

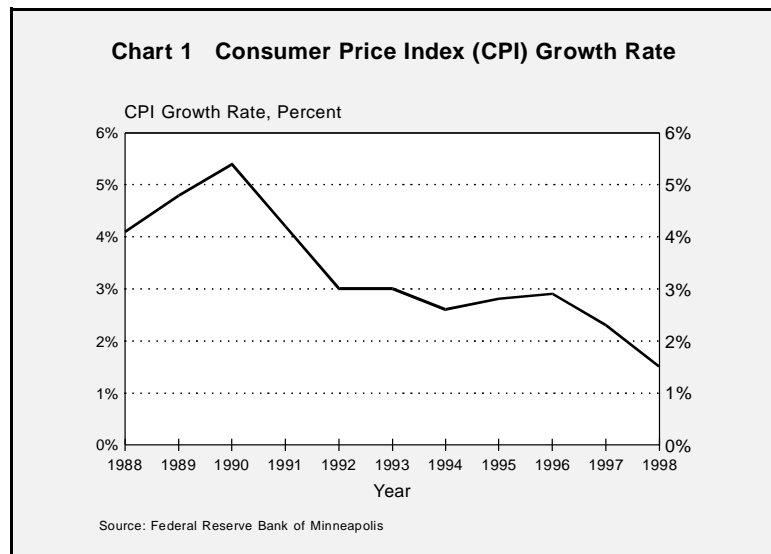
## **PRESERVING GROWTH THROUGH SENSIBLE TAX REDUCTIONS**

Recent monetary policy has been extraordinarily conducive to economic growth by fostering low inflation and stable interest rates. Falling inflation (Chart 1 below) has been a major force driving the current expansion. With inflation near zero, however, further improvement in economic performance must come from sensible growth-oriented tax changes.

The purpose of this paper is to explain (1) how falling inflation has contributed to the current expansion; (2) why, given almost zero inflation, this source of strength has contributed about all that it can to bolster the economy's strength; and (3) the fiscal policy measures that can provide the means for further expansion. Given the adverse international economic situation, implementing the policies presented here is particularly urgent.

### **Transitory Growth Effects of Reduced Inflation**

Inflation reduces the real value of the "capital consumption allowances" that businesses may deduct as the cost of their plant, equipment, and structures in determining their taxable incomes. Inflation similarly lowers the real value of deductions for the cost of inventory. Thus, inflation leads to an understatement of real business costs, an overstatement of real business income, and a higher effective tax rate on the earnings of the capital assets employed by businesses. A decrease in the rate of inflation, such as we have been



experiencing in the last several years, eases the tax burden on capital and encourages the development of a larger capital stock. The resulting higher level of investment has given strength to the current economic expansion.

The reduction in the inflation rate, while inducing a permanent increase in the levels of the capital stock and economic output, provides only a transitory boost to the rates of growth of the capital stock and the economy. The elevated rate of investment will continue only until the capital stock has been raised to the higher desired level associated with the new, lower inflation rate. Continued rapid expansion of investment and GDP requires additional incentives to further increase the nation's stock of capital.

***Falling inflation...has been a major force driving the current expansion. With inflation near zero, however, further improvement in economic performance must come from sensible growth-oriented tax changes.***

## **A Primer on Business Decision Making**

The goal of any business is to maximize the amount by which the total revenue that a business gets for selling its products or services exceeds the costs the business incurs in producing those products and services.<sup>1</sup> The various costs and revenue flows will occur over a period of time, and the timing of the costs will not necessarily match the timing of the revenues. For example, investment in plant and equipment, R&D, or advertising made in the current period will affect sales and costs in future periods. The amounts and timing of the costs and revenues cannot be known with certainty in advance. Businesses must make their decisions based on estimated costs and revenues in an uncertain world. For an investment project to proceed, businesses must estimate the risks associated with the project, and determine that the expected return on the project will be sufficient to cover both the uncertainty and the basic required return on the investment.

### **Dealing With Time: the Concept of Present Value**

To determine whether an endeavor is worth doing, businesses must be able to compare dollars received or spent in different time periods. The solution to this problem is to calculate and compare the "present value" of receipts and outlays.

