[JOINT COMMITTEE PRINT]

TAX ASPECTS OF FEDERAL LEASING ARRANGEMENTS

SCHEDULED FOR A HEARING

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT

OF THE

COMMITTEE ON WAYS AND MEANS

ON FEBRUARY 28, 1983

PREPARED FOR THE USE OF THE

COMMITTEE ON WAYS AND MEANS

BY THE STAFF OF THE

JOINT COMMITTEE ON TAXATION

FEBRUARY 25, 1983

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1983

JCS 3-83

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INTRODUCTION

The Subcommittee on Oversight of the House Committee on Ways and Means has scheduled a public hearing on February 28, 1983, on the tax aspects of Federal contract leasing arrangements. This pamphlet provides background information relating to tax aspects, governmental costs, and other policy issues concerning such arrangements, particularly with reference to the Navy Department's TAKX Maritime Prepositioning Ship program.

The first part of the pamphlet is an overview. The second part is a description of the Navy's TAKX ship program. The third part is a discussion of the tax aspects of the TAKX arrangements. The fourth part discusses the Government's cost of the TAKX arrangements, and the fifth part is a discussion of certain policy issues involved in leasing by nontaxable entities. Finally, an Appendix describes accounting methods for government leases.

I. OVERVIEW

Statement of facts: Navy's charter of TAKX ships

The TAKX Maritime Prepositioning Ships program has been authorized to provide sealift support for the rapid deployment of marine amphibious brigades to crisis areas. A TAKX ship is a built-to-purpose roll-on/roll-off container ship that can be loaded and unloaded in areas without port facilities.

The Navy's original proposal to procure the TAKX ships was replaced with a decision to charter them, according to which the ships are owned, operated and maintained by private parties. The staff understands that the Navy has committed to charter 13 TAKX ships, the aggregate cost of which would be approximately $2.3 billion if purchased outright.

The charter arrangement involves a shipowner, a contractor and the Navy. The shipowner arranges for the construction of the ship and leases it to the contractor. Then the contractor through an operating agent mans, equips and maintains a TAKX ship, transporting equipment, cargo and personnel for the Navy. Including options to extend, these services are to be provided for 25 years. For these services the Navy pays a capital hire, which covers the after-tax capital costs of the shipowner with a 11.745-percent guaranteed after-tax rate of return, and operating hire, which covers the costs of operating the ship and the contractor's profit. In addition, the Navy assumes economic risks of damage to or loss of the ship; risks that the ship will decline in value; and risks associated with interest rate and price fluctuations. The Navy is obligated to reimburse the contractor for disallowed tax benefits if the charter arrangement is treated as a lease for Federal income tax purposes, and the Navy will pay the shipowner's costs of contesting the disallowance.

The statement of facts is made in greater detail in part II.

Tax aspects of TAKX arrangements

The TAKX arrangement contemplates that certain tax benefits will be available to the shipowner as a result of its investment in the ships. These tax benefits include accelerated cost recovery (ACRS) deductions and an investment tax credit. Their availability is premised on a number of assumptions, including a basic assumption that for Federal income tax purposes the shipowner will be treated as the owner of the property. Although the documents indicate that the Navy is not intended to have an interest in the vessels themselves, the determination of which party in the TAKX agreements should be treated as the owner for Federal income tax purposes is based on the substance of the transaction and not just on the labels attached by the parties. If the Navy were considered to have acquired an ownership interest, no ACRS deductions or investment credit would be available.

If it is established the shipowner really owns the ship for tax purposes, there is a further limitation under present law that prevents allowance of the investment credit where property is used by a governmental unit. If the Navy's charter agreement were treated as giving the Navy the right to use the ship rather than a mere right to transportation services, this limitation would result in disallowance of the investment credit.

Under the TAKX arrangement, the Navy bears significant economic risks, which raises questions as to whether the shipowner will in fact be treated as the owner for Federal tax purposes and, thus, whether any of the assumed tax benefits will be available. Even if the shipowner were considered to be the owner of the ships for Federal tax purposes, the Navy may be considered the user of the ships, which would preclude the allowance of the investment credit.

Tax aspects of the TAKX arrangements are discussed in part III.

Governmental cost of TAKX arrangements

The Federal Government's capital cost of a TAKX arrangement has two parts: (1) capital hire paid on-budget by the Navy and (2) net income tax benefits allowed to private parties that would not have been generated under governmental ownership. The Navy commissioned two studies to examine these costs. Both concluded that chartering could be less costly, although in one study that conclusion required that tax benefits be disregarded.

