

Supporting Regional Economic Development through Analysis and Education

EXPENSING: A COMPETITIVE LEAP FOR KANSAS TAX POLICY

By Arthur P. Hall, Executive Director, Center for Applied Economics.

Kansas is on a roll when it comes to good tax policy. One simple, inexpensive step can sustain the momentum and produce a competitive leap in terms of bang for the buck: Permit all businesses to take an immediate income tax write-off for new investments made in Kansas. This step—called “expensing”—would complement the recent competitive reforms related to property and franchise taxation—and further distinguish Kansas as a go-to destination for capital investment, a key driver of high-wage jobs. As a bonus, expensing would make taxes fairer, because it results in equal tax treatment among businesses of all types and sizes.

The existence of an income tax makes the Kansas government a *de facto* silent partner in every Kansas business. In light of this partnership, the appropriate tax policy question is this: Does the government want to act like a partner that invests in the business or a partner that draws cash out of the business whenever possible?

Kansas income tax law, because it operates as an extension of U.S. income tax law, makes the Kansas government act like a cash-hungry partner rather than an investment-driven partner. Expensing would reverse the situation and turn the government into an investment-driven partner—for the economic benefit of all Kansans.

Economic Fundamentals

Well-constructed tax policy does not interfere with taxpayers’ decision-making calculations. Economists refer to this outcome as “tax neutrality.” It represents a challenging goal for policymakers to attain. Most tax instruments influence economic decision-making.

Fortunately, policymakers can attain the goal of tax neutrality with regard to the income tax treatment of saving and investment. Unfortunately, most income tax systems in the U.S. do not attain this worthy goal. Instead, they create an inherent tax bias against saving and investment. No one intended this destructive outcome. It is a historical artifact that has endured from the economically misinformed structure of the first income tax laws.¹

In the modern-day economy, saving and investment represent the same thing from different perspectives. Virtually all saving becomes an investment somewhere in the world. Few people—in developed economies, at least—store cash under their mattress. Saved funds tend to flow to where they earn the highest (risk-adjusted) rate of return.

From a business perspective, the income tax bias against investment is embedded in the (frequently arcane) rules associated with capital cost recovery—that is, the rules associated with the depreciation of capital investments. Expensing is a little used depreciation procedure (sometime called cash-flow depreciation) that removes the tax bias—and greatly simplifies income tax administration for both the taxpayer and the tax authorities.

The Bias of Double Taxation

The income tax bias against saving and investment results from an inherent double counting—and, therefore, double taxation—that results from an economically flawed definition of taxable income. To grasp the mechanics of this double counting, focus on the equal sign in the present value formula shown in *Exhibit 1*. This formula is a foundational

element of finance. It indicates that the economic value of an investment can be represented in one of two equivalent ways—as a point-in-time value (*PV*) or as a flow-through-time value (*CFs*). The formula is embedded in financial calculators for analyzing investments, pricing financial products, or calculating loan payments.

Exhibit 1: The Present Value Formula
The Foundation of Investment Analysis

$$PV = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + \frac{CF_4}{(1+r)^4} + \frac{CF_5}{(1+r)^5}$$

- The formula above depicts a 5-year investment. A 30-year investment would have 30 elements on the right-hand side of the formula.
- *PV* stands for “present value.” It represents the market value (or perhaps purchase price) of an investment, regardless of whether the investment is a machine, a building, a stock, or a bond.
- *CF* stands for “cash flow.” It represents the cash flow that an investment generates, like profits, dividends, interest, rent payments, or capital gains. Normally, investments are valued using free cash flow, the cash flow available to the investment owner after all investment-related costs have been paid, including taxes.
- *r* stands for the “discount rate,” which is often the interest rate or the expected rate of return on an alternative investment. The quantity $(1+r)$ is raised to a power that represents time. A fundamental tenet of finance is that a dollar received immediately is more valuable than a dollar received in the future. Thus, future cash flows are “discounted.”
- Two basic types of investment analysis flow from the above equation: First, **net present value** equals *PV* (with an assigned value for *r*) minus the cost of an investment; if the result is positive, the investment will be evaluated positively. Second, **internal rate of return** equals the value of *r* that equates the estimated values of *CF* with the known (or estimated) cost of an investment. Investors typically want to make investments with the highest internal rate of return.

