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DEMOGRAPHICS, REAL INTEREST RATES AND EQUITY MARKETS

WHITE PAPER

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Demographics, Real Interest Rates And Equity Markets

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Key Takeaways

Population growth per se is not important; what's important from an investment point of view is:

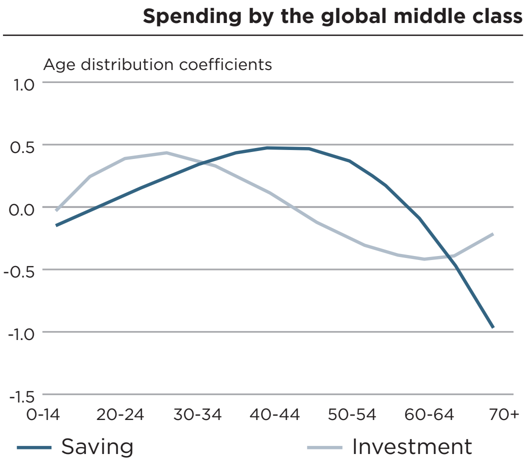
- *The global savings surplus since the 1980s has been the most important driver of expanding asset multiples*
- *Demographics is an accelerator of asset prices. This is no longer the case. As the world population ages, eventually the demographic support to asset prices will reverse – but not for many years to come.*
- *We believe demographics is a crucial factor in the outperformance of growth stocks over value stocks*
- *Since demographic trends in western societies continues to set the global price of capital, Asia will with open capital markets "import" much too low real interest rates, creating the foundation for asset booms in future years.*

The theoretical framework linking demographics to interest rates

Economic theory states that savings must equal investments. But capital is mobile, so it does not follow that savings must equal investments within individual economies. As a result, different countries show different propensities for savings versus investments. Analyzing data from 85 countries between 1960 and 2005, economists at the Brookings Institution in 2006 found that a country's propensity to save is likely to exceed its propensity to invest when the population is skewed toward the ages of 35-64, please see Figure 1 on the right.

Children earn nothing and consume plenty, so they are a drain on national saving. As young adults enter the workforce, it is only after a few years that these younger workers start to contribute to net savings. Therefore, when a country has a baby boom and has a population increasingly skewed toward children and young adults (0-34 years) it will show a stronger propensity to invest and a relatively weak propensity to save. Countries in this position typically run current account deficits and import capital to fund the over-investments. However, for the global economy, a closed system, saving and investment must be brought into balance by a change in the clearing price for savings — i.e. a higher real rate of interest. This is what happened in the West between 1946 and 1980, as the Baby Boomers were born and grew up.

Figure 1



Source: Brookings, Gavekal Data/Macrobond, August 10 2006

As the population ages and the 35-64 age group becomes bigger the demand for savings changes. These workers have passed the time of peak consumption and starts saving for retirement, and companies will face lower final demand, and will therefor invest less. Therefore, in this phase of economic development savings will exceed investments, and economies will tend to see current account surpluses and export capital. In a closed system like the world the variable that brings equilibrium between savings and investments will be lower real rates of interest. This roughly describes what happened in the west from 1980 onwards and more recently in China. Academic papers have estimated the demographic effect on real interest rates over this period and generally conclude that demographics have been responsible for 1,5-2,0 %-points or almost half of the reduction in the equilibrium interest rate between 1990 and 2014.

The final stage of demographic maturation comes when the baby-boom generation starts aging into retirement. The typical retiree is a net drain on national savings. Once they stop working, the elderly start to consume their own savings and/or draw on national savings via a public pension plan or national healthcare system. As a result, a very old population, like a young population, sees its propensity to save fall below its propensity to invest. Capital must be borrowed from other countries or, if it is a global phenomenon, the real rate of interest must rise to bring savings into equilibrium with investment.

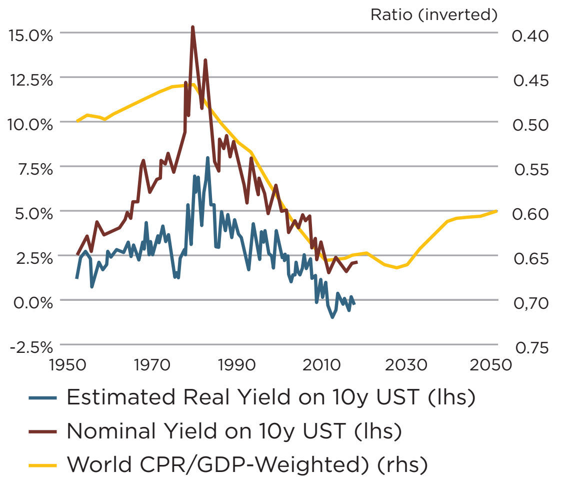
If and when this happens it will have significant effects on asset markets through the effect of a rising real rate of interest.

