quantitative easing is also important as is the broader trend of globalisation. However, in this CBRE ViewPoint, we review these new reports and examine the potential implications for real estate yields.

Figure 1: Interest Rates, Advanced Economies



Source: Macrobond (2016). Interest rates defined as Advanced Economies, Policy Rates, Short-Term and Long-Term Official/Policy Rates, Excluding United States

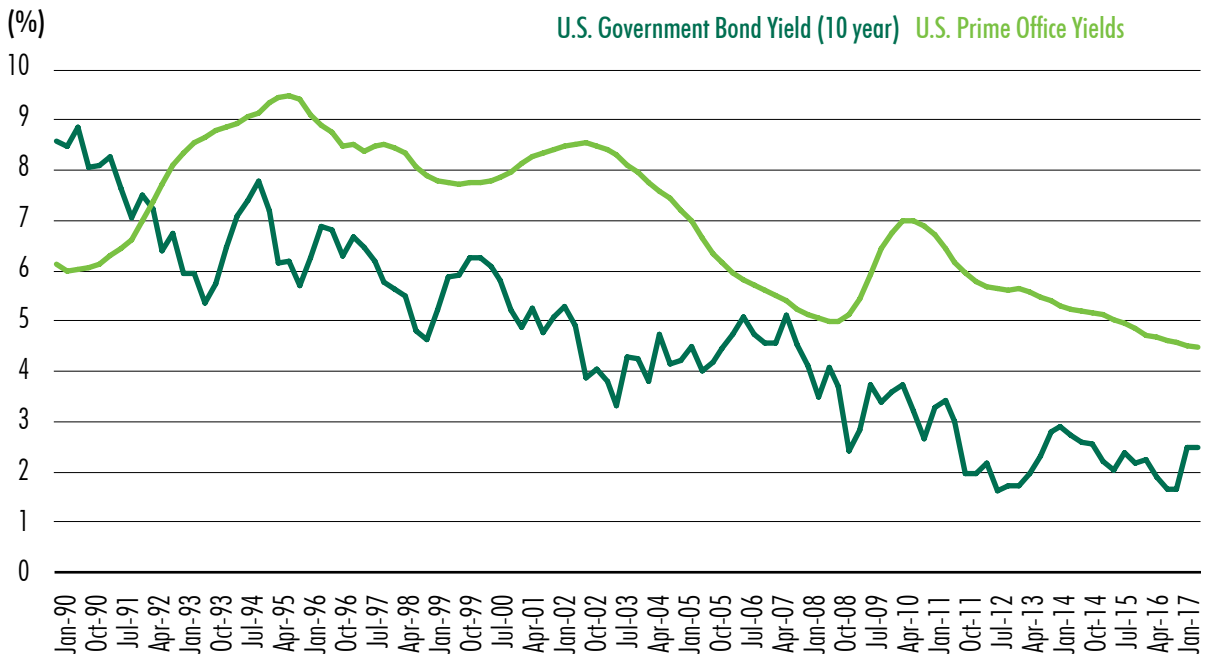
WHY DO REAL ESTATE YIELDS FOLLOW INTEREST RATES IN THE LONG TERM?

In ‘investment terms’, real estate assets are quite closely related to bonds, except that income has some potential to grow and individual assets require management and are not always liquid. A simple but broadly accepted approach to real estate pricing suggests that the yield on a fully let property plus the expected rental growth will be equal to the risk-free rate (taken as the redemption yield on 10-year British gilts) plus a risk premium. Evidence suggests that in the long term the risk premium is constant at around 3% and rental growth tracks inflation. So when bond rates fall, so do real estate yields.

Another way of thinking about this is in terms of portfolio rebalancing. When bond yields fall, as they have done aggressively in the past 10 years, capital flows into the nearest available substitute investment—real estate. This can be seen in the chart below, showing U.S. 10-year government benchmark and office yields. There are some lags in the relationship and real estate yields also react to specific real estate market conditions such as rising or falling vacancy rates, but the long-term relationship is quite clear.

