



The 13th Labour of Hercules: Capital Preservation in the Age of Financial Repression

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For those of you whose Greek mythology might be a little rusty, Hercules was a demi-god, the result of one of Zeus's dalliances with mortal women. Hera, Zeus's divine wife, was not best pleased by her husband's lack of faithfulness, and thus decided to punish Hercules.¹ She drugged him, and in his drug-induced state Hercules killed his wife and two children. When he recovered his senses, Hercules was, of course, full of remorse and begged for redemption. In order to earn forgiveness, he was set 10 "impossible tasks." On two of those tasks he got aid from family and friends, and thus was given two extra tasks. Had Hercules been around today, Hera may well have set him about the task of preserving capital in an age of financial repression.

Before we get into the details of financial repression and its impact upon investing, let's perform a trick beloved by economists and abstract from the issue of repression and indeed valuations (obviously only for a moment as a thought experiment before you think I've been drugged by Hera and have taken leave of my senses). I think the world today could easily be described as the "Era of Uncertainty" Problems threaten from almost every direction: the fiscal cliff looms, the U.S. Presidential Cycle is upon us, Europe's troubles are clear for all to see, China appears to be slowing...indeed, the possibility of a global recession is non-negligible. Well-known and respected observers have publicly voiced their concerns. For instance, Howard Marks of Oaktree Capital recently wrote, "The world seems more uncertain today than at any other time in my life." John Bogle has said, "The economy has clouds hovering over it...And the financial system has been damaged."

Economists have come up with measures of uncertainty that combine things like the number of newspaper stories about uncertainty with the spread of economists' forecasts into a single measure. Exhibit 1 shows an example of this kind of index, and a cursory glance confirms the situation outlined above: the one thing we have been certain of is that uncertainty is high!

Now, if I told you we were in a world of slowing growth, where macro fears dominate and where uncertainty is high, chances are you would find yourself thinking about capital preservation (i.e., maintaining the real purchasing power of your capital).

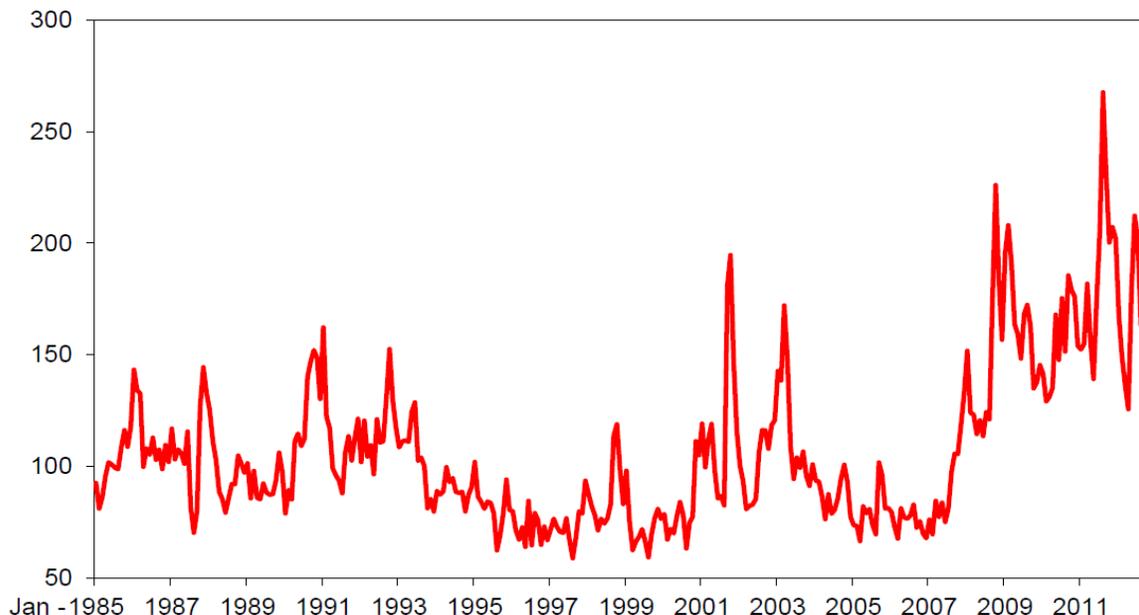
This would certainly make sense if we lived in a world where economists' favourite Latin expression, *ceteris paribus*, was a good description of reality. *Ceteris paribus* simply means that everything is the same or equal. But, sadly, we simply can't ignore valuations. As Exhibit 2 shows, the investment opportunity set is currently pretty limited, especially for those assets that are generally associated with capital preservation (i.e., cash and bonds). They are all expensive, and bear in mind that our cash and bond forecasts embed a return to "normal" over the next seven years.

¹ Oddly, we in the English speaking world use the name of Hercules, but this is actually the Roman name for the character. His Greek name was Heracles, which translates as "To the glory of Hera," Zeus's apparent attempt to placate his wife's anger.

