

HOW INFLATION SWINDLES THE EQUITY INVESTOR¹

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It is no longer a secret that stocks, like bonds, do poorly in an inflationary environment. We have been in such an environment for most of the past decade, and it has indeed been a time of troubles for stocks. But the reasons for the stock market's problems in this period are still imperfectly understood.

There is no mystery at all about the problems of bondholders of in an era of inflation. When the value of the dollar deteriorates month after month, a security with income and principal payments denominated in those dollars isn't going to be a big winner. You hardly need a Ph.D. in economics to figure that one out.

It was long assumed that stocks were something else. For many years, the conventional wisdom insisted that stocks were a hedge against inflation. The proposition was rooted in the fact that stocks are not claims against dollars, as bonds are, but represent ownership of companies with productive facilities. These, investors believed, would retain their value in real terms; let the politicians print money as they might.

And why didn't it turn out that way? The main reason, I believe, is that stocks, in economic substance, are really very similar to bonds.

I know that this belief will seem eccentric to many investors. They will immediately observe that the return on a bond (the coupon?) is fixed, while the return on an equity investment (the company's earnings) can vary substantially from one year to another. True enough. But anyone who examines the aggregate that have been earned by companies during the postwar years will discover something extraordinary: The returns on equity have in fact not varied much at all.

The Coupon Is Sticky

In the first ten years after the war—the decade ending in 1955—the *Dow Jones Industrials* had an average annual return on year-end equity of 12.8 percent. In the second decade, the figure was 10.1 percent. In the third decade it was 10.9 percent. Data for the larger universe, the Fortune 500 (whose history goes back only to the mid-1950's) indicate somewhat similar results: 11.2 percent in the decade ending in 1965, 11.8 percent in the decade through 1975. The figures for a few exceptional years have been substantially higher (the high for the 500 was 14.1% in 1974) or lower (9.5 percent in 1958 and 1970), but over the years, and in the aggregate, the return on book value tends to keep coming back to a level around 12 percent. It shows no signs of exceeding that level significantly in inflationary years (or in years of stable prices, for that matter).

For the moment, let's think of those companies, not as listed stocks, but as productive enterprises. Let's also assume that the owners of those enterprises had acquired them at book value. In that case, their own return would have been around 12 percent too. And because the return has been so consistent, it seems reasonable to think of it as an "equity coupon."

In the real world, of course, investors in stocks don't just buy and hold. Instead, many try to outwit their fellow investors in order to maximize their own proportions of corporate earnings. This thrashing about obviously fruitless in aggregate, has no impact on the equity coupon but reduces the investor's portion of it, because he incurs substantial frictional costs, such as advisory fees and brokerage charges. Throw in an active options market, which adds nothing to the productivity of American enterprise but requires a cast of thousands to man the casino, and frictional cost rise further.

¹ I believe Buffett's article on inflation and its effect on equity investors is one of the best investment articles ever written.

Stocks Are Perpetual

It is also true in the real world investors in stocks don't usually get to buy at book value. Sometimes they have been able to buy in below book: usually, however, they've had to pay more than book, and more about these relationships later. Meanwhile, let's focus on the main point: as inflation has increased, the return on equity capital has not. Essentially, those who buy equities receive securities with an underlying fixed return—just like those who buy bonds. Of course, there are some important differences between the bond and stock forms. For openers, bonds eventually come due. It may require a long wait, but eventually the bond investor gets to renegotiate the terms of his contract. If current and prospective rates of inflation make his old coupon look inadequate, he can refuse to play further unless coupons currently being offered rekindle his interest. Something of this sort has been going on in recent years.

Stocks, on the other hand, are *perpetual*. They have a maturity date of infinity. Investors in stocks are stuck with whatever return corporate America happens to earn. If corporate America is destined to earn 12 percent, then that is the level investors must learn to live with. As a group, stock investors can neither opt out nor renegotiate. In the aggregate, their commitment is actually increasing. Individual companies can be sold or liquidated, and corporations can repurchase their own shares; on balance, however, new equity flotation's and retained earnings guarantee that the equity capital locked up in the corporate system will increase.

So, score one for the bond form. Bond coupons eventually will be renegotiated; equity "coupons" won't. It is true, of course, that for a long time a 12 percent coupon did not appear in need of a whole lot of correction.

The Bondholder Gets It in Cash

There is another major difference between the garden variety of bond and our new exotic 12 percent "equity bond" that comes to the Wall Street costume ball dressed in a stock certificate.

In the usual case, a bond investor receives his entire coupon in cash is left to reinvest it as best he can. Our stock investor's equity coupon, in contrast, is partially retained by the company and is reinvested at whatever rates the company happens to be earning. In other words, going back to our corporate universe, part of the 12 percent earned annually is paid out in dividends and the balance is put right back into the universe to earn 12 percent also.

The Good Old Days

This characteristic of stocks—the reinvestment of part of the coupon—can be good or bad news, depending on the relative attractiveness of that 12 percent. The news was very good indeed in the 1950's and early 1960's. With bonds yielding only 3 or 4 percent, the right to reinvest automatically a portion of the equity coupon at 12 percent was of enormous value. Note that investors could not just invest their own money and get that 12 percent return. Stock prices in this period ranged far above book value, and investors were prevented by the premium prices they had to pay from directly extracting out of the underlying corporate universe whatever rate that universe was earning. You can't pay far above par for a 12 percent bond and earn 12 percent for yourself.

But on their retained earnings, investors *could* earn 12 percent. In effect, earnings retention allowed investors to buy at book value part of an enterprise that, in the economic environment then existing, was worth a great deal more than book value.

