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The Equity Risk Premium: It's Lower Than You Think

Based on our views of long-term GDP growth, we currently estimate that the equity risk premium globally is roughly 2.4%, lower than many investors expect. The impact of the recent rise in economic volatility on risk perceptions may take time to fade

Against a backdrop of weak macroeconomic conditions, the long-term outlook for earnings and the implied equity risk premium (ERP) play a crucial role as investors change their perceptions of the risk associated with holding equities.

Survey results from over 100 of our global client base reveal that clients think the appropriate ERP is 3.9%. Worryingly, our views of GDP growth and equity returns suggest that the compensation for holding equities over bonds are likely to be less for longer than most investors yet realize.

Although the equity risk premium has fluctuated significantly, developments over the past few months have reinforced our view that the expected return on financial assets may be lower than many market participants are willing to believe. With US bond yields now around their lowest levels in 40 years and global real yields also historically depressed, the entire spectrum of asset returns has shifted lower.

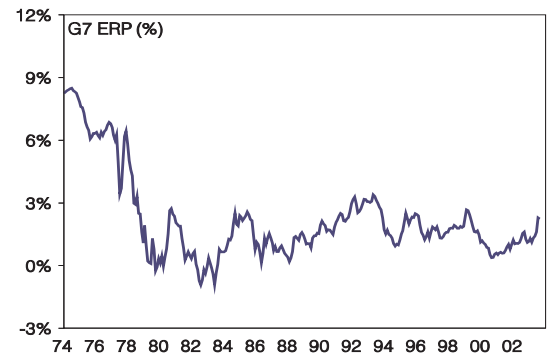
How Much Lower?

Our estimates of the ERP are not far from 2.4% across the main markets. The main exception is the UK, where the ERP appears to be notably higher than elsewhere. Outside Japan, expected real returns are closely clustered around 5%. In Japan, expected real returns on both bonds and equities are around 2% lower than elsewhere (and expected nominal returns around 4% lower), but the ERP is comparable to other markets.

Equity Risk Premium Estimates		
%	Real GDP Growth	Implied ERP
US	3.0	2.3
Japan	1.0	2.3
UK	2.5	3.0
Europe ex UK	2.25	2.4
MSCI World	2.5	2.4

As of 18 October 2002.

The Equity Risk Premium From An Economics Perspective



Defining ERP

The ERP is the difference between the expected return on equities and the risk-free rate, for which analysts often use the 10-year government bond yield. It is the compensation that investors expect to receive for holding riskier equities over less risky government debt.

Although it is hard to benchmark how large the ERP should be, it makes sense for investors to require a premium on equities over government bonds. Not only are equity returns more volatile than bonds over the short run, but equities also represent a claim on the riskier corporate sector and one that is junior to debt.

If the ERP is itself changing, this will affect the returns that equity investors actually receive. For instance, when the ERP declines, the expected return on equities falls. In order to reduce the expected return, equity prices have to rise, potentially quite substantially. In line with this capital appreciation, the returns on equities will be temporarily high while the ERP is coming down, and equity prices will rise more rapidly than earnings. After the adjustment process is complete, expected returns will then be lower as investors demand less of a premium for the risk of holding equities.

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The ERP In a More Volatile Macro Environment

Golden Years Driven by Falling Expected Returns

During the fabulous equity market performance of the two decades between 1980 and 2000, the average real return on equities reached double-digits and the annual excess return over bonds ranged from 4-7% in the US, Germany, France and the UK (and many other markets). The main exception—and a cautionary tale—to this rosy picture is Japan, where spectacular performance in the 1980s was followed by dismal performance in the 1990s as the Japanese asset price bubble imploded.

It is well known that the long bull market in international equities came not from exceptional earnings growth but from a one-time rerating of equities as real bond yields and the ERP fell. The result is that equity prices grew at a rate well above growth in earnings or dividends. Between 1980 and 2000, P/E ratios rose from around 8 to 30 for the S&P 500 US, from 7 to 25 in the UK for the FTSE-100 and from 9 to 25 on the Dax.