There are other factors that make the relationship between bonds and real estate yields quite strong. As many real estate assets are financed by debt, the price of debt influences the price of real estate. When interest rates fall, investors can afford more and pay higher prices for real estate.

Figure 2: U.S. Government Bond and Prime Office Yields



Source: Macrobond, CBRE Research (2016)

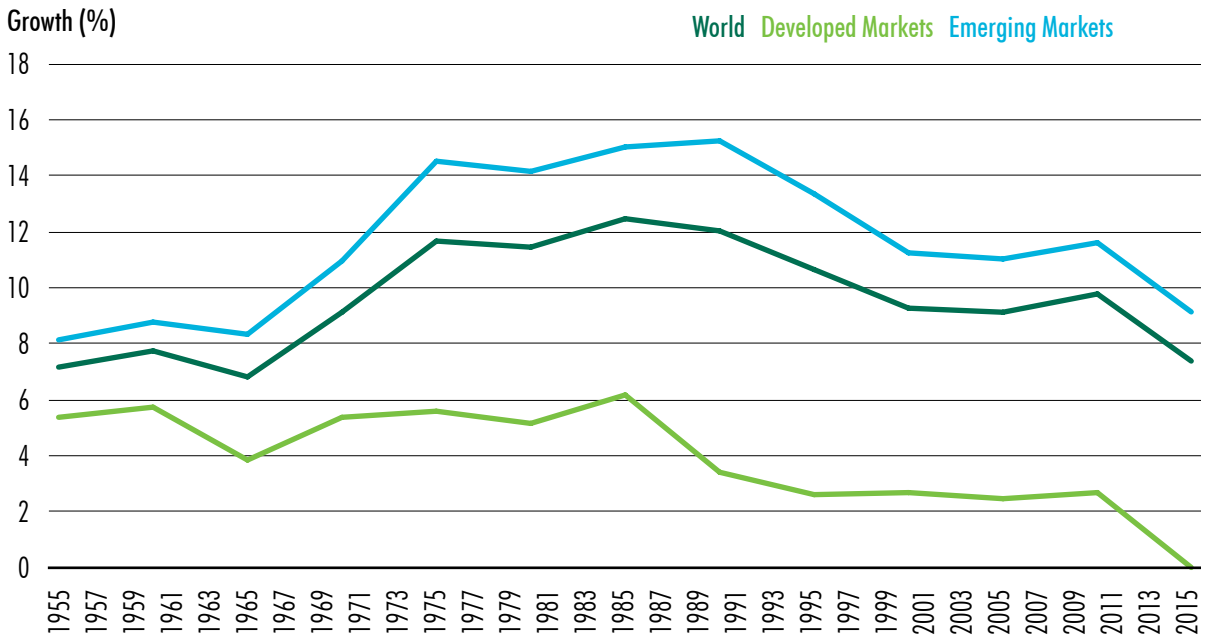
THREE REASONS WHY REAL INTEREST RATES HAVE FALLEN

The decline in real estate yields due to the decline in interest rates has been observed in most markets around the world. But what has caused the decline in interest rates? Recent research suggests that demographics are important, in particular, **labor supply**, **aging** and **life expectancy**.

LABOR SUPPLY

In the developed world, the fertility rate (number of births per woman) has been below the replacement level (the average number of births per woman required to sustain the population from one generation to the next) of 2.1 for 40 years, and the impact on global labor supply is evident. Declining labor participation rates (percentage of the labor force either working or looking for work), due in part to young people putting off joining the labor force and extending their time in education have exacerbated this trend. Although some developed countries have offset the impacts of a shrinking labor supply with immigration and/or postponed retirement, neither mitigating factor can continue in perpetuity.

Figure 3: World Labor Supply Growth



Source: ILO, UN Population Division (2015). World labor supply calculated as % change in the total population aged 20-64, both sexes combined, as of 1 July 2015.