Exhibit 1

Uncertainty Is Certainly High

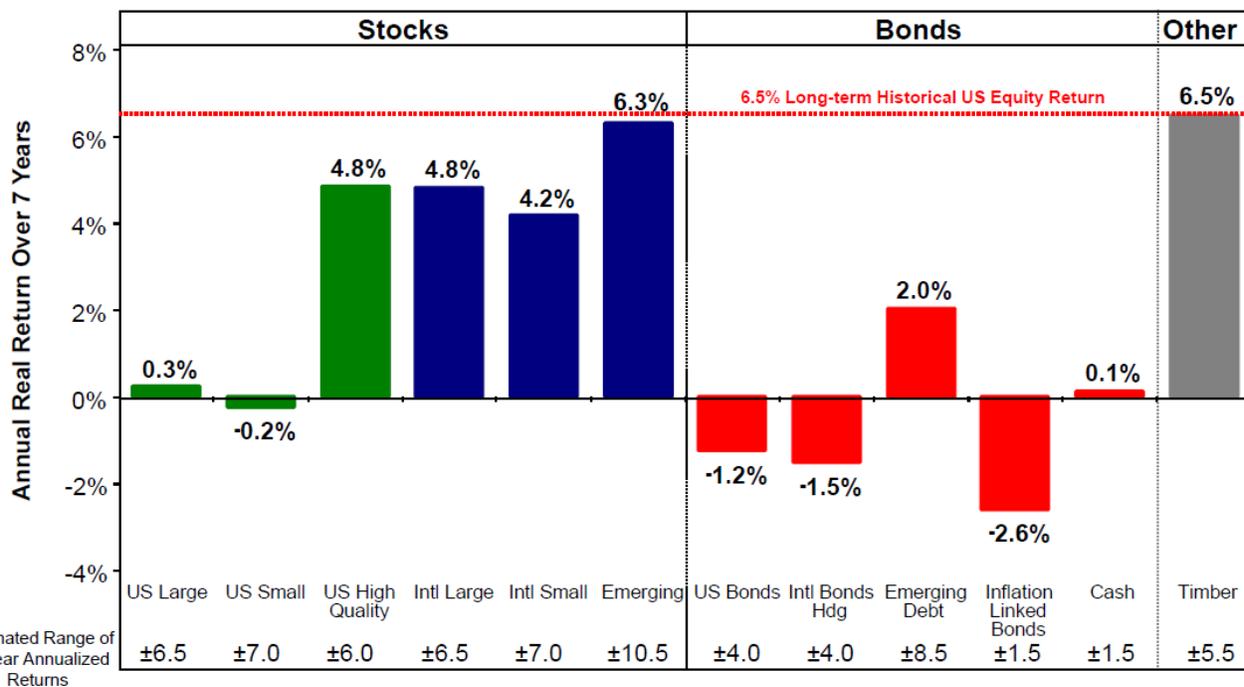
Economic policy uncertainty index



Source: Baker, Bloom and Davis (2012), available from www.PolicyUncertainty.com As of 9/30/12

Exhibit 2

GMO 7-Year Asset Class Return Forecasts*



*The chart represents real return forecasts for several asset classes and not for any GMO fund or strategy. These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Forward-looking statements speak only as of the date they are made, and GMO assumes no duty to and does not undertake to update forward-looking statements. Forward-looking statements are subject to numerous assumptions, risks, and uncertainties, which change over time. Actual results may differ materially from those anticipated in forward-looking statements. US inflation is assumed to mean revert to long-term inflation of 2.2% over 15 years.

Source: GMO As of 10/31/12

It is worth spending a few moments considering what has led us to arrive at this opportunity set. I think that it is a direct result of the policies being followed by central banks, especially the U.S. Federal Reserve. It has been uncharacteristically clear about the way Quantitative Easing (QE) “works.” Brian Sack of the New York Fed writes:

A primary channel through which this effect takes place is **by narrowing the risk premiums on the assets being purchased. By purchasing a particular asset, the Fed reduces the amount of the security that the private sector holds, displacing some investors and reducing the holdings of others. In order for investors to be willing to make those adjustments, the expected return on the security has to fall. Put differently, the purchases bid up the price of the asset and hence lower its yield.** These effects would be expected to spill over into other assets that are similar in nature, to the extent that investors are willing to substitute between the assets. These patterns describe what researchers often refer to as the portfolio balance channel. [Emphasis added.]

Put another way, QE sets the short-term rate to zero, and then tries to persuade everyone to spend rather than save by driving down the rates of return on all other assets (by direct purchase and indirect effects) towards zero, until there is nothing left to hold savings in. Essentially, Bernanke’s first commandment to investors goes something like this: Go forth and speculate. I don’t care what you do as long as you do something irresponsible.

Not all of Bernanke’s predecessors would have necessarily shared his enthusiasm for recklessness. William McChesney Martin was the longest-serving Federal Reserve Governor of all time. He seriously considered training as a Presbyterian minister before deciding that his vocation lay elsewhere, a trait that earned him the beautifully oxymoronic moniker of “the happy puritan.” He is probably most famous for his observation that the central bank’s role was to “take away the punch bowl just when the party is getting started.” In contrast, Bernanke’s Fed is acting like teenage boys on prom night: spiking the punch, handing out free drinks, hoping to get lucky, and encouraging everyone to view the market through beer goggles.

So why is the Fed pursuing this policy? The answer, I think, is that the Fed is worried about the “initial condition” or starting point (if you prefer) of the economy, a position of over-indebtedness. When one starts from this position there are really only four ways out:

- i. **Growth** is obviously the most “popular” but hardest route.
- ii. **Austerity** is pretty much doomed to failure as it tends to lead to falling tax revenues, wider deficits, and public unrest.²
- iii. **Abrogation** runs the spectrum from default (entirely at the borrower’s discretion) to restructuring (a combination of borrower and lender) right out to the oft-forgotten forgiveness (entirely at the lender’s discretion).
- iv. **Inflation** erodes the real value of the debt and transfers wealth from savers to borrowers. Inflating away debt can be delivered by two different routes: (a) sudden bursts of inflation, which catch participants off guard, or (b) financial repression.

Financial repression can be defined (somewhat loosely, admittedly) as a policy that results in consistent negative real interest rates. Keynes poetically called this the “ *euthanasia of the rentier.*”³ The tools available to engineer this outcome are many and varied, ranging from explicit (or implicit) caps on interest rates to directed lending to the government by captive domestic audiences (think the postal saving system in Japan over the last two decades) to capital controls (favoured by emerging markets in days gone by).

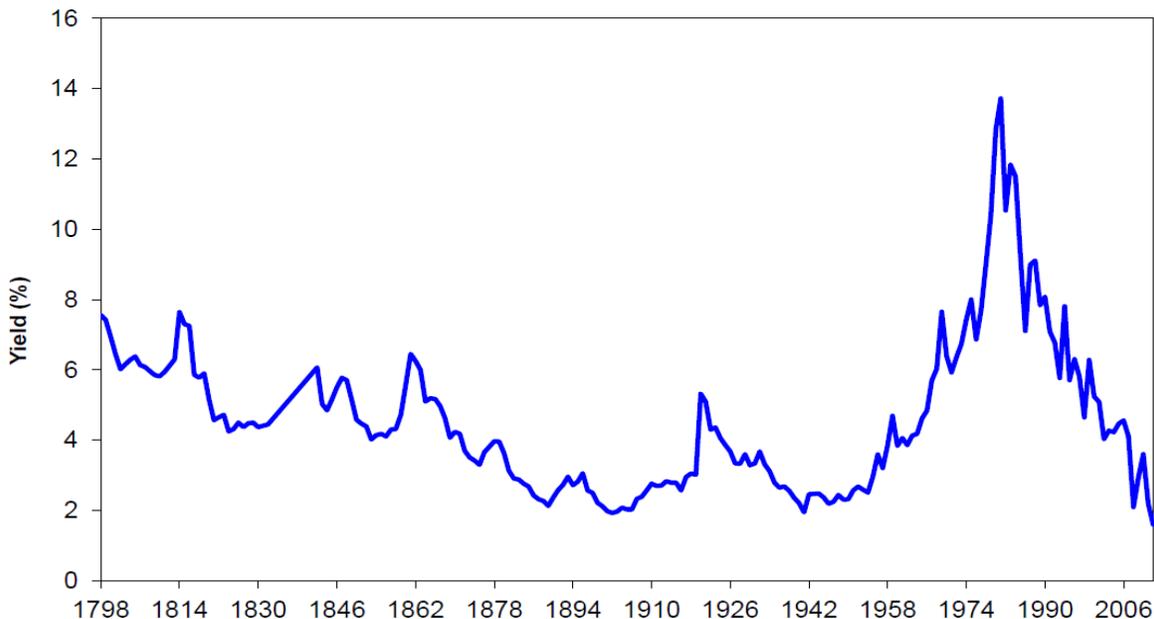
What evidence can be offered that financial repression is something that investors need to consider? The prima facie case is surely Exhibit 3, coupled with the Fed’s actions. Effectively, bond yields are so low because we have

