

SELF-INSURANCE: ECONOMICIS AND TAX TREATMENT

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Self-Insurance: Economics and Tax Treatment

I. Introduction

Investment in, and the conduct of, an enterprise in an economic system predicated on private rights in property are fraught with uncertainty. Revenue and outlay flows are subject to unpredictable variances. Weather extremes and shifts in markets cause unexpected changes in sales and in costs. Additionally, unpredictable events such as fire, flood, accidents or theft may occur which wipe out some part of the enterprise capital. Because the brunt of these variances falls on the return to equity--the residual share of enterprise output--this return expressed as a rate, is higher than returns to other rights to enterprise income (or assets) that are assigned priority of claim.

Suppliers of capital are therefore aware that their returns may range from -100 percent, a total loss, to some high positive return. Given a set of environmental conditions that determine the distribution of potential results, enterprises attempt to minimize the variance in expected returns, particularly the probability of occurrence of total, or near total, loss of enterprise equity capital. One common way to do this is to increase the size of enterprise capital and diversify the markets in which the enterprise operates. This reduces the chance that any single commitment of capital--to a particular location or to a new product line or technology--will seriously

damage the ability of the enterprise to continue. In effect, the enterprise thereby "self-insures" itself against the likelihood of catastrophic losses by arranging to pool many uncertainties. In so doing, it uses some of the gains of part of the enterprise to cover the (individually)unpredictable losses it incurs with respect to particular commitments in other parts of the enterprise.

Another common way to minimize the likelihood an enterprise will suffer catastrophic loss from the occurrence of a non-magerial related loss is to form associations for the specific purpose of pooling such risks. Each member of the association contributes to a common pool of funds that is then available to reimburse a participating member who suffers the insured-against eventuality, such as a fire, flood or accident. This institutional arrangement, which we will call "cooperative insurance", to contrast it with self-insurance, operates financially the same way as does self-insurance: each participant allocates some part of his enterprise gross income to the insurance pool, and this covers the losses of specific participants, when they occur.

It is noteworthy that, whether the particular uncertainty "insured" against is covered by "self-" or "cooperative" insurance, the coverage is accomplished by allocating a portion of enterprise capital, or what amounts to the same

thing, some of the income otherwise attributable to its capital, to the task. In an economic system with an income tax, the "fund" which supports this aspect of the economic process must be accumulated with after-tax funds. This condition in combination with the fact that cooperative insurance premia are costly for relatively small enterprises has attracted sympathetic interest in providing some relief mechanism for such enterprises.^{1/}

Generally these proposals entail permitting enterprises to employ a tax accounting procedure under which an annual deduction, analogous to a cooperative insurance premium, may be taken to build-up a "reserve" to cover the loss, when and if it occurs. In this way, it is contended, small businesses may be aided in overcoming the tax burden on accumulating the capital buffer required to minimize the incidence of catastrophic loss. In particular, proposals have been made in Congress and by an Interagency Task Force which would permit such a self-insurance procedure to be adopted with respect to product liability claims that might confront a small business. The foregoing introductory comments suggest that these mechanisms, if they are carefully designed to merely self-insure businesses would offer no palpable assistance to a small, prudently managed business. The following section sets out

^{1/} A small firm will normally require a small amount of insurance for any particular class of uncertain event. But the costs of writing such a small policy, inspecting the applicant's mode of business operations, and administering the policy will be large, per dollar of insurance coverage.

in detail an analysis of self-insurance. The final section sets out the necessary characteristics of a "self-insurance" scheme that is both self-limiting and not subject to abuse.

II. The economics and accounting for self-insurance.

Suppose that a firm knows for certain that, if it sets aside \$10,000 per year, over a long period of time this will cover claims against it although the precise dating of the claims is unpredictable. In terms of the capital of the enterprise, this says that a fund of assets augmented at the rate of \$10,000 per year, will be sufficient to meet losses, or outflows from the fund, when they occur. The average size of this fund, of course, will depend on the pattern of occurrence of the events triggering the loss. If for example, each year, at indeterminate times during the year, \$10,000 of losses are experienced, then the average balance of the "fund" of assets in support of this "insurance reserve" will be close to zero: as much flows out of the fund as flows in. On the other hand, if the loss might be \$100,000 but occurs, on the average only once in 10 years, the average balance in the self-insurance fund will approximate \$50,000.