To sustain a given level of output per worker when the labor supply is expanding, there must be a certain level of physical capital accumulation (plant and machinery etc.).¹ When the labor supply grows, so does the level of capital and, in turn, the level of global economic growth. By extension, when labor supply growth tails off, as we are seeing at present, a high capital-to-labor ratio quickly emerges and there is less need for investment in plant and machinery. Effectively, savings cease to be deployed in productive assets and are invested in bank accounts and bonds, so real interest rates are depressed. This occurs until the capital stock falls to the appropriate level.

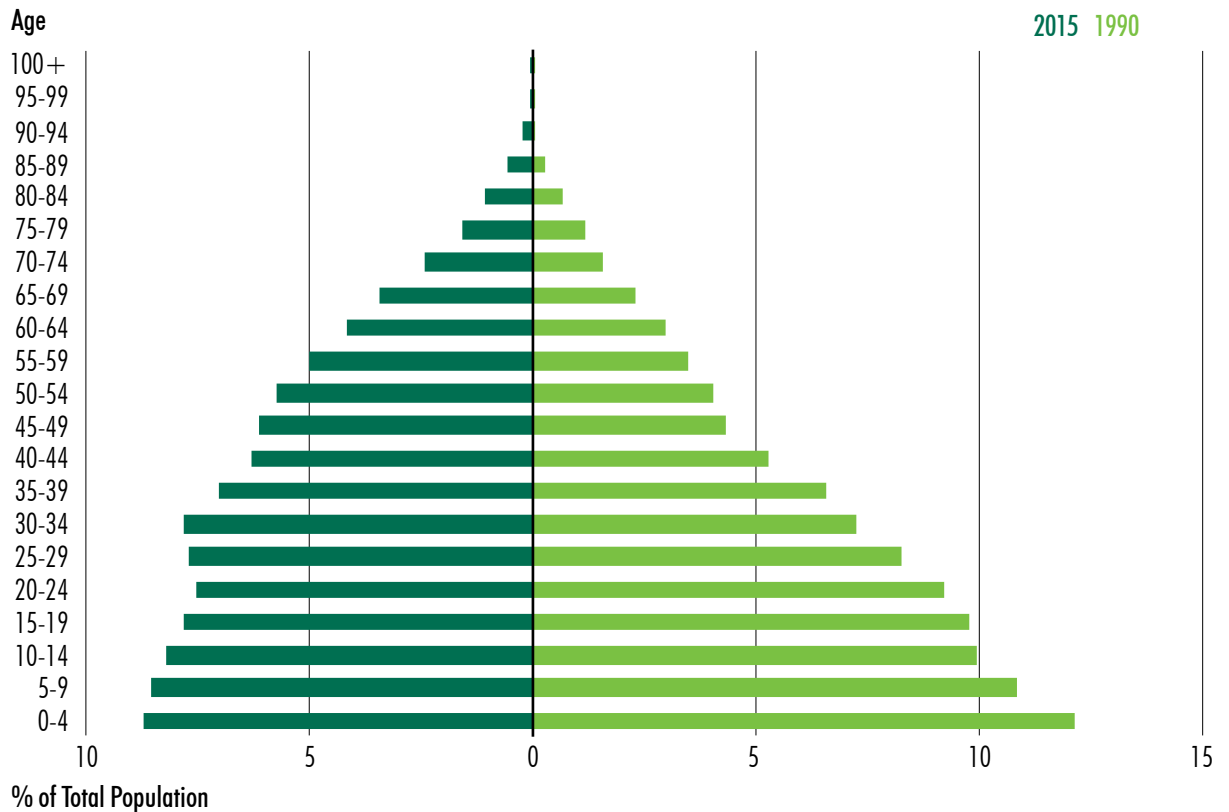


1. Kuznets, S. (1974b), "Population and Economic Growth: Findings," in Kuznets, Simon, Population, Capital, and Growth: Selected Essays, London: Heinemann, 1-48.

