

The Tax Deductibility of Captive Insurance Premiums: An Assessment and Alternative Perspective

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ABSTRACT

This article reviews and analyzes the tax deductibility issue for captive insurers. In determining whether premiums paid to a captive insurer by a parent can be deducted, we conclude that the economic focus should be on whether the transaction will reduce parent-specific pure risk in a relative sense. A concept of partial insurance for tax deductibility purposes is suggested. We reject the assertion that no tax deductibility could be allowed when outside risks have higher variances than parent-specific risks. Furthermore, the relative amount of business, not the absolute number of unrelated risks, is argued to be an important consideration in determining tax deductibility. Finally, the degree of risk reduction can be shown to be higher for a parent in a group captive with unrelated risks than for a single parent of a captive insurer with the same number of unrelated exposures, other things being equal.

Introduction

Whether premiums paid to captive insurers by their parent corporations and affiliates should be tax-deductible for federal income tax purposes has been long debated. The Internal Revenue Service (IRS) and various corporations have litigated this issue in the tax court, claims court, federal district courts and in several different federal appellate courts. The tax deductibility issue has also generated academic interest and has been analyzed by Hofflander and Nye (1984), Smith (1986), Han and Lai (1991), Porat et al. (1991), and others in the insurance-economics literature.

The IRS has maintained that premiums paid to wholly-owned captives by parent corporations are not tax deductible because the captives are part of an

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economic family (Rev. Rule. 77-316). In early cases addressing this issue, such as *Carnation* (1978) and *Clougherty Packing* (1985, 1987), the tax court determined that the premiums paid by parent corporations to captives were not tax deductible because such payments did not meet the necessary criteria for insurance required for federal income tax purposes, which were risk shifting and risk distribution. Payments to captive insurers were viewed as loss reserve contributions, rather than insurance premiums, and reclassified as "self-insurance" or no insurance.

The first purpose of this study is to briefly review the court cases involving the tax deductibility issue and to discuss the concepts in these decisions involving the "economic family," risk shifting, and risk distribution. Recently, the U.S. Tax Court ruled that premiums paid by parent companies to wholly-owned captive insurers are tax deductible if the captives write "relatively large" amounts of unrelated third-party business. The rulings in three cases associated with the tax deductibility issue—*AMERCO* (1991), *Harper* (1991), and *Sears* (1991)—reflected a second substantial victory for companies challenging the IRS on the premium deductibility issue and were solidified on appeal to various circuit courts.¹

Although the concepts of risk shifting and risk distribution are still the focus of recent court decisions, two other considerations have become prominent: whether the exposure (or risk) is deemed to be an insurance risk and whether the alleged insurance transaction was consistent with "commonly accepted notions of insurance." The second purpose of this article is to analyze these two issues. Specifically, we discuss the relevant insurance risks or exposures and the various risk measures associated with the tax deductibility issue and analyze the issues related to other perceptions of the transaction, including the access of captives to guaranty funds, the general treatment of captives by regulators as legitimate insurers, and the role of separate legal entities (the "corporate veil" or firewall issue). Finally, this article utilizes the concept of risk reduction to assess some unresolved tax deductibility issues. Specifically, we examine three issues: the degree of risk reduction when variances of risks are different, the issue of a small number of outside risks, and tax deductibility for owners of group captives.

The next section discusses the "economic family" doctrine and an implicit definition of insurance. Then we address the existence of an insurable risk and the nature of risk measures, followed by a presentation of the perspectives on premiums paid to captives. An economic rationale for why risk reduction

¹ The first favorable ruling arose from the *Humana* (1989) case on appeal to the 6th Circuit Court of Appeals. The court ruled that the payments from brother-sister corporations to a captive insurer of the parent corporation were tax deductible because they were separate legal entities. A more recent decision by the United States Claims Court in *Ocean Drilling & Exploration Company [ODECO] v. The United States* (1991), focused more intensely on the effect of unrelated business on a captive insurer in determining whether a parent's "premium" payments to its subsidiary insurer constituted insurance for tax purposes.

might be a better approach for determining tax deductibility is offered next. Some unresolved issues are then examined and, finally, conclusions drawn.

"Economic Family" Doctrine v. Risk Shifting and Risk Distribution

Is the "Economic Family" Doctrine Dead?

The IRS introduced the "economic family" doctrine in 1977 in its Revenue Ruling 77-316. The doctrine indicates that a wholly-owned captive and its parent company may be perceived as part of the same corporate family because the parent ultimately bears the profits or losses of the captive. When the captive attempts to provide insurance coverage to its parent, the IRS has asserted that this intercorporate transaction is in substance economically equivalent to risk retention or self-insurance. Therefore, payments by a parent to an incorporated captive were not considered by the IRS to be insurance premiums for income tax purposes, because no risk transfer or risk shifting was perceived.²

The economic family theory has not been well received by the courts, especially when unrelated risks are covered by a wholly-owned captive. In *Carnation* (1978), the parent purchased insurance coverage from an unrelated fronting insurer that reinsured 90 percent of the coverage with the captive, which was a wholly-owned subsidiary of Carnation. Although the tax court denied the deduction for premiums paid, its decision was not based on the economic family doctrine, which the court had basically rejected. In *Stearns-Roger* (1985), the parent had an "insurance" contract with Glendale, an insurance subsidiary, and also agreed to indemnify Glendale for up to \$3 million in incurred losses. A federal district court applied the economic family theory and denied the deduction. However, the case was appealed to the 10th Circuit Court, which upheld the decision but rejected the economic family theory because it conflicted with the separate legal status of the parent and captive. In *Beech Aircraft* (1986) and *Mobil Oil* (1985), the courts did not discuss the economic family theory. The theory has been rejected by the Court of Appeals of the 6th Circuit in *Humana* (1989) and also appears to have been rejected by the tax court rulings in the trilogy of decisions in 1991 involving *Sears*, *Harper*, and *AMERCO*. The tax court explicitly indicated in *Harper* (1991) that it had repeatedly rejected the IRS's economic family theory because of its apparent concern with the doctrine of separate legal entities enunciated by the U.S. Supreme Court in *Moline Properties* in 1943.³ The economic family theory never became an issue in *ODECO* (1991).