² James Montier, “Is Austerity the Road to Ruin?” GMO white paper, July 2010.

³ A rentier was someone who lived off the income stream of investments.

a group of price-insensitive buyers in the market. Obviously, the main such agents are the central banks themselves, but in keeping with financial repression, they are turning to others over whom they exert considerable influence and encouraging them to follow suit. So, the banks are told that government bonds are a zero risk weight asset, and therefore they must own them. The insurers are told that under Solvency II they too must own lots of government bonds. Pension funds are encouraged to liability match with the “best” match being defined as (yes, you guessed it, surprise, surprise) government bonds.

Exhibit 3
Government Bonds* – an Ode to Financial Repression



*U.S. 10-year Government bonds

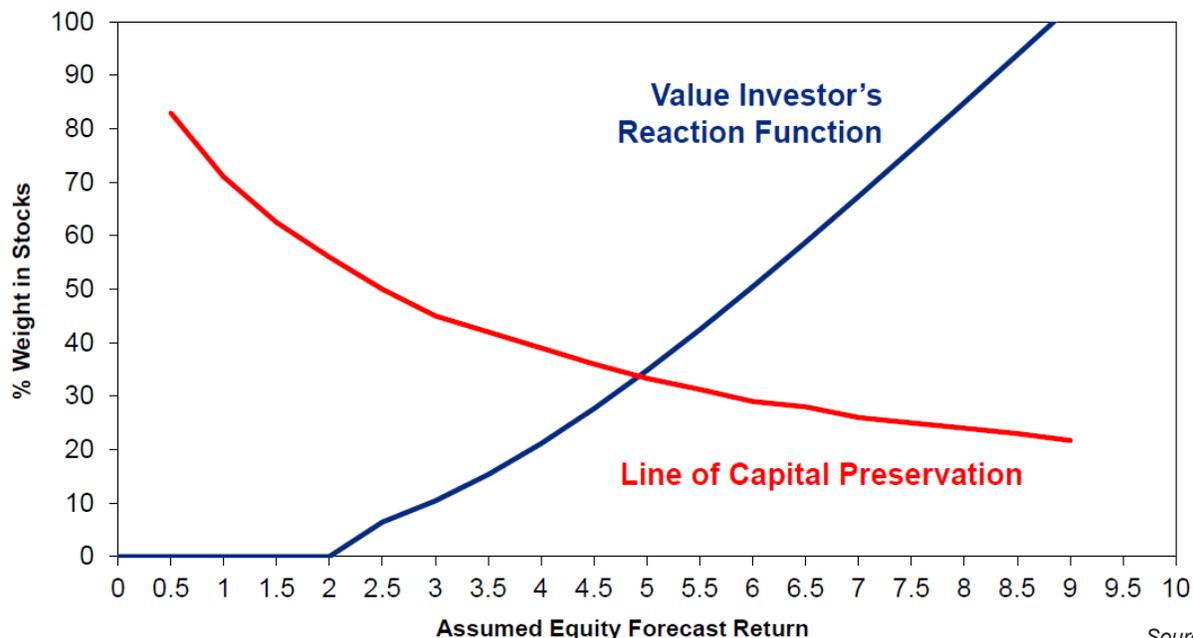
Source: GMO As of 9/30/12

So how does a value investor respond to this? It certainly appears as if the assets one would normally associate with capital preservation are expensive. So can and/or should you substitute other assets such as equities into the role of safe-haven value store?

In order to begin analysing this I need to introduce you to Exhibit 4. It represents a simple, two-asset (cash and stocks) fantasy world. It shows two lines, the first being the blue line (for those reading in black and white that is the line that slopes down from right to left), which represents a value investor’s reaction function. It tells us for a given equity forecast how much stock we should own in our portfolio. I’ve calibrated it so that at “fair value” – approximately 6% real – you have 50% of your portfolio in equities (obviously this could be set for any level). As the market becomes cheaper, you will want to own more of it, and as it becomes more expensive, you will want to own less of it. So, in essence, this captures the behaviour of a value investor.

The red line (sloping down from left to right) shows a line of capital preservation. This maps out how much equity you would need to own given the forecast, assuming that whatever you didn’t own in stock was invested in cash, which was going to earn a -2.5% real return (i.e., financial repression is in play). This line is behaviourally inverse to the value investor’s reaction function. It leads to odd behaviour like selling equities as they become cheaper because you need less of the higher returning asset to offset the drag on your cash, and at the other end of the scale, owning lots of equities when they are expensive because it takes a lot to offset the real return cash drag in the portfolio. This is clearly at odds with a value investing approach.

Exhibit 4
When Value Investing and Capital Preservation Collide



Source: GMO

As Ben Graham opined:

“The investor has no sound basis for expecting more than an average overall return... [from] common stocks [JM: Indeed, on our measures global equities look priced to deliver around 3% real p.a. in our current forecast]... But even if these expectations should prove to be understated by a substantial amount, the case would not be made for an all-stock investment program... The common stock buyer at today’s prices will be running a real risk of having unsatisfactory results therefrom over a period of years.”⁴

In effect, Ben Graham is highlighting the “tail risk” that comes with owning equities, especially at high valuations. We have used Exhibit 5 before, but it stands repeating. The idea behind the exhibit came from my friend, John Hussman.⁵ The horizontal axis plots the level of the real return forecast,⁶ the vertical axis shows the subsequent deepest drawdown from the point of the forecast over the next three years.