Theory is one thing; what has happened in the real world?

As can be seen below the Capital Providers Ratio, the ratio between savers and "consumers" (curve inverted in first graph in order to document the relationship to falling interest rates) of savings has had a very real effect on interest rates since interest rates peaked around 1980.

Figure 2

Demographics Drives Interest Rates



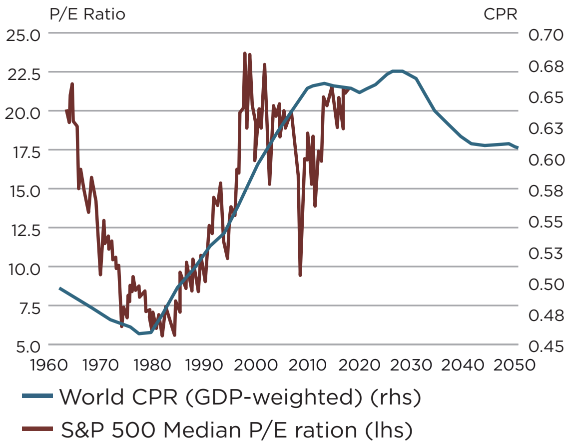
Source: Gavekal Data & Macrobond, October 17 2017

Since 1980 real interest rates has fallen from around 5% to around zero today. And via interest rates demographics has had a very real effect on equity markets, where valuation multiples have risen significantly since 1980, as can be seen in the following chart.

Since 1980 the P/E ratio of the US equity market has risen from around 7 to today above 20, mimicking the fall in interest rates, which has been the result of the rise in the capital providers ratio. As people have saved more over the last several decades so have they bid up prices of assets, both bonds, equity and most likely also property and all sorts of other assets.

Figure 3

And Therefore P/E Multiplies



Source: Gavekal Data/Macrobond/Compustat, October 17 2017

What will happen going forward?

The graphs above show the Capital Providers Ratio plateauing for the next 10-15 years, indicating no further secular updrift to asset valuations. However, it also supports the view that asset prices can continue to trade at historically high valuation levels for the foreseeable future before the demographic support turns into a headwind sometime after 2030.

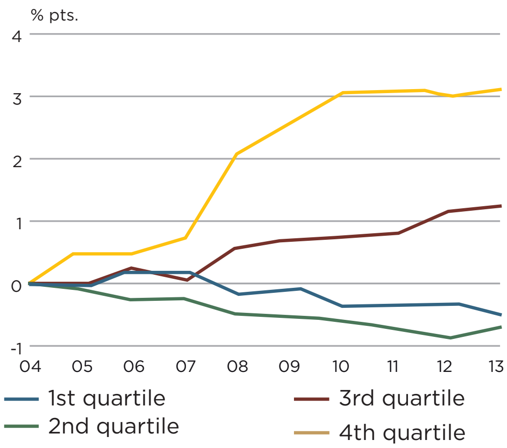
While global aging may someday drive interest rates structurally higher, we think the above argument is too negative and simplistic. Global savings will most likely remain stronger than many expect, supporting a low global real interest rate for a much more extended period. We live in a dynamic and not static world and therefore the traditional capital providers ratio used in studies on this topic, is flawed. The working and saving behavior evolve over time, warranting a dynamically modified capital providers ratio. The ability to work and save later in life should continue to rise, as is reflected in a gradually rising effective retirement age in the world. Furthermore, advances in health technology boost functional age in life's later stages. Seniors' willingness (and incentives) to work longer also should rise along with their ability. Also, years of low interest rates have left impending retirees playing catch-up in retirement saving. More generally, around the world, longer lives must ultimately be supported by longer working lives and higher savings rates to support a longer life.

Above it was stated that "The typical retiree is a net drain on national savings". But savings are not held by the "typical retiree". The top 20% in the US owns 80% of financial assets. Rather obviously, high earners' working and saving behavior has an outsized effect on global saving. If the highest earners are working and saving later in life, the impact should be significant. And this is exactly what's happening: Change in Labor force participation by household income quartile.

The 25% highest income earners are the ones in the US that have increased their labor participation rate (and therefor likely also savings) the most – especially since the GFC.