² The IRS recognized a parent and its captives as separate corporate entities, but they viewed the insured parent as bearing the ultimate burden of incurred loss. Thus, no risk shifting outside the economic family was perceived from a financial viewpoint.

³ In *Moline Properties* (1943), the Supreme Court indicated that a corporation pursuing a legitimate business purpose must be treated as a separate taxable entity. Thus, if a captive insurer is not a sham, transactions between a parent and captive apparently must be deemed separate entities in determining whether alleged insurance transactions between them resulted in risk transfer and risk distribution for tax purposes.

Do these recent decisions mean the various courts reject the substance and essence of the economic family theory? The answer may be "not necessarily." In fact, some courts seem to have used a modified version of the economic family theory implicitly in their rulings without acknowledging the concept "because it might foster a theory which would be extended to other areas of the tax law" (*Clougherty Packing*, 1987, p. 1305). Some subtle evidence that various courts may implicitly use the economic family theory can be presented. In *Clougherty Packing* (1987), Court of Appeals in the 9th Circuit presented the following reasoning based on risk shifting and focus on the insured's assets:

In reaching our holding, we do not disturb the legal status of the various corporate entities involved, either by treating them as a single unit or otherwise. Rather, we examine the economic consequences of the captive insurance arrangement to the "insured" party to see if that party has, in fact, shifted the risk. In doing so, we look only to the *insured's assets*,... it is clear that the risk of loss has not been shifted from *Clougherty* (p. 1305, emphasis added).

In *Humana* (1989), using what appears to be a "balance-sheet" or "book-value" version of the economic family theory, the Court of Appeals of the 6th Circuit agreed with the tax court that the payments by a parent to a subsidiary did not constitute insurance premiums. The appeals court stated:

The economic reality of insurance between a parent and captive insurance company is that the captive's stock is shown as an asset on the parent's balance sheet. If the parent suffers an insured loss which the captive has to pay, the assets of the captive will be depleted by the amount of the payment. This will reduce the value of the captive's shares as an asset of the parent. In effect, the assets of the parent bear the true economic impact of the loss (p. 253).

Some courts seem to implicitly accept an accounting, rather than an economic or market, view of the economic family based on a somewhat simplified "balance-sheet" viewpoint.⁴ Therefore, one probably should not conclude that the theory is totally ignored simply because some courts appear to have rejected it on the surface in order to defer to and avoid conflict with the U.S. Supreme Court's decision in *Moline Properties* (1943). The focus on balance-sheet values, rather than market values, however, does not seem to be entirely logical from an economic perspective based on a broader market-value view of the parent firm.

If the courts do not explicitly use the economic family theory, what is the conceptual base used in deciding the tax deductibility issue? It appears that the courts premise their decisions on an implicit definition of insurance for federal income tax purposes based on the concepts of risk shifting (transfer) and risk distribution (spreading), a view leading to the economic benefit of risk reduction for the party transferring the risk. In early tax cases up to more recent

⁴ Barrese and Nelson (1990) have also suggested that, even though the tax court and the court of appeals tried to avoid accepting the economic family theory, they appear to have utilized it in rulings in the *Carnation* case.

rulings by the tax and claims courts, the U.S. Supreme Court decision in *Helvering v. LeGierse* (1943) is always cited and has had a great influence on court decisions. The *LeGierse* ruling implied a partial definition of "insurance" for federal tax purposes. An insurance transaction was specified to include two essential attributes—risk shifting and risk distribution—even though these concepts were not explicitly defined.

Risk Shifting (Risk Transfer)

The Supreme Court in *LeGierse* (1943) indicated that risk shifting involved the shifting of an identifiable risk of an insured to an insurer. The focus seemed to be on the individual contract between the insured and the insurer but recognized other interdependent contracts that could economically neutralize risk shifting. Both the IRS with the economic family theory and the tax court have focused on risk shifting as one of the most important factors in deciding the tax deductibility issue. Although modern financial theory suggests that there can be no risk shifting in substance within a corporate family, the tax court has implied that there may be risk shifting in a technical legal sense between the parent and the captive under certain circumstances based on the federal tax principle of separate legal entities as enunciated in *Moline Properties* (1943).

To understand and partially resolve the issue, a review of the definition of risk shifting is useful. The tax court noted in *Harper* (1991) that "Basic to any insurance transaction must be risk. An insured faces some hazard; an insurer accepts a premium and agrees to perform some act if or when the loss event occurs" (p. 58). The court goes on to suggest that the parent company must be able to shift its risk to a separate incorporated firm that is financially capable of meeting its obligation in order to constitute insurance. (However, the captive insurer was not required to be financially and managerially independent of the parent, so a meaningful economic separation of ownership and control would not necessarily result.)

At first glance, the court appeared to have applied the concept of risk transfer or shifting correctly in a legal sense because a parent can technically shift some of its risk to a captive which is a separate corporation (legal entity). However, the court did not give adequate economic consideration to the fact that it was dealing with a parent company and its captive rather than two managerially and economically distinct companies. Economically, the parent of a pure captive ultimately controls and has to bear the risk of financial loss, subject to any real economic effects that might arise from the limitation of liability of an incorporated captive.

To avoid the conceptual problems created by *Humana* (1989), the tax court introduced the concept of risk shifting "in substance" in *Sears* and also considered *Sears'* intent for developing and operating Allstate.

Risk shifting was also present "in substance" in that Allstate was neither formed nor operated for the purpose of providing "self-insurance" to *Sears* but sold policies to *Sears* on the same general terms,... and for the same reasons that Allstate sold insurance policies to unrelated third parties (p. 100).

