

## The US Equities Are Not Expensive. Caveat? Demographics

The U.S. equities by all standards and measures are not dear: both the supply side in terms of sustainable ROEs and the demand side in terms of savings, leverage and inflation shocks are supportive of the current pricing. It is, however, hard to ignore the potential impact of demographics.

“What happened to U.S. saving in the 1980s remains an intriguing puzzle.”<sup>1</sup>



### Strong performance

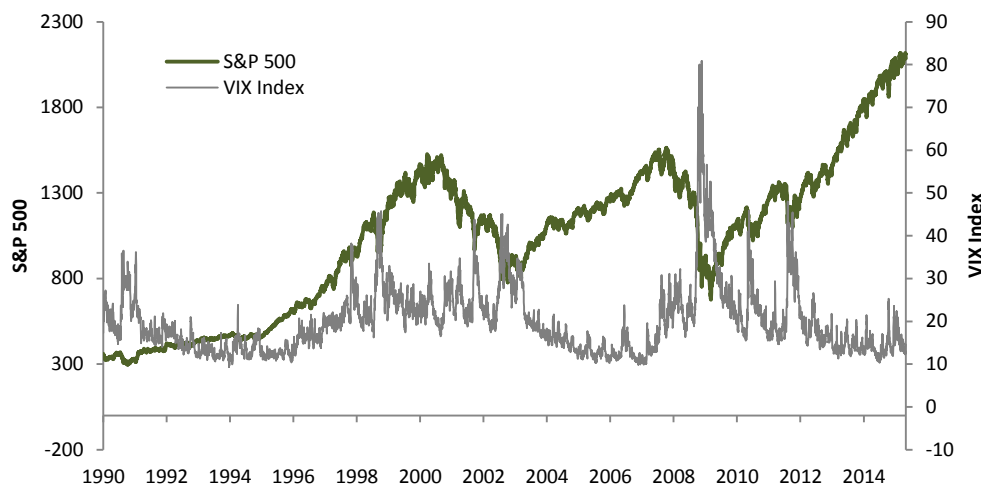
A number of years ago the first place we looked to try and explain the historical levels of equity risk premium was demographics. The choice seemed natural at the time: the greater the proportion of older people, the greater the risk aversion and preference for fixed income investments. Despite months of empirical work, however, we failed to find any reliable relationship between the various demographic factors and equity risk premia. LINKS then went on to base the ERP studies on the factors that did exhibit strong empirical relevance: savings rate, leverage and inflation surprises.

As it happens, we did not rid ourselves of the need to think about demographics. As summer of 2015 approaches and the S&P 500 has added a whopping 140% since the low level in 2008 (Figure 1), the question of whether the valuations have become unsustainably high still depends on our understanding of demographics. More specifically, it depends on the elusive link between aging and the savings rate. After all, historically low levels of volatility are yet another reminder of the danger of complacency: the degree of integration of the pro-cyclical nature of volatility with the investment processes of principal investors today is even greater than in 2008.

---

<sup>1</sup> Auerbach A.J., Kotlikoff A.J., “Demographics, Fiscal Policy, And U.S. Saving in the 1980s And Beyond”, Tax Policy and Economy, 1990

**Figure 1:** S&P500 and VIX index, source: Bloomberg



The pricing of equities, as for any other “commodity”, depends on the supply and demand sides. The “supply side” is the perceived and promised ability to generate profits well into the future, i.e. in essence the sustainable return on equity. Therefore, the first part of the puzzle is to be able to judge what the inherent profit generation capability of the U.S. equities is. The “demand” side is the pool of money ready to be invested in equities (the savings rate) and the risk aversion.

## The Supply Side

The ability of S&P 500 companies to generate returns is captured by the terminal ROE – the sustainable level of average Return on Equity across the cycles. In our previous Risk Wire we concluded that in Europe the sustainable level of ROE has fallen significantly due to the secular regulation-related headwinds that many industries experience.