Monies received or paid out in the future are worth less than if they were paid or received in the present. For example, if you had \$1.00 today, you could place it in a money market account and

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<sup>1</sup> For an excellent book on the subject of managerial decision making, see Julian L. Simon, *Applied Managerial Economics*, Englewood Cliffs: Prentice-Hall, Inc., 1975.

earn, say, 5 percent interest per year, yielding \$1.05 a year from now. It follows that \$1.05 received a year from now is equal in value to \$1.00 today. In technical terms, \$1.00 is the "present value" of \$1.05 to be received in one year, given an interest rate of 5 percent.

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"Discounting" is the process of determining the present value of future sums of money. Discounting allows sums of money received or paid in different time periods to be redefined in terms of one equivalent measure—present value dollars—so that they can be added, subtracted, or compared legitimately. In order to convert any sum of money to be received in the future into present value dollars, one must multiply a future sum by  $1/(1+i)^n$ , where  $i$  is the applicable discount rate (5% in the above example), and  $n$  is the number of years in the future that a given sum is to be received. For example, \$1 to be received 5 years from now, at a going interest rate of 5%, is worth  $\$1 \times 1/(1+.05)^5$ , or 78 cents, today.

***The reduction in the inflation rate...provides only a transitory boost to the rates of growth of the capital stock and the economy... Continued rapid expansion of investment and GDP requires additional incentives to further increase the nation's stock of capital.***

The formula allows one to convert all future sums into present value dollars, and it also casts up two very important facts: (1) the further in the future a sum is to be received (i.e. the larger the "n") the smaller the present value, and (2) the higher the discount rate ( $i$ ) the smaller the present value. (The reader can easily test these propositions, and get a feel for their importance, by plugging in different values for "i" and "n".)

### **The "Cost of Capital," or, What is "The Discount Rate?"**

We have been referring to  $i$  as "the discount rate," but what is it really? The appropriate discount rate for determining the present value of before-tax nominal costs and revenues is the "cost of capital". The cost of capital is the rate of return that an investment must earn for its owners to cover its perceived level of risk, expected inflation, taxes, and the residual risk-adjusted real after-tax yield

that is available on other investments.<sup>2</sup> This residual risk-adjusted real after-tax rate demanded by savers and investors appears to have averaged just under 3.5% since at least the early 1950s.<sup>3</sup>

Individuals may either spend or save a dollar of income. For a small saver, the cost of capital may be thought of as the interest rate you could earn by saving a dollar in a safe asset, such as a Treasury bill or municipal bond, instead of spending it. That interest rate will reflect inflation and whether or not the bill, note, or bond is subject to tax. Because the return on the saving is potential future income that is foregone when money is spent on consumption in the present, that return is often referred to as the "opportunity cost" of using the dollar for consumption rather than saving it. (These choices, trade-offs, or lost opportunities are at the heart of all economic analysis.)

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Companies (acting on behalf of their shareholders) also have an opportunity cost of spending money. Instead of spending a given dollar on investment in capital assets like plant and equipment, the business could invest the dollar in, say, a security or group of securities and earn some rate of return (i), or pay down debt and save the interest expense. Thus for business decisions "i" is referred to as the opportunity cost of capital or just cost of capital, and it is the foregone income that could have been earned by investing in securities whose riskiness is similar to that of the business.

***Taxes are a part of the cost of capital... The higher is the tax rate and the cost of capital, the fewer are the investment projects that businesses can justify as affordable to undertake, and the smaller is the stock of capital.***

Businesses estimate their own cost of capital for use in discounting future sums of money in order to evaluate investment decisions with different revenue and cost streams through time. The cost of capital is the "hurdle rate" that an investment must be able to "clear" in order to be considered

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<sup>2</sup> The cost of capital is the only cost for the purpose of discounting returns on financial investments or land, and is the full required rate of return. In the case of depreciable physical capital, which wears out over time, the investment must also earn enough to cover the cost of replacing itself. The cost of capital plus the added return necessary to match real depreciation generates the "service cost" of a depreciable asset.

