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2006 Forecast, London and Happy New Year!

By John Mauldin

The level of attention to the recent and mild inversion of the yield curve has bordered on hysteria in the media. Does it portend a recession? Or is, as Ethan Harris, the chief economist of Lehman Brothers suggests, the bond market simply on drugs? This week we pause in our series on trade deficits to look at the real meaning of the yield curve and what it does and, just as importantly, what it does not mean. I give you a basic primer on the yield curve, as well as links to more information than you ever wanted so you can read more for yourself.

But first, thanks to all those who purchased a copy of *Just One Thing* this year. My editor tells me sales are doing very well, and another publisher has picked up the Chinese and Korean language rights. Thanks to a lot of word of mouth, like this note from Paul Howard:

“Just One Thing is a fantastic book! Thank you for putting it together. I read 100 pages of it Christmas Day – which is no small feat with my two-month old triplet girls at home! With seven kids of your own, I’m sure you did your fair share of multi-tasking. I look forward to finishing the book soon. Thanks again for getting such a great investing book out in the marketplace.”

And H.V. Kaelbar writes: “I think John Mauldin has done it again! I’m a regular reader of his newsletters and am happy when I get to read his work in book form. He also makes the rounds with some of the most brilliant minds in the industry today and shares his knowledge quite generously.

“In this book, he has given the spotlight to some of his very smart colleagues - some having previously published books and articles and some not. Yet all are recognizable names to me.

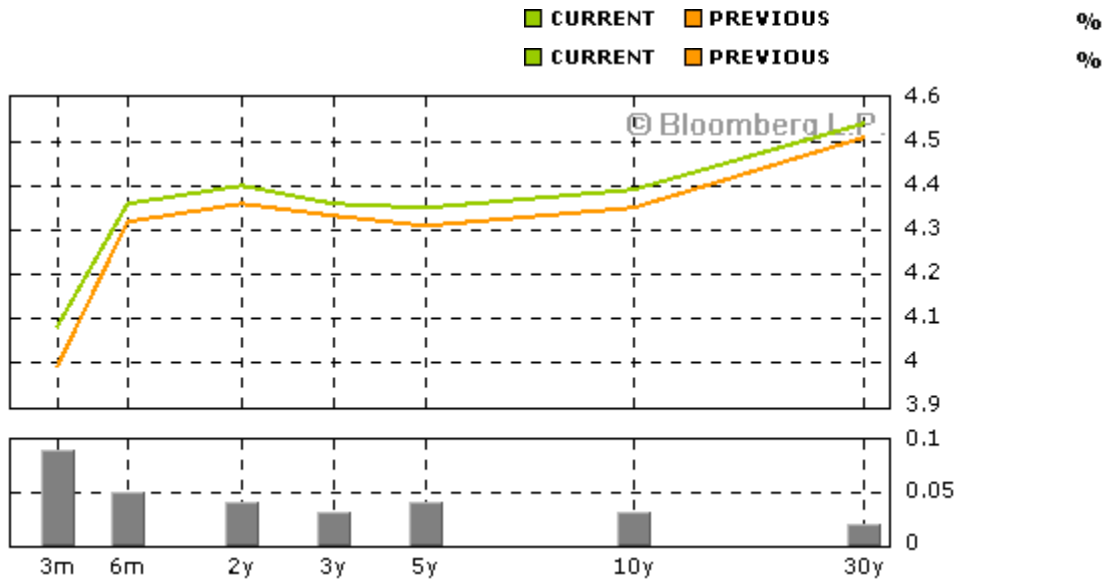
“I’m a money manager and really appreciate how these bright minds help stretch my thinking such that I do not remain anchored to one sided beliefs. But their work is not just for professionals! They write in a way that novices can understand. All the contributors are a credit to the industry. Thanks guys.”

You can get the book at your local bookstore or at this link:
www.amazon.com/justonething. Now to the yield curve.

The Most Accurate Predictor of Recessions

I have written about the yield curve more than any other single topic in the almost six years of writing this letter. There is a justifiable reason to pay attention to the yield curve. In certain very specific circumstances, it has been the single most reliable predictor of recessions. Let's examine what those circumstances are.