The staff has developed a methodology for measuring the relative costs of chartering and purchasing a TAKX ship. This methodology was applied to the data presented in the one TAKX agreement that was made available to the staff at an early date. Analysis of that agreement indicates that the government will pay about $199 million in present value to charter a TAKX that it could have purchased for $178.2 million. The Navy will save an estimated $37 million in on-budget expenditures; however, there will be an estimated revenue loss of $57.8 million arising from the arrangement. The excess cost of chartering, $20.8 million, is thus estimated to be about 11.7 percent greater than the purchase price. Analysis of four additonal TAKX agreements subsequently made available suggests that the excess cost of chartering is, on average, approximately 11.7 percent greater than the purchase price of the ship. In general, it appears on theoretical grounds that the Federal Government, which enjoys the best credit, cannot gain by financing long-term capital projects through parties that require higher yields.

The staff's analysis is described in part IV; its methodology, in the Appendix.

Policy issues: Leasing by nontaxable entities

Behind the TAKX arrangement is a set of broader questions related to leasing by nontaxable entities such as Federal departments and agencies, State and local governments, nonprofit charitable and educational organizations, and foreign persons.

When a nontaxable entity leases an asset it might have purchased, Federal income tax benefits are generated for the lessor

and in part passed through to the nontaxable entity as reduced rents. Thus, organizations that pay no income tax, nonetheless, can enjoy the benefits of income tax deductions and credits, at the expense of the Federal Treasury.

This opportunity to obtain capital goods through leasing on terms more generous than strict tax exemption raises several issues. The first issue is the extent to which Congress should make this opportunity available to Federal units, State and local governments, other nonprofit organizations, and foreign persons, in light of projected budget deficits and other matters of policy. The second issue concerns the proportion of the Federal revenue loss that ultimately benefits the nontaxable organization and the proportion that benefits third-party intermediaries. For example, the staff's analysis of the TAKX agreement described in this pamphlet indicates that about 64 percent of the associated revenue loss will benefit the Navy and 36 percent will benefit third parties. The third issue relates to the proper functioning of the budgetary process, to the extent that the revenue loss of leasing to nontaxable entities does not appear, or is not properly accounted for, in the Federal budget. For example, a Federal agency or department could reduce the apparent short-run costs of its programs by committing to long-term leases, unless such commitments are clearly accounted for when made. The fourth issue relates to whether use of sophisticated, tax-motivated arrangements by tax-exempt entities creates perceptions that the tax system is unfair, especially if the Federal Government itself engages in the practice. The fifth issue relates to whether the quality of public sector services is affected by structuring their delivery to qualify for more favorable tax treatment. For example, performance by public employees may be deemed essential to the quality of certain public services and the accountability of their provision, yet be adverse to the tax-related interests of private parties who might provide the services through a lease arrangement.

These issues are addressed in part V.

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II. STATEMENT OF FACTS: NAVY'S CHARTER OF TAKX SHIPS

The TAKX program was authorized in 1979 by the Secretary of Defense in order to provide sealift support for the rapid deployment of the marine amphibious brigades to crisis areas. The TAKX ships are built-to-purpose, roll-on-roll-off, container ships. The ships have self-sustaining capabilities to load and unload cargo in areas without port facilities.

Initially, the Navy proposed to finance, construct, and own the TAKX ships. Ultimately, the proposal to own the TAKX ships was replaced with a proposal to charter the required ships. The decision to charter ships was based on two studies, conducted on the Navy's account by a national accounting firm and an economic consultant, which concluded that the Navy could charter a TAKX ship for as much as 35 percent less than the cost of purchasing the ship.

Under the TAKX charter arrangement, the Navy has contracted for services to be performed by TAKX ships. The services to be performed are the transportation of equipment, cargo, and personnel on a time charter basis. That is, the TAKX ships are to be owned, operated, and maintained by private parties for the sole benefit of the Navy for a specified period of time.

The original proposal for the charter arrangement was unacceptable to prospective contractors because the proposal would have required the contractors to assume significant economic risks. While the structure of the original proposal was maintained, the final charter arrangement places significant economic risks upon the Navy, most of which are similar to the risks the Navy would have borne had it owned the ship outright.

Structure of the TAKX charter arrangement

The TAKX charter arrangement involves three primary parties: (1) the Shipowner, (2) the Contractor, and (3) the Navy.

The TAKX charter arrangement involves two basic agreements: (1) a lease of the ship under a Bareboat Charter between the Shipowner and the Contractor conveying use of the ship to the contractor, and (2) an agreement to provide ship transportation services under a Time Charter between the Contractor and the Navy. There is also a Credit Agreement, involving financing, and an Operating Agreement between the Contractor and a related party for performing the actual services.

The staff has obtained copies of an "Agreement to Charter" and a "Time Charter" (referred to collectively as the "Time Charter") relating to one of the TAKX ships. The staff understands that the Navy has entered into substantially similar arrangements with respect to all of the TAKX ships. The following description of a TAKX charter arrangement is based largely on this document. Related contracts for that type of ship (*e.g.*, the "Bareboat Charter,"

the "Credit Agreement," and the "Operating Contract") have not been examined yet by the staff.