The mathematical equality represented by the present value formula means that double counting occurs when money represented on both sides of the equal sign counts as taxable income. The same economic value is taxed twice: double taxation. Taxing money represented by the left-hand side of the formula (the money paid for an investment) effectively means that the tax authority is pre-taxing money represented by the right-hand side of the equation (the money generated by the investment). Alternatively, taxing the money represented on right-hand side of the equation is effectively a deferral of taxation on the money represented by the left-hand side.

An example related to retirement saving will help make the double tax problem clearer, because U.S. income tax law has eliminated the problem for personal retirement investments, when channeled through approved procedures. In the United States, people typically save for retirement using individual retirement accounts (IRAs) and employer-sponsored retirement plans, like 401(k)s. Generally, people have a choice between two types of IRAs—traditional IRAs or Roth IRAs (named after the late U.S. Senator, William V. Roth). Both types of IRAs solve the double tax problem but in different ways (401(k)s solve the problem the way traditional IRAs do).

Suppose someone wanted to save for retirement by investing in a bond (or a mutual fund that offered the bond). Using the 5-year present value formula in *Exhibit 1*, if the interest rate is eight percent (8%) and the bond promised to pay \$1,000 at the end of each year, one bond would cost almost \$4,000. The money to make the investment came from salary or small business earnings, which is subject to income tax. A traditional IRA allows the saver to immediately write-off the \$4,000, eliminating tax on the left-hand side of the present value formula; the \$1,000 interest payments on the right-hand side will be taxed later. A Roth IRA does not allow for an immediate write-off, so it taxes the \$4,000 on the left-hand side of the present value formula; but the \$1,000 interest payment will never be subject to income tax. A person that buys the bond without using approved retirement saving procedures must pay income tax on the \$4,000 and the \$1,000 payments—a double tax on money used for saving.

Expensing operates just like a traditional IRA—for businesses. Expensing eliminates the double taxation of business investment by allowing for an immediate income tax

write-off of the money used for investment.² A business investment and the bond investment example described above have the same finance fundamentals. Of course, there are practical differences. The pay-off provisions of a bond are set by contract. The pay-off provisions of a business investment are risky and uncertain; businesspeople must estimate them based on experience and expectations.

Expensing Removes Tax Bias: A Simple Example

The force of habit creates perhaps the biggest obstacle to acknowledging the bias of double taxation. The common way people think about the idea of income—encoded into the income tax laws a century ago—forces them to see IRAs and expensing as a grant of privilege rather than a liberation from penalty.

A different type of example further reveals the penalty-removal perspective of expensing. *Table 1* illustrates the cash flow of a hypothetical \$100,000 investment using two different income tax rules for capital cost recovery—straight-line depreciation and expensing. The example assumes that the investment will generate \$30,000 of free cash flow (pre-tax income) per year for five years. The income tax rate is seven percent (7%). *Table 1* also reports the rate of return on the investment—the internal rate of return, calculated using the present value formula in *Exhibit 1*—based on the different rules.

Table 1
The Tax Implications of Depreciation versus Expensing

	No Tax	Straight-Line Depreciation		Expensing	
		Tax Owed	After Tax	Tax Owed	After Tax
Investment	-100,000	0	-100,000	-7,000	-93,000
CF 1	30,000	700	29,300	2,100	27,900
CF 2	30,000	700	29,300	2,100	27,900
CF 3	30,000	700	29,300	2,100	27,900
CF 4	30,000	700	29,300	2,100	27,900
CF 5	30,000	700	29,300	2,100	27,900
Rate of Return	15.24%		14.24%		15.24%

Note the different rates of return reported in *Table 1*. This result captures the essence of the tax bias that results from current income tax rules. The straight-line depreciation rule results in a rate of return one percentage point lower than the no-tax and expensing scenarios. This differential measures the penalty (double tax) on investment. The expensing rule generates a rate of return equal to the no-tax

scenario; it generates income tax revenue for the government but attains tax neutrality. (An investment tax credit equal to seven percent (7%) has economic properties identical to the expensing scenario.)