The picture is entirely different in the U.S. Out of ten main sectors only two have not yet recovered the average ROE: energy and materials (Figure 2). Both industries have experienced structural issues that are temporary and typical – higher demand and prices have led to higher added capacity and eventually to a temporary oversupply in the market that is likely to clear itself out in two years.

**Figure 2:** Return on Equity, S&P500 Energy and Materials Sectors, source: Thomson

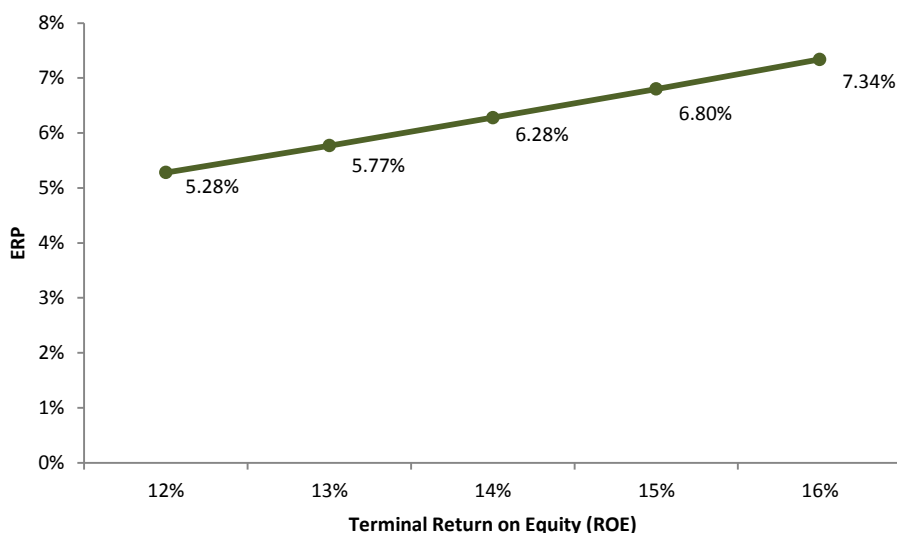


The remaining industries, even banks, have fully recovered their returns and appear to improve them beyond the cross-cycle averages. The cross-cycle average return on equity in the U.S. based on the trailing 12-month data from 1990 is at 15.9%, with the highest reading at 18.9%<sup>2</sup>.

Of course, we can comfortably write this performance off due to a number of bubbles that helped the U.S. equities along: the technology bubble in 1990s, the property and financials bubble of late 2000s, and arguably the farmland, petrochemicals and oil & gas bubbles in recent years. However, it could also be argued that formation of such bubbles is in the very nature of the U.S. economy: the extreme freedom of capital and labour flow cause expansion in successful industries beyond the economically feasible levels.

So assuming a ~15% sustainable ROE, an investor would expect 6.8% return over the 10-year bonds from the U.S. equities, in other words, the Equity Risk Premium is currently 6.8% (Figure 3).

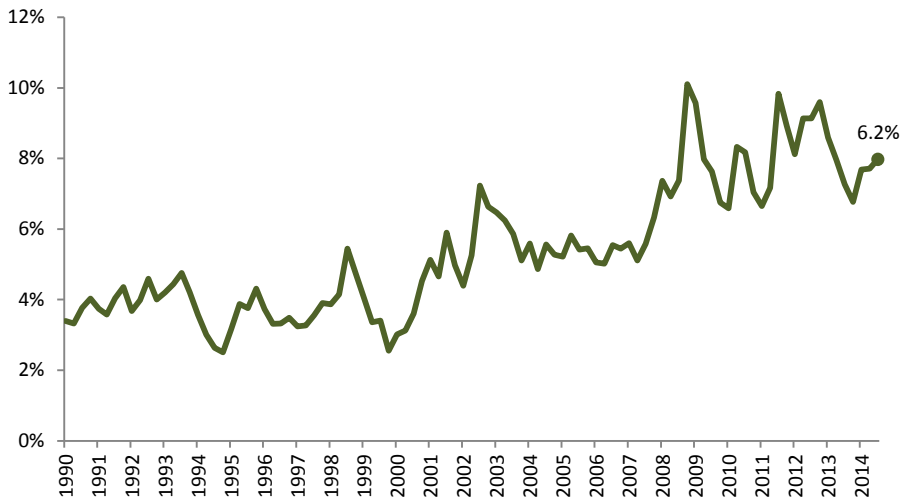
**Figure 3:** Terminal ROE and corresponding ERPs, source: LINKS analysis