First, the yield curve is a graphic depiction of the relationship between the yield on bonds of the same credit quality but different maturities. Normally, you expect to get more interest paid to you for holding a longer maturity, as in theory there is more risk to holding a bond for ten years than for 90 days, or for 30 years as opposed to a mere ten years. You can go to <http://www.bloomberg.com/markets/rates/index.html> and see an up-to-the-minute graph on the yield curve for US treasuries. At 4:00 pm Eastern time on December 30 it looked like this:



This is of course highly unusual. Most of the time the curve or graph will start in the lower right and rise to the upper right. Today it sags in the middle, which means that yields on the two year note is paying more than the ten year bond.

When a shorter maturity note pays more than a longer maturity note or bond, the curve is said to be inverted. There are times when the entire yield curve goes from the upper left to then lower right on the graph. When this happens the yield curve is said to be fully inverted. As we will see below, how far the yield curve inverts gives us a percentage probability of the likelihood of a recession within 4-6 quarters. So, we pay attention to this curve.

Now, let's review a little history. Professor Campbell Harvey of Duke was the one that wrote about the relationship between recessions and the yield curve, and proved that the yield curve outperformed other forecasting tools in his 1986 dissertation at the University of Chicago. He published his dissertation in 1988 in the Journal of Financial

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Economics. In 1989, he published a follow up piece in the Financial Analysts Journal. Estrella (we'll read more about him later) and Hardouvelis picked up on the idea and published an article in 1989 and a few more.

Harvey's prediction about the usefulness of the yield curve was right on target. In 1991, after the 1990 recession he noted that inversions of the yield curve (short-term rates greater than long term rates) have preceded the last five US recessions, suggesting that the curve can accurately forecast the turning points of the business cycle.

(As an aside, Campbell has a great web site with over 8,000 financial and economic terms defined. It is a great resource: <http://www.duke.edu/~charvey/>)

Fast forward to 1996. Arturo Estrella and Frederic S. Mishkin, economists for the New York Federal Reserve Bank, wrote an article in the "Current Issues in Economics and Finance" which is published by the New York Federal Reserve Bank. In it, they compare the usefulness of the yield curve as a prediction tool to other indicators:

"The yield curve—specifically, the spread between the interest rates on the ten-year Treasury note and the three-month Treasury bill—is a valuable forecasting tool. It is simple to use and significantly outperforms other financial and macroeconomic indicators in predicting recessions two to six quarters ahead."

They compared the yield curve with three other possible indicators, including the so called "leading economic indicators" from the Conference Board. The only reliable predictor four quarters out was the yield curve spread.

In September 2000 the yield curve was seriously inverting. I called Estrella to talk about the importance of the curve. I wrote then:

'First, he told me he had done another study in 1998 comparing even more predictors. The latest study involved 30 potential predictors of a recession. The conclusion of that study is that the 90 day average of the yield curve was the most reliable predictor of the 30 they studied, so score one for taking this current situation more seriously.'

