How much is it?

By Keith S. Brown

I like to ask questions. So does my daughter. What she has shown me is that sometimes the simplest questions have the most interesting answers.

I started saving $100 a month the day my daughter was born. If she decides to go to college, I want to be able to help her financially – if she needs it.

So, what is the annual rate of return I need to achieve?

The five numbers that I find most interesting are:

1. The total amount contributed
2. The "Theoretical Balance" or the total contributions and earnings assuming no inflation and no taxes
3. The "Post-Tax Balance" or the Theoretical balance after taxes.
4. The "Deflated Balance" or the Theoretical balance after inflation (this is essentially the Roth IRA balance).
5. The "Deflated Post-Tax Balance" is what happens when both inflation and taxes reduce the buying power of money.

"Safe" Investing

If the monthly contributions were kept in a FDIC insured savings account at the local bank, the account would earn about 3% per year. After 20 years (assuming no inflation and no taxes) my $24,000 in contributions (along with 20 years of earnings) would be reported on my bank statement as $32,912.28.

Uncle Sam, in his guise as the friendly neighborhood tax collector, wants his cut of the action. Assuming that I pay 28% of my earnings as tax (at the end of each year) and that inflation holds at 0%, my daughter will have $30,065.62.

Historically, inflation runs about 3½%. Even if Uncle Sam forgives all taxes, the $32,912.28 will only be worth $22,834.03 (in today's dollars). Uncle is not about to do that. (The Educational IRA is capped at $500 per year – and it is tax-deferred, not tax free.)

Figuring in both inflation and taxes, the theoretical $32,912.28 is reduced to a mere $21,421.04.

Not much money at all. In fact, with inflation at 3½% and a saving account that pays only 3%, the account is losing ½% per year – before taxes. That seems about as safe as sleeping on an ant hill to avoid a jaguar.

What to do?

If the traditional "safe" investment is unsafe, then what about the traditional unsafe investment – the stock market. My parents and my grandparents all lived through the great-depression. Though none of them currently own stocks, or (to the best of my knowledge) have ever owned stocks, their attitude is that buying stocks is somewhat less intelligent than burning money.

Is it?

Based on what I've read, an unmanaged index (such as the S&P 500) returns about 10-11% per year – long term (generally for periods of 10+ years). For the last 20 years (1979 => 1998) the S&P 500 has returned an average annual total return of 16.6%. (16.6% is the average annual total return reported by the Vanguard Index Trust Prospectus, April 20 1989 for the S&P 500 index).

If 10% per year long term is more nearly correct, my $24,000 in contributions would grow to a theoretical maximum of $76,569.69 – that sure sounds a lot better than $32,912.28. Uncle Sam again would want his portion. Again assuming 28% taxes on earnings there would be $54,290.00 after taxes. If Uncle forgives all taxes, 3½% inflation would reduce the buying power of $76,569.69 to $49,307.74. And if we account for both taxes and inflation, the $76,569.69 would have the same buying power as $38,230.94 would today.

On the other-hand, if I use 15% (assuming the Vanguard numbers are more nearly correct) then my contributions would grow to a theoretical maximum of $151,595.50. Wow! After paying Uncle (each year), the account would show $87,351.83. If Uncle forgave taxes, inflation would reduce the theoretical to $93,396.66. And accounting for both taxes and inflation, $151,595.50 would have the same buying power as $61,412.94. If that is the same as burning money – then burn baby burn! (Sorry grandma!)

A Foolish Investment?

For me day trading does not make sense. First, I'm at the wrong end of the information pipe-line. I have two jobs, I have a family and I ride bicycles. For such an approach to work, I would have to be continuously "plugged-in" – continuously monitoring all relevant information, making minute by minute decisions. Information-delay in that environment is at best, the right decision delayed – and money lost or misspent. While I enjoy working with computers, I have other things to do with my life than being an **info-borg**. Second, day trading is not a frictionless transaction. Even if I could find a fast, reliable broker at $5 a trade – twenty trades (10 buys, 10 sells) would totally consume my $100 monthly contribution. No, day trading does not make sense for me.

I bought and read Michael O'Higgins' "Beating the DOW" and Robert Sheard's "Unemotional Investor" (Sheard writes for the Motley Fool). Sheard expands on the system described by O'Higgins. If they are right, then a long-

term average annual total return of 20+% is not only possible, but doable – and takes less than an hour a year. The Foolish Four, a real money portfolio, implements one of the systems described by Sheard.

So what are the numbers at 20%?

The theoretical maximum is $316,147.94. After Uncle Sam takes his bite, $146,344.52 would be left. If Uncle forgave the taxes, inflation would reduce the buying power to $188,077.55. Accounting for both taxes and inflation, the theoretical maximum is reduced to $103,412.59 (in today's dollars).

It now becomes obvious why tax-deferral and lower capital gains taxes are such hot issues. It is not just the money lost to taxes, it's the also the potential growth lost due to money pulled out to pay taxes. With a 3% annual return, taxes consume almost 9% of the theoretical maximum. With a 10% annual return, taxes consume a bit over 29% of the theoretical maximum. With a 15% annual return, taxes consume more than 42% of the theoretical maximum. And with a 20% annual return, taxes have consumed almost 54% of the theoretical maximum. This is not a "rich folks" problem, it is a problem for anyone who can squeeze out $100 a month for twenty years to put their kids through school.

With luck and good budgeting, $100,000 (in today's dollars) might get a child through 4 years of undergraduate school, perhaps a year or two of graduate school, and maybe, just maybe have a bit left over for either a wedding or a down-payment on a small house.