Contractor arranges for ownership, financing, and contruction.—The documents indicate that the Contractor is responsible for arranging for the financing and construction of the ships. It is also responsible for obtaining the Shipowner, which will be a partnership comprised of equity investors.

Shipowner arranges for construction.—Once a Shipowner has been obtained, the Shipowner will contract for the construction of the TAKX ship in accordance with the Navy's specifications.

Shipowner leases to Contractor.—Once the TAKX ship is constructed, the Shipowner will convey the ship to the Contractor under the Bareboat Charter. The parties contemplate that for Federal income tax purposes the Bareboat Charter will be treated as a lease agreement under which the Shipowner is lessor and the Contractor is the lessee.

Time Charter to the Navy.—Under the Time Charter, the Contractor must provide transportation services to the Navy and ensure that the TAKX ship is manned, equipped, and maintained in accordance with the Navy's requirements. The parties contemplate that for Federal income tax purposes the Time Charter will be treated as a service contract and not a lease. Services will actually be performed by an affiliate of the Contractor (referred to as the "Operator") under a separate operating contract. In the event that the Contractor defaults, the Contractor will be required to appoint an "Operating Agent," who will assume possession and control of the ship and who will assume the right to payments made by the Navy. If the Contractor does not appoint an operating agent, the Navy may do so.

Pursuant to the Time Charter, the Navy is required to make two types of payments: (1) capital hire (which is computed by reference to the amounts required to repay—with interest or a return—the debt financing and equity investment of the Shipowner, taking into account the net income tax benefits for the Shipowner that are generated by the Bareboat Charter), and (2) operating hire (which covers the costs of operating the TAKX ship and the Contractor's profit). In addition to these basic charges, the Navy assumes a variety of other economic burdens described below.

Specific aspects of the time charter

Term of the Time Charter.—The Time Charter provides for an initial term of 5 years (referred to as the "Basic Term"). The Navy has the option to extend the Basic Term for one to four successive renewal periods, for a total of 25 years. The useful life of the ships is at least 30 years.

The Navy may not terminate the Time Charter for convenience during the Basic Term. However, it may terminate for convenience at any time during the renewal periods.

Manning.—The master, officers, and crew of the TAKX ship will be civilians hired by the Contractor, subject to the Navy's approval. All officers must be qualified for a United States Government "Confidential" security clearance. In addition, the Master, Chief Officer, and Radio Officer must be qualified for a United States Government "Secret" security clearance. The Navy reserves the

right to station approximately 28 "Permanent Government Personnel" aboard the ship. Also, the Navy has the right to assign up to 100 additional military personnel to the ship as a surge team.

Operating hire.—Operating hire is payable for each 24-hour day or part thereof during the 25-year extended term of the Time Charter.

The operating hire payments may be adjusted to preserve the basic economic assumptions (*i.e.,* to protect the Contractor's profit) and for other similar purposes.

Capital hire.—The Navy is obligated to make semi-annual capital hire payments. If payments of operating hire are suspended or reduced because the TAKX ship is not fully available for service, because the ship is in a reduced operational status, or the Contractor or Shipowner in any way fail to perform, the Navy must continue to pay capital hire during such period.

Improvements.—The Navy has the right to request the Contractor to make such improvements to the ships as the Navy deems necessary, unless those improvements affect the ship's seaworthiness. The work is to be done by the Contractor at the Navy's risk and expense. The improvements remain the property of the Navy. If the improvements affect the commercial utility of the ship, the Navy must remove them upon termination of the Time Charter and restore the ship to its prior condition.

The Navy's right to purchase the ship.—If the Shipowner finances the entire cost of the TAKX ship with debt (*i.e.,* if no equity investment is made), the Navy will have the option to purchase the ship (subject to Congressional authorization) at any time during the term of the Time Charter for a price equal to the principal amount of the Shipowner's debt financing plus accrued interest.

If the Shipowner has any equity investment, the Navy can purchase the TAKX ship at any time after the end of the Basic Term on any capital hire payment date. The price is fair market value, adjusted upward if fair market value is less than a fixed Termination Value (described below). The price is not adjusted downward if fair market value exceeds the Termination Value.

If the Navy makes an outright purchase of the TAKX ship, the Navy has the right to require the Contractor to continue to operate the ship at the same operating hire rates set forth in the Time Charter.

Economic risks borne by the parties

The Navy bears significant economic risks resulting from the acquisition and operation of the TAKX ship. The Shipowner is guaranteed an after-tax rate of return and is otherwise protected against the loss of its investment. The primary risks borne by the Contractor are limited to acts of negligence by the Contractor or its agents.

Risks associated with debt financing.—The capital hire payments are based on an assumption that permanent financing can be obtained at 11 percent. If the interest rate at which permanent financing is actually obtained is higher, the capital hire rate will be adjusted upward to reflect the higher interest rate. Thus, the Navy alone bears the risk that interest rates will rise.