Precisely because this golden period was driven largely by a fall in the expected return and the ERP on equities, it makes sense that investors should expect substantially lower absolute and excess returns from equities than they used to over the past twenty years.

The ERP Will Not Fall Sharply

Historical comparisons are helpful, but they are only part of the story. We see the scope for sharp declines in the ERP to be relatively low, for two reasons.

First, the macroeconomic improvement that underpinned the fall in risk premia through into the mid 1990s has largely run its course. The decline in the ERP from close to 10% in the late seventies to around 2% on average through the eighties and nineties was underpinned by dramatic improvements in the economic environment. Inflation fell sharply, and the volatility of GDP growth, inflation and interest rates all declined significantly.

We revised our long-term GDP growth forecasts for the US down to 3% (from 3.25% previously) in early August. Recent

downward revisions to the historic productivity data now imply a lower average rate of 2.5% between 1995-2000 than the initial data had suggested. That lower starting point, a slower pace of capital deepening and the end to some of the fundamental factors that have lifted productivity growth in recent years are behind our revised view. In Euroland too, a more cautious 2.25% growth rate (against 2.5% previously) seems more appropriate, particularly since the long-run prospects for German growth continue to look subdued.

With the world's major economies generally in much better shape now than they were in the late 1970s, the scope for further gains from this source is less obvious. For instance, further substantial falls from the current sub-2% inflation rate are not only unlikely but would arguably increase, not reduce, the riskiness of equities as an asset class. Deflation, or the threat of it, can cause substantial problems for corporate profitability and greatly increase default risk, as Japan's recent experience shows.

GS Global Equity Risk Premium Survey

In mid-summer, we conducted a survey of equity return expectations, drawing on Goldman Sachs' relationships with senior portfolio managers and CIOs. We received estimates as well as anecdotal comments from over 100 of our global client base in response to the following question: What do you think the appropriate long-run equity risk premium is for your markets?

According to these market participants, the appropriate equity risk premium in the OECD averages 3.9%. Although individual responses varied widely, there was significant clustering around the 3.5%-4.5% range and averages were similar across the major markets.

Survey participants generally expected the US market to continue to outperform on a relative basis, but they highlighted risks including balance-of-payments deficits, the path of the dollar, and equity

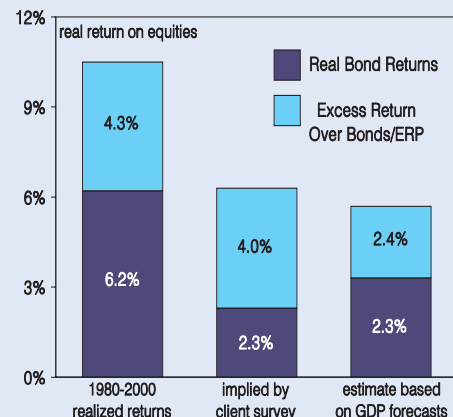
and pension-liability volatility. Structural reform tops the list of obstacles to growth prospects in Europe. Japan is a market especially clouded with uncertainty. Despite seeing value in individual companies, respondents seem doubtful that reform is on the horizon to help lift overall returns.

Many respondents indicated that with little room for valuation expansion, equity returns would be driven by earnings growth. Most participants agreed that the days of mid-double-digit returns are over and long-term returns will be lower. Large institutions in particular are likely to remain more cautious on equities as an asset class for at least the next 2-3 years due to performance and solvency issues.

We agree with the risks underscored by our clients, and as we discuss above, the structural changes that drove higher

equity returns in the past have probably largely run their course. But our estimate that the ERP is currently 2.4% ERP is still a lot lower than the consensus response. ■

Survey Responses Diverge From the GS View



The ERP In a More Volatile Macro Environment

Second, equity market volatility has increased sharply. Monthly volatility in many equity markets is around multi-decade highs. This is not simply a consequence of the last few months, when monthly movements have been particularly sharp, but a sustained increase in volatility that dates back to at least 1998.