The accounting for these two extremes consists of these elements: Each year, the enterprise records as an expense \$10,000, and credits an account we shall call "reserve for

product liability claims" \$10,000. In the first instance, when \$10,000 of claims are satisfied each year, as each claim is satisfied, cash is paid (credited), and the reserve for product liability claims is correspondingly reduced (debited). At the end of the year, the net effect of this accounting procedure will have been to leave the balance in the reserve unchanged and to record as an expense the amount paid out as claims, \$10,000. In the second instance, when claims arrive every 10 years, each year the expense is \$10,000 (a debit to the current year's income account, or net worth), as is the addition to the reserve which then builds-up to \$100,000 by the 10th year. In the 10th year, when the claim of \$100,000 is paid, this reduces assets and the reserve by \$100,000, but has no effect on the expense charged for that year.

The first case, that of equal annual claims results in a balance sheet showing zero in the reserve account. The second case, however, produces a balance sheet in the 10th year, before the claim is paid, which would show the following in the net worth section: Reserve for product liability claims, \$100,000; and commingled with all its assets, an equivalent amount. After the \$100,000 has been paid, the reserve balance would be zero, and the corresponding assets also zero. But, because the 10 years' of cash-flow had been earmarked, not included in annual income and, thereby, not included in retained

earnings, or earned surplus, the payment will not have impaired the ability of the enterprise to continue. This last statement follows from the fact that we have postulated that this is a prudently managed firm; that it will regard its reserve for product liability as a severable part of its assets and not a permanent portion of equity, or net worth.

To this point, the discussion has proceeded on the assumption that a reliable estimate of the probability of occurrence, and the magnitude, of possible product liability losses is ascertainable. If the losses are statistically predictable, the question arises: Why would any firm with the expectations described by the second case incur the cost of maintaining a (real) reserve, \$50,000 per year, on the average in the above example, rather than cooperatively insure? One answer is that, if the firm holds its own reserve, it can employ the assets thus financed and, thereby, possibly earn a high return while avoiding the administrative and related costs of cooperatively insuring. This explains why even substantial enterprises will find it advantageous to self-insure against only moderate losses and to cooperatively insure only against extremely large potential losses. Self-insurance reserves against only moderate losses implies small capital funds for the purpose, and this is more economical than cooperative insurance for the same coverage. They will buy cooperative insurance only with a high "deductible" which is to say, insure only against losses

in excess of some specified amount, in order to avoid tying up capital. If there is no basis for statistically estimating the probability of occurrence, or the size, of some potential claim, the risk is simply uninsurable, by the enterprise itself or through cooperative insurance.

A. The effect of income taxes.

We have also ignored the possible impact of taxation on the ability of a firm to self-insure, in the sense used above. To examine the effect of taxation, we postulate two tax regimes. One, which we may call present law, requires that the enterprise accumulate its (real) reserve with after-tax funds and permits a deduction for losses only when incurred; the other, which we will call hypothetical law, permits the enterprise to take deductions annually in the computation of taxable income equal to the estimated average annual loss. In both regimes, the marginal tax rate faced by the enterprise is 40 percent, and the after-tax return on assets is 10 percent (16 2/3 percent, before tax). Additionally, we assume that additions to the reserve are made at the beginning of each year and that claims, when due, are paid exactly at the end of the year; the annual additions to reserves, on a before tax basis, are \$10,000, and the claims, when they occur, are \$30,000. Finally, for reasons that will become clear later, we "compound" the earnings on the self-insurance reserve and add them to the reserve as they accrue.

The attached table records the results of 5 years' experience. In year #1, the deposit, or addition, of \$10,000 of pre-tax income in a reserve yields \$6,000 of assets, which "grow" to \$6,660; while, under the hypothetical law, the \$10,000 is not taxed (is taken as a deduction from gross income) and thus provides \$10,000 of assets which grow to \$11,000. Note that, in both cases the "growth" is after tax; under the hypothetical law, notwithstanding the "tax-free" character of the funds used to acquire assets, the earnings thereon are taxed, for the assets corresponding to the reserve are commingled with other earning assets. In both cases \$10,000 of pre-tax earnings are added to the reserve the second year, so that, at the end of the second year the balances in the asset reserves are \$13,860 (present law) and \$23,100 (hypothetical law). At the beginning of the third year, the customary additions to reserves are made, producing end of year balances of \$21,846 (present law) and \$36,410 (hypothetical law). At the end of the third year, a \$30,000 claim, in pre-tax dollars, is paid. Under present law, this \$30,000 is deducted from taxable income, which means the after-tax cost is reduced to \$18,000 (60% of \$30,000); in contrast, under hypothetical law, the \$30,000 is not a reduction of taxable income, but only an allocation (deduction from) the reserve. Years 4 and 5 follow the same pattern, and after paying the \$30,000 claim

at the end of the fifth year, a slight balance remains in the reserve account under both tax regimes, \$513.66 (present law) and \$856.10 (hypothetical law). Over the 5 years, the average end-of-year reserve balances are \$7,142.05 (present law) and \$11,883.42 (hypothetical law).