Risks of damage to or loss of the TAKX ship.—Although the Contractor is required to secure full form marine insurance coverage, the costs of insuring the hull and machinery and the costs of protection and indemnity coverage are included in the operating hire rates and, thus, paid by the Navy. Further, the Navy must reimburse the Contractor for any increases in the costs of war risk insurance (including war risk insurance for the benefit of the Shipowner) after the first year of the Time Charter.

If the Contractor cannot obtain the required insurance, or if such insurance is not in effect for any reason beyond the Contractor's control, the Navy must reimburse the Contractor for any loss or damage arising during the term of the Time Charter, to the extent such loss would have been covered by insurance. Further, the Navy will reimburse the Contractor for any amounts that the Contractor is required to pay to the Shipowner as indemnities pursuant to the Bareboat Charter, to the extent not covered by insurance.

Upon the occurrence of an event of loss (which is defined in the Time Charter to include the actual or constructive loss, confiscation, or seizure of the TAKX ship), the Navy is obligated to pay any deficiency between (1) the Shipowner's unrecovered equity investment and remaining debt plus any tax liabilities arising out of the termination event (which amounts are defined as the "Termination Value" in the Time Charter), and (2) the insurance proceeds received by the Contractor.

Essentially, the Navy bears the risk that the required insurance will be unavailable and that the costs of such insurance will rise. More importantly, in the event that the insurance proceeds are not sufficient to make the Shipowner whole, or are not forthcoming, both the Contractor and the Shipowner can look to the Navy for indemnification.

Risk that the value of the TAKX ship will decline.—If the Navy exercises its option to purchase the ship at the ship's fair market value prior to the end of the extended 25-year term, the Navy will be required to pay any deficiency between the Termination Value (*i.e.,* an amount approximating the Shipowner's unrecovered equity, remaining debt, and any tax liabilities generated) and the value of the ship. The price is not adjusted downward if the fair market value exceeds the Termination Value.

If the Time Charter is terminated (for reasons other than an option to purchase) prior to the close of the 25-year extended term, the Contractor—with the consent of the Shipowner—can elect simply to retain the vessel. However, if the Contractor does not exercise this option, it must use its best efforts to sell the ship. If the Contractor is unable to sell the ship, the Navy is required to pay the Termination Value to the Contractor. Even if the ship is sold, the Navy must pay any deficiency between the Termination value and the sale proceeds. The Shipowner retains any excess of the proceeds over the Termination Value.

Thus, if there is a premature termination, the Shipowner retains the right to enjoy any appreciation in the value of the TAKX ship. The Navy bears the risk that there will be no market for the ship and the risk that the ship will decline in value. The purpose of the Termination Value payment is to ensure that the Shipowner at

least is able to recover its investment plus the specified rate of return.

The specified Termination Value of the vessel at the end of the 25-year term is almost nothing. At that point, the Shipowner will have been assured recovery of its investment plus a guaranteed rate of return. If the vessel has any value at the end of the 25-year term (and presumably it would, because the estimated useful life is in excess of 30 years), the Shipowner is entitled to that value in addition to its guaranteed return.

Risks associated with the characterization of the Time Charter for Federal income tax purposes.—The Navy is obligated to reimburse the Contractor for any amounts required to make the Shipowner whole if (1) the Shipowner suffers the loss of any tax benefits as a result of the Time Charter being treated as a lease for Federal income tax purposes, or (2) the Shipowner is required to include in gross income the value of any nonseverable improvements made to the ship at the Navy's request. The Navy can direct the Shipowner to contest any disallowance of tax benefits, in which case the Navy will also pay the costs incurred by the Shipowner in contesting such disallowance. The Navy is not required to indemnify the Shipowner for any loss of Federal income tax benefits attributable to characterization of the transaction as a conditional sale to the Navy.

The capital hire payments were calculated on the basis of the Federal income tax law in effect at the time the agreement to Charter was entered into. The Time Charter agreement made available to the staff was entered into before enactment of the changes made by the Tax Equity and Fiscal Responsibility Act of 1982, which, for example, reduced the cost of property eligible for ACRS deductions by one-half of the investment credit allowed (Act section 205). Thus, the Navy's capital hire payments already are subject to an upward adjustment.

Risks attributable to inflation and price fluctuations.—The operating hire payments are subject to economic price adjustments which, in effect, protect the Contractor against the risk that the operation of the TAKX ship will become unprofitable. Similarly, the capital hire payments and the Termination Value will be adjusted to preserve the economics of the transaction to the Shipowner. In no case will these amounts fall below the amount required to provide for a guaranteed "Nominal After-Tax Economic Yield" of 11.745 percent on the Shipowner's investment.

Risk attributable to alterations.—Any improvements to the ship are made by the Contractor at the Navy's risk and expense. If the improvements add to the cost of operation, the operating hire may be adjusted to take those additional costs into account.

