

# MuhlenkampMethods

For the Intelligent Investor

Answers to questions you may not even know you have.

## Why the Market Went Down

*This essay was written in 1979 for Ron's peers in the investment industry. Price-to-earnings (P/E) ratios on stocks had declined from 17 to 7 in just seven years, and no one seemed to understand why.*

*A short glossary has been added at the end of the essay for easy reference.*

Nearly five years after the bear market of 1973–74, the specter of that market continues to haunt investors—individual, corporate, and professional alike. Most investment decisions are prefaced by the fear of another bear market with the implication that the 1973–74 decline was divorced from, or unwarranted by, the economics of the period. In this brief paper, I show that the decline was entirely appropriate to the changes in economics and completely consistent with accepted theory for investing capital, whether in business, in bonds, or in equities. The bear market in equities came as a surprise to investors only because they tried to extrapolate the past in its simplest terms, rather than understanding present changes and building on that understanding. It is my belief that a better understanding of why that bear market occurred should help to relieve the fear of its recurrence and allow more rational investment practices.

1. Before we begin, I would like to propose two assumptions that will simplify our discussion: Taxes will be ignored. Once the argument has been completed, taxes can be taken into account on an item-by-item basis.
2. Barring an unusually lucid crystal ball, the present will be considered a steady state condition, implying that the future will be very similar to the present. Once the present is fully understood (as a steady-state condition), the implication of any changes in the future will be much easier to understand.
3. I've summarized my argument in Figures 4.1 and 4.2. Frequent reference to these tables should prove helpful.



## The Argument

It is 1979. Core inflation is running at a rate of 8%–9%. Since the value of the dollar is shrinking at an 8%–9% rate, most investors would like to *at least* offset that rate as a minimum requirement.

Short-term Treasury bills (T-Bills) are liquid, and considered to be risk-free investments. As such, they provide both a measure of the degree to which inflation can be offset on a current basis and a benchmark against which to measure other investments. Currently, short-term T-Bills yield about 9.5%. Thus, other investments can be measured against both the inflation rate and short-term T-Bills.

Long-term AAA corporate bonds are generally liquid, but considered to be a step below T-Bills in quality and less certain in their payout, due to the length of time to maturity. For these reasons, most investors require a higher expected return from 30-year General Motors (GM) bonds, relative to T-Bills, before they are willing to invest their money. Today, 30-year GM bonds provide an expected return of about 9.5%. This implies that investors would not now prefer such bonds to T-Bills, unless they expected inflation and T-Bill yields to be lower in the future than they are today.

Equity (stock) investment in a company is generally perceived as being riskier than debt (bond) investment in the same company, because stock prices are generally more volatile than bond prices. Although this volatility becomes less important as investors lengthen their time horizons, most stock investors still require some premium return to offset the greater volatility and perceived risk of stock investment. Today, based on the 9.5% returns on T-Bills and long-term bonds, many investors tell me that they need to see a 15% potential return to be willing to provide equity capital.

This point can also be made from the perspective of the company. If it costs GM 9.5% to borrow money, it must earn an additional return on that money to be worthwhile being in business. In short, if GM can't earn a premium, it has no incentive to pay 9.5% for use of the funds. A return on the order of 15% would seem to be a sufficient premium.

Consequently, I use a required return on equity of 15% in today's marketplace. This implies that if a company is actually earning that 15%, it should be worth *book value* (book value is defined as shareholder equity). Today, in fact, the average corporate return is roughly 15%, and the actual average price-to-book-value is just over one times book value. So, the market would appear to be fairly valued based on the assumptions and the data in the first column of Figure 4.1.



**Figure 4.1 Derivations**

	1979	1965	1951
Inflation (%)	8.0	1.5	7.0
Return on 90-day T-Bills (%)	9.5	4.0	2.0
Return on 30-year GM Bond (%)	9.5	4.5	3.0
Required Return on Equity (%) <i>(to be worth book value)</i>	15.0	8.0	13.0
Actual Average Return on Equity (%)	15.0	12.0	13.0
Actual Price / Book Value (P/BV)	1.0	2.0	1.0
Implicit P/E Ratio ( $P/E = P/B \div ROE$ )	6.0	17.0	7.0

Now then, let's step back in time to 1965. In 1965, inflation averaged 1.5%. Ninety-day Treasury bills provided returns of roughly 4%. Long-term corporate bonds provided a return of 4.5%. In this environment, many people tell me that they would require returns of 7%–8% to be willing to provide equity money. Again, if you are a corporate treasurer borrowing at 4.5% and earning 7%–8%, it is probably worthwhile being in business.

