

Still Flashing Green:

Equities in a world of higher growth and financial repression



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Equity markets have started the new year with a powerful rally. At the same time the great bond bull-market, which dominated capital markets for the last four decades, has finally come to an end; the 2-year US Treasury yield has risen above 2% and the 10-year Treasury yield is back above 2.6%.

According to market commentators, bond yields, and equity prices are not supposed to rise at the same time. Equities, real estate, art, classic cars and fine wine have all surged in value during the great bond bull-market. Conventional wisdom attributes those surging prices to the coinciding decline of interest rates. It follows, if the bond bull-market is over then the asset bull-market should also be over.

The logic supporting this bearish outlook is persuasive and, on the face of it, supported by compelling historical evidence. Nevertheless, asset markets are continuing to rally despite bond yields moving higher. The growing gap between the bullish markets and the increasingly bearish commentators requires consideration.

This note walks through a couple of scenarios which may explain why equity markets are still rallying in the face of rising bond yields.

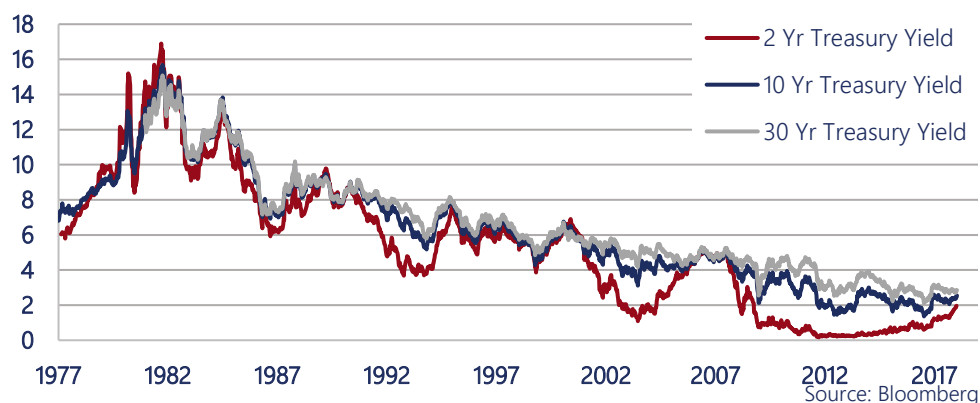
As I have used a few equations in this note and, I'm told, most readers give up at the first equation, I will offer the two scenarios upfront:

1. **The growth scenario:** equity investors are simply pricing higher real economic growth, while bond investors think this growth will be largely non-inflationary, equity prices are adjusting accordingly.
2. **The inflation scenario:** central banks are permitting or perhaps even encouraging higher inflation, through a process of financial repression. As a result, the inflation protection offered by equities is becoming more valuable.

Of the two scenarios, the second is the more interesting. The first scenario is likely benign for both equity and bond

investors. The second scenario is likely benign for equity investors but potentially very damaging for bond and cash

Figure: 1 2, 10 & 30 Year US Treasury Yields



Source: Bloomberg

investors.

Curve flattening

Using the benchmark 10-year Treasury yield as a reference, the great bond bull-market can be dated as beginning on September 30th, 1981, when the 10-year Treasury yield peaked at 15.84%, and continuing until July 8th, 2016 when the same 10-year yield troughed at just 1.36%.

Assuming we don't see a lower 10-year yield in the next few years, the great bond bull-market lasted a total of 34½ years. This means, few of today's investment professionals have first-hand experience of managing money in a rising inflation environment.

The bond-bull may have passed but so far, the bear has barely come out of hibernation. Short term interest rates have risen noticeably, but longer-term interest rates have not clearly moved out of the trading range held for the last five years.

Bond investors refer to interest rate movements of the type we are seeing today as a 'bear-flattening', meaning bond yields are generally rising, but the lower short-term rates are rising more rapidly than the higher longer-term rates. This causes the yield curve across different bond maturities to flatten, as can be seen by the convergence of the red, blue and grey lines representing the 2,10 and 30-year US Treasury yields in Figure 1.

From 2009 until the end of 2015, the US Federal reserve held its short term target rate at the exceptionally low level of just 0.25%.

Since then it has gradually increased this interest rate to 1.5%. The failure of long term interest rates to respond to these recent hikes suggests investors expect only a very muted rate cycle. If the yield curve is to be believed, the Fed is probably already more than half way through the rate hike cycle and, once done, will likely leave interest rates at a low level, for many years to come.