III. TAX ASPECTS OF TAKX ARRANGEMENTS

Overview

The Time Charter contemplates that certain tax benefits will be available to the Shipowner as a result of its investment in the ships. In general, those tax benefits include accelerated cost recovery (ACRS) deductions and an investment tax credit. The availability of the ACRS deductions and the investment credit is premised on a number of assumptions, including a basic assumption that for Federal income tax purposes the Shipowner will be treated as the owner of the property. Although the documents indicate that the Navy is not intended to have an interest in the vessels themselves, the determination of which party in the TAKX agreements should be treated as the owner for Federal income tax purposes is based on the substance of the transaction and not just on the labels attached by the parties. If the Navy were considered to have acquired an ownership interest, ACRS deductions and investment credits would not be available.

If ownership were established in the Shipowner, there would be a further limitation that prevents allowance of the investment credit where property is used by a governmental unit (governmental use restriction). If the Navy's charter agreement were treated as giving the Navy a right to use in the ships rather than a mere right to transportation services, the governmental use restriction would result in disallowance of the investment credit.

What follows is a description of the present law rules bearing on these issues and a discussion of the application of these rules to the facts in the TAKX transactions. The last section discusses foreign tax aspects of the transaction.

The Ownership Issue

Business and tax reasons for leasing and similar arrangments

The traditional reasons for leasing and similar arrangements that permit companies to use equipment or obtain services without obtaining an ownership interest stem from tax, accounting, and a variety of business considerations. These considerations are discussed in the pamphlet, "Analysis of Safe-Harbor Leasing" (JCS-23-82), published in 1982 by the staff of the Joint Committee on Taxation.

Tax-exempt organizations and governmental units have leased equipment for many of the same tax and nontax business reasons as taxable entities. The recent increase in lease and similar arrangements by these entities is due in part to budgetary limitations on the purchase of equipment and limitations on the ability to issue tax-exempt bonds. These considerations are discussed more fully under Part V below. Also, as will be discussed below, the rea-

sons for arranging a transaction as a charter or service contract as opposed to a lease stem largely from the desire to avoid the government use restriction imposed on the investment credit.

Principles for determining ownership of property

Depreciation or ACRS deductions are allowed only for assets used for a business or income-producing purpose. Those tax benefits are viewed as a means of recovering the costs incurred to produce taxable income. In general, those tax benefits are not allowed to tax-exempt organizations or governmental units that have no taxable income.

The determination of ownership of property requires a case-by-case analysis based on all facts and circumstances. Although the determination of ownership is inherently factual, a series of general principles is embodied in court cases, revenue rulings, and revenue procedures. Most of those principles center on the question of whether a transaction structured as a lease or similar arrangement is in fact a conditional sale or financing arrangement that conveys an ownership interest to the user of the equipment. These general principles are described fully in the pamphlet, "Analysis of Safe Harbor Leasing" (JCS-23-82) published by the staff of the Joint Committee on Taxation.[1]

In general, for a person to be considered the owner of property for Federal income tax purposes, the person must hold title to the property under State law. State law ownership is not sufficient, however, to guarantee tax ownership, and both the courts and the IRS focus on the substance of the transaction rather than its form. The courts do not disregard the form of a transaction simply because tax considerations are a significant motive so long as the transaction also has a bona fide business purpose and the person claiming tax ownership retains sufficient burdens and benefits of ownership.

In general, the person claiming ownership must be the person who has an investment and suffers (or benefits) from fluctuations in value. Thus, if a lessee has the option to obtain title to the property at the end of a lease for a price that is nominal in relation to the value of the property at the time when the option could be exercised, as determined at the time the parties entered into the agreement, or which is relatively small when compared with the total payments required to be made, lease treatment is denied and the user is considered the owner.[2]

Recently, the Ninth Circuit in *Swift Dodge* v. *Commissioner*[3] held that a lease containing a terminal rental adjustment clause, which is used in auto leases to permit an upward or downward adjustment of the rent to make up for any difference between the projected value of the property and its actual value upon lease termination, was in substance a conditional sale to the lessee. The

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[1] The safe harbor lease provisions are not discussed in connection with the TAKX transactions. Those provisions, enacted in 1981 and modified in 1982 differ from the traditional lease rules basically because they permit lease treatment for transactions that have no purpose other than the transfer of tax benefits. The staff understands that the parties are not seeking benefits under the safe-harbor lease provisions.

[2] *See*, Rev. Rul. 55-540, 1955-2 CB.39 (and cases cited therein.).

[3] Docket No. 81-7440 (9th Cir., November 19, 1982), *rev'g* 76 T.C. 547 (1981)).

court concluded that where the lessee bears the risk of loss and risk of fluctuation in value, the only significant risk borne by the lessor is the risk of default by the lessee, a risk assumed by any holder of a security interest in a conditional sale.