What we have said so far is that because inflation and interest rates climbed from 1965 to 1979, our required return on equity capital doubled in the same way that the required return on corporate bonds doubled. The doubling in the required return on corporate bonds drove the price of 4.5% bonds or preferred stocks to 50 cents on the dollar, and this surprised no one. Given a fixed coupon rate, we had to halve the price in order to double the return. Yet people were shocked when the prices of their equities were cut in half, even though it was for the same reason.



Corporate returns on equity in the mid-1960s averaged about 12%. This 12% was enough above the required return of 7%–8% that actual prices averaged two times book value. The only way in which these premium prices of two times book value could have been sustained is if the corporations had been able to sustain the premium returns (of 12% vs. the 7% or 8%). What has happened since then is that the required return doubled, and the actual return climbed merely from 12% to 15%, so that the prices shrank from two times book to just book value. Stock prices fell for the same reason that prices fell on existing bonds; it was the only way to increase future returns.

In order to complete the picture, we can go back to 1951. In the period around 1951, inflation rates were averaging about 7%. Ninety-day T-Bills were only yielding 2%, and returns on corporate bonds were only 3%, due to the interest rate controls after World War II. Clearly, these interest rates were not economic, given the rate at which money was losing its purchasing power. Interest rates *should* have been around 8%–9%, forcing required returns on equity to roughly 13%. In fact, in 1951 corporate returns on equity averaged 13%, and stocks were priced just above book value.

At this point several comments should be made. First of all, as we have derived the numbers in the three columns, each column is consistent unto itself. Anyone in 1951 who bought a 3% 30-year bond has in fact received his 3%. The bond is about to mature in 1981. Whether or not he is happy with that 3% is another question. He got exactly what he expected. Anyone who bought stocks at one times book in 1951 in companies that were earning 13% on equity has received that 13%. Since earnings are either paid out in dividends or added to equity, the investor received exactly what the companies earned, because the stock price is once again equal to book value. Like the bond investor, the stock investor has received exactly what he expected.



The difficulty comes when you make a transition from one column (i.e., one set of figures and one set of assumptions) to another. We have made that transition twice, and we are back where we started. However, let’s look at what happened during those transitions (see Figure 4.2).

**Figure 4.2 What Happens in “Real World” When Inflation Changes**

	1965-79	1951-65
Required Annual Return (%)	8.0	13.0
Actual P /B Return (+ or -) (%)	<u>- 5.0</u>	<u>+ 5.0</u>
Realized Annual Return	3.0	18.0

In the 14-year period from 1951 to 1965, because the *required* return went down, the prices on equities went up from one times book to two times book. The adjustment did not occur in bonds simply because bonds were pegged too low in 1951 to be economic investments. When you double numbers in a 14-year period, you are adding about 5% on average per year.

In 1951 investors required equity returns of 13%, and the average company provided an in-house return of that same 13%. In the ensuing 14 years, investors’ requirements dropped to 8%, while companies were able to maintain in-house returns of 12%. This caused the ratio of prices to book values to double, adding 5% per year in price appreciation to the 13% required. And, in fact, the total returns from equity investments for the period 1951 to 1965 averaged 18%.

In 1965, investors required equity returns of 8%. In the ensuing 14 years, their requirements rose to 15%, and companies’ in-house returns rose to 15%. This caused the ratio of prices to book values to halve, giving back the 5% per year in price appreciation that was realized earlier. But this 5% was taken from a base of only 8%, leaving a net return of only 3%. In fact, the total of returns from equity investments, for the period 1965 to 1979, averaged 3%.