AGING POPULATIONS

The second major trend in global demographics is aging. Since 1995, the global population pyramid has changed from being pyramidal to pear-shaped.

Figure 4: World Population Structure (1990 and 2015)



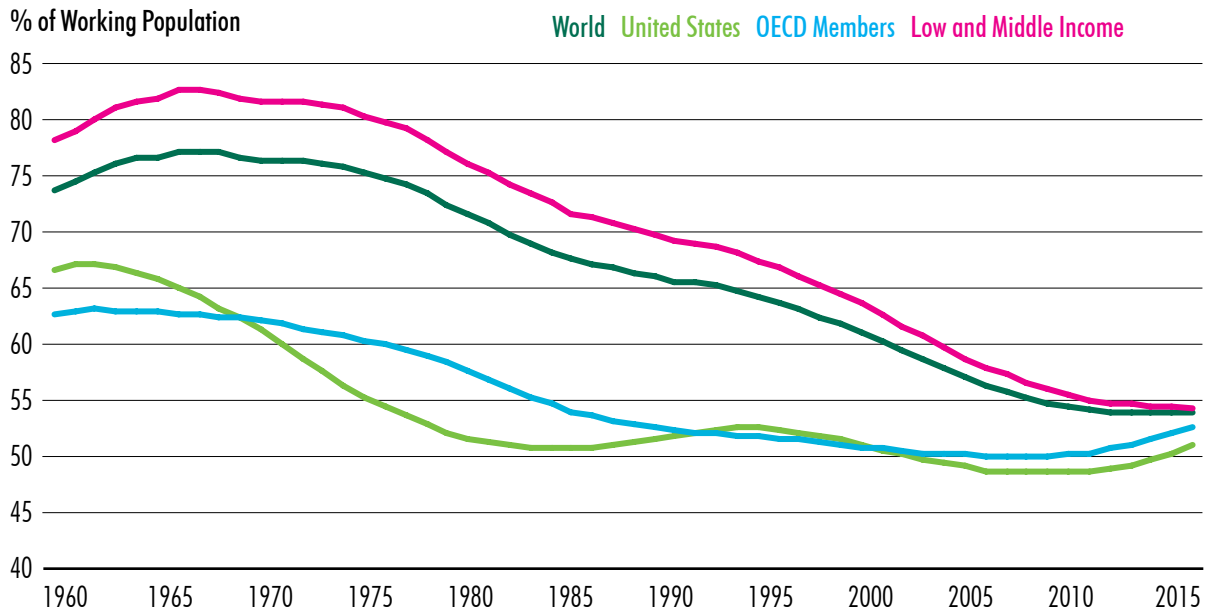
Source: ILO (2017)

There appears to be a negative relationship between the global dependency ratio (defined as the % outside the working age bracket (older or younger than 16 to 65) and savings rates. A 1-percentage-point fall in the global dependency ratio causes a 50 basis points increase in savings as a share of world GDP.² The reason for this should be clear: the period in which an individual is earning is the time when his or her savings are at their highest level, although the precise rate does vary with life stage. The growth of the working age population, due to the baby boom caused dependency ratios to fall over the last 35 years and hence the level of global savings to increase. The baby boomer generation, which is now moving out of its peak saving years and into retirement, will cause rises in the dependency ratio and savings should begin to fall again.³

2. Lukasz R. and Smith, T. (2015) *Drivers of long-term global interest rates – can changes in desired savings and investment explain the fall?*

3. *World Bank (2017)*. Note: savings is defined as gross national income less total consumption, plus net transfers.