The worst of the market’s drawdowns occur when forecast returns are below 5% real, and this risk grows as the forecast return drops to zero and below. Indeed, at forecasts of zero and below, investors run the risk of seeing their investment halve over the next three years! [N.B. GMO’s current S&P 500 forecast is 0% annually.]

Conversely, when the forecast return is 10% or higher, the risk of deep drawdown over the subsequent three years is relatively muted, limited as it is to around 20%. Thus, as valuations become more and more attractive, the downside becomes less and less – the margin of safety at work.

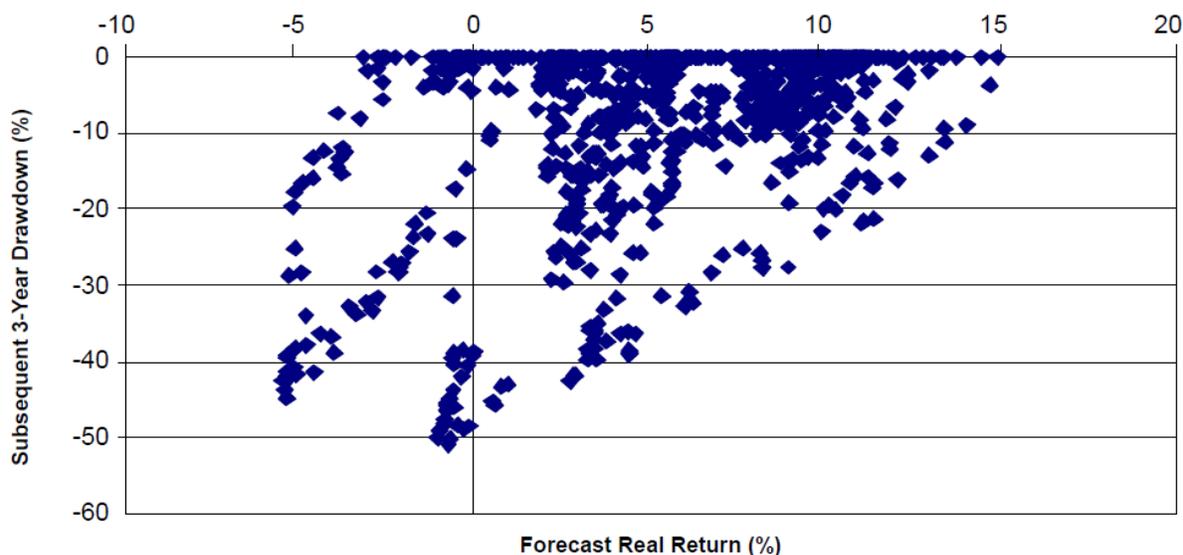
⁴ Benjamin Graham, *The Intelligent Investor: The Definitive Book on Value Investing*, 1973.

⁵ www.hussmandfunds.com

⁶ Of course, we at GMO have been doing these forecasts in real time since 1994, but this chart shows data from 1940 onwards. I have created a series of forecasts for market returns based on mean reversion in the Graham and Dodd P/E. They correlate very closely with the real-time forecasts we have made, so provide a rough proxy of what we might well have been saying if we had been around at the time.

Exhibit 5
The Margin of Safety at Work

U.S. S&P 500 (1940-)



Each data point in the chart above depicts a proxy real return forecast at a month-end and the subsequent 3-year drawdown related to such real return forecast. Forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Forward-looking statements speak only as of the date they are made, and GMO assumes no duty to and does not undertake to update forward-looking statements. Forward-looking statements are subject to numerous assumptions, risks, and uncertainties, which change over time. Actual results may differ materially from those anticipated in forward-looking statements.

Source: GMO

So investors find themselves between Scylla and Charybdis, facing either the likely but limited erosion of purchasing power that stems from holding cash, or the uncertain but potentially disastrous impairment of capital that arises from owning overvalued equities. Hardly an appealing choice!

However, there is some hope. People often talk about capital preservation and capital growth as mutually exclusive competing objectives: you can do one or the other but not both. I think they can be reconciled by time horizon. That is to say that there are times when it is absolutely correct to focus on capital preservation (think 2007) and in doing so you end up with capital to then deploy for capital growth when the opportunity set is much riper (think early 2009). This provides a hint at one way in which we might seek to deal with financial repression, effectively by out-compounding the drag of inflation and negative real rates. As long as investors swing between irrational exuberance and the depths of despair, altering the asset mix to reflect the opportunity set may provide a path to beating inflation.

Let's now turn to the impact of financial repression upon equities. The easiest way to frame this is to think of a dividend discount model of valuation, and then think about how financial repression might impact the various elements.

Unaffected by financial repression

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \dots + \frac{D_T}{(1+k)^T}$$

Affected by financial repression, if your discount rate is in any way affected by other rates

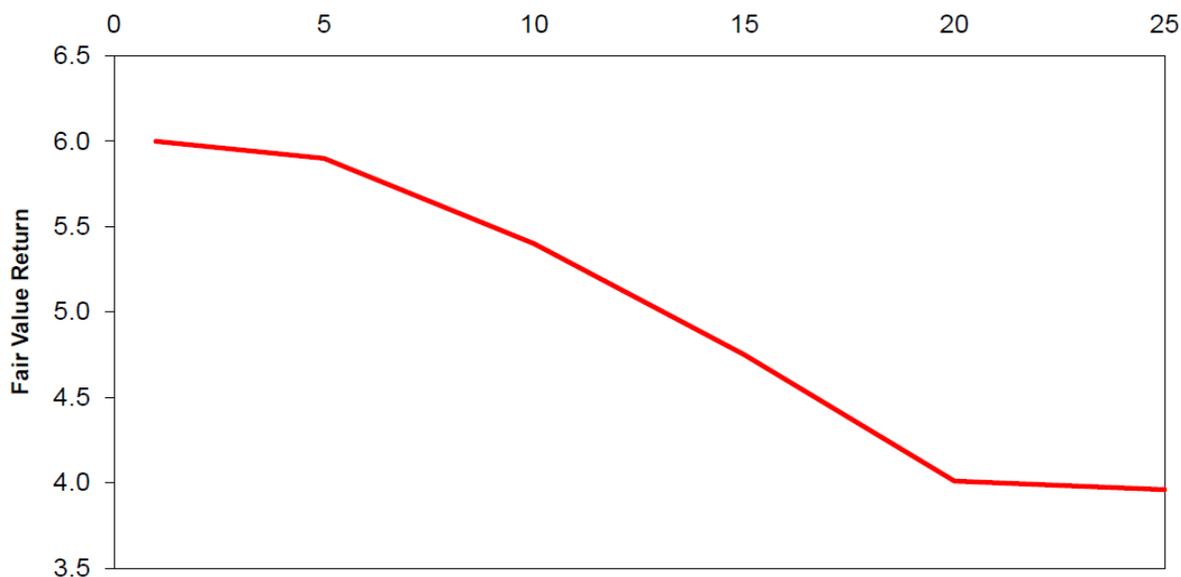
The price of your equities is determined by the flow of dividends (out across the top row of the above equation) and the discount rate (going out across the bottom of the equation). It should be clear that a policy of financial repression in and of itself has no impact upon the cashflows/dividends. In contrast, if you base your discount rate on another rate such as the government bond yield plus an equity risk premium, then it will clearly be affected by the policy of financial repression.