IRS guidelines

To give taxpayers guidance in structuring leveraged leases (i.e., where the property is financed by a nonrecourse loan from a third party), the Internal Revenue Service in 1975 issued Revenue Procedure 75-21, 1975-1 C.B. 715, and a companion document, Revenue Procedure 75-28, 1975-1 C.B. 752 (the guidelines). If the requirements of the guidelines are met, and if the facts and circumstances do not indicate a contrary result, the Service will issue an advance letter ruling under the nonsafe-harbor rules that the transaction is a lease and that the lessor is the owner for Federal tax purposes. The guidelines are not by their terms a definitive statement of legal principles and are not intended for audit purposes. Even if the requirements of the guidelines are not met, a ruling might be issued based upon the general principles described above.

The specific requirements for obtaining a ruling under the guidelines are as follows:

1. Minimum investment.—The lessor must have a minimum 20 percent unconditional at risk investment in the property.

2. Purchase options.—In general, the lessee may not have an option to purchase the property at the end of the lease term unless, under the lease agreement, the option can be exercised only at fair market value (determined at the time of exercise). This rule precludes fixed price purchase options, even at a bona fide estimate of the projected fair market value of the property at the option date. In addition, the lessor cannot have a contractual right to require the lessee to purchase the property (a put).

3. Lessee investment precluded.—Neither the lessee nor a party related to the lessee may furnish any part of the cost of the property. The rationale is that a lessee investment may suggest that the lessee is in substance a co-owner of the property.

4. No lessee loans or guarantees.—As a corollary to the prior rule, the lessee must not loan to the lessor any of the funds necessary to acquire the property. In addition, the lessee must not guarantee any lessor loan.

5. Profit and cash flow requirements.—The lessor must expect to receive a profit from the transaction and have a cash flow from the transaction independent of tax benefits.

6. Limited use property.—Under Revenue Procedure 76-30, 1976-2 C.B. 647, property that is limited to use by the lessee (limited use property) is not eligible for lease treatment. The rationale is that if the lessee is the only person who could conceivably use the property, the lessor has not retained any significant ownership interest.

IRS ruling regarding bareboat charters

The Internal Revenue Service has no published revenue rulings concerning the question of ownership in a ship charter arrangement. However, a private letter ruling (LTR 8126112, April 2, 1981), does address the treatment of a bareboat charter as a lease. The TAKX transaction involves a Bareboat Charter between the Ship-

owner and the Contractor. Private letter rulings are not legal precedents and may not be cited as such, but they are useful in determining how the Internal Revenue Service applies legal principles to a particular set of facts in the absence of other authority.

The facts.—In LTR 8126112, a vessel was acquired by a partnership. The vessel was financed in part (32 percent) by an equity contribution by the partners and in part (68 percent) by long-term bond proceeds issued by an owner-trustee and guaranteed by the United States under Title XI of the Merchant Marine Act. The owner-trustee held the vessel in trust for the owners and was responsible for executing all necessary documents.

Upon delivery, the vessel was to be chartered (*i.e.,* leased) for a basic term of 25 years, with options to renew at fair market value for three 5-year periods. The parties estimated that the useful life of the vessel was at least 33½ years, although the class life of the property under the Asset Depreciation Range (ADR) system is only 18 years. They also estimated that the residual value at the end of the 25-year basic lease term would be at least 20 percent of original cost.

The charter payments were sufficient to ensure that the owners would have a profit independent of tax benefits. In addition to the charter payments, the Charterer had to insure the vessel against loss and indemnify the owners against any loss, including any loss of the anticipated tax benefits. Upon loss, the Charterer had to make a payment equal to a stipulated loss value, taking into account payments by third parties. Any third party proceeds in excess of the stipulated loss value had to be split between the owner-trustee and the charterer in accordance with a formula. Upon payment of the requisite amounts, the ship had to be conveyed to the Charterer.

Although it is not clear from the facts in the ruling, it appears that the Charterer would be liable to make a Termination Value payment upon a premature termination of the charter under an arrangement similar to that used in the TAKX transactions.

Under the charter, the Charterer could make improvements to the vessel. Title to the improvements vested in the Charterer only if they were removable.

At the end of the lease term, the Charterer had the right to purchase the vessel at fair market value.

If at any time the Charterer defaulted, the owner-trustee could sell the vessel or require the Charterer to purchase all stock of the corporate partners who own the vessel for a price that would ensure the owners a set rate of return. The owner-trustee was secondarily liable. If both the owner-trustee and the Charterer failed to purchase the stock as required, a Guarantor had to make the purchase pursuant to a guarantee arrangement. Under a letter of credit arrangement, a bank might also be liable for the stock purchase price.

The ruling.—The Internal Revenue Service held in LTR 8126112 that the Bareboat Charter was a lease and that the partners were the owners entitled to depreciation and investment credit.