Even if we are uncertain about the ROE going forward, in any event, Figure 3 suggests that the ERP is somewhere between 5.8% and 7.3%. The whole range is well above the historical levels (Figure 4), which may suggest that equity investor in the U.S. equities is compensated more than historically the norm for holding equities. But is the investor compensated sufficiently?

<sup>2</sup> Please note that the levels may be different if calculated with full fiscal year data.

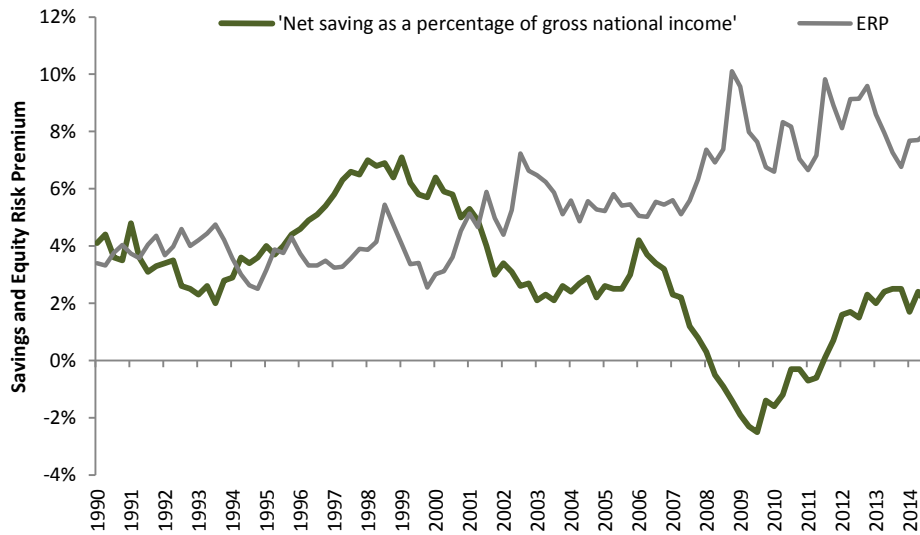
Figure 4: S&P500 Equity Risk Premia historically, souce: LINKS



The Deman Side

In order to answer the question of sufficient compensation, we have to look at the drivers of “fair” ERP. Fundamentally, the savings rate generates a pool of money that “chases” equity investments; high savings rates create glut of supply of investments and depress the ERP (Figure 5).

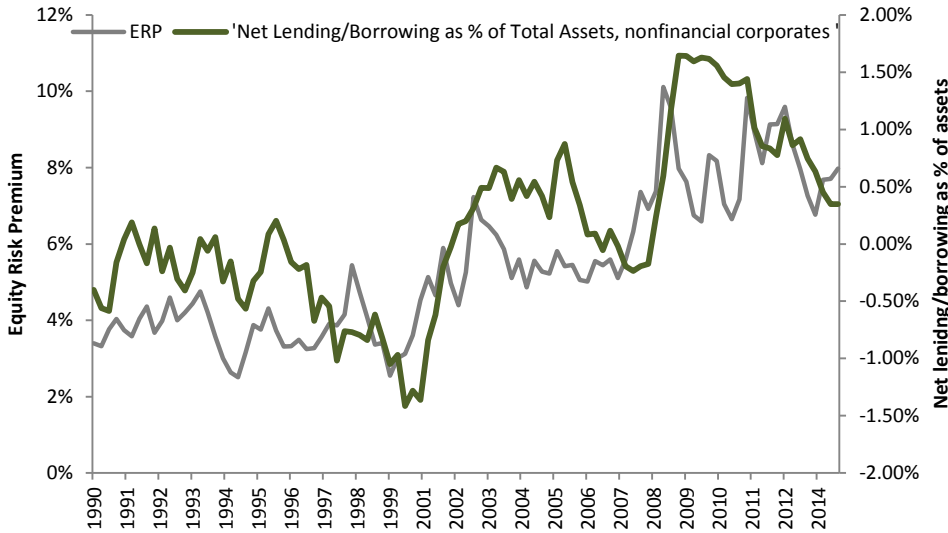
Figure 5: Net savings and ERP, souce: LINKS, US Bureau of Economic Analysis (BEA)