However, introducing the concept of risk shifting "in substance" does not answer some of the questions raised later. In fact, utilizing their definition of risk shifting (risk transfer), both the parent and unrelated insureds appear to shift their pure risks (exposures) to the captive and eventually back to the parent as a speculative ownership risk after the economic dynamics of the loss and premium pooling process have been completed. That is, total financial uncertainty for the parent may increase on an absolute basis in some cases, as Plotkin (1990) has indicated. The tax court and most scholars, except Han and Lai (1991), did not adequately explain why a transaction that may increase total uncertainty on an absolute basis to a parent in some cases can be called "insurance," when this expanded risk shifting concept is applied.⁵ Rather, they discuss the concept of risk transfer in the context of "insurance" by focusing on pure risk. For example, risk transfer is typically used in a context such as the following from Doherty (1990): "individuals or firms transfer their exposures and premiums to a pool and the resources of the pool are used to pay those suffering loss" (p. 1). Similarly, Cummins (1990), Doherty (1990), Hofflander and Nye (1990), Kimball (1990), and Stiglitz (1990) do not concentrate the substance of their discussion on risk shifting per se. Rather, they focus most of their analysis on risk distribution (spreading), the second essential feature associated with the characterization of "insurance."

Risk Distribution (Risk Spreading)

In recent cases, such as *AMERCO* (1991), *Harper* (1991), *Sears* (1991), and *ODECO* (1991), the focus of the intellectual debate has shifted from "risk transfer" to "risk spreading." Moreover, the fact that the captives wrote relatively large amounts of unrelated risks was emphasized. For example, the insurance written by Republic Western Insurance Co. (a wholly-owned subsidiary of AMERCO) for AMERCO and its subsidiaries (the related risk) was less than 46 percent during the years at issue.

By focusing on risk spreading and third-party risk rather than "risk shifting," corporations were finally able to obtain favorable court rulings. The reason for their success was based on the concept of risk reduction when unrelated risks were included in the pool. For example, the court stated in *AMERCO* (1991) that "the concept of risk distributing emphasizes the pooling aspect of insurance" (p. 37) and in *Harper* (1991) that "the relatively large number of unrelated insureds [that] comprise approximately 30 percent of Rampart's business...constitutes a sufficient pool of insureds to provide risk

⁵ Many scholars—such as Cummins (1990), Doherty (1990), Hofflander and Nye (1990), Kimball (1990), Plotkin (1990), and Stiglitz (1990)—involved in one or more of the recent trilogy of tax court cases discuss risk transfer in their reports to the tax court. However, none, except possibly Plotkin, addressed in depth the issue that a parent's (policyholder's) total financial risk may increase as unrelated risk increases. This total risk view does not seem to have merit in a strict insurance context because insurance historically and commonly has focused on pure risk and not speculative or business risk.

distribution" (p. 24). The various courts and most expert witnesses seem to have correctly interpreted the concept of risk distribution. More importantly, most of the scholars emphasized the effect of risk reduction through risk distribution, as discussed below. However, the use of the concept of risk distribution and what constitutes a sufficient percentage of unrelated business for insurance to exist still leaves some unanswered questions.

Risk Shifting and Distribution: Some Remaining Issues

A partial implicit definition of insurance from recent court cases, which involves the concepts of risk shifting and risk distribution to determine whether the premiums are tax deductible, raises some questions. First, how many or what percentage of unrelated risks (exposures) need to be written by a captive insurer such that premiums of its parent are deductible? Two percent of unrelated risk premium apparently was not sufficient in *Gulf Oil* (1987), whereas at least 30 percent was deemed sufficient in *Harper* (1991).⁶ A second question involves the tax court's rationale in *Harper* (1991) to decide that 30 percent of unrelated business for a captive is sufficient for the parent's premium payments to be treated as deductible insurance expenses for federal income tax purposes.⁷ Third, is it reasonable to treat insurance premiums paid to an economically unrelated insurer the same as "premiums" paid to a captive insurer? A parent can substantially shift all of its pure risks under consideration to a financially unrelated insurer through insurance purchased in the market involving an independent arms-length transaction, while the parent retains some of its exposure and risk indirectly when captive insurance is utilized.⁸ In a subsequent section of this article, we discuss the economic relevancy of risk reduction and use Han and Lai's (1991) concept of partial risk reduction to address the three questions raised above.

The Presence of Insurance Risks and Risk Measure

Recent court decisions addressed the existence of an insurable risk and the nature of risk measures. Several issues were raised, including the nature of an insurance risk, measures of risk and relative risk, the choice of the standard

⁶ *Gulf Oil* (1987) was the first case to consider specifically the economic effect of unrelated exposures on the deductibility of premiums for related parties. In fact, the tax court indicated in a footnote that if the captive insurer had derived at least 50 percent of its premium volume from unrelated business, it might provide sufficient risk shifting for the payments between parties to be viewed as premiums for insurance (see *Gulf Oil*, 1987, p. 1027, footnote 14).

⁷ Smith (1986) had an important influence on the tax court decision in *Harper* (1991) because it was utilized for analytical purposes by a plaintiff expert witness, Doherty (1988).

⁸ Of course, the complete elimination of pure risk for a given type of insurance never occurs in practice because constraints imposed by deductibles, coinsurance, experience rating, and policy limits in insurance contracts need to be recognized. The bankruptcy or insolvency possibility for the insurer involves a speculative or business risk and naturally creates issues associated with the *quality of insurance* which is always present in an insurance transaction.

deviation or the variance as a specific risk measure, and the quality of insurance and the probability of insolvency.

Speculative Risk or Pure Risk?

The first issue is which type of risk should be considered for insurance purposes: speculative risk or pure risk? Most insurance scholars agree that pure risk rather than speculative risk is the relevant risk to consider for the tax-deductibility issue involving insurance premiums (see Cummins, 1990; Doherty, 1990; and Han and Lai, 1991). This choice is consistent with one of the tax court insurance criteria that the risk involved must be an "insurance risk." As Cummins (1990) observed in the *Sears* case, that "Sears owns Allstate means that it has a speculative risk interest in the insurance venture [and] does not negate the reduction in pure risk" (p. 4). In *AMERCO* (1991), the tax court stated that "'insurance risk' is required; investment risk is insufficient" (p. 33).