It was a situation that left very little to be said for cash dividends and a lot to be said for earnings retention. Indeed, the more money that investors thought likely to be reinvested as the 12 percent rate, the more valuable they considered their reinvestment privilege, and the more they were willing to pay for it. In the early 1960's, inventors eagerly paid top-scale prices for electric utilities situated in growth areas, knowing that these companies

had the ability to reinvest very large proportions of their earnings. Utilities whose operating environment dictated a larger cash payout rated lower prices.

If, during this period, a high-grade, non callable, long-term bond with a 12 percent coupon had existed, it would have sold far above par. And if it were a bond with a further unusual characteristic—which was that most of the coupon payments could be automatically reinvested at par in similar bonds—the issue would have commanded an even greater premium. In essence, growth stocks retaining most of their earnings represented just such a security. When their reinvestment rate on the added equity capital was 12 percent while interest rates generally were around 4 percent, investors became very happy—and, of course, they paid happy prices.

Heading for the Exits.

Looking back, stock investors can think of themselves in the 1946-66 period as having been ladled a truly bountiful triple dip. First, they were the beneficiaries of any underlying corporate return on equity that was far above prevailing interest rates. Second, a significant portion of that return was reinvested for them at rates that were otherwise unattainable. And third, they were afforded an escalating appraisal of underlying equity capital as the first two benefits became widely recognized. This third dip meant that, on top of the basic 12 percent or so earned by corporation on their equity capital, investors were receiving a bonus as the Dow Jones Industrials increased in price from 133 percent of book value in 1946 to 220 percent in 1966. Such a marking-up process temporarily allowed investors to achieve a return that exceeded the inherent earning power of the enterprises in which they had invested.

This heaven-on-earth situation finally was “discovered” in the mid-1960’s by many major investing institutions. But just in as these financial elephants began trampling on one another in their rush to equities, we entered an era of accelerating inflation and higher interest rates. Quite logically, the marking-up process began to reverse itself. Rising interest rates ruthlessly reduced the value of all existing fixed coupon investments. And as long-term corporate bond rates began moving up (eventually reaching the 10 percent area), both the equity return of 12 percent and the reinvestment “privilege” began to look different.

Stocks are quite properly thought of as riskier than bonds. While that equity coupon is more or less fixed over periods of time, it does fluctuate somewhat from year to year. Investor’s attitudes about the future can be affected substantially, although frequently erroneously, by those yearly changes. Stocks are also riskier because they come equipped with infinite maturities. (Even your friendly broker wouldn’t have the nerve to peddle a 100-year bond, if he had any available, as “safe.”) Because of the additional risk, the natural reaction of investors is to expect an equity return that is comfortable above the bond return—and 12 percent on equity versus, say, 10 percent on bonds issued by the same corporate universe does not seem to qualify as comfortable. As the spread narrows, equity investors start looking for the exits.

But, of course, as a group they can’t get out. All they can achieve is a lot of movement, substantial frictional costs, and a new, much lower level of valuation, reflecting the lessened attractiveness of the 12 percent equity coupon under inflationary conditions. Bond investors have had a succession of shocks over the past decade in the course of discovering that there is not magic attached to any given coupon level: at 6 percent, or 8 percent, or 10 percent, bonds can still collapse in price. Stock investors, who are in general not aware that they too have a “coupon,” are still receiving their education on this point.

Five Ways to Improve Earnings.

Must we really view that 12 percent equity coupon as immutable? Is there any law that says the corporate return on equity capital cannot adjust itself upward in response to a permanently higher average rate of inflation?

There is no law, of course. On the other hand, corporate America cannot increase earnings by desire or decree. To raise that return on equity, corporations would need at least one of the following:

- (1) an increase in turnover, i.e., in the ratio between sales and total assets employed in the business;
- (2) cheaper leverage;
- (3) more leverage;
- (4) lower income taxes;
- (5) wider operating margins on sales.

And that's it. There simply are no other ways to increase returns on common equity. Let's see what can be done with these.

We'll begin with *turnover*. The three major categories of assets we have to think about for this exercise is accounts receivable, inventories and fixed assets such as plants and machinery.

Accounts receivable go up proportionally as sales go up, whether the increase in dollar sales is produced by more physical volume or by inflation. No room for improvement here.

With inventories, the situation is not quite so simple. Over the long-term, the trend in unit inventories may be expected to follow the trend in unit sales. Over the short term, however, the physical turnover rate may bob around because of special influences—e.g., cost expectations, or bottlenecks.

The use of last-in, first out (LIFO) inventory-valuation methods serves to increase the reported turnover rate during inflationary times. When dollar sales are rising because of inflation, inventory valuations of a LIFO company either will remain level (if unit sales are not rising) or will trail the rise in dollar sales (if unit sales are rising). In either case, dollar turnover will increase.

During the early 1970's, there was a pronounced swing by corporations toward LIFO accounting which has the effect of lowering a company's reported earnings and tax bills). The trend now seems to have slowed. Still, the existence of a lot of LIFO companies, plus the likelihood that some others will join the crowd, ensures some further increase in the reported turnover of inventory.

The Gains Are Apt to be Modest

In the case of fixed assets, any rise in the inflation rate, assuming it affects all products equally, will initially have the effect of increasing turnover. That is true because sales will immediately reflect the new price level, while the fixed-asset account will reflect the change only gradually, i.e., as existing assets are retired and replaced at the new prices. Obviously, the more slowly a company goes about this replacement process, the more the turnover ratio will rise. The action stops, however, when a replacement cycle is completed. Assuming a constant rate of inflation, sales and fixed assets will then begin to rise in concert at the rate of inflation.

To sum up, inflation will produce some gains in turnover ratios. Some improvement would be certain because of LIFO, and some would be possible (if inflation accelerates) because of sales rising more rapidly than fixed assets. But the gains are apt to be modest and not of a magnitude to produce substantial improvement in returns on equity capital. During the decade ending in 1975, despite generally accelerating inflation and the extensive use of LIFO accounting, the turnover ratio of the Fortune 500 went only from 1.18/1 to 1.29/1.