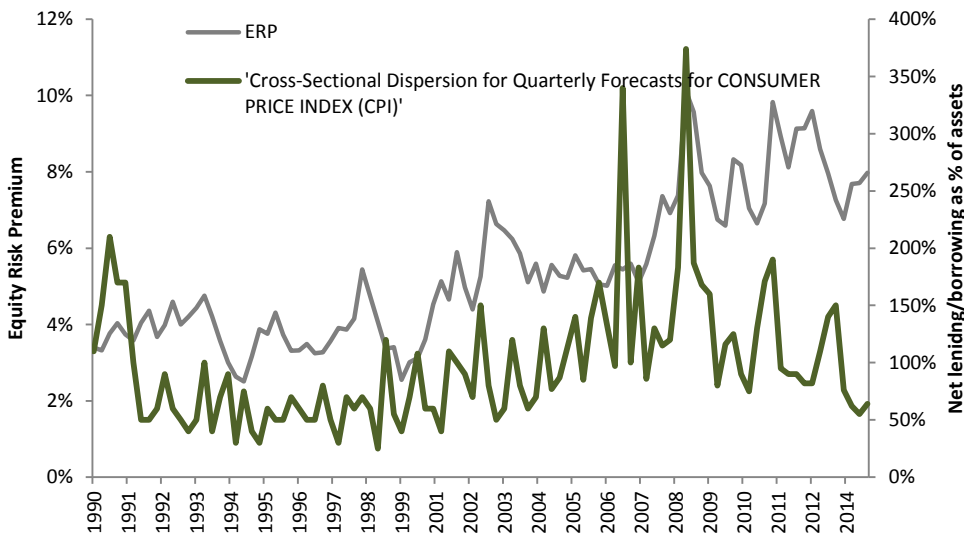
As it happens, savings have been on the rise in the U.S., which means that other things held unchanged, there is more money for equity investments and consequently the “fair” level of pricing should be higher.

The next question is whether the available money will flow into the equity investments, which is a function of inherent risks of these investments: the leverage and the likelihood of inflation shocks. Both factors are positively related to ERP and have been falling (Figures 6 & 7).

**Figure 6:** Net lending/borrowing as % of Total assets and ERP, source: LINKS, US Bureau of Economic Analysis (BEA)



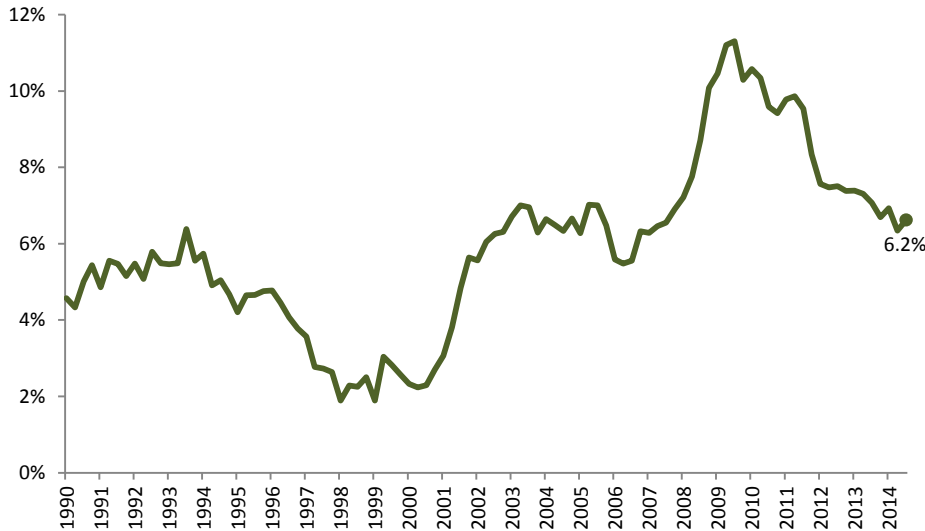
**Figure 7:** Cross-sectional dispersion of quarterly CPI forecasts, ERP, source: FRED, LINKS