The expensing rule—full tax write-off of the investment in the year in which the business makes it—attains tax neutrality because it does not tax the quantity on the left-hand side of the equal sign defining the present value formula. The straight-line depreciation rule (or any other depreciation rule that has guided U.S. income tax policy) permits taxation on both sides of the present value formula.

Expensing expresses a policy consistent with a government that wants to behave as an investment-driven silent partner. Depreciation expresses a policy consistent with a government that wants to behave as a cash-hungry silent partner. (Note that the government’s tax stream under the expensing scenario generates a 15.24 percent rate of return, a rate identical to the taxpayer’s, indicating a genuine partnership.)

Table 1 illustrates this viewpoint in the “Investment” line. The economic value of any income tax write-off is the write-off amount times the tax rate (\$100,000 x 7% = \$7,000)—the government’s participation in the investment. By not taxing the investment amount—that is, by effectively reducing the after-tax cost of the investment in a manner consistent with the taxation of future income—the expensing rule preserves the no-tax pattern of costs and benefits. The depreciation rule, even though it results in a lower annual tax liability, only crudely approximates the pattern of costs and benefits.

As a practical matter, the economic elegance of the expensing rule holds only if the taxpayer can realize the full benefit of the write-off in the investment year. Under standard administrative procedures related to deductions, this outcome will not prevail if the taxpayer has an insufficient level of taxable income in the investment year. However, in a real-world scenario of uncertain cash flows and graduated tax rates, providing for an unlimited carry-forward of unused deduction amounts offers a sound administrative solution.

A Note on “Tax Expenditures”

Stanley S. Surrey, a U.S. Treasury official, coined the term “tax expenditure” in the 1960s. He wanted to draw attention to the many elements of the U.S. tax code that simu-

lated spending programs by reducing tax liabilities in exchange for engaging in specified economic activities. The Kansas Department of Revenue produces an annual report on Kansas tax expenditures.

The concept of tax expenditure is useful, but it can be misapplied. Many tax expenditure items in the income tax code manifest themselves as items that pervert the tax base from what people believe to be the proper definition of a comprehensive income tax base. The problem comes when people define as a tax expenditure (special tax preference) policy steps that correct the economically flawed concept of income built into the traditional definition of a comprehensive income tax base. For example, many tax analysts view the deductions allowed for contributions to individual retirement accounts as tax expenditures; but they actually represent the correct income tax treatment of saving. Likewise, many analysts will put the label of tax expenditure on expensing, because it deviates from the historical practices of capital cost recovery (see Appendix); but expensing (or economically equivalent tax credits) represent the correct income tax treatment of capital investment.

Here is an example relevant to Kansas. Kansas law grants a 10 percent investment tax credit to qualifying business taxpayers. The Kansas Department of Revenue identifies this credit as a tax expenditure. However, this identification is only partially correct.

Removal of a penalty should not count as a privilege. The expensing procedure eliminates a penalty—the inherent double tax on capital investment. The top corporate tax rate in Kansas is 7.35 percent (the top partnership and S-Corporation rate is 6.45 percent). The value of a deduction is equal to the tax rate times the deduction, so expensing is economically equivalent to a tax credit rate equal to a taxpayer's marginal tax rate. Accordingly, the tax expenditure component of the Kansas investment tax credit equals 2.65 percent of the investment for corporations (3.55 percent for partnerships and S-Corporations) not the full 10 percent.

Appendix: A Brief History of Tax-Related Depreciation Accounting³

People have understood the income tax bias against saving and investment for a long time. They have also understood how certain capital cost recovery procedures (depreciation rules) can either exacerbate or mitigate the bias. That the

problem has endured for decades in light of this understanding offers a case study in how difficult it is to change complex administrative systems once they begin.

The tax-bias problem started largely as a result of historical accident, inexperience-based ignorance, and intellectual fashion at the time lawmakers codified the U.S. income tax. Kansas inherited the problem when it adopted the income tax in 1933. The federal system had functioned for about 20 years by then. Like most states, Kansas piggybacked (and continues to piggyback) on federal law.