The extent to which this matters to you as an investor clearly depends upon the duration of the repression. For instance, if you thought you were just going to see financial repression for a single year, you wouldn't care because a single year's cash flow makes up a de minimis amount of the total worth of a long-duration asset like equities. If, on the other hand, you thought financial repression were going to be permanent, your discount rate would be permanently lower, and this would clearly significantly impact your valuation of equities.

Exhibit 6 shows how your estimate of fair value is dragged down by long periods of financial repression. Let's say you start from a position similar to ours in that equities should generate around 6% real under normal circumstances. As the exhibit shows, if financial repression lasts five years, your fair value estimate is barely dented. At 10 years of repression you are taking about 60 basis points off the fair value, well within the noise tolerance of any estimate of fair value. However, by the time you are at 15 years of financial repression, your estimate of fair value would be over 100 basis points lower than "normal." As we extend out to 20 years and beyond, your estimate of fair value is now 200 basis points lower than "normal"; fair value is now 4% rather than 6%.

Exhibit 6 Impact Depends upon the Duration of Repression

Number of years in which discount rate is suppressed by 2%

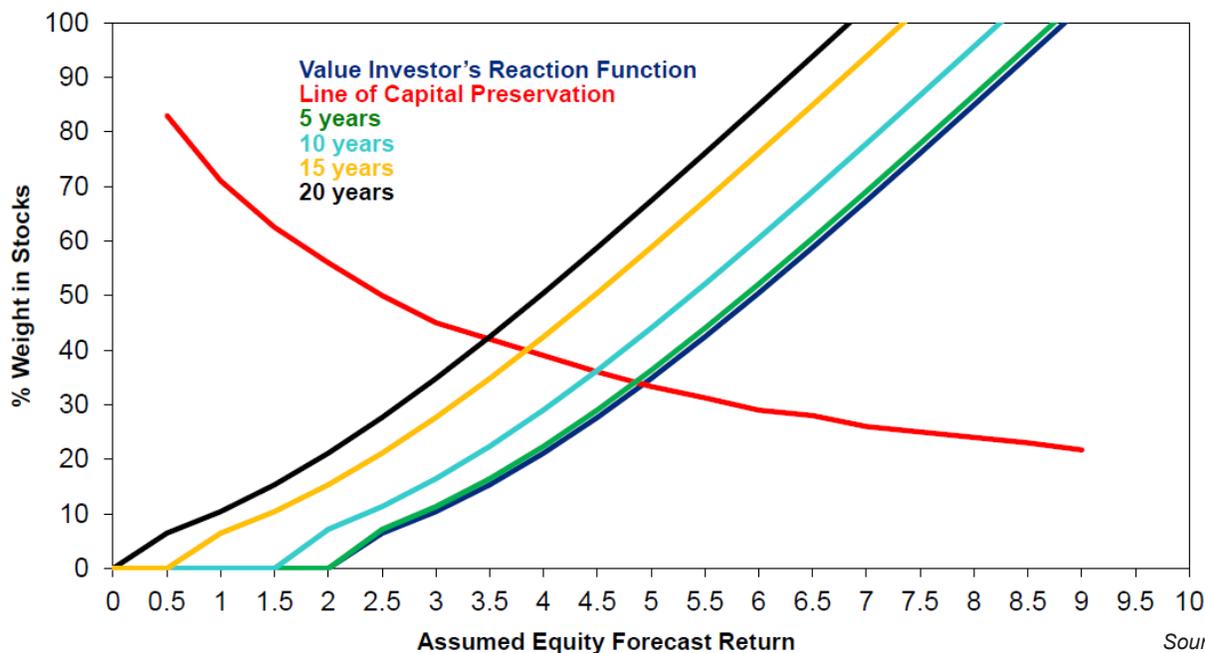


The projection of the effect that different durations of financial repression would have on fair value returns expressed in the chart above is based upon the reasonable beliefs of GMO and there is no guarantee that such projection would be accurate.

Source: GMO

Clearly this will impact your behaviour. Let's return to the diagram we used earlier, showing our value investor's reaction function. If an investor alters his perception of fair value, then it translates as a horizontal shift in the reaction function. At each new assessment of fair value, a "neutral" weight is held (set to be 50% above). Exhibit 7, which is a repeat of Exhibit 4 with some additional lines, represents these shifting reaction functions, each one reflecting behaviour that depends upon the investor's assessment of the duration of financial repression. The longer he thinks financial repression will last, the further to the left his reaction function slides.