The resulting “fair” level of compensation for the U.S. equities is currently at 6.2% (Figure 8). **The required level of minimum compensation for holding equities in the U.S. has been consistently falling since 2009, in-line with the improving economy and corporate profits.** The required or fair ERP is an important metric that is often overlooked by value investors who tend to ignore that the economy is in constant flux: the “fair” pricing changes with interest rates, savings rates, leverage and

inflation expectations. A P/E of 20 may be too much in one type of economic climate and too little in another.

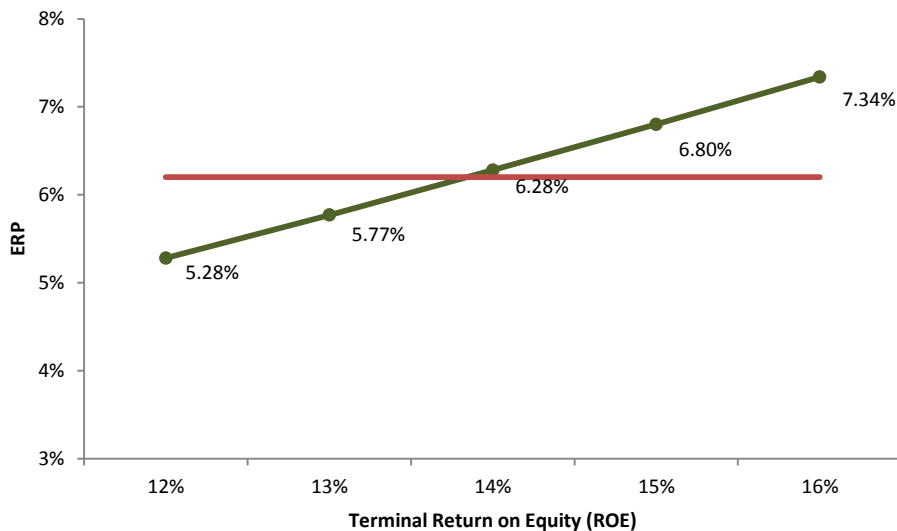
**Figure 8:** Fair level of required ERP, source: LINKS



**So are the U.S. equities expensive?**

This brings us to the ultimate question of whether there is a significant pricing risk in the U.S. equities. Overlaying the fair level of ERP with Figure 3 we get the pricing “comfort zone” (Figure 9):