<sup>3</sup> See Gary Robbins and Aldona Robbins, "Eating Out Our Substance (II): How Taxation Affects Investment", Institute for Policy Innovation, Lewisville, TX, 1995, p. 9.

worthwhile. If a given investment were not expected to earn the business's cost of capital, the business would be better off just investing in securities or paying down debt. Businesses try to choose those courses of action that result in the largest net present value, that is, the largest present value of revenue or sales streams minus or net of costs. This is how all investment decisions are made, and is often referred to as evaluating net cash flows.

### **The Measurement of Taxable Income**

Tax rules affect a business's decision-making because they affect how a business's taxable income is calculated, and how much tax is paid. Taxes are a part of the cost of capital. The higher is the tax burden on the earnings of an asset, the higher is the pre-tax rate of return that the asset must earn to provide a normal after-tax profit to its owner and thereby justify its undertaking. The higher is the tax rate and the cost of capital, the fewer are the investment projects that businesses can justify as affordable to undertake, and the smaller is the stock of capital. Anything that raises the tax burden slows investment and reduces capital formation.

***Revenues are not profit, and should not be taxed as such, until they exceed the cost of producing the goods or services that generated the revenues. Businesses must subtract costs from revenues to measure income correctly... Subtracting the entire cost of an asset from revenues in the period it is purchased is called "expensing".***

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Most physical capital — equipment, plant, office or commercial buildings, apartment buildings, etc. — involves outlays or expenditures now for an asset that will help produce revenues over several years. The cost of capital investment is immediate; the money given up to acquire the assets is lost to the business at once, and may not be used for other purposes, such as debt repayment, earning interest, paying dividends, or hiring additional employees. The outlay should be regarded as an immediate business cost. Subtracting the entire cost of an asset from revenues in the period it is purchased is called "expensing".

If the tax code were attempting to equate taxable income with real cash flow profit and loss, it would allow businesses to deduct the full cost of their capital outlays in the years they were made. Businesses would show (correctly) relatively low income and pay relatively low taxes in years of heavy investment, and show relatively high income and pay relatively high taxes in later years as the returns on the investment flowed in.

However, the tax code requires that businesses depreciate their investment outlays instead of expensing them. Depreciation means writing off capital expenses over a period of time (matching, in theory, the period over which the assets earn income). This mimics the accounting convention. Accountants depreciate or make allowances for capital consumption (capital "used up" in the production process), hence the term "capital consumption allowances". The accounting rationale for depreciation is to acknowledge that a capital asset takes some years to "wear out" (either physically or through economic obsolescence), and it retains resale value over time. Only a portion of the machine's or building's value is lost in any given year. The accountant counts only the drop in value of the asset as a current cost, called "economic depreciation". It is an attempt to measure the change in the business's net worth from one period to the next, rather than receipts minus outlays.

***Depreciation is not the proper measure of costs for determining taxable income... [A] business cannot buy only the portion of the machine or building that is wearing out in the production process each year. It must buy the entire asset all at once, tying up funds that would otherwise be available to earn income. The business's opportunity cost is the full cost of the asset and is incurred at the time of purchase...and must be allowed promptly as a deduction to properly measure the income of the business.***

Depreciation is not the proper measure of costs for determining taxable income. The residual market value of a machine or building is an asset, which should be considered a balance sheet item, not an element of current income. It is true that an asset retains a diminishing value for years after its purchase. Nonetheless, the business cannot buy only the portion of the machine or building that is wearing out in the production process each year. It must buy the entire asset all at once, tying up funds that would otherwise be available to earn income. The business's opportunity cost is the full cost of the asset and is incurred at the time of purchase. The full present value of that cost is a cost of earning income, and must be allowed promptly as a deduction to properly measure the income of the business.<sup>4</sup>

Employing depreciation instead of expensing in the calculation of income for tax purposes has the effect of deferring costs, overstating actual business income, and raising the effective tax rate on investment. Near-term income and taxes are artificially increased, while write-offs are larger in later years and future taxes are reduced. The net effect is to accelerate tax collections for the Treasury, and to increase their present value. In the process, this system of taxation imposes a higher tax rate

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<sup>4</sup> If an asset does retain value over time, and is sold at some future point for more than scrap, the proceeds of the sale should be added to taxable income at that time. That is when the business recovers the use of the money tied up in the asset. By contrast, depreciation pretends that this opportunity cost of employing the asset does not exist.

on income used for investment than on income used for consumption, a bias that distorts economic activity and reduces investment, productivity, wages, and employment.