Total Risk or Relative Risk?

The second issue is what measure of risk should be used: total risk or relative risk? In regard to a total risk measure, Plotkin (1990) suggests a measure of total financial risk, which combines insurance risks with speculative or business risks that usually are not deemed insurable. Total financial uncertainty (which includes both pure and speculative risks) may not be appropriate in a classical insurance sense and was not accepted by the tax court in *AMERCO* (1991), *Harper* (1991), or *Sears* (1991). All of the expert witnesses in *Sears*, however, generally agreed that a total risk measure based on pure risks increases as the number of policies or exposure units increases. The major economic problem associated with using such a total risk measure is that it does not recognize the additional premiums received when a firm writes additional policies. By ignoring the additional premiums associated with the additional exposures, the analysis considers only part of the "insurance" transaction or pooling process because it considers risk and ignores return.

Relative Risk Measures

The third issue involves what measure of relative risk to use. If relative risk is deemed to be a more relevant measure than absolute total risk for insurance-analytic purposes, which measure of relative risk should be used? Hofflander and Nye (1990) in the *Sears* case suggest several relative risk measures: relative risk per dollar of parent premium, relative risk per dollar of parent expected loss, and relative risk per number of parent policies. These relative risk measures all increase as unrelated risk increases. However, these three measures only consider part of the "insurance" process. If a captive writes some unrelated business, not only will its total risk increase (as measured by the standard deviation of potential losses), but its total premiums will also increase. The Hofflander and Nye measures consider only the incremental risk costs (increases in risk) of writing unrelated business and ignore the incre-

mental benefits associated with the additional premiums from unrelated risks. These relative risk measures ignore unrelated premiums, unrelated expected losses, or the number of unrelated policies in the denominator of the relative risk measure.

Cummins (1990), Doherty (1990), and Stiglitz (1990) use various measures of relative risk based on the variability in losses in their analyses in the Sears-Allstate case, such as the relative risk per exposure unit. Unlike relative risk per number of parent policies, the relative risk per captive exposure unit sensibly considers not only a parent's exposures but also unrelated exposures in the captive insurance pool. This risk measure is reasonable for analyzing the tax deductibility issue. However, using relative risk per exposure unit does not explain adequately how an increase in the predictability of Allstate's average loss per policy explicitly decreases the pure risk of Sears. Clearly, the total pure risk of Sears' exposures are important to both Allstate and Sears, as well as the relative risk per unit, because the potential losses to be paid to policyholders (both related and unrelated) are in terms of total losses not relative losses per se. To resolve this issue, Cummins, Doherty, and Stiglitz recognize that this measure ignores premiums or the rate per exposure unit. Although total risk increases as the number of policies increases, so do total premiums. However, total risk increases at a decreasing rate for a standard deviation measure of risk if exposures are less than perfectly and positively correlated; total premiums increase at a linear rate for homogeneous exposure units. This joint phenomena explains why insurers in practice generally prefer to sell more, rather than less, policies, as Stiglitz (1990) insightfully notes. Therefore, a meaningful relative-risk measure clearly should recognize both premiums and the variability in losses.

Standard Deviation or Variance of Losses?

The fourth issue involves whether to choose the standard deviation or variance of losses as a risk measure. While the relative risk per exposure unit based on the standard deviation of total losses as a risk measure decreases as the number of policies increases, a relative risk per unit based on a variance of total losses measure does not change. Moreover, the standard deviation argument has a stronger foundation based on the statistical law of large numbers and the central limit theorem. Thus, the standard deviation rather than the variance generally is a more appropriate measure in this case.⁹ Cummins (1990), Doherty (1990), and Stiglitz (1990) independently adopted the standard deviation principle in their reports to the tax court.

Hofflander and Nye (1990) and Plotkin (1990) suggest that the risk of ruin increases as the firm writes more insurance if total capital is held constant.

⁹ Han and Lai (1991) have shown that, with a measure based on the relative risk per dollar of premium, risk reduction also results when variance of losses is used to measure risk. In this respect, the risk reduction concept can be applied with a variance measure when it is utilized properly. However, the use of variance as a risk measure may be abused if not utilized carefully.

Although the statement may be true in special theoretical circumstances, the assumption that the capital stays the same when an insurer sells more policies is not completely realistic. Cummins (1990), Doherty (1990), Kimball (1990), and Stiglitz (1990) argue in *Sears* (1991) that a normal captive insurer would generally increase its capital as it increased sales in order to reduce the risk of ruin or to hold it constant. Moreover, the rate or premium (the rate times the number of exposure units) always has an implicit or explicit risk charge (profit loading) imbedded in it in a competitive insurance market which flows into capital as coverage is provided as shown by Cummins (1991), McCabe and Witt (1980), and Witt (1973, 1974a). If the captive did not increase its capital and the risk of ruin became too high, then regulators would require the firm to increase its capital or constrain its underwriting activities in order to constrain its leverage. In competitive insurance markets, informed consumers would be less likely to purchase insurance from such an insurer unless it reduced its price to reflect its higher probability of insolvency.

Finally, even if the firm does not increase its capital and regulators did not constrain the firm, an increase in the ruin probability or probability of insolvency would merely tend to decrease the quality of the insurance being sold. This insolvency exposure, rather than being a pure risk, is a speculative risk of the captive insurer borne by the parent.¹⁰ Therefore, this issue appears to be irrelevant to the tax deductibility issue, as suggested by Cummins (1990), because it does not directly involve pure risk, which is the relevant type of risk for evaluating traditional insurance transactions. It is an insurance quality issue rather than a tax-deductibility issue. Moreover, the IRS has never questioned the tax deductibility of premiums paid to an unrelated insurer based on this quality issue.