It should be apparent that, in terms of the net position of the enterprise, there is no real difference whatever between the two tax regimes: the apparent difference arises from the fact that the entries in the columns headed "present law" are always in "after-tax" magnitudes, the entries under "hypothetical law" are always in "before-tax" magnitudes; present law magnitudes are, therefore, always 60 percent of hypothetical law. The enterprise is not "better-off" under the one regime or the other as it takes steps to self-insure, if the two critical assumptions on which the example has been constructed hold. First, the statistical estimate of annual average liability to be covered by the reserve must be accurate; second, partially related to the first, the fund must never be usable for purposes other than coverage of the losses self-insured against. Suppose, for example, that the actual probability of loss is zero. Under present law treatment the enterprise setting aside \$10,000 of annual before-tax income would have accumulated a capital stock of \$40,293.66, all of which is "tax-paid" and hence indistinguishable from other capital of the enterprise, also accumulated with "tax-

paid" funds. Under hypothetical law, the setting aside of \$10,000 of pre-tax funds would have accumulated to \$67,156. Then, since there is no claim against this reserve (and stock of assets), the hypothetical law tax treatment would have provided the enterprise a 2/3 enrichment by permitting the accumulation of enterprise capital with untaxed funds. If, under hypothetical law, an enterprise is to be permitted to self-insure, and if there is no sound statistical basis for estimating the probability and magnitude of future losses, then some means must be provided to tax the accumulated reserve experience demonstrates is not required to cover the allegedly insured against losses. Such a means is readily at hand: if the hypothetical law reserve (including accumulated after-tax earnings) is subject to tax when the enterprise determines that the reserve is redundant, the "gain" from holding capital acquired with untaxed funds will be fully eliminated. For example, if after 5 years in the foregoing example, the hypothetical law cumulative reserve of \$67,156, assumed to be found to be unnecessary, is taxed at 40 percent, the enterprise will have remaining \$40,293.66, exactly the same amount the enterprise would have under present law.

This helps explain why the device of cumulating the two reserves was adopted. If the (taxed) earnings of the capital acquired with untaxed funds are not associated with

the capital fund, an enterprise applying the hypothetical law "reserving" mechanism could profit, as compared with present law, by enjoying twice the net income flow from the fund, even though he later "repays" the Treasury its "share" of the previously untaxed capital when dissolving the fund. The combination of current taxation of income earned by the hypothetical law fund plus treatment of those earnings, if retained in the fund, as capital acquired with untaxed funds, ensures that the provisions of the hypothetical law cannot be used to circumvent the income tax.

III. Necessary attributes of a proposal to permit self-insurance funds.

The foregoing section has demonstrated that present law tax treatment does not discourage self-insurance, if an enterprise so desires. Nevertheless, from a purely financial accounting point of view there is some virtue in encouraging the use of explicit reserving for the occurrence of individually unpredictable losses. In the hypothetical law example previously used, assuming the accuracy of the estimated average annual loss of \$10,000, a better-more consistent-- annual measure of enterprise income is produced by annually recognizing that loss rather than waiting until the losses occur, as happens under present law rules. From the discussion thus far completed, four cardinal rules for a tax

accounting system permitting the current deduction of a self-insurance premium emerge:

- A. Assets representing the reserve must be segregated, as by deposit in a trust established for the purpose.

The essentiality of this rule derives from these considerations. First, there is no operational method of testing the "sincerity" of a taxpayer who would establish a self-insurance fund. The validity of estimates of the probability of occurrence and the size of future losses are not testable by information available to revenue agents; nor can any objective test be reasonably applied to determine whether the self-insurer really maintains the lower debt/equity ratio implied by his estimates of risk exposure, i.e., that the "reserve" is above the ordinary net worth required by his creditors and needed to carry on his business in the event the "reserve" must be liquidated to satisfy a claim. Lacking these means of determining "sincerity", statistical reliability, and prudence of a taxpayer who otherwise would pay no penalty for establishing a "reserve" solely for the purpose of circumventing the tax laws, the only available discipline to prevent abuse is to require the self-insurer to, in fact, sever the funds from his own control. As a corollary to this, the trust fund should be prohibited from owning securities or notes issued by any self-insurer availing himself of this option.