Figure 5: Dependency Ratios



Source: World Bank (2016)



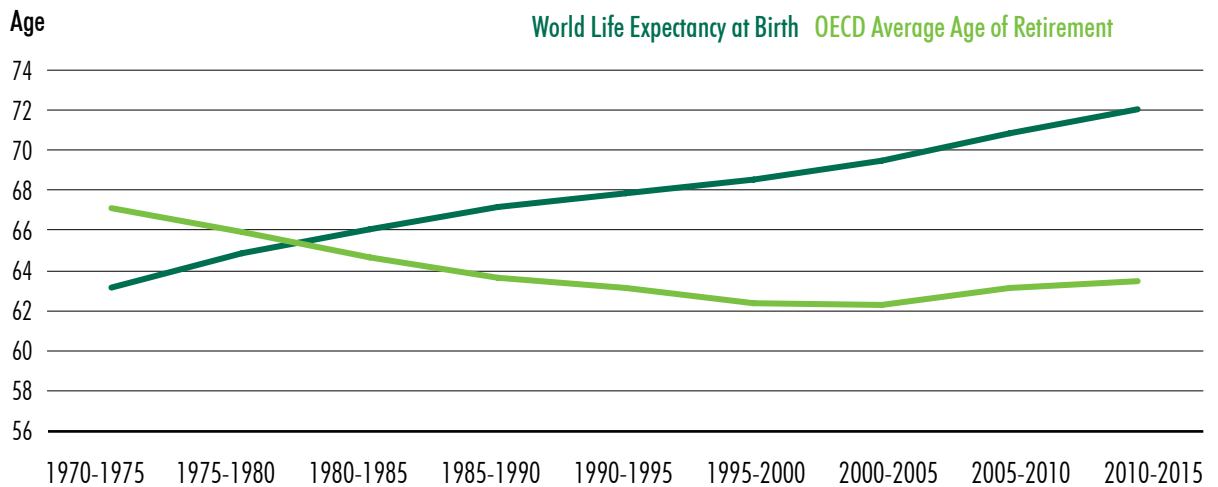
LIFE EXPECTANCY

The link between longer life and increased propensity to save makes intuitive sense, as individuals prepare for a longer period of retirement.⁴ The lower interest rates that result from longer lives create a need to save even more for retirement.

In countries undergoing demographic transition (where life expectancies are increasing and the death rate is falling), the saving behaviors of different cohorts do not cancel out: the increased saving of those of working age who have to provide for a longer period of retirement is not offset by the spending of retirees. In countries with more than 1 billion inhabitants, like India and China, the result is a substantial rise in the aggregate level of savings. Furthermore, in countries undergoing rapid economic growth, the incomes of the young are high relative to the retirement incomes of the old, concentrating income among the highest saving group and limiting the fall in savings.

Ben Bernanke, formerly of the Federal Reserve Bank termed this phenomenon the “global savings glut”: an excess of global savings over investment, emanating from increased savings rates in emerging economies in East Asia.⁵ This surplus supply of capital drives down the relative cost of capital, namely the interest rate. Carvalho et al. (2016) attribute the bulk of the 1.5-percentage-point fall in equilibrium interest between 1990 and 2014 to increasing life expectancy.