In retrospect, some of the observed fall in earnings and price volatility was simply the result of a very prolonged period without recession. The combination of higher volatility and substantial losses has given investors a powerful reminder of the risks of holding equities.

Is there any way to tell what the impact of the weaker macroeconomic and market history should mean for the ERP? When we look at this more formally, we find that shifts in the macro environment do a pretty good job of explaining the movements in the macro risk premium until around 1997. As inflation and GDP volatility fell and real interest rates came down through the eighties, the ERP declined. Falling equity market volatility in the early nineties also appears to explain some of the fall in the ERP around that time. This supports our view that a significant decline in the ERP from the early 1980s was justified.

After that point, however, these macro variables cannot explain the extent of the further falls in the ERP that occurred. In fact, in many respects the macroeconomic environment became more volatile over this period, suggesting that the risk premium should have remained higher than in the mid-nineties. Measures of GDP,

inflation and equity market volatility all hit their troughs between 1995 and 1997, contradicting the view that increased volatility is simply a symptom of the recent global downturn.

With further rises in most measures of macro volatility, particularly over the last 18 months, our models suggest a recent range for the ERP of 2.5-3.5%. This is a little higher than our estimate of where the ERP has actually been. In fact, the macro environment has consistently justified a higher ERP than the actual ERP since 1997, and the divergence has been particularly stark since early 2000. Effectively, the model now says that although the ERP is above its averages, higher than average volatility in markets and economies suggest that perhaps it should be—at least until investors can be assured that the period of economic uncertainty has passed.

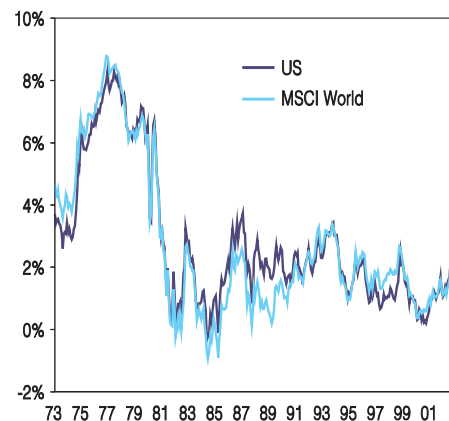
Of course, ultimately economic volatility and market volatility is likely to fall, and some retracement in the ERP could then be justified. The model suggests, however, that the impact of periods of higher volatility takes some time to fade. There seems to be some tendency for investors to apply the rule of ‘once bitten, twice shy’—at least until the memory of the bite fades a little. With the macro outlook still very uncertain, and our global economic view still flagging a number of risks, it may be too early to believe that uncertainties will fade rapidly.

Are We Too Pessimistic?

Some might also argue that we are too cautious in our views on long-run GDP growth. Productivity optimists would presumably view a 3% US growth forecast as too conservative and an updated version of some well-known research by the Fed on the impact of IT on productivity would be consistent with slightly higher estimates of GDP growth than our own. But the latest productivity revisions suggest greater caution and even the upper bound from the Fed’s research is not much higher than our estimates.

Structural reform in Europe and Japan could also potentially raise productivity growth above our forecasts, but we have

A ‘Macro’-Based Equity Risk Premium

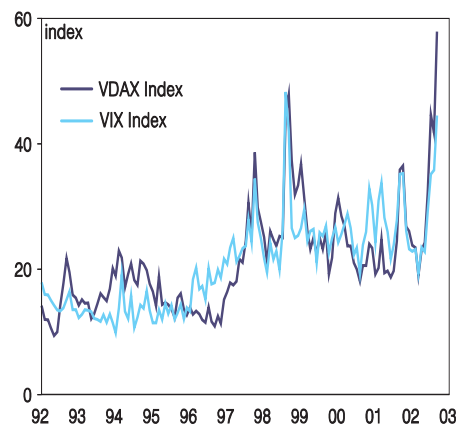


already implicitly allowed for some modest acceleration in productivity in both economies and our estimates of European labour force growth may actually be overly optimistic.