- B. Income earned by the assets held in trust shall be taxable to the beneficiary enterprise as earned.

The need for this rule is obvious. To allow exemption of this income from tax would not only constitute a subsidy to the beneficiary enterprise, but because it is in tax-exempt form, it degrades the progressivity of the tax system and induces an excess revenue loss. If there is some reason to subsidize small, or other worthy businesses engaging in this elective form of self-insurance, it should be provided in taxable form. For example, some schedule of credits per dollar deposited might be offered, if the enterprise would reduce its tax deductions for losses (or additions to reserves) that year by the amount of the credit.

- C. Withdrawals from the trust fund for any purpose other than coverage of claims for which the fund was established must be taxable to the beneficiary enterprise.

As was shown in the previous section, to permit non-taxable withdrawals of reserve assets for purposes other than coverage of the claims insured against confers an unjustified benefit on the self-insuring enterprise which, again, is proportional to its income status.

- D. As a procedural rule, only additions to the insurance reserve, net of gains and losses experienced by the trust fund or trustees fees, may be permanently held in trust.

Since the essence of the hypothetical tax law treatment of self-insurance reserves is to maintain strict segregation of pre- and post-tax funds, and given the fungibility

of money, it is necessary that the income (loss) earned by assets held in the trust fund (insurance reserve) be literally paid-out to the self-insuring enterprise. Positive income presents no problem; the trustee would be required to advise the self-insurer at the end of a period no longer than one year what income has been earned and which is to be included in the taxpayer's taxable income, and to pay out the funds to the self-insurer at the earliest practicable time. Losses, on the other hand, would be reported to the self-insurer who would then have to reduce the magnitude of the loss by his tax rate before reporting it as a loss, or deduction in his tax return for the year.^{1/} In both cases, the amounts taken from the fund are treated as nonqualified withdrawals. Trustees' fees, like any other ordinary business expense, are payable with untaxed funds and, hence, may be directly taken out of the trust fund balance; they would be treated as a qualified withdrawal, already deducted from gross income of the self-insurer.

1/ If a self-insurer sets aside \$1 of gross income as a self-insurance reserve, under present law he pays tax of 40¢ (under our assumption of a 40 percent tax rate) and has left 60¢ of assets representing his own disposable funds. If, then, the 60¢ asset is sold for 30¢, the self-insurer should be allowed a deduction of that amount, making his net after-tax loss 18¢, i.e., he ends up with 42¢.

In contrast, under hypothetical law, \$1 of gross income set aside in the trust fund. If this \$1 asset is sold for 50¢, the trustee would report to the self-insurer a loss of 50¢; the self-insurer would reduce this loss by 40 percent--to 30¢ reportable that year as a loss in his tax return, deriving a "refund" of 12¢. If the self-insurer were to withdraw his 50¢, pay 20¢ in tax, he would end up exactly in the position of the self-insurer under present law, namely with 42¢.

Balance Sheet Impact of Alternative Tax Treatments of Individually Unpredictable Losses

Year, transaction	Present law (deduct loss when incurred)		Hypothetical law (deduct \$10,000/yr.)	
	Increase in "fund" (beg. of yr.):	"Fund" ^{1/} balance (end of yr.):	"Fund" ^{1/} addition (beg. of yr.):	"Fund" ^{1/} balance (end of yr.):
#1: Set aside \$10,000 of gross income	\$6,000	\$ 6,660	\$10,000	\$ 11,000
#2: Set aside \$10,000 of gross income	6,000	13,860	10,000	23,100
#3: Set aside \$10,000, etc. Pay \$30,000 claim	6,000	21,846 -18,000 <u>3,846</u>	10,000	36,410 -30,000 <u>6,410</u>
#4: Set aside \$10,000, etc.	6,000	10,830.60	10,000	18,051
#5: Set aside \$10,000, etc. Pay \$30,000 claim	6,000	18,513.66 -18,000.00 <u>513.66</u>	10,000	30,856.10 -30,000.00 <u>856.10</u>

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^{1/} The "Fund" balance is explicitly an earmarked portion of net worth, implicitly a corresponding amount of assets held by the enterprise.