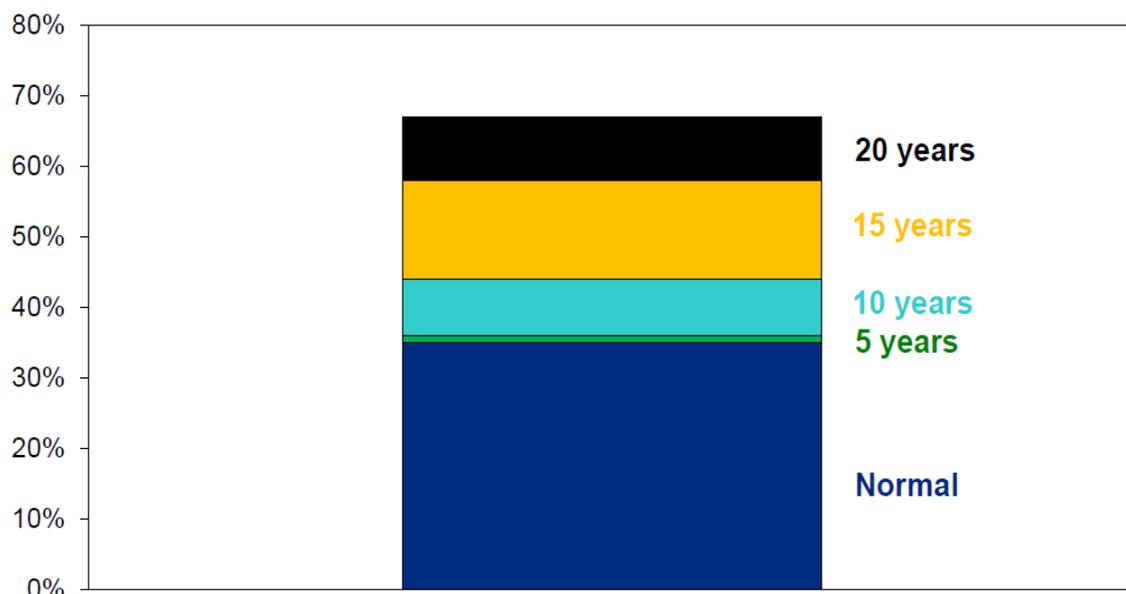
Exhibit 7
Shifting Reaction Function



Source: GMO

These horizontal shifts may not look particularly dramatic but they can lead to some very different behaviour. This is best illustrated by picking an example. Let's say you think equities are priced to generate 5% real. If we are in a normal world, where fair value is 6% real, then equities are expensive and you should own less than you would at fair value. However, if you think that financial repression will last 20 years, your fair value is not 6% but 4%, and thus at 5% real stocks are actually cheap and you should own more of them than you normally would. Exhibit 8 quantifies this. Based on the original reaction function at 5%, you would own around 35% in equities. However, if you were operating under the assumption that fair value was 4%, then you would own close to 70% in equities at 5% real, nearly double your stock weight under the base case.

Exhibit 8
Stock Weight at Forecast 5% Real



The bar graph above illustrates theoretical allocations to equities based on a forecast of 5% real at varying duration of financial repression.

Source: GMO

Of course, this raises the obvious question as to how long financial repression will last. I'd love to be able to tell you the answer, but I have a rare form of Tourette Syndrome that compels me to tell the truth, which is that I have absolutely no idea.

Reinhart and Sberina (2011) provide us with the following table based on some notable periods of financial repression; unfortunately the sample size is small (many of these events are actually one and the same). However, based on this data the average duration of repression is 22 years \pm 12 years!

Exhibit 9
Average Duration of Financial Repression

	Start	End	Duration (Years)
Argentina	1944	1974	30
Australia	1945	1968	23
	1971	1972	1
	1976	1977	1
Belgium	1945	1974	29
India	1949	1980	31
Ireland	1965	1980	15
Italy	1945	1970	25
South Africa	1945	1974	29
Sweden	1945	1965	20
	1984	1990	6
UK	1945	1980	35
US	1945	1980	35
		Mean	22
		Median	25
		Standard Deviation	12

Source: Reinhart and Sberina

As ever, when in doubt one can turn to Ben Graham's writings for insight. The quotation below comes from *The Intelligent Investor*, which was written right in the middle of the post-World War II period of U.S. financial repression:

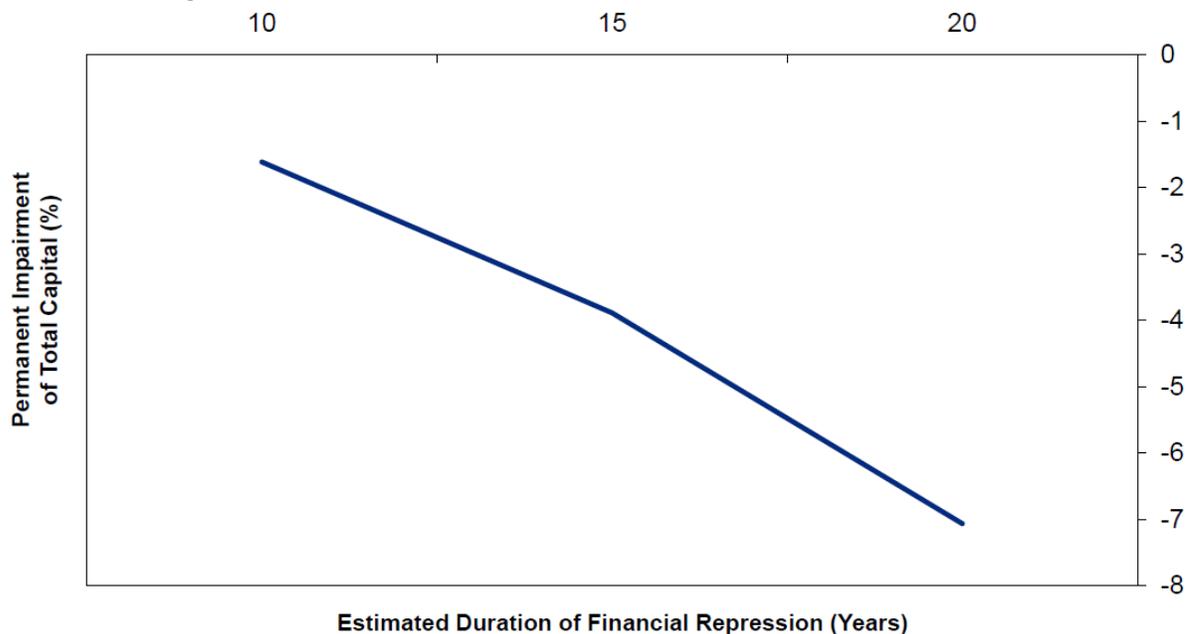
It must be evident that we have no enthusiasm for common stocks at these levels...[However] we feel that the defensive investor cannot afford to be without an appreciable proportion of common stocks in his portfolio, even if we regard them as the lesser of two evils – the greater being the risks in an all-bond holding.

This neatly sums up GMO's viewpoint. We don't like stocks as an asset class compared to what we think fair value should be. However, the alternatives are generally really awful. This problem is exacerbated if financial repression lasts beyond our forecast horizon of seven years. So, at the margin, an investor would probably be wise to give equities a little more benefit of the doubt, and hence a little more weight in their portfolio than they would do, if the Fed weren't pursuing policies of financial repression.