Valuing Equities

To understand why the equity market might be responding positively to these interest rate movements, it is useful to understand how the dividend discount model – the equity market’s standard valuation tool – is influenced by interest rates.

The dividend discount model calculates the net-present-value of a company’s future dividend payments and sums up those values to give the present value of the company. The price, P , of an equity is therefore the sum of the value of all future dividend payments, D_i , with each of those future payments being scaled down by an appropriate discount factor, $1/(1+R)^i$, to account for the length of time the investor must wait for the anticipated payment and the associated risks that those payments may not arrive or be reduced in value by inflation.

$$P = D_0 + \frac{D_1}{(1+R)} + \frac{D_2}{(1+R)^2} + \dots + \frac{D_n}{(1+R)^n} + \dots + \frac{D_\infty}{(1+R)^\infty}$$

On its own this equation is of limited use. Turning it into a more practical stock market valuation tool requires another couple of steps. Firstly, we need to pick an appropriate discount rate, R and secondly, we need to make an estimation of the likely size of the future dividend payments.

Estimating the discount rate is, at least in principle, relatively straightforward. Long term Treasury yields are the return on long-term lending to the government, and the government is considered the safest credit risk. Therefore, the dividend discount rate, which is essentially the long-term return on lending to a riskier company, can be thought of as the long-term government bond yield plus some additional, equity risk premium, which is the compensation for the ever-present risk that the company goes out of business or, for some other reason, fails to make the expected payments. For practical purposes the dividend

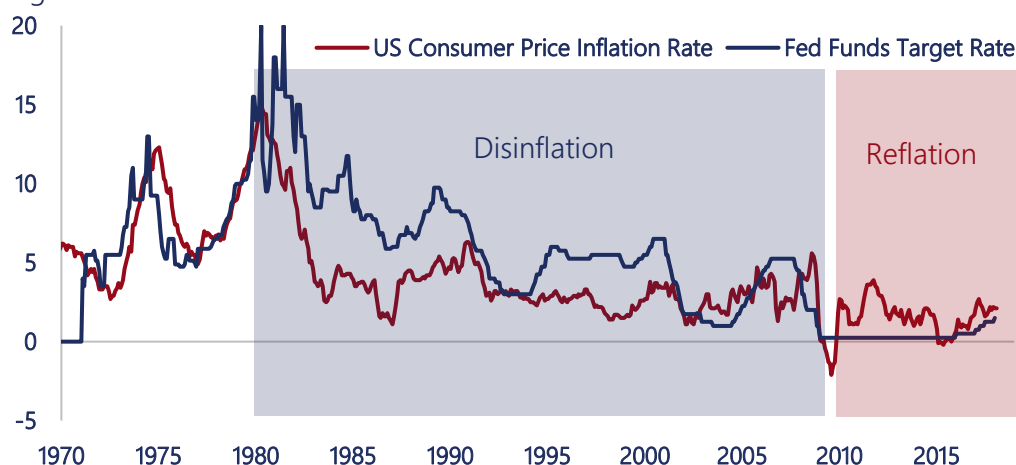
discount rate, R , can be thought of as the 30-year government bond yield, y_{30} , plus an equity risk premium, ERP .

$$R = y_{30} + ERP$$

This gives us our first clue as to why the equity bull-market has not yet been derailed by the end of the bond bull-market. Long term bond yields have not yet moved significantly higher. If we focus only on long-term interest rates, it is difficult to definitively say the bond bull-market has ended.

Estimating future dividends, is also straightforward, in theory. The simplest method is to assume a constant annual growth rate of dividends, G . This allows us to express all future dividends in terms of today’s dividend, scaled up by an appropriate

Figure: 2



Source: US Bureau of Labor Statistics, US Federal Reserve compound growth rate:

$$D_0, \quad D_1 = D_0(1+G), \quad D_2 = D_0(1+G)^2, \quad \dots, \quad D_n = D_0(1+G)^n$$

When we put these future dividends into the dividend discount model we get this rather ungainly infinite sum:

$$P = D \left(\frac{(1+G)}{(1+R)} + \frac{(1+G)^2}{(1+R)^2} + \dots + \frac{(1+G)^n}{(1+R)^n} + \dots + \frac{(1+G)^\infty}{(1+R)^\infty} \right)$$

Although cumbersome, this equation has the attractive quality of having reduced the problem of estimating the value of an equity to just three simple variables: the current dividend, D , which is known; the dividend discount rate R , which can be estimated by observing long term bond yields; and the future dividend growth rate, G , which is the relatively unknown wild-card.