At this point it should be noted that the investors who bought 30-year bonds in 1965 can expect to get their 4.5% return over the 30-year period. To date they have not received it, because the price of the



bonds has dropped dramatically in order to get remaining returns (i.e., on a yield-to-maturity basis) up to 9.5%. Nevertheless, if these bonds are held to maturity, people will get the 4.5% they originally expected. Their frustration will be that in the interim they have changed their required returns, simply because the economics changed.

## The Conclusions

The conclusions from this exercise are several. The first conclusion is that the price of stocks is driven by the same economic factors that determine the price of bonds. Stocks are priced, as they must be priced, to provide the investor with a competitive prospective return, just as are bonds. The second conclusion is that stocks do have an additional variable in their returns. Whereas a bond coupon is fixed for the life of the bond, the underlying return for stocks is the corporate return on equity, which can, of course, change. If a bond is held to maturity, the investor will realize the exact return he bargained for. Similarly, if the stock is held until the capitalization rate—the price-to-book-value—returns to its level at purchase, the shareholder will receive whatever return on corporate equity the company earned on average during his holding period. Thus, there is an additional variable, but the price determinations are still based on what the company earns. A shareholder owns a share of the company and can expect to receive the company's return on equity capital, provided he manages to sell his share for a capitalization rate equal to the one at which he purchased.

The third conclusion is that if in 1951 bonds had been priced to return 9% or 10% (in order to make them competitive with the 7% inflation rate), bondholders would have been called out of their bonds somewhere between 1951 and 1965. This means that, rather than allowing the prices of the bonds to increase to 1.8 times par, the companies simply would have called them back in and issued 4.5% bonds. The point is that anyone buying a 9.5% bond today will not get that 9.5% unless the bonds are outstanding to maturity. If interest rates should drop, it is the obligation of the corporation to call them back in and reissue new bonds at a lower coupon rate.

The fourth conclusion is that the return on shareholders' equity is in fact return on shareholders' equity. When a company earns money on shareholder equity, that money goes to only two places: it gets paid out in dividends (in which case the shareholder can invest it or spend it as his or her heart desires), or it gets plowed back into the equity base. If it is plowed back into the equity base, those dollars do accrue to the value of the enterprise. The difficulty in the last 14 years has simply been that the



capitalization rate (i.e., the price-to-book ratio) has declined at a rate nearly offsetting this accumulation of corporate equity, so it has not been apparent to shareholders that they were, in fact, benefiting from corporate retained earnings. Looking at the period from 1951 to 1965, shareholders benefited doubly, but there was very little incentive to look closely or to pursue the argument at that time.

The fifth conclusion is that the reason the stocks can be viewed as a hedge against inflation is that corporate management has the task of earning returns on shareholder equity over and above the costs of borrowing money. When inflation and interest rates rose in 1970, the verbal response of investors was “to buy those 7% to 8% bonds while you have a chance” because 4.5% was viewed as a normal return on debt. Even coupons of 7% to 8% on bonds did not deter corporate management. They were earning a 12% return on shareholder equity. It had decreased their margin, but it was still worthwhile being in business. In 1973 and 1974 when interest rates rose again, investors concluded that 8% to 9% bonds were here to stay. At the same time, corporate management reached the same conclusion, indicating that a 12% return on shareholder equity was only marginal. Thus, they have since upped their required returns to 15%.

The realization that we may have entered a new era of inflation and interest rates, hit both investors and corporate managers, (who are often the same people), at the same time. But, whereas a corporate executive body requires several years to upgrade the profitability of their company, investors are able to up their prospective returns in a very short period of time. They simply cut prices. This occurred in the equity markets in 1973 and 1974.

Since that time we have had gradually increasing levels of corporate return on equity, so that today returns are competitive, but returns are not at premium levels as they were in 1965. The capital markets have adjusted to this by simply cutting their price-to-book-value ratios from two times to one times. Nevertheless, if inflation continues to climb and interest rates continue to climb, corporate executives will continue to up their required returns. If the investor buys into corporations at prices below book value, he will be taken care of simply by the actions of the executives. It's when the investor insists on paying prices substantially above book value that he is relying on corporations to earn premium returns rather than simply competitive returns.