Cheaper leverage? Not likely. High rates of inflation generally cause borrowing to become dearer, not cheaper. Galloping rates of inflation create galloping capital needs; and lenders, as they become increasingly distrustful of long-term contracts, become more demanding. But even if there is no further rise in interest rates, leverage will be getting more expensive because the average cost of the debt now on corporate books is less than would be the cost of replacing it. And replacement will be required as the existing debt matures. Overall, then, future changes in the cost of leverage seem likely to have a mildly depressing effect on the return on equity.

More leverage? American business already has fired many, if not most, of the more-leverage bullets once available to it. Proof of that proposition can be seen in some other Fortune 500 statistics: in the twenty years ending in 1975, stockholders' equity as a percentage of total assets declined for the 500 from 63 percent to just under 59%. In other words, each dollar of equity capital now is leveraged much more heavily than it used to be.

What the Lenders Learned

An irony of inflation-induced financial requirement is that the highly profitable companies—generally the best credits—require relatively little debt capital. But the laggards in profitability never can get enough. Lenders understand this problem much better than they did a decade ago—and are correspondingly less willing to let capital-hungry, low-profitability enterprises leverage themselves to the sky.

Nevertheless, given inflationary conditions, many corporations seem sure in the future to turn to still more leverage as a means of shoring up equity returns. Their managements will make that move because they will need enormous amounts of capital—often merely to do the same physical volume of business—and will wish to get it without cutting dividends or making equity offerings that, because of inflation, are not apt to shape up as attractive. Their natural response will be to heap on debt, almost regardless of cost. They will tend to behave like those utility companies that argued over an either of a point in the 1960's and were grateful to find 12 percent debt financing in 1974.

Added debt at present interest rates, however, will do less for equity returns than did added debt at 4 percent rates in the early 1960's. There is also the problem that higher debt ratios cause credit ratings to be lowered, creating a further rise in interest costs.

So that is another way, to be added to those already discussed, in which the cost of leverage will be rising. In total, the higher costs of leverage are likely to offset the benefits of greater leverage.

Besides, there is already far more debt in corporate America than is conveyed by conventional balance sheets. Many companies have massive pension obligations geared to whatever pay levels will be in effect when present workers retire. At the low inflation rates of 1955-56, the liabilities arising from such plans were reasonably predictable. Today, nobody can really know the company's ultimate obligation. But if the inflation rate averages 7 percent in the future, a twenty-five-year-old employee who is now earning \$12,000, and whose raises do no more than match increases in living costs, will be making \$180,000 when he retires at sixty-five.

Of course, there is a marvelously precise figure in many annual reports each year, purporting to be the unfunded pension liability. If that figure were really believable, a corporation could simply ante up that sum, add to it the existing pension-fund assets, turn the total amount over to any insurance company, and have it assume all the corporation's present pension liabilities. In the real world, alas, it is impossible to find an insurance company willing even to listen to such a deal.

Virtually every corporate treasurer in America would recoil at the idea of issuing a "cost-of-living" bond—a non-callable obligation with coupons tied to a price index. But through the private pension system, corporate America has in fact taken on a fantastic amount of debt that is the equivalent of such a bond.

More leverage, whether through conventional debt or unbooked and indexed “pension debt,” should be viewed with skepticism by shareholders. A 12 percent return from an enterprise that is debt-free is far superior to the same return achieved by a business hocked to its eyeballs which means that today’s 12 percent equity returns may will be less valuable than the 12 percent returns of twenty years ago.

More Fun in New York

Lower corporate income taxes seem unlikely. Investors in American corporations already own what might be thought of as a Class D stock. The Class A, B, and C stocks are represented by the income-tax claims of the federal, state, and municipal governments. It is true that these “investors” have no claim on the corporation’s assets; however, they get a major share of the earnings, including earnings generated by the equity buildup resulting from retention of part of the earnings owned by the Class D shareholders.

A further charming characteristic of these wonderful Class A, B, and C stocks is that their share of the corporation’s earning can be increased immediately, abundantly, and without payment by the unilateral vote of any one of the “stockholder” classes, e.g., by congressional action in the case of the Class A. To add to the fun, one of the classes will sometimes vote to increase its ownership share in the business retroactively—as companies operating in New York discovered to their dismay in 1975. Whenever the Class A, B, or C “stockholder” vote themselves a larger share of the business, the portion remaining for Class D—that’s the one held by the ordinary investor—declines.

Looking ahead, it seems unwise to assume that those who control the A, B, and C shares will vote to reduce their own take over the long run. The Class D shares probably will have to struggle to hold their own.

Bad News from the FTC

The last of our five possible sources of increased returns on equity is *wider operating margins on sales*. Here is where some optimists would hope to achieve major gains. There is no proof that they are wrong. But there are only 100 cents on the sales dollar and a lot of demands on that dollar before we get to the residual, pretax profits. The major claimants are labor, raw materials, energy, and various non-income taxes. The relative importance of these costs hardly seems likely to decline during an age of inflation.

Recent statistical evidence, furthermore, does not inspire confidence in the proposition that margins will widen in a period of inflation. In the decade ending in 1965, a period of relatively low inflation, the universe of manufacturing companies reported on quarterly by the Federal Trade Commission had an average annual pretax margin on sales of 8.6 percent. In the decade ending in 1975, the average margin was 8 percent. Margins were down, in other words, despite a very considerable increase in the inflation rate.

If business was able to base its prices on replacement costs, margins would widen in inflationary periods. But the simple fact is that most large businesses, despite a widespread belief in their market power, just don’t manage to pull it off. Replacement cost accounting almost always shows that corporate earnings have declined significantly in the past decade. If such major industries as oil, steel, and aluminum really have the oligopolistic muscle imputed to them, one can only conclude that their pricing policies have been remarkably restrained.