### **The Interactions of Inflation and Tax Rules on Investment**

Another factor that influences the cost of capital is inflation. If a proposed investment faces a hurdle rate or cost of capital of 5 percent when the inflation rate is zero, it must earn or return roughly 10 percent if the inflation rate rises to 5 percent in order to earn the same real or inflation-adjusted rate of return. Presumably, rising inflation will boost future sales receipts, costs, and the difference between them in proportion, keeping the real return from dropping. However, any contracts without inflation protection could adversely affect a business.

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The chief impact of inflation in raising business costs and the cost of capital is in relation to the capital consumption allowances in the tax code. These allowances are not adjusted for inflation. The higher is the rate of inflation, the lower is the value of the capital consumption write-offs both in real value and relative to the nominal revenues of the business. A rising inflation rate increases a business's taxable income, its effective real tax rate, and its cost of capital, and makes many investment projects infeasible. Conversely, however, a falling rate of inflation lowers the cost of capital to all businesses, making outlays or investment in capital more attractive.

### **Expensing versus Depreciation for Various Asset Lives and Rates of Inflation**

Capital consumption allowances are worth more the more quickly they can be taken and the lower the rate of inflation. Table 1, below, illustrates these points.

The first row of Table 1 shows that each dollar of capital outlay is worth a full dollar if it may be written off or "expensed" as soon as it is made. Each column represents one of the depreciation periods (asset life classes) allowed under current law, from 3 years to 39 years. (The various types of machinery, structures, and other depreciable property are assigned by law to specific life classes in rough proportion to their expected useful lives.) With expensing it doesn't matter how long asset lives are when calculating current income because the full amount invested, one dollar in this case, is written off in its entirety, that is, completely expensed in the first period. A full dollar in present value is subtracted from taxable income, and the tax saved by the dollar of capital consumption allowance is \$1.00 multiplied by the applicable tax rate.

The picture is different under depreciation. Look at the next row. With zero percent inflation and a 3.5 percent real discount rate, the present value of the dollar of write-off, stretched out over three years, is 96.4 cents. The present value of taxes saved over the life of the asset is not the \$1 expenditure on capital times the applicable tax rate, but 96.4 cents times the applicable tax rate. Assume now that inflation is 3 percent. This must be tacked on to the business's cost of capital, giving a discount rate of about 6.5%, which reduces the value of the \$1 of write-off, stretched out over 3 years, to 93½ cents. That makes the value of the taxes saved 93½ cents times the applicable tax rate. Clearly, higher inflation reduces the value of capital consumption allowances to the business. At an inflation rate of 5 percent, the value of the allowance falls to 91.7 cents times the applicable tax rate.

<b>Table 1: Present Value of Current Law Capital Consumption Allowances per Dollar of Investment Compared to Expensing (First-year Write-off).</b>									
Asset lives:		3 yrs	5 yrs	7 yrs	10 yrs	15 yrs	20 yrs	27.5 yrs	39 yrs
Present value of first-year write-off of \$1 of investment:		\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Present value of current law write-off of \$1 if inflation rate is:	0%	\$0.964	\$0.937	\$0.912	\$0.877	\$0.796	\$0.742	\$0.646	\$0.550
	3%	\$0.935	\$0.888	\$0.846	\$0.789	\$0.667	\$0.592	\$0.469	\$0.367
	5%	\$0.917	\$0.859	\$0.807	\$0.739	\$0.599	\$0.519	\$0.391	\$0.295
Assumes a 3.5 percent real discount rate, 3-20 year assets placed in service in first quarter of the year, 27.5-39 year assets placed in service in January.									

The rest of the columns show the effects of inflation on the value of capital consumption allowances for assets of increasing life spans. The longer lived is the asset and the higher is the rate of inflation, the lower is the present value of the consumption allowance, the greater the overstatement of business income, and the less the value of the taxes saved. For example, if inflation were 5%, the allowable write-off for a building with a 39-year asset life would have a present value of less than 30 cents per dollar of cost, a staggering disincentive to engage in long-term investments.