Depreciation accounting, as a business practice, was not widespread before the implementation of the income tax. The advent of the income tax, which embraced the practice, helped codify it and accelerate its acceptance. This history helps explain why business people largely accepted the procedures promulgated by the Bureau of Internal Revenue (now the Internal Revenue Service) without giving much thought to the economic consequences of their actions. The income tax had operated for several decades before savvy business managers began to keep at least two sets of books—one for the tax authorities and one for business decision-making.⁴

Depreciation accounting generated a lot of controversy among accountants during the latter half of the 19th century. The theory and practice began developing in the 1830s with the advent of capital-intensive industry—particularly railroads and public utilities. In general, the controversy pitted those practitioners committed to the age-old practice of realization (booking income or expenditures when validated by an actual transaction) against those that wanted to reckon depreciation (wear and tear) as a bookkeeping operation. From the viewpoint of income tax administration, the tax bias against business investment might have not materialized if the realization side had prevailed.

The controversy over depreciation accounting generated a few lawsuits that made it to the Supreme Court. The Court decisions generally reflected the state of professional opinion at the time the cases were heard. The Court rejected the concept of depreciation accounting in cases heard in 1876 and 1878; opined that the concept deserved consideration in a case heard in 1899; and acknowledged the concept in a case heard in 1909. Somewhat coincidentally, in the same year, the concept became codified into U.S. tax law with the Corporation Tax Act of 1909—the same year

that Congress submitted to the states for ratification the 16th Amendment to the Constitution (which authorized an income tax).

Depreciation accounting became a feature of the Tariff Act of 1913—essentially, the beginning of the income tax in the United States. The Revenue Act of 1918 specifically stipulated, for the first time, that certain compliance procedures—depreciation accounting among them—must harmonize with generally accepted accounting procedures.

The authors of a 1989 U.S. Treasury study titled “A History of Federal Tax Depreciation Policy” nicely set up the relevance of accounting protocols for the economics of investment:

Depreciation controversies have most often centered on the suitability of depreciable lives [of tangible assets] and methods used by taxpayers. . . . Originally, taxpayers were given considerable discretion in the choice of depreciable lives, asset salvage values, and depreciation accounting methods. However, this policy ultimately placed a costly burden on the Bureau of Internal Revenue and taxpayers to verify the “reasonableness” of the deductions taken. Over time, administrative and statutory changes lessened this burden by creating more uniform depreciation rules. Today, most property is depreciated using a small number of recovery periods established by statute; salvage value is no longer a factor in the determination of depreciation deductions for most property; and the method of allocating deductions over recovery periods is prescribed by statute. Consequently, taxpayer discretion with respect to tax depreciation has been virtually eliminated.⁵

The creation of pre-defined rules and timetables may have reduced compliance costs, but they created economic distortions. It undermined the fundamental precepts of depreciation accounting, which sought to accurately match the time flow of wear and tear with income generation. The arbitrary timetables altered the economic analysis of cash flows. Expensing (sometimes referred to as cash-flow depreciation) represented a viable alternative that promised even greater administrative simplification without the economic distortions.

The federal government’s demand for tax revenue perhaps best explains the motive responsible for codifying pre-defined timetables—and promulgating the notion that expensing (or other accelerated depreciation methods) represented a tax preference rather than economically superior tax policy. Making depreciation timetables longer, under the rationale of better matching the “useful lives” of capital investments—created a larger business income tax base in the short run. The bias toward long depreciable lives became further entrenched when adherence to the pre-defined timetables became a regular feature of income tax audits. The burden of proof shifted to the taxpayer to demonstrate why a particular capital asset did not fit into the prescribed timetable. Disparities in administration—given auditor discretion—exacerbated the tax-bias problems.

By the mid-1950s, a growing number of tax scholars, business people, and lawmakers began to recognize the economic problems with the existing tax depreciation methods.⁶ (Marginal tax rates of more than 50 percent made the problems much worse.) The legislative tendency was to grant businesses more operational latitude and faster depreciation methods. The Internal Revenue Code of 1954—the first major re-write of the income tax code—explicitly allowed for accelerated depreciation methods. The record shows that lawmakers consciously intended for the 1954 changes to improve the economics of investment.