Figure 4

Older Workers, over age 55

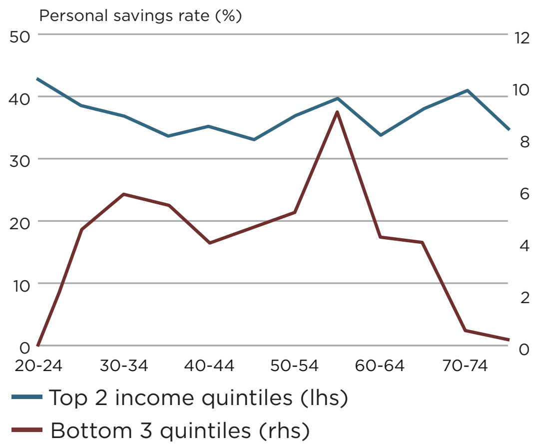


Source: FRBSF Economic Letter, February 2016

What about seniors' late-life saving behavior? Consider the top two income quintiles, collectively accounting for about 80% of U.S. personal income and more than 95 % of net worth.
Based on 2014 data from the BLS's Consumer Expenditure Survey, these high earners exhibit no decline in savings rates as they enter retirement, and even in their late 70s.

Figure 5

U.S. Personal Savings Rate by Age and Income



Source: BLS Consumer Expenditure Survey, 2014, and Federal Reserve Survey of Consumer Finances, 2013, PIMCO calculations

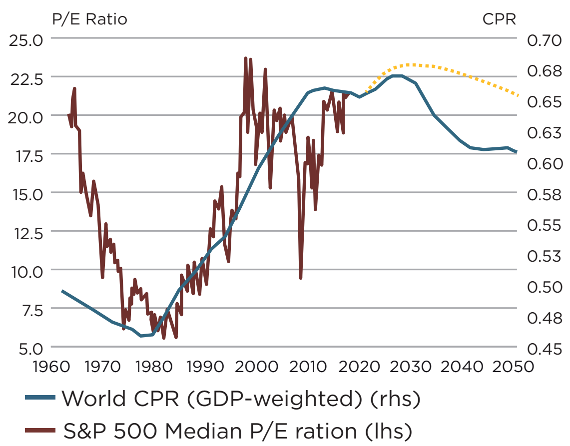
The highest earners in the US and probably across the western world, are the people working and saving later in life. As a larger proportion of the population enters this age cohort there should continue to be a tailwind for savings demand and support for a low global real interest rate.

Pimco has tried to quantify the effects of applying a more realistic dynamic retirement age assuming that people gradually will increase retirement age from 65 to 70 by 2050 (Footnote: Joachim Fels, 70 is the new 65: Demographics still support "Lower rates for longer", PIMCO, Feb 2016). The effect of an increase in the retirement age from 65 to 70 years on the savings-investment balance is an effective delay of around 15 years before the net effect of demographic aging becomes a headwind for real interest rates. Applying this insight to the mentioned (static) analysis above would indicate that real interest rates and therefor asset prices in general would not see any demographic headwind before the 2040s.

In Figure 6, we have superimposed the effects on the capital providers ratio of a more dynamic approach to assessing the future trend in the CPR. Only sometime during the 2040s will the savings-investment balance tip sufficiently to significantly affect the real interest rates and Price Earnings ratio.

Figure 6

Static and Modified Dynamic



Source: Gavekal Data/Macrobond/Compustat, October 17 2017

Style and country effects from demographics

Since end 2006, growth stocks have outperformed value stocks. We believe a crucial factor behind this has been the falling real yields. Periodically there will be reversals, but we firmly believe that the above conclusions on demographics and real interest rates continue to support growth ahead of value as secular low interest rates support long duration assets. Within equities therefore, we continue to like growth as well as free cash flow.

Furthermore, we believe that going forward investors will increasingly allocate capital to Asia. As long as global capital markets remain open real Interest rates are determined at the global level and will for the foreseeable future be dominated by demographic changes in western economies, which most likely will imply abnormally low real interest rates for the economic growth Asia will experience, as explained in our white paper "Global Demographics — why should we care?". Asia will be a secular outperformer both because of internal growth dynamics as well as because of a very low cost of capital and therefor promises to be the most important investment area for the coming decades.

Conclusion

Real Interest Rates matters because they drive asset prices. Many factors impact real interest rates. Shorter term cyclical factors like the business cycle comes to mind as well as the somewhat longer cycle phenomena of changes in productivity levels and potentially the funding of future big US fiscal deficits. However, the biggest impact on real interest rates comes from demographics, explaining around half of the decline in real interest rates since 1990. And although other factors introduce volatility into the assessment of future real interest rates it is our view that demographics acts as a long-term anchor around which real interest rates oscillates.

Eventually societies will turn "sufficiently old" to meaningfully impact aggregated savings levels and therefor reverse the downward pressure on real interest rates. However, we believe it will take many years before this happens, and in the meantime bonds, equities and other assets will stay secularly supported by demographics. Asset prices will be volatile but also continue to be structurally highly priced for a good reason, namely a savings surplus driven by global demographics for many years to come. The prime beneficiaries of this will be growth stocks as well as Asian equities, who will see the best of two worlds, namely both good growth as well as low cost of capital.

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