There you have the complete lineup: five factors that can improve returns on common equity, none of which, by my analysis, are likely to take use very far in that direction in periods of high inflation. You may have emerged from this exercise more optimistic than I am. But remember, returns in the 12 percent area have been with us a long time.

The Investor’s Equation the dollar

Even if you agree that the 12 percent equity coupon is more or less immutable, you still may hope to do well with it in the years ahead. It's conceivable that you will. After all, a lot of investors did well with it for a long time. But your future results will be governed by three variables: the relationship between book value and market value, the tax rate, and the inflation rate.

Let's wade through a little arithmetic about book and market value. When stocks consistently sell at book value, it's all very simple. If a stock has a book value of \$100 and also an average market value of \$100, 12 percent earnings by business will produce a 12 percent return for the investor (less those frictional costs, which we'll ignore for the moment). If the payout ratio is 50 percent, our investor will get \$6 via dividends and a further \$6 from the increase in the book value of the business, which will, of course, be reflected in the market value of his holdings.

If the stock sold at 150 percent of book value, the picture would change. The investor would receive the same \$6 cash dividend, but it would now represent only a 4 percent return on his \$150 cost. The book value of the business would still increase by 6 percent (to \$106) and the market value of the investor's holdings, valued consistently at 150 percent of book value, would similarly increase by 6 percent to (\$159). But the investor's total return, i.e., from appreciation plus dividends, would be only 10 percent versus the underlying 12 percent earned by the business.

When the investor buys in below book value, the process is reversed. For example, if the stock sells at 80 percent of book value, the same earnings and payout assumptions would yield 7.5 percent from dividends (\$6 on an \$80 price) and 6 percent from appreciation—a total return of 13.5 percent. In other words, you would do better by buying at a discount rather than a premium, just as common sense would suggest.

During the postwar years, the market value of the Dow Jones industrials has been as low as 84 percent of book value (in 1974) and as high as 232 percent (in 1965); most of the time the ratio has been well over 100 percent. (Early this spring, it was around 110 percent.) Let's assume that in the future the ratio will be something close to 100 percent—meaning that investors in stocks would earn the full 12 percent. At least, they could earn that figure before taxes and before inflation.

7 Percent after Taxes

How large a bite might taxes take out of the 12 percent? For individual investors, it seems reasonable to assume that federal, state, and local income taxes will average perhaps 50% on dividends and 30 percent on capital gains. A majority of investors may have marginalized rates somewhat below these, but many with larger holdings will experience substantially higher rates. Under the new tax law, as *Fortune* observed last month, a high-income investor in a heavily taxed city could have a marginal rate on capital gains as high as 56 percent. (See "The Tax Practitioners Act of 1976.")

So let's also assume, in line with recent experience, that corporations earning 12 percent on equity pay out 5 percent in cash dividends (2.5% after tax). And retain 7 percent, with those retained earnings producing a corresponding market-value growth (4.9 percent after the 30 percent tax). The after-tax return, then, would be 7.4 percent. Probably this should be rounded down to about 7 percent to allow for frictional costs. To push our stocks-as-disguised-bonds thesis one notch further, then, stocks might be regarded as the equivalent, for individuals, of 7 percent tax-exempt perpetual bonds.

The Number Nobody Knows

Which brings us to the crucial question—the inflation rate. No one knows the answer on this one—including the politicians, economists, and Establishment pundits, who felt, a few years back, that with slight nudges here and there unemployment and inflation rates would respond like trained seals.

But many signs seem negative for stable prices: the fact that inflation is now worldwide; propensity of major groups in our society to utilize their electoral muscle to shift, rather than solve, economic problems; the demonstrated unwillingness to tackle even the most vital problems (e.g., energy and nuclear proliferation) if they can be post-poned; and a political system that rewards legislators with reelection if their actions appear to produce short-term benefits even though their ultimate imprint will be to compound long-term pain.

Most of those in political office, quite understandably, are firmly against inflation and firmly in favor of policies producing it. (This schizophrenia hasn't caused them to lose touch with reality, however; Congressmen have made sure that their pensions—unlike practically all granted in the private sector—are indexed to cost-of-living changes *after* retirement.)

Discussions regarding future inflation rates usually probe the subtleties of monetary and fiscal policies. These are important variables in determining the outcome of any specific inflationary equation. But, at the source, peacetime inflation is a political problem, not an economic problem. Human behavior, not monetary behavior, is the key. And when you very human politicians choose between the next election and the next generation, it's clear what usually happens.

Such broad generalizations do not produce precise numbers. However, it seems quite possible to me that inflation rates will average 7 percent in future years. I hope this forecast proves to be wrong. And it may well be. Forecasts usually tell us more of the forecaster than of the future. You are free to factor your own inflation rate into the investor's equation. But if you foresee a rate averaging 2 percent or 3 percent, you are wearing different glasses than I am.

So there we are: 12 percent before taxes and inflation; 7 percent after taxes and before inflation; and maybe zero (0) percent after taxes and inflation. It hardly sounds like a formula that will keep all those cattle stampeding on TV.

As a common stockholder you will have more dollars, but you may have no more purchasing power, Out with *Ben Franklin* (A penny saved is a penny earned") and in with *Milton Friedman* (A man might as well consume his capital as invest it").

What Widows Don't Notice

The arithmetic makes it plain that inflation is a far more devastating tax than anything that has been enacted by our legislatures. The inflation tax has a fantastic ability to simply consume capital. It makes no difference to a widow with her savings in a 5 percent passbook account whether she pays 100 percent tax on her interest income during a period of zero inflation, or pays no income taxes during years of 5 percent inflation. Either way, he is "taxed" in a manner that leaves her no real income whatsoever. Any money she spends comes right out of capital. She would find outrageous a 120 percent income tax, but doesn't seem to notice that 6 percent inflation is the economic equivalent.