Many sophisticated commentators began to argue that it made no sense to keep the timetable depreciation methods in place. Accelerated depreciation methods simply represented administratively complex measures to mitigate the negative economics of an anachronistic (and mistaken) set of rules. Expensing—100 percent acceleration of depreciation—offered the best economics (and the simplest administration). Economist Vernon L. Smith, native son of Wichita, Kansas and 2002 Nobel Laureate in Economics, argued in a scholarly journal in 1963:

The common practice is to permit capital costs to be written off or depreciated over time in accordance with some specified set of tax depreciation rules. We will show that this practice leads to bias in the form of investment decision rules different from those prevailing in the absence of a tax, that the bias is likely in the direction of delaying optimal investment timing, and that such biases can be

removed by expensing investment outlays in the computation of taxable income. . . .Our analysis suggests that the write-offs should be fully accelerated, not to give anyone an advantage, but to eliminate an existing disadvantage in the sense that investment decision rules are distorted.⁷

Yet lawmakers have never taken this compelling step. The system has remained wedded to depreciation timetables that will always produce some degree of distortion because of the inherent double tax on investment. The year before Smith published the findings quoted above, the Kennedy Administration enacted the first of a seemingly never-ending set of income tax reforms that have created complexity, uncertainty, and often self-contradictory policies related to investment.

The Revenue Act of 1962 liberalized depreciation rules and enacted the first-ever investment tax credit. The Tax Reform Act of 1969 sought to improve the economics of the depreciation rules on the one hand yet on the other hand further enshrined accelerated depreciation as a tax preference in the context of the Alternative Minimum Tax. The Tax Reform Act of 1981 enacted an entirely new set of accelerated depreciation measures, which were modified in 1982 and 1984. The Tax Reform Act of 1986 (such a significant set of reforms that it created the Internal Revenue Code of 1986) modified depreciation rules yet again and terminated the ever-varying investment tax credit. Depreciation issues surfaced again as a policy concern around 2000.⁸ The only change to result from this concern was “bonus depreciation,” enacted in 2002.

Throughout history, expensing as a universally applicable cost recovery procedure has arisen as a logically consistent alternative only in the context of radical tax reform. There is one *ad hoc* exception—the (capped and limited) expensing provisions for small businesses embodied in Section 179 of the Internal Revenue Code. Kansas law conforms to Section 179.

Endnotes

- 1 For a detailed discussion of the issues involved, see Arthur P. Hall, “Competing Concepts of Income and the Double Taxation of Saving,” Technical Report 05-0926, Center for Applied Economics, School of Business, University of Kansas, September 2005. Available at: <http://cae.business.ku.edu>
- 2 A responsible discussion of expensing must address the issue of the prevailing income tax deduction for interest expense. Under a debt-finance scenario, using the present value formula approach, one can see that the money used for investment does not derive from (potentially) taxed earnings. The interest deductions that come later reduce the level of taxable cash flow generated by the investment. However, the interest deduction argument does not address the inherent double tax problem. Additionally, tax analysts have always known that the interest deduction creates a bias toward debt finance rather than equity finance.
- 3 This section draws liberally from: David W. Brazell, Lowell Dworin, and Michael Walsh, “A History of Federal Tax Depreciation Policy,” OTA Paper 64, Office of Tax Analysis, U.S. Treasury Department, May 1989. Available at: <http://www.treasury.gov/offices/tax-policy/library/ota64.pdf>
- 4 Joel Dean, “Four Ways to Write Off Capital Investment: Management Should Have a Wider Tax Choice,” *The Journal of Business*, Vol. 29 (2), April 1956, pp. 79-89.
- 5 Brazell, *supra* note 3, pp. 1-2.
- 6 Dean, *supra* note 4; Robert R. Milroy, Donald F. Istvan, and Ray M. Powell, “The Tax Depreciation Muddle,” *The Accounting Review*, Vol. 36(4), October 1961, pp. 539-547.
- 7 Vernon L. Smith, “Tax Depreciation Policy and Investment Theory,” *International Review of Economics*, Vol. 4(1), January 1963, pp. 81 & 91.
- 8 C. Eugene Steuerle, “Is it Time to Rationalize Depreciation Policy?” *Tax Notes*, August 20, 2001, p. 11109. Available at: <http://taxpolicycenter.org/publications/template.cfm?PubID=9701>



Center for Applied Economics
University of Kansas School of Business
Summerfield Hall, 1300 Sunnyside Avenue
Lawrence, KS 66045-7585
www.cae.business.ku.edu
(785) 864-5134