Perspectives on "Premiums" Paid to Captives

In recent court rulings, it has been emphasized that a captive premium transaction must be consistent with "commonly accepted notions of insurance," and a captive must be perceived as a legitimate insurer rather than a sham for tax purposes. In cases where the courts have come down on the taxpayer's side of the issue, the rulings emphasized that the captives could be perceived as legitimate insurers. Moreover, whether the transaction could be viewed as an arms-length transaction was also deemed an important consideration. For example, the 6th Circuit Court stated in *Humana* (1989) that

Health Care Indemnity [which is a subsidiary of Humana] met the State of Colorado's statutory minimum requirement for an insurance company, was recognized as an insurance company following an audit and certification by the State of Colorado and is currently a valid insurance company subject to the strict regulatory control of the Colorado Insurance Department. The State of Colorado has either approved or established

¹⁰ Unrelated risks in a captive would be expected to pay a lower rate for coverage if the quality of insurance declined.

the premium rate for insurance between the Humana affiliates and Health Care Indemnity (p. 253).

Another factor that has influenced court rulings is whether a parent company and its captive insurer are separate legal entities. The corporate veil becomes important when either a parent or its captive insurer becomes financially insolvent. In his report to the Tax Court in *Sears*, Kimball (1990) observed that a parent has no obligation to save its captive because the captive is an investment. In other words, a parent need not lose more than its initial investment except for unusual situations where courts allow creditors to "pierce the corporate veil."

Porat and Powers (1992) thoughtfully examine the issue of "piercing the corporate veil." They argue that, although a parent of a captive is protected by the doctrine of limited liability, there may be situations where piercing the corporate veil is justified, such as when the costs of limited liability are higher than the associated benefits.¹¹ Specifically, they suggest that there may be justification for piercing the corporate veil of a captive insurer if the captive is not an independent entity and does not make independent management and operating decisions, the captive shifts excessive insolvency risk to involuntary creditors, or the captive is not properly capitalized by its parent.

The access of captive insurers to state guaranty funds also has become a consideration in court rulings. For example, the tax court in *AMERCO* notes one of the conclusions of an expert witness, Foudree (1990), who indicates that, when an insurer becomes insolvent and is liquidated, a state guaranty association and a court-appointed liquidator for the insurer will generally pay any claims by its parent or affiliates under a contract as insurance claims, not as shareholder claims. Kimball (1990) suggests similar consequences under the Illinois Insurance Code for free-standing captive insurers serving the general public. Of course, captives not licensed in a state in the United States would not have access to state guaranty funds.

Pure Risk Reduction and Tax Deductibility

As noted above, risk reduction through risk distribution has become the focus of debate, partially due to Cummins's (1990), Doherty's (1990), and Han and Lai's (1991) emphasis on the risk reduction approach. However, they do not explicitly formalize an economic rationale for why risk reduction might be a better conceptual approach for determining the tax deductibility of pure risk-financing payments. Why the concept of pure risk reduction may provide a better and simpler guideline for determining tax-deductibility than relying on an explicit technical definition of insurance is suggested below.

¹¹ For a detailed discussion of the economic and social costs and benefits of the corporate limited liability, see Halpern, Trebilcock, and Turnbull (1980) and Easterbrook and Fischel (1985).

Legal Issues

Various courts have used the implicit partial definition of insurance developed in *LeGierse* for resolving the tax deductibility issues involving captive insurers. This may not be economically appropriate, because this 1943 Supreme Court decision dealt with a simple case involving interdependent life insurance and annuity contracts. The issue basically involved financial hedging through the neutralization of a life insurance risk (death) with a life annuity risk (survival) for an 80-year-old woman. The Court concluded that no insurance risk existed.

Today, insurance is only one of several risk-financing mechanisms available for treating pure risk (see Williams and Heins, 1989, chaps. 11 and 12). Risk reduction in monetary terms is the major economic benefit provided by insurance, as Houston (1964) notes. Internal Revenue Code 162(a) 1954 and U.S. Treasury Regulation 1.162-1(a) allow a deduction for all ordinary and necessary business expenses paid or incurred during the taxable year in carrying on a trade or business. Conceivably, "premiums" paid by a parent to its wholly-owned subsidiary could be treated as a necessary business expense for treating pure risk under certain circumstances, if "true" insurance were not required by federal tax law.¹² In this respect, a risk reduction concept might be considered from legal, risk-management, and taxation viewpoints.¹³

Modern Financial Theory and Insurance Economics

Porat et al. (1991) examine the tax treatment of insurance versus self-insurance and argue that the focus of the debate should be on the question of which tax policy maximizes "social welfare." Moreover, they argue that "modern financial theory reconciles the purchase of insurance with value maximization of the firm, making no general statement on the relative merit of market insurance versus various forms of self insurance" (p. 663). It is partially true that the literature characterized by Main (1982, 1983) and Mayers and Smith (1982, 1987) does not explicitly consider the cases between market insurance and self-insurance because market insurance and no insurance are usually analyzed. However, the statement by Porat et al. may be somewhat misleading because it implies that there is no relative economic merit in distinguishing between market insurance and self-insurance.

Mayers and Smith (1982) and Main (1982) analyze the set of incentives for the purchase of insurance by a widely-held public corporation. Mayers and Smith argue that the existence of bankruptcy costs can induce firms to purchase insurance because the probability of incurring the bankruptcy costs is

¹² However, Congress would have to accept at least three changes: some risk-financing transfers other than insurance, the loss of arms-length transactions, and the resulting potential loss of tax revenue.

¹³ The reduction of litigation and other transaction costs could be substantial, and existing resources could be reallocated to risk management activities, which could control and reduce losses. Consequently, resources might be used more efficiently and effectively if the removal of the economic independence or the arms-length-transaction safeguard did not generate excessive tax incentives for manipulation of loss estimates (a moral hazard problem).

lowered by transferring some risk to an insurer. Apparently, the expected bankruptcy costs are higher for self-insurance than the cost of market insurance because, in some states of nature, a large casualty loss will bankrupt the firm when some form of self-insurance is used. In contrast, such a casualty loss could be hedged with market insurance and the firm could survive. Thus, the benefit (the reduction of bankruptcy costs) from the purchase of market insurance may outweigh the associated costs when compared to self-insurance.¹⁴ Furthermore, the risk-reduction benefits of a parent purchasing insurance from a wholly-owned captive that writes some unrelated business would tend to be less than those derived from market insurance but higher than self-insurance, because if a parent purchases insurance from its captive, then it can reduce only some of its risk from a potential loss. There is risk reduction but not the elimination of total pure risk. In contrast, if a parent purchases insurance from unrelated insurers, it can reduce all of its pure risk, except for that associated with deductibles, and any other type of loss constraining agreements. Such differences may not always be economically trivial, as Porat et al. (1991) imply.