And what about the new economy? Many of those expecting higher future GDP or earnings growth than our estimates still point to the productivity gains and profit potential from the IT revolution. We agree that the balance of evidence currently still suggests that IT-related factors have led to a genuine, sustained boost in productivity growth, particularly in the US. That is why our productivity growth estimates are higher than for the pre-IT period.

But it is also pretty clear that the assumption that the new economy would translate into increased profitability beyond these productivity gains, either for tech producers or the broader economy, was false. Instead, the gains have accrued largely to consumer, as you would expect in a competitive environment. Like previous technological breakthroughs, the IT revolution does not appear to have transformed the normal relationship between earnings growth and GDP growth.

Implied Volatility Continues to Rise



Into An Era of Lower Financial Asset Returns

Just like equities, bonds enjoyed a golden age in the eighties and nineties. The table on this page shows that the real return on bonds has also been impressive over the last twenty years, and well above the returns achieved over the previous three decades. Since 1980, bonds in the major markets have delivered real returns of 5-8%. Bond prices soared on the back of one-off valuation gains as inflation fell more sharply than anticipated and governments moved to control the deterioration in their budget positions.

As with the high returns on equities, those days now appear to be over. Short of a period of global stagnation, the scope for yields to fall much further is quite limited. The move from a high-inflation to a low-inflation era is essentially a one-off event, and after a long period of improvement, budget positions are deteriorating again across the G7. Given that markets are priced for some risk of prolonged sluggish growth, a return to a more normal environment would likely involve a period of negative returns for bonds.

Adjustment To the New Era Takes Time

The adjustment from an era of high expectations to an era of lower ones takes time. Our survey results on page 2 imply that investors have already trimmed their expectations of returns quite substantially.

Financial market movements over the last two years support that conclusion.

Our own estimates of expected financial asset returns are even lower, however, suggesting that the adjustment process is not yet complete. Based on our views of GDP growth, it still looks as if equity returns and the compensation for holding equities over bonds are likely to be lower for longer than most investors yet realise.

As that adjustment process takes place, volatility in financial markets may remain higher than normal. While the financial market adjustments may be ongoing, the macroeconomic implications of this shift away from an era of higher financial asset returns is likely to play out over an even longer time horizon.

While professional investors are already well down the road in trimming their

expectations, the implications of lower major market asset returns for spending, savings and investment decisions are only just beginning to be acknowledged. The sense that a large part of this adjustment to a new equilibrium for spending behaviour may still lie ahead is one big reason behind our continued caution towards the US and global economic outlook. ■

Excess Returns By Country					
(%)	Real Returns	1950-80	1980-90	1990-00	1990-Today
US	Equities	6.7	11.0	16.3	8.6
	Bonds	-1.7	7.2	3.9	4.4
	Excess return on equities	8.4	3.8	12.4	4.2
UK	Equities	6.1	15.4	12.3	6.8
	Bonds	-2.7	7.5	7.6	6.9
	Excess return on equities	8.8	7.9	4.7	-0.1
France	Equities	5.3	15.4	14.3	8.1
	Bonds	2.1	8.6	7.6	7.1
	Excess return on equities	3.2	6.8	6.7	1.0
Germany	Equities	8.1	14.0	10.5	4.5
	Bonds	2.9	4.7	5.1	5.0
	Excess return on equities	5.2	9.3	5.4	-0.5
Japan	Equities	12.7	18.2	-3.5	-6.7
	Bonds	0.9	6.7	6.3	5.9
	Excess return on equities	11.8	11.5	-9.8	-12.6

Note: Total market indices. Figures from 1950-90 from Dimson, Marsh and Staunton (2000) 'Triumph of the Optimists.' Figures from 1990 onwards are GS calculations.

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