Of course, you must ask what would happen if you are wrong? That is to say, what would happen if you thought financial repression was here for 20 years, and it actually lasted only five years? The answer is, naturally, that you would own too much equity at too high a price. You would have been buying equities thinking fair value were 4% real, but then after five years you would realize that fair value had actually been 6%. This creates a permanent impairment of capital.

Exhibit 10 shows a stylised version of this problem. It assumes that equities are priced to deliver 4% real (i.e., fair value under the scenario of financial repression lasting 20 years), and then traces out the extent of the permanent impairment of your total capital if it transpires that after five years repression ends. It is obviously a function of your expected duration of repression since that determines which reaction function you sit on, and therefore how much weight you hold in stocks. If you thought repression were going to last 20 years, then at 4% real you would own 50% in stocks. However, if after five years of 4% real, fair value shifts to 6%, then you would take a 14% impairment on your equity holdings, or a 7% impairment of your total capital (permanent because you should not expect stocks to move from their fair value).

Exhibit 10
What If You Are Wrong!



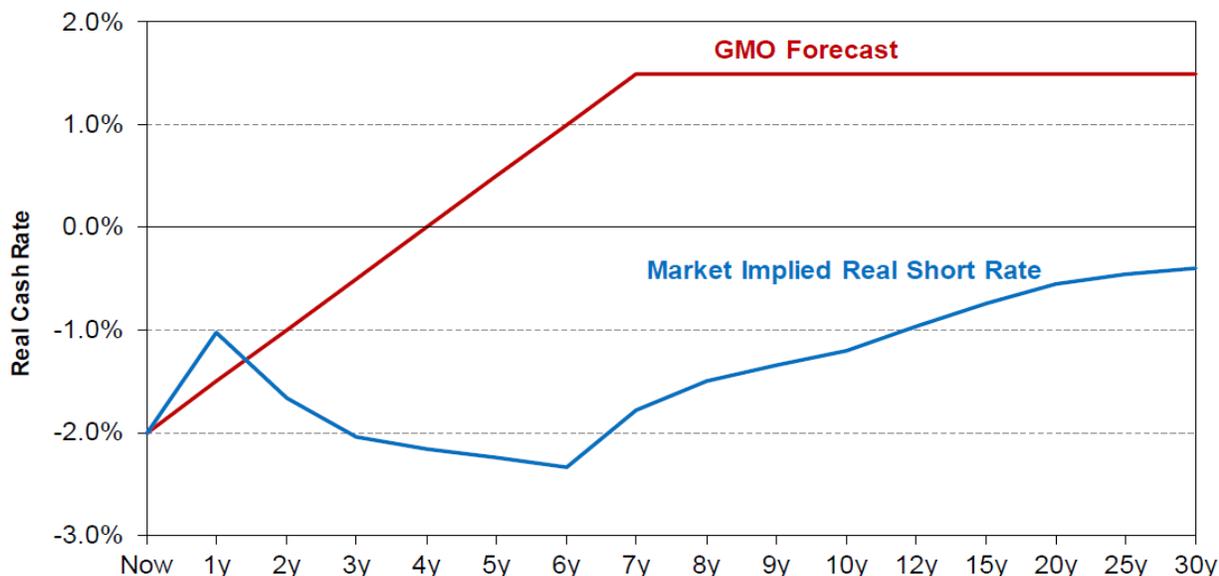
The projection of the effect that different durations of financial repression would have on the permanent impairment of capital expressed in the chart above is based upon the reasonable beliefs of GMO and there is no guarantee that such projection would be accurate.

Source: GMO

There are no easy answers to the problem of capital preservation in an age of financial repression, only difficult choices. Given that our models assume that rates revert to “normal” over the next seven years, we shouldn’t be reacting very differently than we would under normal circumstances. However, we willingly admit we could be wrong. Predicting cash rates is a tough thing to do, because in essence you are predicting a policy variable. Looking at our history, our cash forecasts have generally been one of the least accurate for exactly that reason. As ever we tend to err on the side of caution by assuming that financial repression is short-lived: we will tend to under-own equities if proved wrong, but we still have the potential to out-compound the effects to inflation if the opportunity set continues to shift as it has done in the past.

As an alternative to our view, one could look to the forward market to gauge the market’s implied view on cash rates and inflation (as shown in Exhibit 11).

Exhibit 11
Cash Rates: GMO vs. the “Market” View on Real Cash Rates



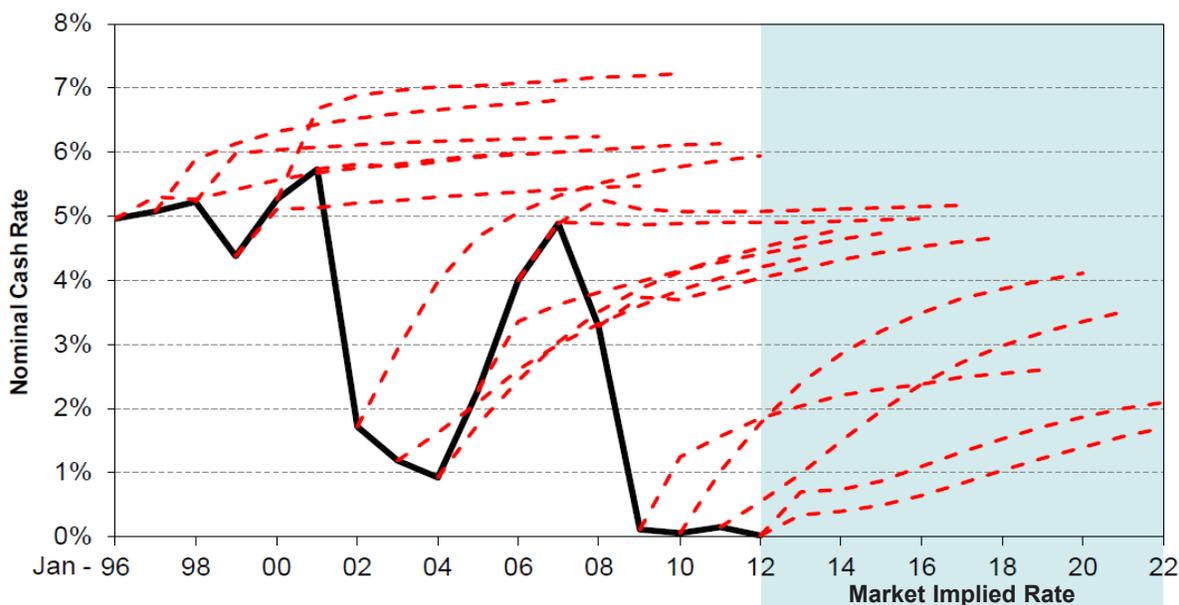
Forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Forward-looking statements speak only as of the date they are made, and GMO assumes no duty to and does not undertake to update forward-looking statements. Forward-looking statements are subject to numerous assumptions, risks, and uncertainties, which change over time. Actual results may differ materially from those anticipated in forward-looking statements.