Bankruptcy costs are a deadweight loss, so it is beneficial to society to reduce bankruptcy costs. Market insurance appears to reduce expected bankruptcy costs the most, whereas self-insurance will not reduce bankruptcy costs. Between these extremes, insurance through captives underwriting unrelated business can partially reduce bankruptcy costs. Thus, a potential tax policy that allows premiums for market insurance to be fully deductible, disallows deductions for reserves for self-insurance, and allows premiums paid to captives underwriting unrelated business to be partially deductible could be beneficial to society in the Porat et al. sense. Similar arguments related to modern financial theory, such as the efficiency of risk bearing and the control of the incentive for a firm to forego a positive net present value replacement project can be made (see Mayers and Smith, 1982; Garven and MacMinn, 1993; and Ho, Lai, and Witt, 1993).

In general, if a parent purchases insurance from its captive that writes unrelated business, it could partially reduce its pure risk and, consequently, reduce its expected bankruptcy costs, increase the efficiency of risk bearing, and control the firm's incentive to forego a positive net present value replacement project. In this respect, recognizing a partial, pure risk reduction approach

¹⁴ Costs of resources supplied by other stakeholders in an insured firm, such as employees and bondholders, may also be reduced as a consequence of a lower bankruptcy probability, as Mayers and Smith (1982) note. They argue in general that stockholders and bondholders of the firm have a comparative advantage in risk bearing over other stakeholders in the firm, such as employees, managers, customers, or suppliers, if the contracting process is costly. However, the amount of risk that can be allocated to and absorbed by the equityholders and debtholders is limited if the equity and debt claims of the firm are not large relative to those of other stakeholders. The firm is able to transfer risk to an insurer by purchasing market insurance, while the firm is not able to shift any risk to any financially independent party outside of the firm with self-insurance. Thus, market insurance can achieve greater efficiency in the allocation of risk bearing than self-insurance because there is always at least one more risk bearer.

might be desirable. These potential results are inconsistent with the Porat et al. (1991) argument noted above.¹⁵

The Risk Reduction Concept and Mutual Insurance

A risk reduction concept is broadly consistent with the concept of mutual insurance. The transaction involved when a parent company shifts insurable risks to a wholly-owned captive with unrelated risks is weakly similar to mutual insurance at the limit. Specifically, the fact that independent mutual policyholders as a given group can share risk but cannot directly shift risk out of their economic family (the mutual company) is somewhat similar to the situation of a parent who cannot shift risk out of its economic family (the parent company and its controlled subsidiaries), assuming reinsurance is not used. Note, however, that every policyholder in a mutual company can be treated as a partial owner and in a broad conceptual sense as a group parent. The parent-specific (single policyholder) risk relative to the parent-total (mutual) risk approaches zero when there are a large number of policyholders in a mutual company. In other words, individual policyholders can almost reduce their pure risk to zero through a mutual insurer when there are a large number of policyholders with similar exposures, because the policyholder-specific risk to the total mutual-pool risk approaches zero. However, they retain a small ownership or speculative risk no matter how large the mutual. This transaction may broadly be called "insurance" for a large number of policyholders, and it commonly is, because there is risk distribution among many financially independent entities through risk sharing.¹⁶

This section has suggested a rationale to explain why the pure risk reduction approach is appropriate for addressing the tax deductibility issue from legal, risk management, and economic points of view. The risk reduction approach can help resolve some of the unanswered questions raised previously. First, the conceptual advantage of using a risk reduction approach for determining tax deductibility of risk-financing payments is that it avoids the problem associated with the potentially incorrect use of the concept of risk shifting, and it would help to reduce confusion about the economic nature of insurance. Second, the concept of risk reduction through risk sharing might allow the courts to resolve some of their conflicting rulings on what constitutes insurance when such transactions involve either unrelated insurance of outside risks or the purchase of insurance by a parent from a wholly-owned captive insurer.

¹⁵ In fact, by carefully applying modern finance theory, it can be shown that market insurance is better than captive insurance which is better than self insurance in a risk-reduction sense, because captive insurance with unrelated risks in the pool provides an extra degree of freedom through broader risk spreading.

¹⁶ Risk sharing as a general concept implicitly involves both risk shifting and risk assumption through dividing and sharing pure risks in a pool. However, the law of large numbers allows the transfer of risk to overwhelm the assumption of risk under normal circumstances for entities in an insurance pool. For some exceptions, see Brockett, Cox, and Witt (1984, 1986).

However, the risk reduction approach alone cannot resolve the following questions. First, how many or what percentage of unrelated risks (exposures) need to be written by a captive insurer such that premiums of its parent are deductible? Two percent of unrelated risk premium was not sufficient in *Gulf Oil* (1987), whereas at least 30 percent was deemed sufficient in *Harper* (1991).¹⁷ What remains unclear from these decisions is what percentage between two and thirty of unrelated business is needed for tax deductibility of premiums, and is such a percentage a necessary and sufficient condition for insurance to exist. Furthermore, one might ask whether it is economically reasonable and fair to treat the relative tax deductibility in the *Sears* case, where Allstate wrote more than 99 percent of unrelated business, the same as in *Harper*, where Rampart wrote only 30 percent unrelated business.

Second, what was the tax court's rationale in *Harper* (1991) to decide that 30 percent unrelated business for a captive is sufficient for the parent premium payments to be treated as deductible insurance expenses for federal income tax purposes? Third, is it reasonable to treat insurance premiums paid to an economically unrelated insurer the same as "premiums" paid to a captive insurer? A parent can substantially shift all of its pure risks under consideration to a financially unrelated insurer through insurance purchased in the market involving an arms-length transaction, while the parent retains some of its exposure and risk indirectly when captive insurance is utilized.