If my inflation assumption is close to correct, disappointing results will occur not because the market falls, but in spite of the fact that the market rises. At around 920 early last month, the Dow was up fifty-five points from where it was ten years ago. But adjusted for inflation the Dow is won almost 345 points—from 865 to 520. And

about half of the earnings of the Dow had to be withheld from their owners and reinvested in order to achieve even that result.

In the next ten years, the Dow would be doubled just by a combination of the 12 percent equity coupon, a 40 percent payout ratio, and the present 110 percent ratio of market to book value. And with 7 percent inflation, investors who sold at 1800 would still be considerably worse off than they are today after paying their capital-gains taxes.

I can almost hear the reaction of some investors to these downbeat thoughts. It will be to assume that, whatever the difficulties presented by the new investment era; they will somehow contrive to turn in superior results for themselves. Their success is most unlikely. And in aggregate of course, impossible. If you feel you can dance in and out of securities in a way that defeats the inflation tax, I would like to be your broker—but not your partner.

Even so-called tax-exempt investors, such as pension funds and college endowment funds, do not escape the inflation tax. If my assumptions of a 7 percent earned each year as merely as a replenishment of purchasing power, endowment funds are earning *nothing* until they have outpaced the inflation treadmill. At 7 percent inflation and, say, overall investment returns of 8 percent, these institutions, which believe they are tax-exempt, are in fact paying “income taxes” of 87.5 percent.

The Social Equation

Unfortunately, the major problems from high inflation rates flow not to investors but to society as a whole. Investment income is a small portion of national income, and if per capita real income could grow at a healthy rate alongside zero real investment returns, social justice might well be advanced.

A market economy creates some lopsided payoffs to participants. The right endowment of vocal chords, anatomical structure, physical strength, or mental powers can produce enormous piles of claim checks (stocks, bonds, and other forms of capital) on future national output. Proper selection of ancestors similarly can result in lifetime supplies of such tickets upon birth. If zero real investment returns delivered a bit greater portion of the national output from such stockholders to equally worthy and hardworking citizens lacking jack-pot producing talents, it would seem unlikely to pose such an insult to an equitable world as to risk Divine Intervention.

But the potential for real improvement in the welfare of workers at the expense of affluent stockholders is not significant. Employee compensation already totals twenty-eight times the amount paid out on dividends, and a lot of those dividends now go to pension funds, nonprofit institutions such as universities, and individual stockholders who are not affluent. Under these circumstances, if we now shifted all dividends of wealthy stockholders into wages—something we could do only once, like killing a cow (or, if you prefer, a pig)—we would increase real wages by less than we used to obtain from one year’s growth of the economy.

The Russians Understand It Too

Therefore, diminishment of the affluent, through the impact of inflation on their investments, will not even provide material short-term aid to those who are not affluent. Their economic well-being will rise or fall with the general effects of inflation on the economy. And those effects are not likely to be good.

Large gains in real capital, invested in modern production facilities are required to produce large gains in economic well-being. Great labor availability, great consumer wants, and great government promises will lead to nothing but great frustration without continuous creation and employment of expensive new capital assets throughout industry. That’s an equation understood by Russians as well as Rockefellers. And it’s one that has been applied with stunning success in West Germany and Japan. High capital-accumulation rates have enabled

those countries to achieve gains in living standards at rates far exceeding ours, even though we have enjoyed much the superior position in energy.

To understand the impact of inflation upon real capital accumulation, a little math is required. Come back for a moment to that 12 percent return on equity capital. Such earnings are stated after depreciation, which presumably will allow replacement of present productive capacity—if that plant and equipment can be purchased in the future at prices similar to their original cost.

The Way It Was

Let's assume that about half of earnings are paid out in dividends, leaving 6 percent of equity capital available to finance future growth. If inflation is low—say, 2 percent—a large portion of that growth can be real growth in physical output. For under these conditions, 2 percent more will have to be invested in receivables, inventories, and fixed assets next year just to duplicate this year's physical output—leaving 4 percent for investment in assets to produce more physical goods. The 2 percent finances illusory dollar growth reflecting inflation and the remaining 4 percent finances real growth. If population growth is 1 percent, the 4 percent gain in real output translates into a 3 percent gain in real per capita net income. That, very, roughly, is what used to happen in our economy.

Now move the inflation rate to 7 percent and compute what is left for real growth after the financing of the mandatory inflation component. The answer is nothing—if dividend policies and leverage ratios remain unchanged. After half of the 12 percent earnings are paid out, the same 6 percent is left, but it is all conscripted to provide the added dollars needed to transact last year's physical volume of business.

Many companies, faced with no real retained earnings with which to finance physical expansion after normal dividend payments, will improvise. How, they will ask themselves, can we stop or reduce dividends without risking stockholder wrath? I have good news for them: a ready-made set of blueprints is available.

In recent years the electric-utility industry has had little or no dividend-paying capacity. Or, rather, it has had the power to pay dividends if investors agree to buy stock from them. In 1975 electric utilities paid common dividends of \$3.3 billion and asked investors to return \$3.4 billion. Of course, they mixed in a little solicit – *Peter-to-Pay-Paul* technique so as not to acquire a Con Ed reputation. Con Ed, you remember, was unwise enough in 1974 to simply tell its shareholders it didn't have the money to pay the dividend. Candor was rewarded with calamity in the market place.

The more sophisticated utility maintains—perhaps—increases the quarterly dividend and then asks shareholders (either old or new) to mail back the money. In other words, the company issues new stock. This procedure diverts massive amounts of capital to the tax collector and substantial sums to underwriters. Everyone, however, seems to remain in good spirits (particularly the underwriters).

More Joy at A.T. &T.

Encouraged by such success, some utilities have devised a further shortcut. In this case, the company declares the dividend, the shareholder pays the tax, and—presto—more shares are issued. No cash changes hands, although the IRS, spoilsport as always, persists in treating the transaction as if it had.