### Effect of Depreciation on the Cost of Capital and Investment

How do lengthy write-off periods and inflation affect the rate of return on investment and the cost of capital? Look briefly at Table 2 below:

<b>Table 2: Expensing Versus Depreciation: Depreciation Overstates Taxable Income, Depresses Return on Capital</b>			
Expensing (full cost recovery)		Depreciation	
Revenues from machine, present value	\$115	Revenues from machine, present value	\$115
Full cost of machine	\$100	Full cost of machine	\$100
Full cost write-off for tax purposes (expensing)	\$100	Allowable depreciation write-off, present value	\$ 85
Real profit = taxable profit	\$ 15	Taxable "profit" (exceeds real profit)	\$ 30
Tax	\$ 5	Tax	\$ 10
After-tax income	\$ 10	After-tax income	\$ 5
Rate of return	10%	Rate of return	5%

Table 2 depicts a situation in which a business can purchase a machine for \$100 dollars that will enable the business to earn a revenue stream, over time, with a present value of \$115. (Nominal receipts will exceed \$115 over the period.) The present value of the profit, which is revenues minus costs, is \$15 (= \$115 - \$100). If the business were allowed a deduction for the full present value cost of the machine, and assuming a tax rate on earnings of one-third, the business would pay \$5 in taxes (in present value, more in nominal terms). The business would be left with \$10 in after-tax or "net" profits (in present value) producing a rate of return of 10% on the \$100 dollar investment.

The second column shows what happens if the write-offs for the investment must be stretched out over several years. The real present value of the deductions is reduced by the lost time value of money and the rate of inflation (both of which enter into the discount rate). The illustration assumes a discount rate that reduces the present value of the write-off of the expenditure on the machine to 85 percent of the initial cost, or \$85 (a not-untypical figure for a manufacturing business employing a mixture of short-lived equipment and long-lived plant). The present value of the business's revenues are still \$115, but the present value of its taxable income is now bumped up to \$30 (= \$115 - \$85). The business pays taxes with a present value of \$10 (one-third of \$30). In reality, however,

the business did incur outlays of \$100 in present value, so its true profit is \$15 in present value. Thus, the effective tax rate on the business's true profit is two-thirds ( $\$10/\$15$ ); its after-tax net income is \$5 in present value, and its rate of return on its \$100 outlay is only 5 percent.

In this example, depreciating the asset instead of expensing it cut the business's after-tax rate of return in half. Under such circumstances, fewer projects would be able to meet the real after-tax rate of return demanded by business owners to undertake the risk of making the investment. If the minimum risk-adjusted after-tax return required by investors were 10%, the project in this example would just be feasible under expensing, but would not be undertaken at all under the increased real taxes paid on illusory profits created by depreciating assets rather than expensing them.

***Capital consumption allowances are worth more the more quickly they can be taken and the lower the rate of inflation... The longer lived is the asset and the higher is the rate of inflation, the lower is the present value of the consumption allowance, the greater the overstatement of business income, and the less the value of the taxes saved. For example, at 5% inflation, the allowable write-off for a building with a 39-year asset life has a present value of less than \$0.30 per dollar of cost.***

A corollary to the above is that moving towards expensing and away from depreciating assets would increase the after-tax rate of return on investment, and thereby would increase the amount of investment and economic activity taking place. Ideally, depreciation schedules should be "accelerated" to immediate write-off. Alternatively, additional nominal depreciation should be permitted to increase the present value of the capital consumption allowances, after discounting for time and inflation, to equal the full present value of the expense incurred.

### **Where Are We Now?**

The accelerated cost recover system (ACRS) provisions combined with the expanded investment tax credit (ITC) for equipment enacted in the Economic Recovery Tax Act of 1981 (ERTA) roughly approximated expensing for depreciable equipment. ACRS also improved the tax treatment of long-lived structures such as buildings. Since 1981, however, tax laws have moved in the wrong direction with respect to depreciation allowances. The misnamed Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) rolled back much of the benefits of the 1981 legislation for equipment. The Deficit Reduction Act of 1984 (DEFRA) reversed much of the 1981 Act's improved treatment of structures. The Tax Reform Act (TRA) of 1986 further curtailed ACRS, eliminated the ITC, and boosted taxes on capital gains. The effects of these tax increases on investment were only partly cushioned by a reduction in the corporate and individual tax rates in the TRA and the declining rate of inflation of the early to mid-1980s. Subsequent tax hikes in 1990 and 1993 worsened the tax treatment of capital, as did an uptick in inflation in 1989 and 1990.