## Postscript

I would like to make just two more points. I consider them axioms of investing:

1. Over the long term (e.g., 30 years) the difference in risk between the stock and the bonds of any given company is minuscule. If the company dies, neither is any good. When Penn Central went bankrupt, owning the bonds was little better than owning stock.
2. Return on shareholder equity is exactly that. If the company earns it, it accrues to the value owned by the shareholder, either through dividends or through increased equity value. Over the long term, the shareholder gets what the company earns. A shareholder can get more or less by buying at a discount (to equity value) or at a premium.

## Editor's Note

*In this essay, Ron gains insight into the dynamics of the market from 1951 to 1979 by considering the perspectives of both the investor and the businessperson. What rate of return is required for an individual to invest? What rate of return must a company be able to make before it will borrow money? The answers to these questions depend on the inflation rate, interest rates, and perceived risk. Thus, when inflation and interest rates change, the required returns change as well.*

*In 1973–74, the realization that inflation was here to stay drove stock prices down. (Remember, the investor has a required return. To meet this in an environment of increasing inflation, corporate profitability must increase or purchase price must drop. Profitability takes years to change. Price changes are much quicker.) The bear market of 1973–74 was a surprise to analysts because investment models did not take inflation into account. (From 1951 to 1965 they didn't need to, because inflation was steady. But from 1965 to 1978, changes in inflation played the major role in the marketplace.)*

*The lesson to learn: when you are working with money, you must account for the fact that the value of money can change. You must account for inflation.*

*Do Ron's insights still hold true in 2007? Below we've added two columns for 1998 when bond yields and stocks prices first reflected inflation rates of 2%. Note that the parameters come very close to those of 1965. The "real world" numbers on the lower table reflect the results of the period which look a lot like 1951-1965. The numbers also demonstrate why, starting in 1998, Ron has been saying that stocks are priced to do 8%-9% per year going forward; (for more information refer to the 'Total Return' segment in our essay entitled "How Much Money Are You Willing to Lose for a Theory?").*



The second additional column lists the numbers for 2007, which are very close to the numbers for 1998. The “real world” numbers demonstrate returns that are still a bit below the required return since 1998.

**Figure 4.3 Derivations (Updated)**

	2007	1998	1979	1965	1951
Inflation (%)	2.0	2.0	8.0	1.5	7.0
Return on 90-day T-Bills (%)	4.0	3.0	9.5	4.0	2.0
Return on 30-year GM Bond (%)	4.5	5.0	9.5	4.5	3.0
Required Return on Equity (%) <i>(to be worth book value)</i>	8.0	8.0	15.0	8.0	13.0
Actual Average Return on Equity (%)	13.0	13.0	15.0	12.0	13.0
Actual Price / Book Value (P/BV)	2.1	2.1	1.0	2.0	1.0
Implicit P/E Ratio $(P/E = P/B \div ROE)$	17.0	17.0	6.0	17.0	7.0

**Figure 4.4 What Happens in “Real World” When Inflation Changes (Updated)**

	1998- 2006	1979- 1998	1965- 1979	1951- 1965
Required Annual Return (%)	8.0	15.0	8.0	13.0
Actual P / B Return (+ or -) (%)	<u>+0.0</u>	<u>+3.0</u>	<u>-5.0</u>	<u>+5.0</u>
Theoretical Annual Return	8.0	18.0	3.0	18.0
Realized Annual Return	7.0	18.0	3.0	18.0



## Glossary

**Book Value (BV) or “Book”**—the owner’s equity in the business. It is often quoted as Book Value/Share.

**Book Value** = Total Assets – Total Liabilities

**Price-to-Book (P/B)**—the market capitalization divided by owner’s equity in the business. Note that P/B equals the Price-to-Earnings Ratio (P/E) times Return on Equity (ROE).

**Price-to-Earnings Ratio (P/E)**—the current price of a stock divided by the trailing 12 months earnings per share.

**Return on Equity (ROE)**—a company’s net income (Earnings) divided by the owner’s equity in the business (Book Value). This percentage indicates company profitability or how efficiently a company is using its equity capital.  
ROE = Earnings/Book

## References

Federal Reserve Bank of St. Louis, *U.S. Financial Data*

Federal Reserve System Board of Governors, *Historical Chart Book*

*Standard & Poor’s Analyst’s Handbook*