A. T. &T., for example, instituted a dividend-reinvested program in 1973. This company, in fairness, must be described as very stockholder-minded, and its adoption of this program, considering the folkways of finance, must be regarded as totally understandable. But the substance of the program is out of *Alice in Wonderland*.

In 1976, A. T. & T. paid \$2.3 billion in cash dividends to about 2.9 million owners of its common stock. At the end of the year, 648,000 holders (up from 601,000 the previous year) reinvested \$432 million (up from \$327 million) in additional shares supplied directly by the company.

Just for fun, let's assume that all A.T. & T. shareholders ultimately sign up for this program. In that case, no cash at all would be mailed to shareholders—just when Con Ed passed a dividend. However, each of the 2.9 million owners would be notified that he should pay income taxes on his share of the retained earnings that had that year been called a “dividend.” Assuming that “dividends” totaled \$2.3 billion, as in 1976, and that shareholders paid an average tax of 30 percent on these, they would end up, courtesy of this marvelous plan, paying nearly \$700 million to the IRS. Imagine the joy of shareholders, in such circumstances, if the directors were then to double the dividend.

The Government Will Try to Do it.

We can expect to see more use of disguised payout reductions as business struggles with the problem of real capital accumulation. But throttling back shareholders somewhat will not entirely solve the problem. A combination of 7 percent inflation and 12 percent returns will rescue the stream of corporate capital available to finance real growth.

And so, as conventional private capital-accumulation methods falter under inflation, our government will increasingly attempt to influence capital flows to industry, either unsuccessfully as in England or successfully as in Japan. The necessary cultural and historical underpinnings for a Japanese-style enthusiastic partnership of governments, business, and labor seems lacking here. If we are lucky, we will avoid following the English path, where all segments fight over division of the pie rather than pool their energies to enlarge it.

On balance, however, it seems likely that we will hear a great deal more as the years unfold about underinvestment, stagflation, and the failures of the private sector to fulfill needs.

Inflation

A further, particularly ironic, punishment is inflicted by an inflationary environment upon the owners of the "Bad" business. To continue operating in its present mode, such a low-return business usually must retain much of its earnings - no matter what penalty such a policy produces for shareholders.

Reason would prescribe just the opposite policy. An individual, stuck with a 5% bond with many years to run before maturity, does not take the coupons from that bond and pay one hundred cents on the dollar. Instead, he takes those coupons from his low-return bond and-if inclined to reinvest-looks for the highest return with safety currently available. Good money is not thrown after bad. What makes sense for the bondholder makes sense for the shareholder. Logically, a company with historic and prospective high returns on equity should retain much or all of its earnings so that shareholders can earn premium returns on enhanced capital. Conversely, low returns on corporate equity would suggest a very high dividend payout so that owners could direct capital toward more attractive areas. (The Scriptures concur. In the parable of the talents, the two high-earning servants are rewarded with 100% retention of earnings and encouraged to expand their operations. However, the non-earning third servant is not only chastised--"wicked and slothful" - but also is required to redirect all of his capital to the top performer. *Matthew 25: 14-30*).

When prices continuously rise, the "bad" business must retain every nickel that it can. Not because it is attractive as a repository for equity capital, but precisely because it is so unattractive, the low-return business must follow a high retention policy. If it wishes to continue operating in the future as it has in the past-and most entities, including businesses, do-it simply has no choice.

For inflation acts as a gigantic corporate tapeworm. That tapeworm preemptively consumes its requisite daily diet of investment dollars regardless of the health of the host organism.

Whatever the level of reported profits (even if nil), more dollars for receivables, inventory and fixed assets are continuously required by the business in order to merely match the unit volume or the previous year. The less prosperous the enterprise, the greater the proportion of available sustenance claimed by the tapeworm. A business earning 8% or 10% on equity often has no leftovers for expansion, debt reduction or "real" dividends. The tapeworm of inflation simply cleans the plate. (The low-return company's inability to pay dividends, understandably, is often disguised. Corporate America increasingly is turning to dividend reinvestment plans, sometimes even embodying a discount arrangement that all but forces shareholders to reinvest. Other companies sell newly issued shares to Peter in order to pay dividends to Paul. Beware of "dividends" that can be paid out only if someone promises to replace the capital distributed.)

END

2008 Notes:

While a number of simple measures of valuation have also been useful over the years, even metrics such as price-to-peak earnings have been skewed by the unusual **profit margins we observed at the 2007 peak, which were about 50% above the historical norm - reflecting the combination of booming and highly leveraged financial sector profits as well as wide margins in cyclical and commodity-oriented industries.** Accordingly, using price-to-peak requires the additional assumption that the profit margins observed in 2007 will be sustained indefinitely. Our more comprehensive measures do not require such assumptions, and reflect both direct estimates of normalized earnings, and compound estimates derived from revenues, profit margins, book values, and return-on-equity.

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This is a good post from <http://www.gannononinvesting.com/>

A blog written by a self-taught investor.

I attach it here because it reinforces the points made in Buffett's great article. Read it and reap.

A reader sent me an email asking me why the company shown in [my blind stock valuation contest](#) has free cash flow that's so much lower than reported earnings.

Let's look at something [Warren Buffett](#) said in [his 2009 letter to shareholders](#):

*"Our BNSF operation, it should be noted, has certain important economic characteristics that resemble those of our electric utilities. In both cases we provide fundamental services that are, and will remain, essential to the economic well-being of our customers, the communities we serve, and indeed the nation. **Both will require heavy investment that greatly exceeds depreciation allowances for decades to come....**"*

Without giving too much away, the mystery company in [the blind stock valuation exercise](#) fits that description.

But why does any company fit that description?

Why would a company require capital spending *"that greatly exceeds depreciation allowances"* not just for one year or two but decade after decade?