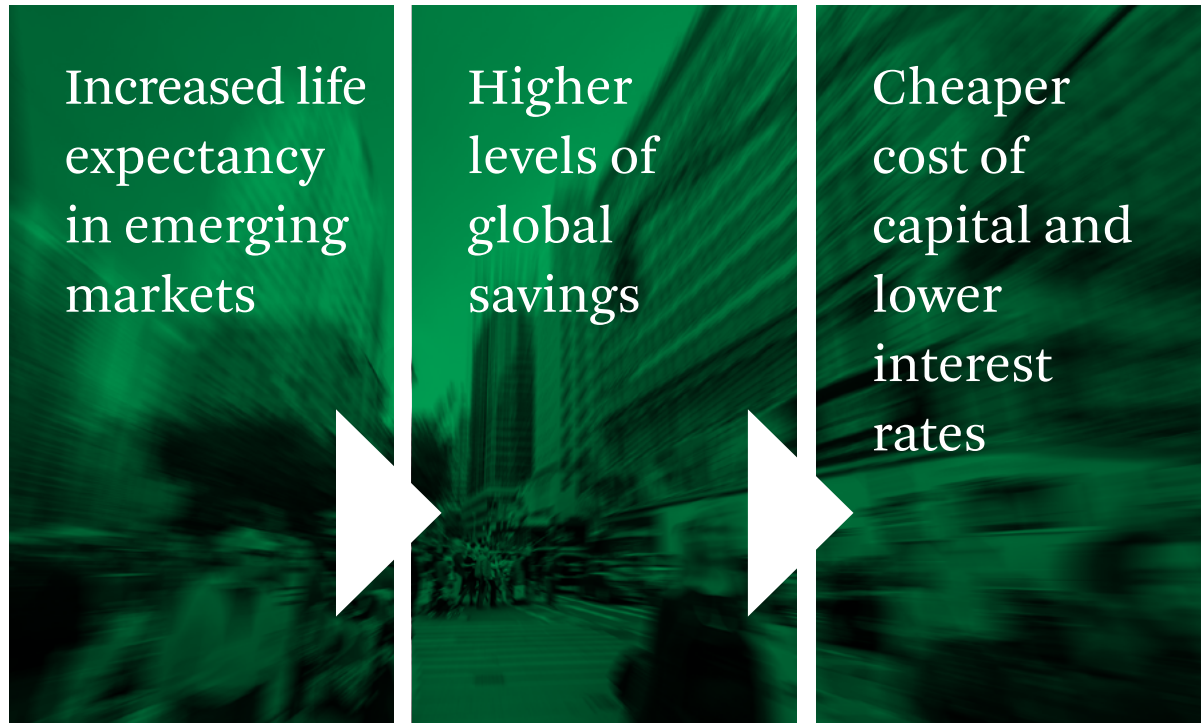
Figure 6: World Life Expectancy and Retirement Age



Source: World Bank and OECD

4. Bloom, D., Canning, D., and Graham, B. (2003) ‘Longevity and Life-Cycle Savings,’ The Scandinavian Journal of Economics, Vol. 105 (3), pp. 319-338

5. Bernanke, B. (2015) ‘Why are interest rates so low, part 3: The Global Savings Glut.’



WHERE NEXT?

According to the International Labor Organization,⁶ the interlinked trends of contracting labor supply and extended life expectancy are all set to continue along their current trajectories in the foreseeable future. Of course, the dissaving that is associated with aging populations in the developed world offers some prospect of a reduction in the supply of capital. However the latest research suggest that this may not be enough, at least for many years to offset the other powerful demographic factors that are generating savings at a global level. So interest rates and property yields can both be expected to remain lower level for some considerable time to come.

While interest rates in the U.S. were raised by 0.5% since December 2016, it is unlikely that rates will be raised further in the near-term. For example, the European Central Bank is keeping rates at 0% and providing a further half-year of quantitative easing, and China is continuing to stimulate economic growth through monetary policy in 2017. However, if the global economy continues along the growth path of the current economic cycle, tightening monetary policy can eventually be expected. Each peak in the rate cycle is lower than the last, and after this cycle is complete and recession once more sets in, interest rates will fall back to low levels.