Application of rules to the TAKX transaction

Without the facts of the Bareboat Charter between the Shipowner and the Contractor, any discussion of the ownership issue in the TAKX transaction will be incomplete. Even if the bareboat charter agreement in the TAKX transaction were similar to that in LTR 8126112, that ruling cannot be used as a precedent. In addition, unlike the situation in the ruling, a third party is involved (*i.e.,* the Navy as Time Charterer) that bears significant economic risks.

Governmental Use Restriction on the Investment Credit

Overview

Property that is "used by" a governmental unit (other than property leased on a casual or short-term basis) is ineligible for the investment credit (sec. 48(a)(5)). It is clear that under the governmental use restriction the investment credit is unavailable with respect to property that is owned by or leased to a governmental unit. However, one court has held (and the Internal Revenue Service has ruled) that the investment credit can be claimed where the governmental unit essentially has contracted for a service to be provided by the owner of the equipment rather than for the use of the equipment itself.

Rationale for the governmental use restriction

When the investment credit was enacted in 1962, it was designed to stimulate expansion of the Nation's productive facilities by reducing the net costs of acquiring new equipment. At that time, the governmental use restriction was premised on the view that governmental demand for equipment is not dependent on its price. Thus, a reduction in price, which would, in effect, result if the investment credit were available, would not cause any corresponding increase in production.

A somewhat different rationale for the governmental use restriction is discussed in part V below.

"Service Contract" exception

Internal Revenue Service rulings.—Under Treasury regulation 1.48-1(k), "property used by a governmental unit" means only property owned by or leased to a governmental unit. In Revenue Ruling 68-109, 1968-1 C.B. 10, the Internal Revenue ruled that property provided to a customer as an integral part of a service is not "used by" the government within the meaning of section 48(a)(5).

Revenue Ruling 68-109 involved communications equipment installed by a public utility on the premises of governmental units. In ruling that the taxpayer's agreements with its customers were not sales or leases, but rather service contracts, the Internal Revenue Service relied on the fact that the taxpayer retained all ownership in and possession and control over the equipment. The Internal Revenue Service also focused on the fact that the communications equipment was part of an integrated network used to render

services to the customer, not property placed with a user to allow it to provide services to itself.

The Internal Revenue has issued a number of other rulings applying the service contract exception,[4] including a private ruling in which this exception was applied to the time charter of a vessel to the Federal government (LTR 8217040, January 27, 1982). Although a private ruling is not binding on the Internal Revenue Service or the courts, a private ruling is helpful in interpreting the law absent other authority.

LTR 8217040 involved a newly-constructed vessel that was to be time chartered to an agency of the Federal government. The basic term of the time charter was to be five years, with five one-year optional periods, for a total of only ten years. The taxpayer represented that it had to man, equip, operate, and maintain the vessel, and that the master of the vessel was to be under the direction of the Federal government as regards the employment of the vessel, but not as regards navigation, care, and custody of the cargo. The taxpayer also represented that it had to bear the risk of loss with respect to the vessel. The government reserved the right to choose the port-of-call and the cargo to be carried. The government also had to bear the expense of fuel and loading and discharging. If the vessel were "off-hire" because of any incident not within the taxpayer's control preventing the full working of the vessel, no charter hire would be required from the government.

The Internal Revenue Service ruled that the taxpayer could claim an investment credit for the vessel, based on the representations that the taxpayer had to retain possession and control over the vessel, that the taxpayer was required to provide maintenance and secure insurance for the vessel, that the taxpayer had to furnish and control the crew of the vessel, and that the time charter transferred no legal interest in the property to the Federal government.

The case law.—The only judicial decision dealing with the service contract exception to the governmental use restriction is *Xerox Corporation* v. *United States,* 656 F.2d 659 (Ct.Cl. 1981). In *Xerox,* a manufacturer provided duplicating machines to the Federal government. The Internal Revenue Service had issued a revenue ruling involving the same basic facts as in the *Xerox* case that held that the agreements were leases (Rev. Rul. 71-397, 1971-2 C.B. 63). The Court of Claims rejected the taxpayer's contention that its agreements were short-term leases, which are eligible for an exception to the governmental use restriction. However, the court held that the machines were eligible for the investment credit because they were provided as an integral part of a service contract.

Essentially, the Court of Claims based its decision on the Internal Revenue Service's own formulation of the service contract exception, as set forth in the holdings of published and private rul-

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[4] *See, e.g.,* Rev. Rul. 72-407, 1972-2 C.B. 10 (in which vehicles supplied to a governmental unit were ineligible for the credit because the taxpayer gave up possession of the property and placed it with the user to enable the user to provide services for itself); LTR 7847075, August 28, 1978, (in which the service contract exception was applied to a communications satellite system developed in response to a government bid request, based on the government's lack of possession and control, the fact that the taxpayer bore the risk of loss during the service period, and the fact that the system was available to commercial users).

ings (other than Rev. Rul. 71-397). The court rejected the government's contention that the service contract exception cannot ever apply where the customer's own personnel operate the machines, because this factor was present in the first ruling adopting the exception (i.e., Rev. Rul. 68-109, 1968-1 C.B. 10). The court emphasized that *Xerox* was not a case in which the cost or value of the property dominated the price of the total arrangement. The court also noted that, conceivably, its decision would be different if the Treasury regulation had formulated the precise confines of the service contract exception.