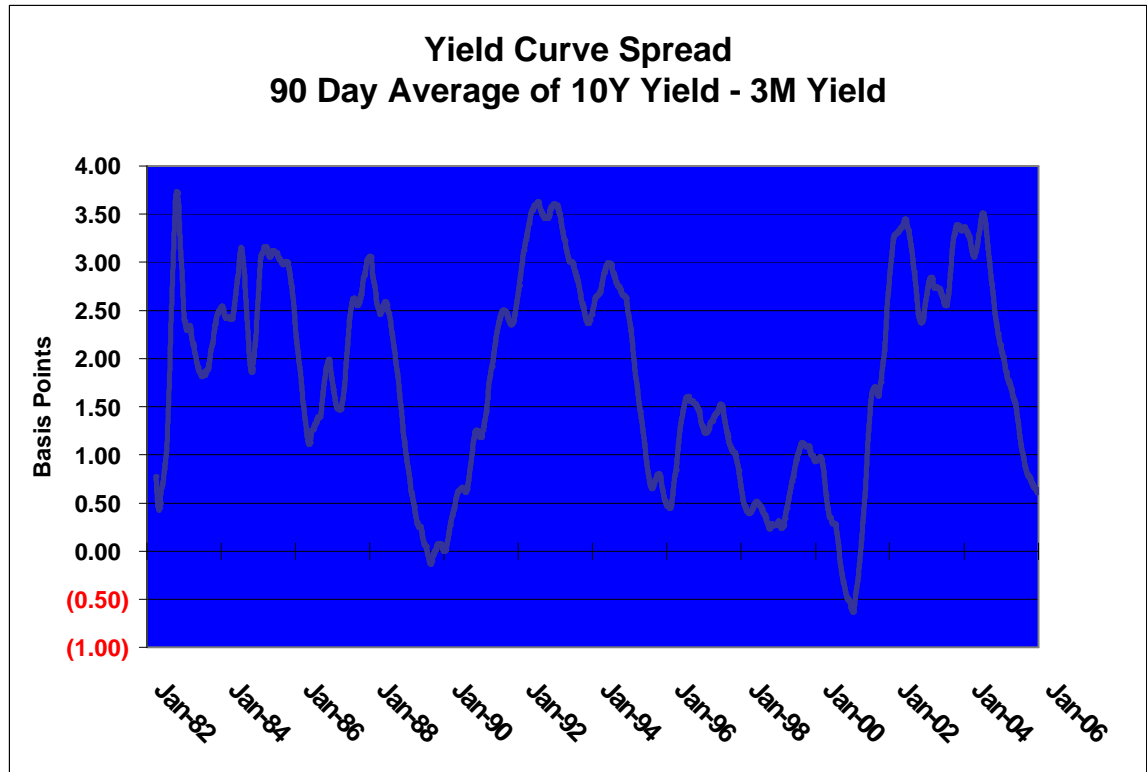
You can read the first paper at http://www.newyorkfed.org/research/current_issues/ci2-7.pdf. The second paper was a private study and is to my knowledge not published on the web, although I did get and read a copy at the time.

The paper that they published used the spread between the 90 day T-bill and the ten year bond. For the record, the average ten year bond since 1982 has yielded 7.31%, the average 90 day T-bill was 5.49% and the average spread was 1.82%. For the record, today we have the 90 day at 4.08%, the ten year at 4.39% for a difference of 0.31%.

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They used the 90 day average of the spread rather than the actual one day spread. This is important. There are several times where the yield curve inverted for a few days but did not stay that way for long. Recessions did not follow.

So, the fact that the two year and the ten year inverted this week does not mean we will see a recession next year. In fact, it may not mean anything other than it was a slow week in the bond pits. We saw the spread on the yield curve roughly where it is today in 1996. It was four years later that we had a recession. Here is a graph of the 90 day-ten year yield curve spread.



Maybe things will get back to normal come next week when all the traders get back from Aspen and the Caribbean, having left the trading desks to their assistants. Yet, as we will see below, the inversion is not without interest to investors. So what can meaning can we draw?

Estimated Recession Probabilities

Estrella and Mishkin developed a probability table about how likely a recession would be 4 quarters later given a particular level of the yield curve spread. Let's look at that table from the 1996 paper.

Estimated Recession Probabilities for Probit Model Using the Yield Curve Spread

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Four Quarters Ahead Value of Spread

(Recession Probability Percent)	(Spread Percentage Points)
5	1.21
10	0.76
15	0.46
2	0.22
25	0.02
30	-0.17
40	-0.50
50	-0.82
60	-1.13
70	-1.46
80	-1.85
90	-2.40

Note: The yield curve spread is defined as the spread between the interest rates on the ten-year Treasury note and the three-month Treasury bill.

The spread in the table above is the 90 day average. Basically, if the spread is 0.46 basis points, there is a 15% probability of a recession four quarters later. And that is roughly where we are today. The 90 day average is 0.52%.

But that level of spread has happened several times in the past 40 years and we have not had a recession follow. So why should we pay attention today?

Because for a full inverted yield curve to show up you will start seeing “signs” in the yield curve like we saw this week. These things start innocuously, usually when the economy seems to be booming, and most observers suggest we ignore them. And sometimes they are right.

But most observers suggested we ignore full-blown yield curve inversions as well. I think it was something like 50 out of 50 Blue Chip economists failed to predict the last recession even a few months out. They ignored the yield curve, all finding reasons why “this time it’s different.”

In a follow-on paper mentioned below, Estrella documents that each of the previous yield curve recessions since 1978 produced major academic papers telling us why this time it’s different. They were all wrong. If we have another yield curve inversion, we will have another spate of papers and economists suggesting that we ignore the curve as well. That is one prediction you can take to the bank.