The equation also helps demonstrate how current equity prices are determined by a tug-of-war between the assumed dividend growth rates, which scale up the value of future dividends and the dividend discount rates which scale those values back down again. Increasing the assumed dividend growth rate makes a company more valuable while increasing the dividend discount rate makes it less valuable.

The benign-growth story is undramatic, it offers no flashing red-lights warning of an imminent crisis.

Market commentators worrying that equity markets are about to weaken are making the correct connection to bond yields but perhaps focusing too much on short term rates rather than the more important and relatively immobile long-term rates.

With a little mathematical manipulation, the previous infinite sum can be rewritten in the simpler but equivalent form:

$$P = \frac{D}{R - G}$$

The Growth Scenario

Armed with the dividend discount model we can now see there really isn't much of a conundrum at all between the recent behaviour of the bond markets and that of the equity markets. The all-important long-term bond rates, have yet to move significantly higher, while the emergence of a synchronised global economic expansion, is causing investors to revise up their earnings-growth and therefore dividend-growth expectations. As a result, R is remaining fixed, G is increasing, and so the price of equities, P , is also increasing.

The benign-growth story is undramatic, it offers no flashing red-lights warning of an imminent crisis. As a result, it does not grab headlines or make good copy and therefore gets limited coverage. Nevertheless, the benign-growth scenario is probably the best explanation of why equity markets are performing so well and may continue doing so.

The Inflation Scenario

If there is an anomaly in the behaviour of capital markets at the moment it is probably in the failure of long term bond rates to respond to rising inflation rates and to rising future inflation risks. This is key to the more interesting second inflation scenario which could also explain rising equity markets.

Figures 2 and 3 show the long-term history of inflation and central bank base rates in the US and UK respectively. The history is divided into two regimes. The first disinflation-regime runs from the early 1980's until the global financial crisis of 2007. The second reflation-regime runs from around 2009 and is still going today.

The disinflation-regime is characterised by a trend decline in the rate of inflation and a tendency of central banks to hold short-term interest rates above the rate of inflation – the blue line is above the red line.

By contrast the reflationary-regime is characterised by short-term interest rates being held below the rate of inflation and, arguably, a rising inflationary trend – the blue line below the red line.

Bond yields are usually thought of as being comprised of an estimate of future inflation, i , and an additional real yield, which provides investors with an above inflation return.

Why are long-term bond yields not moving higher reflecting the re-emergence of inflation risk?

$$\text{Bond Yield} = \text{expected inflation} + \text{real yield} = i + r$$

Looking at bond yields in this way, it is reasonable to say the great bond bull-market was caused by the trend decline of inflation running from the early 1980's until a little after the global financial crisis of 2007. Although this explains the bond bull-market it does rather beg the question: What caused the great decline of inflation?

There are many competing explanations for the decline of inflation:

1. Monetary policy: Central banks drove inflation down by running a tight monetary policy, holding base rates above inflation rates, as shown in Figures 2 and 3.
2. De-unionisation: The early 1980's witnessed a concerted effort to weaken the power of trade unions and to break the cycle of high annual pay increases causing similarly large inflationary price hikes.
3. Global trade: According to world bank statistics, between 1980 and 2008 trade as a percentage of global GDP increased from 31% to 61%. This caused greater price competition for goods and services thereby producing a disinflationary force.
4. Global labour: The integration of former communist countries into the global economy resulted in a global glut of cheap labour. As with the de-unionisation process this reduced wage inflation and therefore also reduced goods and services inflation.

It is too early to say definitively that we are witnessing the start of a trend increase of inflation. So far, the inflation rates in Figures 2 and 3 show only a rebound of inflation back to pre-crisis levels, we need more time to see if that rebound now becomes an upward trend.

That said, if we go through the laundry list of the forces behind disinflation it is difficult not to conclude that all of those forces have now been either weakened or reversed.