The answer is inflation.

Now, before I get into illustrating why railroads all vastly overstate their true economic earnings, I want to stress that this overstatement is not caused by fraud or management's desire to mislead. If investors are misled, it's only because they look at the P/E ratio without looking at free cash flow.

It is well known that railroads can't pay out all their earnings in dividends. The big reason for this is that some of those stated earnings are completely illusory.

It's an earnings mirage.

This railroad earnings mirage come from a continual gap between capital spending and depreciation. Year after year, railroads spend more on new property than they count as a replacement expense. In other words, the "upkeep" expense at railroads is vastly understated. This causes vastly overstated earnings.

Railroads depreciate against the original cost of their old assets. But they replace their old assets with new assets. Because of inflation, replacing any asset bought or built in 1991 with an identical one in 2011 will cost more money.

Depreciation doesn't adjust for cost inflation.

Obviously, inflation isn't specific to railroads. But an inflation rate of say 2% a year makes little difference when you're replacing an asset after 1 or 2 or 3 years.

Inflation makes a huge difference when you're replacing an asset after 10 or 15 or 20 years.

A movie ticket cost \$4.20 in 1991. Try getting a replacement ticket for \$4.20 today.

Railroads tend to have free cash flow that is no greater than about 50% of their reported earnings. That's true of American railroads over the last 15 years or so (when inflation ran 2% a year using the GDP deflator). A couple railroads had free cash flow - the actual amount they could have paid in dividends each year - running around half of earnings. Most actually did even worse than that. This means their earnings don't all come in the form of cash.

Some of the 50% difference was caused by capital spending meant to grow the business. But a lot of that 50% difference between net income and free cash flow was caused by a gap between depreciation expense and the actual cost required to replace the railroad's assets.

Depreciation charges were too low relative to the actual cash upkeep needed to maintain the same assets and do the same volume of business.

That's bound to happen if railroads are replacing equipment that's 15 or 20 years old. Obviously, inflation makes the replacement cost higher than the original cost.

Yet depreciation isn't adjusted for inflation.

Companies depreciate against the original cost of the asset they use up over those 15 or 20 years. So if they buy something for \$1,000 that will last 20 years they charge themselves \$50 a year ($\$1,000 / 20 \text{ years} = \$50/\text{year}$). But even if inflation is just 3% a year over the next 20 years, the actual replacement cost when the thing breaks down in 2031 will be \$1,800. It'll be \$2,200 if inflation is 4%.

Let's assume inflation will be 3% over the asset's 20 year life. That means the replacement cost of something we buy in 2011 and replace in 2031 will be \$1,800 in 2031 for every \$1,000 we pay today.

If instead of depreciating against the original \$1,000 cost we make up a non-GAAP fantasy account I'll call "Provision for Future Equipment Replacement" we might use a straight-line method where we take the actual replacement cost (\$1,800) in 2031 and space it out evenly over 20 years. $\$1,800$ divided by 20 years equals \$90 a year.

So, we'd report depreciation of \$50 a year under the original cost method - assuming 3% inflation - even though we know full well that we have to set aside \$90 a year for the actual replacement cost of the equipment in 2031 if we live in a world of 3% inflation. That means our owner earnings should be reduced by multiplying depreciation by 1.8 ($\$90/\$50 = 1.8$). So, economic depreciation is really 1.8 times the depreciation we put on the books.

If you look at a group of 5 or 10 railroads, power companies, etc. you'll get a feel for how long the

useful life of their entire business is. A big clue is property, plant, and equipment / capital spending. If a no-growth business has \$32,000 of PP&E and \$2,000 in capital spending, it's shedding and regrowing its PP&E skin at a rate of once every 16 years (since it's replacing 1/16th this year). That's how long the business's life span is. It has to regenerate all its tangible assets every 16 years.

This is only meaningful for an asset heavy business like a railroad. It's not a relevant calculation for businesses that depend primarily – or entirely – on their current assets to produce earnings.

And all of this is in nominal terms. In reality, the company's property, plant, and equipment isn't being replaced every 17 years in a business where annual capital spending is 6% of PP&E ($1/0.06 = 16.67$). It's not like you're replacing the same 100 miles of track every 17 years. It's more like you're replacing the same \$100 worth of track every 17 years. How much track \$100 buys changes over the years.

Why should you care how long it takes a business to shed and regrow its balance sheet skin?

It gives you a clue as to how inflation is disguising the economic reality behind the reported earnings. Only businesses that are very asset heavy will be affected by inflation in this way.

But – even among asset heavy businesses – there's a big difference between a business that replaces those tangible assets every 6 years and a business that replaces those tangible assets every 16 years.

A business that replaces its tangible assets every 6 years will be depreciating some of those assets in 2005 dollars instead of 2011 dollars. But a business that replaces its tangible assets every 16 years will be depreciating some of those assets in 1995 dollars instead of 2011 dollars.

Railroads are an odd business in that their assets don't have to be replaced very often. It's just that they have to use unfathomable amounts of assets to move stuff around. Some other asset heavy businesses – especially very dense, very heavily used networks – have high capital spending but short asset lives.

Their depreciation expense is more accurate even though they're also big capital spenders, because the original cost of their assets is always closer to the replacement cost of those same assets.

None of this would be true if we lived in a non-inflationary world. But since the 1940s, we in the United States have tended to have more or less constant inflation. Prices never really fall for very long. And they rise ever higher over time.

The result is that our companies understate their depreciation expense in proportion to the age of the assets chewed up by their day-to-day operations.

Ravi Nagarajan of [Rational Walk](#) sent me an email where he mentioned that some industries do a good job of breaking down capital spending and explaining depreciation. That's true. The two examples he gave were railroads and offshore oil drillers.

If you're wondering about how railroads calculate depreciation, there's a note in each company's 10-K that explains how it calculates depreciation.