The court tried to obtain an answer to the first question by asking Cummins (1989) and others what percentage was sufficient to constitute insurance in the *AMERCO* case. The answer was that no magic percentage was sufficient to constitute insurance. Rather, it was suggested that the existence of insurance would have to be considered case by case. Specifically, a number of factors would have to be considered, such as the presence of insurable risks, the premiums paid to captives, and the nature of the insurance contract.¹⁸ In other words, the fact that the *Harper* case was won by the taxpayer and that Harper happened to have 30 percent outside business should not necessarily be taken to mean that premiums paid to any captive with at least 30 percent outside business are tax deductible. Other factors mentioned above should also be considered, along with the specific facts and circumstances associated with each case. Current court rulings still have not answered these three questions.

To resolve these issues, a concept of partial insurance may be appropriate and is suggested here. By utilizing a pure risk reduction concept not directly

¹⁷ *Gulf Oil* (1987) was the first case to consider specifically the economic effect of unrelated exposures on the deductibility of premiums for related parties. In fact, the tax court indicated in a footnote that if the captive insurer had derived at least 50 percent of its premium volume from unrelated business, it might provide sufficient risk shifting for the payments between parties to be viewed as premiums for insurance (see *Gulf Oil*, 1987, p. 1027, footnote 14).

¹⁸ The presence of insurable exposures and the payment of premiums to captives are discussed above. The nature of an insurance contract would include the use of deductibles or retentions, coinsurance, dividends, experience or retrospective rating, claim payment arrangements, and other factors.

tied to the classical concept of insurance, it is possible to determine the degree of tax deductibility for tax purposes based on the percentage of unrelated risks underwritten by a wholly-owned captive insurer. Han and Lai (1991) utilize the risk reduction approach and present a method to determine the degree of tax deductibility of premiums under various situations. For example, premiums paid to a captive that wrote 30 percent of outside risks could theoretically be partially deductible rather than 100 percent deductible, as suggested in the recent court rulings. Conceptually, this approach could be broadly conceived as partial insurance in a special sense if Congress wanted to maintain a formal link to the concept of insurance.¹⁹ This is a broad public policy issue that has important tax revenue consequences that the U.S. Congress must consider carefully before changing tax laws. The potential incentives for manipulation without a complete arms-length transaction would also have to be assessed carefully. The additional moral hazard costs arising from such a change in federal tax law could be substantial if such transactions were not carefully monitored by the IRS.

Although it is possible to calculate the degree of risk reduction (see, e.g., Han and Lai, 1991, and Cummins, 1989) and even the degree of tax deductibility (see Han and Lai), one should not treat the degree of risk reduction and degree of tax deductibility in an information vacuum. Other factors must be considered simultaneously to determine the degree of tax deductibility, such as the presence of insurable risks, the nature of premiums paid to captives, and the nature of the contracts involved in the alleged insurance transactions.

This partial deductibility approach based on a risk reduction concept and other factors has several advantages. First, the courts would not need to come up with a magical percentage for unrelated risks in a captive pool to assert that risk distribution has taken place. Second, the tax court would not have to provide an economic rationale for its rulings that premiums paid to a captive should be 100 percent deductible for federal income tax purposes. Thus, the courts could focus on the economic benefits of a transaction associated with pure risk reduction rather than on an explicit definition of insurance, if a change in federal tax law were deemed desirable and instituted. In conclusion, there is a continuum between a case like *Sears*, which involved almost "pure" insurance (100 percent risk reduction), and a case like *Carnation*, which was clearly a sham. There is no simple formula for deductibility. However, by considering a concept of partial insurance based on risk reduction and other factors, the end result involving partial deductibility of premiums might be better than the current all-or-nothing approach.

¹⁹ With an all-or-nothing choice, it would seem reasonable to require a reduction of relative risk of at least 50 percent in order to constitute insurance by providing a substantial reduction of risk through risk spreading, other things being equal. By utilizing a pure risk reduction concept not directly tied to the classical concept of insurance, it is possible to determine the degree of tax deductibility for tax purposes based on the percentage of unrelated risks underwritten by a wholly-owned captive insurer.

Some Unresolved Issues

The Degree of Risk Reduction When Variances of Risks Are Different

Smith (1986) raises the heterogeneous risk issue when he states that,

if unrelated business written by a captive insurer has a much larger variance than the parent's risks, the captive's loss distribution could have a larger variance than the parent's, as evidenced by the financial setbacks suffered by several captive insurers in recent years. Diversification through insuring unrelated risks does not guarantee greater stability (p. 101).

This argument might give the impression that no tax deductibility of insurance premiums could be allowed when the variance of unrelated risks is larger than that associated with the parent-specific risks in the captive insurer's portfolio of risks.²⁰ Some unnecessary confusion is created about the concept of risk reduction. Two cases clarify the issue.

First, consider the case where the individual standard deviations of outside or unrelated risks or exposures are assumed to be higher than the parent-specific risks. It can be shown that the degree of risk reduction is higher than in the case where the standard deviations of outside risks are the same as the parent-specific risks. The economic intuition for this result is that the proportionate contribution of parent-specific risks to a captive's total risk decreases as the parent-total risk decreases when the standard deviations of outside risks increase relative to parent-specific risks, other things being equal.

Second, consider the case where the standard deviations of an economically unrelated risk are assumed to be less than the standard deviations for parent-specific risks. It can be shown that the degree of risk reduction is less than in the case where the standard deviations of outside risks were the same as those of parent-specific risks. The economic reason for the lower deductibility here is that the contribution of parent-specific risks to total risk is relatively higher when the standard deviations of outside risks are smaller, other things being equal.²¹

Clearly, the magnitude of the standard deviation of individual loss exposures underwritten by a captive affects the degree of risk reduction. These results are consistent with Cummins's (1989) observation that "risk can be reduced through pooling in a heterogeneous as well as a homogeneous pool" (p. 17). Moreover, these results should help to eliminate the misconception that no tax deductibility should be allowed when outside risks have higher variances than parent-specific risks, because the increased variance of the captive distribution was expected to increase uncertainty. In fact, as noted above, the opposite result occurs, which conflicts with Smith's (1986) suggestion.