1. Monetary policy: Central banks are no longer holding base rates above the prevailing rate of inflation. Rather, they are facilitating borrowing at negative real interest rates. In many cases, borrowers are now being paid to borrow, in real terms.
2. De-unionisation: Arguably, Brexit, the election of Donald Trump, the rise of populism in Europe are all symptomatic of developed market workers becoming less content and more assertive. This may yet turn into concerted demands for higher wages.
3. Global trade: Global trade remains extremely free, but it is no longer rising as a share of global GDP and there are now credible threats to both the European Union and NAFTA which could send it in reverse.
4. Global labour: The wages of former communist countries are catching up with those of the developed markets and as those workers are now beginning to

Put bluntly, policymakers' manipulation of the bond markets means they cannot reliably reflect investor expectations

consume a greater share of their own output. This should at least reduce the disinflationary impulse coming from those regions.

There are also reasons to believe policymakers may find a modest resurgence of inflation quite convenient. Higher inflation would; help erode the real value of the debt accumulated during the great bond bull-market; make a return to the dangerous deflationary conditions of the great financial crisis less likely; and if achieved through monetised debt issuance – some believe quantitative easing is already morphing into monetisation – it would also ease the pressure on government finances, giving governments some leeway to counteract the growing populist movements.

So, the real capital market conundrum is: Why are long-term bond yields not moving higher to reflect the re-emergence of inflation risk?

One explanation is that bond markets are expecting a protracted period of what has been termed ‘financial repression’. If monetary authorities are expected to run an extended period of financial repression – holding interest rates artificially below prevailing inflation rates – either through directly controlling short term interest rates or by artificially depressing longer-term yields with bond purchases under quantitative easing programmes, then the bond markets cannot be expected to reflect true long-term inflation expectations.

Put bluntly, policymakers’ manipulation of the bond markets means they cannot reliably reflect investor expectations, by contrast, equity markets are much closer to the genuinely free market ideal. This reality has important implications for the dividend discount model.

We can now return to the dividend discount model to think about how inflation fits into its framework.

Inflation is basically a measure of the annual change in the price of the goods and services sold by companies. It follows therefore, that company revenues, earnings and ultimately dividends will be heavily influenced by inflation. For this reason, it is reasonable to think of earnings growth and dividend growth as being comprised of both an inflation component, i , and a real growth component, g , in just the same way that bond yields are made up of inflation and real components:

$$G = i + g$$

If we break the inflation component out of both the dividend discount rates and the dividend growth rate, we get another version of the dividend discount model:

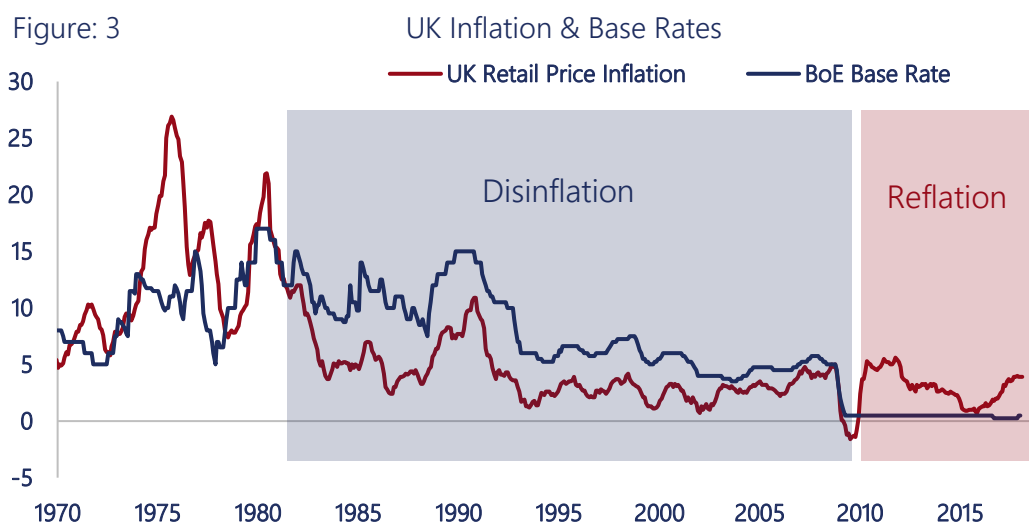
$$P = \frac{D}{(i + r) - (i + g)}$$

Of course, in this equation, the two inflation terms cancel out, giving a third version of the dividend discount model in terms of just the real interest rate component of the dividend discount rate and real growth component of the dividend growth rate:

$$P = \frac{D}{r - g}$$

It is the ability to cancel out the inflation terms from the dividend

Figure: 3



Source: UK office for National Statistics, Bank of England

the inflation protection afforded by equities should become much more valuable.

discount model that leads equities to being considered ‘real’ assets. Theoretically the current value of an equity is unaffected by future inflation.