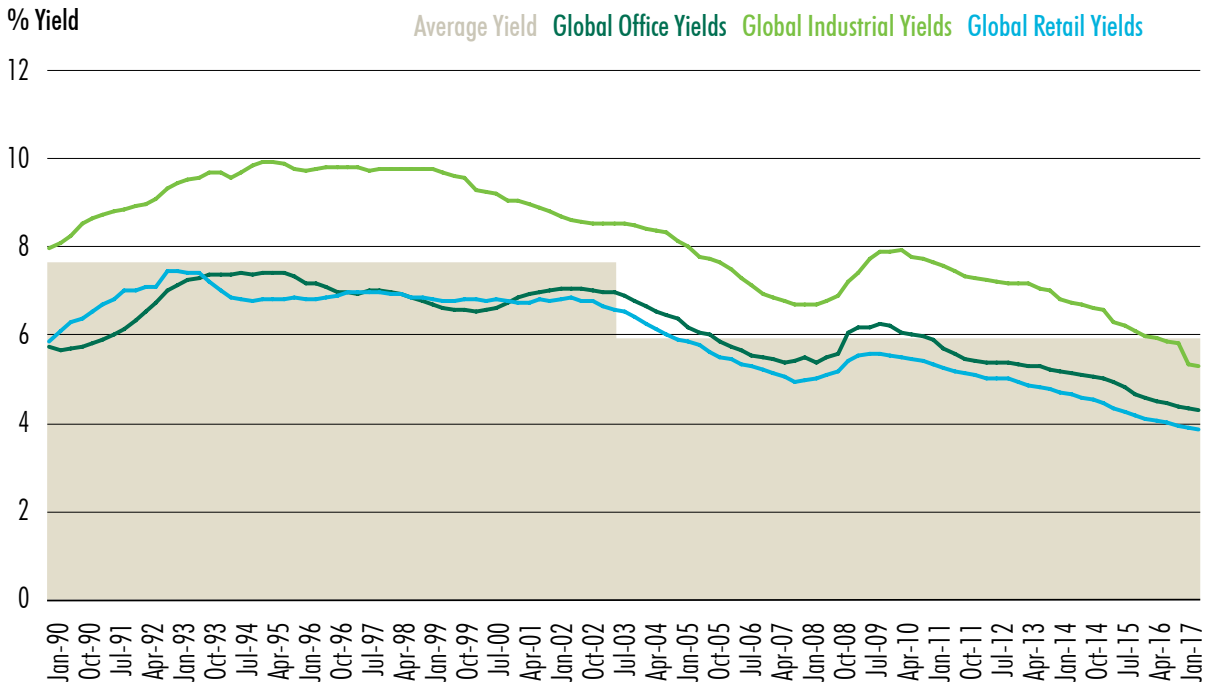
6. ILO (2016) 'World Employment and Social Outlook.'

IMPLICATIONS FOR REAL ESTATE

For real estate, the implication of demographic change is a quasi-permanent structural shift in real estate yields. Statistical analysis suggests there is a structural break in the global yields series, equating to a fall of 171 basis points around 2003.

Part of this fall is due to the nature of the current economic cycle, which has seen a protracted period of sluggish growth due to the lingering effects of the global financial crisis. However, recent evidence suggests that longer-term demographic factors are also at work. The observed shift in real estate yields is potentially part of a long term structural change toward a near permanent, lower base.

Figure 7: Global Real Estate Yields



Source: CBRE Research (2016)

FOR MORE INFORMATION, PLEASE CONTACT:**Nick Axford, Ph.D.***Head of Research, Global*

+44 207 182 2876

Nick.Axford@cbre.com

*@NickAxford1***Spencer Levy***Head of Research, Americas*

+1 617 912 5236

Spencer.Levy@cbre.com

*@SpencerGLevy***Richard Barkham, Ph.D.***Chief Economist, Global*

+44 20 7182 2665

Richard.Barkham@cbre.com

Siena Carver*Analyst, Global Research*

+44 20 7182 2608

Siena.Carver@cbre.com

Neil Blake, Ph.D.*Head of Forecasting and Analytics, Global*

+44 207 182 2133

Neil.Blake@cbre.com

*@NeilBlake123***Jos Tromp***Head of Research, EMEA*

+31 20 626 26 91

Jos.Tromp@cbre.com

Henry Chin, Ph.D.*Head of Research, Asia Pacific*

+852 2820 8160

Henry.Chin@cbre.com.hk

@HenryChinPhD

To learn more about CBRE Research, or to access additional research reports, please visit the Global Research Gateway at www.cbre.com/researchgateway.

Additional U.S. Research from CBRE can be found [here](#).