Source: Bloomberg, GMO

The market currently seems to believe that the Fed will indeed keep real short rates suppressed for a very long time – consistent with the historical experience of financial repression. Effectively, the market currently implies that real short rates will average almost -1.5% over the next 20 years!

However, before one dashes out to buy equities, it is worth noting that the forward curves are not great predictors of actual future short rates in either nominal or real terms (Exhibits 12 and 13, respectively).

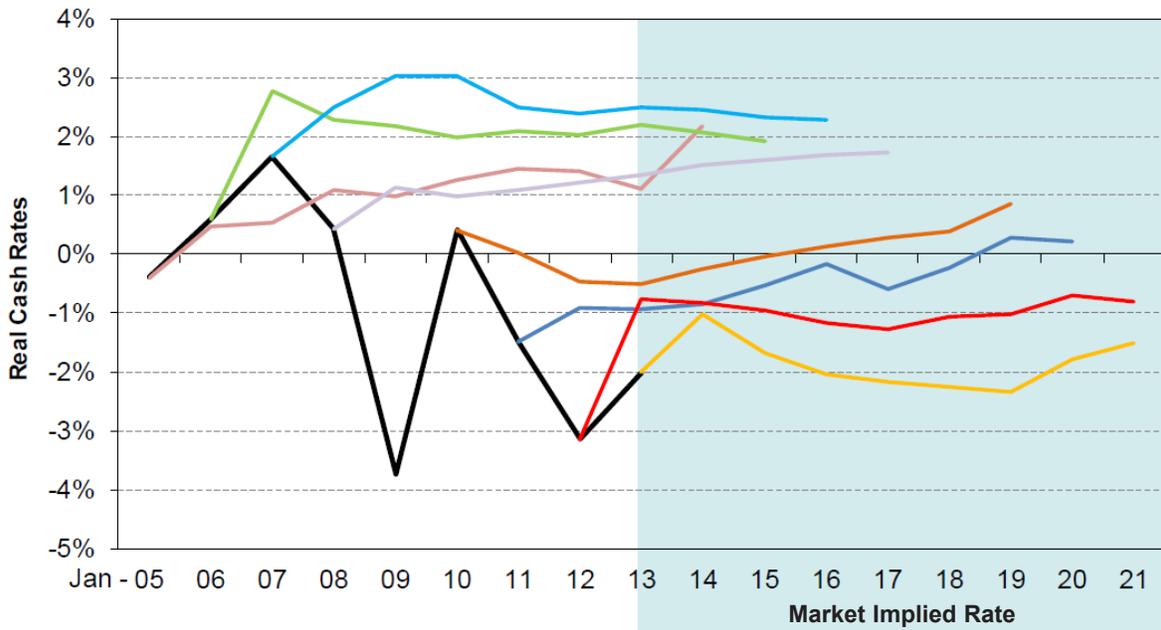
Exhibit 12
Market Forward Nominal 3-Month Cash Rates and Actual



Source: Bloomberg, GMO

Exhibit 13

Market Forward Real 3-Month Cash Rates and Actual



Source: Bloomberg, GMO

All of which leaves me with yet another example of the specific form of Tourette Syndrome mentioned previously, however, on this occasion a quotation from Voltaire sums it up best: “Doubt is not a pleasant condition, but certainty is absurd.”

Appendix: Tobin's Q and Financial Repression

One of the things that made my head ache whilst I was thinking through the implications of financial repression for equity valuations was how a measure like Tobin's Q would fit into the story. Tobin's Q measures the market value of an enterprise relative to its replacement cost.

The approach has its route in Keynes's *General Theory* where he writes:

But the daily revaluations of the Stock Exchange, though they are primarily made to facilitate transfers of old investments between one individual and another, inevitably exert a decisive influence on the rate of current investment. For there is no sense in building up a new enterprise at a cost greater than that at which a similar existing enterprise can be purchased; whilst there is an inducement to spend on a new project what may seem an extravagant sum, if it can be floated off on the Stock Exchange at an immediate profit.

As Tobin and Brainard note,⁷ "Economic logic indicates that a normal equilibrium value for Q is 1... Values of Q above 1 should stimulate investment, in excess of requirements for replacement and normal growth, and values of Q below 1 discourage investment."

At first it wasn't obvious to me that under this approach financial repression could affect such a measure. This caused me to doubt my initial results. However, upon reflection it became clear that financial repression actually does come to bear upon Tobin's Q.

Financial repression has no impact upon the denominator of the equation – replacement cost is unaffected by financial repression. However, the numerator – market value – can be thought of as exactly the dividend discount model that was presented earlier, and thus can be affected by financial repression via the discount rate. In essence, financial repression raises the level of Tobin's Q above 1.

Having reached this conclusion I was intrigued to see if anyone else had thought about such issues. Some research revealed something that I should have guessed – none other than James Tobin himself had detailed this outcome in a paper in 1969.⁸

He writes, "If the rate on one asset, 'money,' is fixed, then the market rate of return on capital can, indeed must, be among the n-1 rates to be determined. **This enables the monetary authority to force the market return on physical capital to diverge from its technological marginal efficiency – or, what is the same thing, to force the market valuation of existing capital to diverge from its reproduction cost.** By creating these divergences, the monetary authority can affect the current rate of production and accumulation of capital assets." [Emphasis added.]

So whilst financial repression clearly doesn't impact replacement cost, it can alter the valuation of the asset in the market. Effectively, Tobin is arguing that policies such as those of financial repression will change the "equilibrium" level of Q. Indeed, Tobin argues that creating "arbitrage" opportunities (a wedge between replacement cost and market valuation) is one way in which central banks can affect the real economy.

⁷ Tobin and Brainard, "Asset Markets and the Cost of Capital," Cowles Foundation, Paper 440, 1977.

⁸ James Tobin, "A General Equilibrium Approach to Monetary Theory," *Journal of Money, Credit and Banking*, Vol 1, No. 1 pp15-29, 1969.

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