But the ability to cancel out inflation expectations from the dividend discount model rests on both bond and equity markets being free to discount the same unbiased expectations of future inflation. If one of those markets is not a free market, as is the case with today’s managed bond markets, then we cannot assume the inflation ‘expected’ by the bond market is the same as that expected by the equity market. Therefore, we cannot cancel out the inflation terms and instead must rewrite the dividend discount model with two explicitly different inflation expectations:

$$P = \frac{D}{(i_{bond} + r) - (i_{equity} + g)}$$

With this model the difference between the inflation expectations of the bond and equity markets becomes a key driver of current equity prices.

To illustrate the point, it is useful to convert the dividend discount model into an expression of the more familiar price/earnings ratio or P/E, ratio. We do this by recognising that the dividend is simply the fraction of the earnings that a company pays out. For convenience we will assume this pay-out ratio to be 50%. Therefore, the dividend becomes: $D = 0.5 E$ and the dividend discount model becomes:

$$P = \frac{0.5 E}{r - g}$$

Which can be rearranged to give the familiar P/E ratio:

$$\frac{P}{E} = \frac{0.5}{r - g}$$

For illustrative purposes only, we can plug some numbers into this P/E equation. Assuming a dividend discount rate of 8% and an earnings growth rate of 5%, we get an estimated P/E ratio of 16.7

$$\frac{P}{E} = \frac{0.5}{8\% - 5\%} = 16.7$$

These numbers were chosen to come reasonably close to expectations of the P/E ratio of the US market, which according to Bloomberg is around 16.9.

If we now allow the earnings growth rate to anticipate an extra 1% of inflationary growth, which, due to financial repression, the bond market and therefore the dividend discount rate is prevented from anticipating, then we get an equation giving a much higher P/E ratio:

$$\frac{P}{E} = \frac{0.5}{8\% - 6\%} = 25$$

This is of course just another way of saying, if inflation is heading higher and bond yields are not being allowed to compensate investors for the resulting loss of real income then the inflation protection afforded by equities should become much more valuable.

Conclusion

As I finished writing this, the International Monetary Fund published its [latest assessment](#) of the state of global economic growth. The report summary is decidedly upbeat:

Global economic activity continues to firm up. Global output is estimated to have grown by 3.7 percent in 2017, which is 0.1 percentage point faster than projected in the fall and ½ percentage point higher than in 2016. The pickup in growth has been broad based, with notable upside surprises in Europe and Asia. Global growth forecasts for 2018 and 2019 have been revised upward by 0.2 percentage point to 3.9 percent. The revision reflects increased global growth momentum and the expected impact of the recently approved U.S. tax policy changes.

The U.S. tax policy changes are expected to stimulate activity, with the short-term impact in the United States mostly driven by

the investment response to the corporate income tax cuts. The effect on U.S. growth is estimated to be positive through 2020, cumulating to 1.2 percent through that year, with a range of uncertainty around this central scenario."

No one should ever put much weight on an economic forecast, but this IMF report at least offers an accurate assessment of what is currently happening world's economy: economic growth is picking up and spreading out; monetary policymakers appear content to allow this growth to build; equity markets are moving to reflect the higher growth.

We do not see much drama in this situation and therefore do not see the flashing red lights warning of an imminent crisis. For now, we remain cautiously optimistic on the outlook for investment returns from here*.

On the other hand, we suggest investors, especially those holding large bond or cash allocations, give serious consideration to the risk of an inflation/financial-repression scenario lasting many more years. If this happens, those investors will suffer low or negative real-returns, for years to come. This will lead to a substantial loss of future purchasing power. Financial repression amounts to a tax, targeted specifically at the holders of bonds and cash.

We warn of the dangers of the inflationary financial-repression scenario because, if we were policymakers today, it is the policy we would adopt; a modest rate of inflation, running above interest rates, is probably the least-painful way to erode the real value of the debt mountain accumulated during the great bond bull-market. If, as a side effect, the stock market rallies, we suspect few policymakers will lose sleep.

As explained above, if this scenario plays out the inflation protection offered by equities could become substantially more valuable than it is today.

In the short term, bond prices are less volatile than equity prices, in the long term, equity value is more resilient than bond value.

The Equitile Resilience Fund is currently fully invested in equities.



* Cautiously optimistic is about as far as we go at Equitile, we don't really do ebullient.

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