Table 1 above showed that lower levels of inflation have a significant, positive effect on the value of capital consumption allowances and the after-tax income and rate of return on investment in plant and equipment. More investment projects become feasible. The falling rate of inflation that we have enjoyed during the past 8 years has played a big part in promoting the kind of capital accumulation that drives all economic expansions, including the present one. Unfortunately, because inflation is already about as low as it can be expected to go, this source of stimulation for the U.S. economy is about tapped out. Further stimulus to growth must come from increasing the rate of return on investment through tax policy, and the best way to accomplish this, as table 2 shows, is to move towards expensing of capital outlays.

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***[F]undamental tax reform would...replace capital cost recovery allowances with immediate expensing... [A]ny lesser tax reduction measure should include steps that move in the direction of expensing, such as acceleration or enhancement of the capital cost recovery allowances. An across-the-board reduction in asset lives would be a good start.***

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### **What to Do?**

Ideally, a fundamental tax reform would be enacted to replace capital cost recovery allowances with immediate expensing. Short of fundamental tax reform, any lesser tax reduction measure should include steps that move in the direction of expensing, such as acceleration or enhancement of the capital cost recovery allowances. An across-the-board reduction in asset lives would be a good start.<sup>5</sup> Action should be taken immediately.

A switch to expensing would involve some short run revenue loss to the Treasury. Under expensing, businesses would pay lower taxes up front at the time they acquired assets (because they would be subtracting more from revenues, resulting in lower net income), but they would pay more in subsequent years as revenues from that asset are earned. Furthermore, the additional investment resulting from the lower cost of capital would boost GDP and the tax base, and would recover a significant portion of the lost revenue.

Alternatively, capital could continue to be written off over several years, but the annual consumption allowances could be increased sufficiently in nominal terms that their present value equals the amount of the initial capital outlays. Such a system of augmented write-offs is called

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<sup>5</sup> Senator John Ashcroft (R-Missouri) has proposed a 25% reduction in asset lives.

"neutral-cost recovery" (NCRS). The switch to NCRS would involve less near term revenue loss to the Treasury while providing the same reduction in the cost of capital as expensing.<sup>6</sup>

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### **Reducing the Tax Barriers to Investment and Growth**

Eliminating the overstatement of business income by moving to expensing (or its present value equivalent) would lower the cost of capital and promote needed investment. It would make the tax system more neutral in its treatment of saving and investment relative to income used for consumption. No other single fiscal measure would so ensure continuing vigorous growth in the U.S. economy at so little cost. Given a budget surplus and international economic uncertainty, the time to act is now.

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<sup>6</sup> See Norman B. Ture, "Taxes, Growth, and Employment," IRET, March 19, 1992.

Many patterns of write-offs can be devised to equal the discounted value of the full up-front price paid for an asset. For example, a neutral cost recovery system was proposed by then Congressman Jack Kemp and Senator Bob Kasten in 1985. Under their approach, depreciation write-offs similar to those in current law would have been increased each year by a 3.5% real return. Moreover, the unrecovered basis of the property would also be adjusted each year for inflation.

The current rate of inflation is about 1.5%. Assuming 3.5% as a normal real return, a reasonable nominal discount rate would then be about 5%. (More precisely, it would be 5.0525%, with compounding, since  $1.015 \times 1.035 = 1.050525$ .) The write-off schedule for a 10-year asset with a present value of \$100 might work as follows: \$10 in year 1, \$10.50 in year 2, \$11.04 in year 3, \$11.59 in year 4, \$12.18 in year 5, \$12.79 in year 6, \$13.44 in year 7, \$14.12 in year 8, \$14.83 in year 9, and \$15.58 in year 10. Each year's write-off is 5.0525% higher than that of the year before. Although the nominal write-offs would exceed \$100, they would be just equal in present value to the \$100 outlay for the machine.