The Fed funds rate is at 4.25%. It is highly likely it will go to 4.5% at the end of January. If the ten year does not move upward, you could see the beginning of a full yield curve inversion. That will put us on “official” yield curve watch. Since that seems like a real possibility, let’s look at some of the specific points in the 1996 paper.

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In 1989, the yield spread predicted a 25% probability of a recession showing up in 1990 and one did. It was mild, but that was small comfort to those who got caught in its trap.

Further, the Fed paper authors tell us that things have changed and that now we should be much more concerned about a “mere” 25% probability. Quoting:

“Thus, even a probability of recession of 25 percent—the figure forecast for the fourth quarter of 1990 data on the yield curve spread one year earlier—was a relatively strong signal in the fourth quarter of 1989 that a recession might come one year in the future.”

Further down they say,

“There are two reasons why the signal for this [1990] recession may have been weaker than for earlier recessions. First, restrictive monetary policy probably induced the 1973-75, 1980 and 1981-82 recessions, but it played a much smaller role in the 1990-91 recession. Because the tightening of monetary policy also affects the yield curve, we would expect the signal to be more pronounced at such times. Second, the amount of variation in the yield curve spread has changed over time and was much less in the 1990s than in the early 1980s, making a strong signal for the 1990-91 recession difficult to obtain.”

Basically they are saying that future studies a few decades from now will probably have much higher probabilities of recession at lower spreads than did their study because things, like volatility, have changed.

The 90 day yield curve in 1990 only went to a negative (-) 0.13%. It got to -0.71% at the end of 2000, with the worst one day number being January 2 of 2001 when it was -0.95%. Interestingly, from that point the spread went positive in less than a month. (For what it's worth, the weeks around Christmas and New Years saw really odd and wild volatility.)

The 10 Year – 30 Year Connection

The Treasury plans to start issuing new 30 year bonds in February. This will be of interest as there is an interesting relationship I have noted back in 2000 between the ten year and the 30 year bond.

“Just for kicks, I went to the Federal Reserve web site (<http://www.federalreserve.gov/Releases/H15/data.htm>) and downloaded the interest rates on 10 year and 30 year bonds since 1977. Then I did a comparison. Curiously, it is not at all uncommon for the 10 year rate to go above the 30 year rate.

“In fact, it seems to happen about 18 months or so before a recession or a stock market crash. Not just one time but every time the 10 year/30 year rates

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became inverted since 1980 we had either a recession (in 1980, 1982 and 1990) or the '87 stock market crash.

“I should point out that in 1987 we did not see an overall negative yield curve while we did prior to the recession years.”

For the record, Bloomberg says the 30 year is at 4.54%. Since there are no actual 30 year bonds (the longest note would be about 25 years), I assume they have some method for giving us this number. No matter, in a few months we will have a real number. And we can then compare it to the ten year.

If for some reason that 30 year drops below the ten, you can bet many economists will argue that it is a result of the Fed not offering enough 30 year bonds so that demand drove the rates down. I should point out they made very similar arguments in 2000. Of course, when things went back to normal in late 2000, those arguments began to ring hollow. They will this next time as well.

You can learn more about interest rates and the yield curve at my friend Ed Easterling's very useful work at <http://www.crestmontresearch.com/content/irates.htm>. There are some very good graphs which make the whole historical yield curve picture come to life.

Some Conclusions

Arturo Estrella is now the Senior Vice President, Capital Markets Function Federal Reserve Bank of New York. In October of this year, he produced a very useful primer on the yield curve at http://www.newyorkfed.org/research/capital_markets/ycfaq.html. For those of you who want more on the academic research on yield curves, I highly recommend it.

He concludes it with the following question and answer. It is instructive for us to look at what he says (emphasis mine):

“Q. Should we expect the predictive power of the term spread for real activity to persist?”

“A. Accumulated experience with the forecasting power of the yield curve suggests that it is much more than a passing phenomenon. Warnings of its actual or possible demise are often voiced, as in Butler (1978), Furlong (1989), Watson (1991) and - to some extent - Dotsey (1998), **but the fact remains that recessions still seem to follow inversions quite inevitably, as recently as in 2000-2001.**

“Like many empirical models, some formal predictive models that forecast output growth based on the term spread seem to have a structural break around 1979-1980. Stock and Watson (2003) find substantial evidence of a break for models that predict output growth and Estrella, Rodrigues and Schich (2003) find more modest evidence for models that predict industrial production.