Here is note #10 from the **Union Pacific (UNP)** 10-K:

*“...Properties and equipment are **carried at cost** and are **depreciated on a straight-line basis** over their estimated service lives, which are **measured in years**, except for rail in high-density traffic corridors (i.e., all rail lines except for those subject to abandonment, yard and switching tracks, and electronic yards), **which are measured in millions of gross tons per mile of track**...”*

Basically, Union Pacific is saying that they don't adjust their depreciation charges for inflation. They just take the original cost of the property and depreciate it using one of two methods.

The easiest way to think of the two depreciation methods is to imagine a hammer and an anvil. The property is the hammer. You can either set aside money to pay for a new hammer in equal installments every day or in equal installments every time the hammer strikes the anvil. For something like a hammer, the economically accurate way to depreciate the asset is based on the number of anvil strikes, because the anvil will eventually destroy the hammer. Time doesn't destroy hammers. Anvils destroy hammers.

Always ask what forces a company to replace its assets.

Is it time? Is it use? Is it technology? Or is it customer taste?

The best asset is one that can survive all those changes.

The worst asset is one that can't survive any of those changes.

Twenty years ago – back in 1991 – this is [what Warren Buffett told a group of Notre Dame Students](#):

“The telephone company (AT&T), with the patents, the MBAs, the stock options, and everything else, had one problem, and that problem is illustrated by those figures on that lower left hand column. And those figures show the plant investment in the telephone business. That's \$47 billion, starting off with, growing to \$99 billion over an eight or nine year period. More and more and more money had to be tossed in, in order to make these increased earnings, going from \$2.2 billion to \$5.6 billion. So, they got more money, but you can get more money from a savings account if you keep adding money to it every year. The progress in earnings that the telephone company made was only achievable because they kept on shoving more money into the savings account and the truth was, under the conditions of the '70s, they were not getting paid commensurate with the amount of money that they had to shove into the pot, whereas Lord Thompson, once he bought the paper in Council Bluffs, never put another dime in. They just mailed money every year. And as they got more money, he bought more newspapers. And, in fact, he said it was going to say on his tombstone that he bought newspapers in order to make more money in order to buy more newspapers. The idea was that, essentially, he raised prices and raised earnings there every year without having to put more capital into the business. One is a marvelous, absolutely sensational business, the other one is a terrible business.”

So why did [Warren Buffett](#) buy Burlington Northern?

That's a great question. Buffett has given some clues. His best explanation is probably [what he told](#)

[Charlie Rose](#).

Since I don't agree with Buffett's purchase, I can't do his argument justice.

I just have no interest in owning a railroad. It's not a business I want to be in. That may be close minded. But that's the truth.

What I wanted to do here is just make sure that the folks who **are** interested in buying railroads aren't overly fixated on the P/E ratio.

A railroad's reported earnings are not comparable to reported earnings in other industries.

3. [Rnagarajan](#) says on Jan 23, 2011 at 9:30 AM:

Very interesting and insightful article. I think part of the answer regarding Buffett's decision to purchase BNSF is related to the deregulation that took place after passage of the Staggers Act in 1980. While it took the industry some time to show the benefits of deregulation, the performance over the past several years (and particularly during the recession) has demonstrated the incredible operating efficiencies of the rail network in general and the advantages over trucking given rising fuel costs and our increasingly decrepit interstate highway system. While maintenance capex is meaningfully higher than depreciation for the reasons noted in the article, inflation also has the effect of increasing the value of the existing network, so there are two sides to the coin. For example, when Berkshire purchased BNSF, the purchase price allocation assigned significantly more value to property, plant, and equipment than the predecessor company's prior carrying value.

In any event, I've been looking at BNSF and rails closely in recent days as part of my work on an upcoming report on Berkshire. I think the following data presents some revealing stats about the industry as a whole and BNSF in particular. An interesting observation is that the operating ratio for 2010 is likely to be at or near 70% - a historically excellent figure. Union Pacific has also reported excellent results - thanks to operating leverage and the industry's recovery in 2010.

SELECTED CLASS I RAILROAD: KEY INDUSTRY STATISTICS			
Industry-Wide Resource Availability:	2009	2008	2007
Miles of Road Operated less Trackage Rights	94,048	94,209	94,440
Miles of Track Operated less Trackage Rights	160,781	160,734	161,114
Miles of High-Density "A" Track Maintained	62,067	69,749	70,323
Locomotives in Service	24,047	24,003	24,143
Freight Cars in Service	416,180	450,297	460,172
Industry-Wide Financial Results			
<i>Figures in Billions</i>	2009	2008	2007
Freight Revenue	46.1	59.4	52.9
Operating Revenue	47.8	61.2	54.6
Operating Expense	37.2	47.3	42.7
Net Income	6.4	8.1	6.8
Operating Ratio *	77.80%	77.30%	78.30%
Return on Average Equity	9.79%	13.26%	11.49%
* Operating Ratio equals operating expenses as percentage of operating revenue.			
Source: AAR Railroad Statistics Report Dated October 29, 2010: http://bit.ly/hIm0JA			

BNSF KEY OPERATING STATISTICS				
Resource Availability:	2010	2009	2008	2007
Miles of Road Operated less Trackage Rights		23,000	23,000	23,000
Miles of Track Operated less Trackage Rights		40,000	40,000	40,000
Locomotives in Service		6,759	6,510	6,400
Freight Cars in Service		79,329	82,555	85,338
<i>Figures in Millions</i>	2010	2009	2008	2007
Freight Revenue		13,588	17,503	15,349
Operating Revenue		14,016	18,018	15,802
Operating Expense		10,754	14,106	12,316
Net Income		1,721	2,115	1,829
Operating Ratio		76.7%	78.3%	77.9%
Source: 2010, 2009, and 2008 10-K				