²⁰ Smith's statement ignores the benefits of risk reduction resulting from risk-sharing among economically independent parties. Risk reduction can result even when heterogeneous risks are pooled, as Cummins (1974) has shown.

²¹ Mathematical demonstrations of these economic assertions are available from the authors upon request.

The Issue of a Small Number of Outside Risks

The tax court has become concerned in recent rulings about the number of unrelated risks or exposures in a captive insurer's portfolio.²² Here, we assess issues associated with the degree of risk reduction when the number of parent-total risks is small.

It can be shown that the number of parent-specific risks or unrelated risks will not change the degree of the risk reduction as long as the proportion of parent-specific risks to parent-total exposures does not change. In other words, the absolute number of unrelated insureds is not important in determining the degree of risk reduction for similar exposures, as long as there are a sufficient number for the law of large numbers to function adequately. Rather, the relative number of unrelated insureds to the number of total captive-insurer risks (both parent-specific and unrelated risks) is important for determining the degree of risk reduction, other things being equal.

This result seems reasonable when one recognizes that the basic issue involves the degree of relative risk reduction associated with the parent-specific pure risks rather than the insolvency issue associated with absolute size. Of course, the absolute number of risks of captive insurers may be important for both "insurers" and regulators in certain cases, because size can affect the captive insurer's insolvency risk. However, the captive insurer's insolvency risk is a speculative risk based on ownership of the risk pool and is not necessarily a relevant risk under the alternative economic risk-reduction concept suggested for tax deductibility purposes here.

Tax Deductibility and Group Captives

Han and Lai (1991) analyze the tax deductibility issue for a group captive, concluding that a "parent of the group captive usually would enjoy less of a tax advantage than the parent of a captive which underwrites a substantial portion of outside risks, unless a large group of firms form the captive jointly" (p. 60). This conclusion is correct when the group captive does not write risks unrelated to its owners. Unfortunately, Han and Lai (1991) do not consider the case where the group captive writes unrelated risks. A brief analysis of the situation where a group captive writes risks from outside the ownership group is presented below.

It is important to distinguish between risks unrelated to the group of owners and risks unrelated to a specific parent in a group captive case, because a specific parent is not the total owner of a group captive. Specifically, a parent of a group captive with outside risks has two types of unrelated risks: the

²² For an extreme example, consider a situation where there are two parent-specific risks and three similar exposures from unrelated business firms. Although the captive covers 60 percent of unrelated risks in its pool or portfolio of risks, the courts would probably question whether there is *adequate risk distribution* when the absolute size of the pool or the number of risks is considered.

outside risks unrelated to those of the entire ownership group and those that come from the other parents or owners within an ownership group.

It can be shown that the degree of risk reduction is higher for a parent in a group captive with outside unrelated risks than for a single parent of a pure captive in a similar situation with the same number of units of outside risk. The result is economically intuitive because there is greater risk spreading and/or sharing with outside risks in a group captive. A parent in a group captive has more unrelated risks in its pool than a single parent and can spread or reduce its specific risk more than a single parent, other things being equal.²³

Conclusion

A major issue involving the IRS, business firms, and various courts concerns the tax deductibility issue of whether a so-called "premium" paid to a wholly-owned captive for some type of coverage is an "insurance" transaction. Although earlier cases—*Carnation* (1978), *Clougherty Packing* (1987)—focused on the economic family theory and risk shifting in substance, more recent cases—ODECO (1991)—have focused more on risk spreading and the role of unrelated risks in a pool. In addition, two other conditions have become important in recent court rulings: whether a risk is an insurance or pure risk and whether a transaction is commonly viewed and accepted as a form of insurance. The most important economic consideration, however, may not be whether the transaction is classical insurance in a legal and technical sense. Rather, the relevant economic inquiry should focus on whether the transaction will reduce parent-specific pure risk in a relative sense.

We posit a theoretical partial insurance approach based on a risk reduction concept. The advantage of this partial deductibility approach is that the tax court would not have to provide an economic rationale for its ruling in *Harper* (1991), where premiums paid to a captive that wrote 30 percent unrelated risks should be 100 percent deductible. Although it is possible to calculate the degree of risk reduction and, thus, the degree of tax deductibility, one should not treat the degree of tax deductibility in an information vacuum. Other factors, such as the presence of insurable risks, aspects of premiums paid to captives, and the nature of insurance contracts, must be considered simultaneously to determine the degree of tax deductibility. Facts and circumstances in individual cases must be assessed carefully.

Some unresolved issues are discussed. The degree of risk reduction will increase or decrease as the standard deviation or risk size of outside exposure units increases or decreases. This result resolves a misconception that no tax

²³ This result does not invalidate Han and Lai's second conclusion that a parent in a group captive usually would enjoy less of a tax advantage than the single parent of a pure captive that writes a substantial number of outside risks. Different conclusions are obtained here because the group captive is assumed to write exposures outside of the owners' economic control, whereas Han and Lai assume no outside risks or nonowner controlled exposures are written. A mathematical demonstration of this economic assertion is available from the authors upon request.

deductibility could be allowed when outside risks have higher variances than parent-specific risks or exposures, other things being equal.

The courts have become concerned about the absolute amount of outside business in recent rulings involving captive insurers. The relative amount of business, not the absolute number of unrelated risks, is the relevant consideration in determining tax deductibility when such deductibility is not strictly tied to the traditional concept of insurance.

Finally, the degree of risk reduction of a parent in a group captive with multiple parents was assessed. The degree of risk reduction is higher for a parent in a group captive with outside or unrelated risks than for a single parent of a group captive with the same number of unrelated exposures. The implementation of tax deductibility concepts based on a relative risk reduction concept would require major changes in federal income tax law and regulations but could create some new moral hazard problems without substantial monitoring of such transactions.

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