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“However, this evidence does not necessarily imply that the predictive power of the yield curve has disappeared altogether, only that the values of the parameters in the formal models may have changed. Models of a more qualitative nature, such as those that predict recessions, seem to be affected much less or not at all, as documented by Estrella, Rodrigues and Schich (2003). Theory suggests (e.g., Estrella (2005a)) that there is a persistent predictive relationship between term spreads and future real output, though the precise parameters may change over time.

“Since yield curve inversions and economic recessions correspond to extreme values of those variables, a connection between inversions and recessions may be systematically detectable even if parameters change over time within reasonable bounds. **Thus, although yield curve inversions may not be followed by recessions as a matter of universal mathematical principle, they should definitely raise warning flags about future output growth.**”

Let's draw this letter and the year to a close with a few observations. Even if the yield curve does fully invert, it suggests that we will not see an outright recession in 2006? Why? Because to get a 90 day average negative number is going to take close to 90 days. If we get there, a recession is still at least 3-4 quarters away.

That does not mean we could not see the beginnings of a slowdown. In fact, if we do see an inversion, it would suggest a slowdown in the latter part of 2006 is likely. Remember, we never go directly to a recession from a strong economy like we have today. It takes time to slow an economy down.

Secondly, the stock market drops an average of 43% before and during a recession. That is an ugly number. But it is a very real number. And you do NOT want to wait until the last moment to head for the sidelines. Much of the drop in the market will happen prior to a recession, and we only know if there was a recession in hindsight. Usually, by the time we find we are in a recession, it is time to start buying.

Third, there are going to be a lot of people arguing that this time it's different if we do get a full blown inversion. And to be perfectly candid with you, it may be. I will go over that rationale in some future letter. But I will tell you this, I highly doubt I will buy it. When you have something as reliable as the yield curve telling you there are problems in Dodge City, it may be time to think about leaving town. Perhaps new sheriff Ben Bernanke can solve the problem before it emerges. But I am not sure I want to bet my portfolio on his ability.

Is it time to head for the hills yet on your index funds? Not really. The yield curve is not really telling us anything other than to pay attention at this time. So we will. I should note that many indices other than the internet bubble NASDAQ were not that far from their highs in July of 2000 when the yield curve started to show serious problems. In fact, the markets went up for a month or so following that negative inversion.

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2006 Forecast, London and More

Next week is my annual forecast issue. I am doing my usual intense research for this issue. It is always the hardest one for me to write in any given year. It generally takes two full days instead of the normal 5-6 hours.

I can make a few forecasts now. 2006 is going to be the busiest year I have had in a long time. We are launching a new service for investors in the first quarters, assuming the attorneys sign off on all the copy. I will be recommending a small number of investment advisors and funds which will be available to the average investor. I am pretty excited about our prospective line-up, although we will always be on the lookout for new managers.

I am finally going to start a new book I have been planning for over 6 years. More details next week. For those of you who wrote offering to help, I will be in contact shortly. This is going to be fun.

I will be in London February 15 where I am going to guest host on CNBC Squawbox (Europe). I will be in New York January 30 speaking at a hedge fund conference on finding emerging hedge funds. Details on this conference next week. Detroit, Toronto, Miami and La Jolla are also on the schedule for January.

It is time to hit the send button on this week's letter, as well as 2005. I am ready and excited about 2006. I always seem to think the next year will be my best ever. And sometimes it is! I find my optimism about the new year is no different, although I can see a few bumps I am going to have to iron out. But they are good kind of problems. As my Dad said, if it was easy, then anyone could do it! And you wouldn't make any money. It is only the hard stuff that really pays.

Lucky for me, I get hard stuff that is also a lot of fun. And I get to write to the greatest group of readers any analyst could have. I consider each and every one of you my friends and I take writing to you very seriously. Thank you for letting me come into your life this last year. I look forward to an even more exciting 2006! I would be even more excited if I could get my inbox empty before Tuesday morning. But some things will never change.

This weekend will find me with family and friends. I promised my young son I would take him to King Kong tonight. I really am not looking forward to it, even though the reviews are great, as I don't like movies with sad endings. And we do know how this one will end. Stay safe this weekend!

Let me wish you a very Happy New Year!

Your really ready for 2006 analyst,

John Mauldin

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