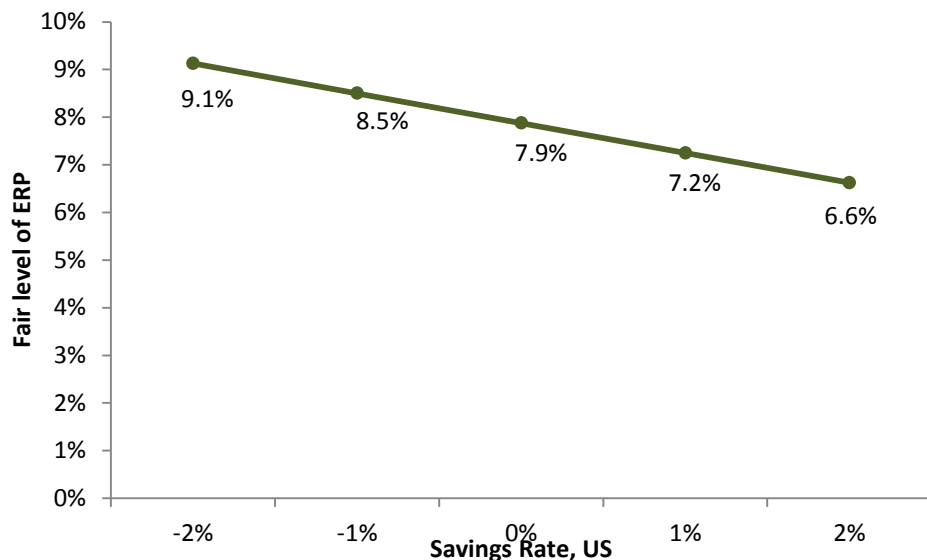
**Figure 9:** ERP dependency on Terminal ROE and the fair level of ERP (in red), source: LINKS



Since we are comfortable that the cross-cycle ROEs are unlikely to be below 14%, an investor in the U.S. equities is currently compensated a little more than fairly.

Of course, in this picture we are missing the biggest wild card: the demographics, or rather the potential impact of demographics on savings. If savings were to fall from the current 2.5% of GDP to 1%, the required level of ERP would be 7.2%, which would destroy the whole “comfort zone” of valuation. One percent of savings rate decline increases the required level of ERP by 0.6% (Figure 10).

**Figure 10:** Dependency rate of fair ERP on savings rate, source: LINKS



So why should the savings rate fall? The answer is: we do not know. Multiple theories have been suggested for explaining the behavior of the national savings rate, most of them to do with demographics. The Altruistic Family Model, the Life-Cycle Model, the Reduced Form Model are the main ones and they all fail miserably when it comes to predicting the dynamics of savings. If there was any truth in the common belief that with aging population the national savings rate will fall, the U.S. equities would be way too expensive for anyone’s comfort.

Unfortunately, we have not been able to zero in on a framework that explains national savings with sufficient degree of accuracy. Ignoring the issue of savings, the U.S. equities do not have serious valuation headwinds. However, we cannot deny the secular downward trend of the savings rate in the longer term. As far as long-term pricing is concerned, then, the jury is still out.

## About LINKS:

LINKS Analytics B.V. has a focused offering of industry leading systemic risk management solutions for institutional investors. Our unique and proven methodology of estimating the degree of systemic risk is based on the assessment of asset valuation dislocations globally (Graham Risk) and the degree of interconnectedness and concentration (Network Risk).

## Contact:

LINKS Analytics B.V.  
Kluizenaarsbocht 6, 2614 GT Delft  
The Netherlands  
Tel: + 31 (0) 70 891 9282

E-mail: [info@linksanalytics.com](mailto:info@linksanalytics.com)  
[www.linksanalytics.com](http://www.linksanalytics.com)

©2015 LINKS Analytics B.V.

---

## Limitations:

This document is provided for information purposes only. The information contained in this document is subject to change without notice and does not constitute any form of warranty, representation or undertaking. Nothing herein should in any way be deemed to alter the legal rights and obligations contained in agreements between LINKS Analytics and its clients relating to any of the products or services described herein.

LINKS Analytics makes no warranties whatsoever, either express or implied, as to merchantability, fitness for a particular purpose, or any other matter. Without limiting the foregoing, LINKS Analytics makes no representation or warranty that any data or information supplied to or by it are complete, or free from errors, omissions or defects.

LINKS<sup>SM</sup>, LINKS Analytics<sup>SM</sup>, BIPSS<sup>SM</sup>, LINKS Risk Platform<sup>SM</sup>, Graham Risk<sup>SM</sup> are service marks of LINKS Analytics B.V. Other products, services, or company names mentioned herein are the property of, and may be the service mark or trademark of, their respective owners.