Although the published and private rulings do not articulate any single test for use in determining whether an agreement is a service arrangement or a lease, the court felt that the factors deemed common to service contracts in those rulings related to two broad areas of inquiry: (1) the nature of the possessory interest retained by the taxpayer, and (2) the degree to which the property supplied is a component of an integrated operation in which the taxpayer has other responsibilities.

In holding that the possessory interest retained by the taxpayer was not sufficient to constitute a leasehold interest, the *Xerox* court focused on the following factors which were drawn primarily from the Internal Revenue Service rulings in which a service contract was held to exist: (1) the taxpayer retained ownership of the machines, (2) the taxpayer decided whether to repair, replace, or alter the machines, and the customer was prohibited from altering or moving the machines, (3) the taxpayer bore the cost of adjustments, repairs, and replacements, (4) the taxpayer was responsible for loss or damage, except in the case of a customer's negligence, and (5) the presence of a 15-day cancellation provision placed an economic risk on the taxpayers.

In the second area of focus used by the Internal Revenue Service in determining whether an agreement is a service contract—the degree to which the property is part of an integrated operation—the court did not view as significant the distinction made by the Internal Revenue Service between property used by a taxpayer to provide services to its customers and property placed with the customer to allow it to provide services to itself. The court found that the integrated nature of the taxpayer's contractual arrangement was demonstrated by (1) the taxpayer's policy of making like-for-like exchanges of machines, and (2) the fact that the amount paid by the customer was primarily determined by the number of copies made.

Finally, in holding that the taxpayer's contractual arrangements could reasonably be deemed to be within the purpose of the investment credit, the court focused on the fact that the taxpayer manufactured machines for all customers not just the government, and that governmental use represented only 5 or 6 percent of the taxpayer's machines.

Application of the service contract exception to the TAKX charter arrangement

The TAKX charter arrangement raises several issues relevant to the determination of whether the investment credit will be available to the Shipowner. The allocation of rights and duties among the

parties to the Time Charter and the purpose for which the TAKX ship is required by the Navy may distinguish the TAKX charter arrangement from the cases that have been considered by the Internal Revenue Service and the Court of Claim under the service contract exception.

Thus, even if the Navy were not considered to have acquired an ownership interest, it might be considered the user of the ships which would result in disallowance of the investment credit.

Nature of the possessory interest retained by the Contractor.—The following facts distinguish the TAKX transaction from the *Xerox* case and relevant rulings with respect to the degree of possessory interest: (1) neither the Shipowner nor the Contractor bears significant economic risks, (2) the Contractor can be replaced under circumstances in which the Time Charter continues, (3) in the event the Navy exercises its option to purchase prior to the end of the Time Charter, the Navy can require the Contractor to continue to operate the ship under the same terms as set forth in the Time Charter, (4) that the Navy can cause alterations to be made to the TAKX ship, and (5) the Time Charter contemplates that the Navy will have the services of the TAKX ship for substantially all of its useful life. These facts are an indication that the Navy has acquired a significant possessory interest in the TAKX ship.

The possibility that the Navy may have acquired a significant possessory interest is also indicated by the nature of the TAKX Program. Should the TAKX ship be required for military use in a time of conflict (the Time Charter is unclear on this point), it may be argued that the ship will be under the control of the Navy.

Integrated nature of the arrangement.—In contrast to the *Xerox* case, in which the taxpayer made periodic like-for-like exchanges of the machines, the Contractor providing the service (and not the vessel) under the TAKX charter arrangement could be replaced. Unlike the *Xerox* case, the capital hire payments are not based solely on the amount of services provided. Further, the continuation of capital hire payments during periods when the ship is not fully available for service and, conversely, the continuation of operating services in the event the Navy exercises its option to purchase, indicates that the service and the hire elements of the TAKX arrangements are separable.

Purpose of the investment credit.—In *Xerox*, the Court of Claims considered whether the allowance of the investment credit would run afoul of the purpose of the credit. The court focused on the fact that the taxpayer manufactured fungible machines for the use of governmental and commercial users alike in concluding that the government's demand and the taxpayer's traditional primary market were within the normal operations of economic incentives. In the case of the TAKX charter arrangement, TAKX ships are built-to-purpose solely for governmental use.

Foreign Tax Aspects

The characterization of the transaction can have a significant impact on the foreign tax credit position of the shipowner and the contractor. Under the Code, a taxpayer is generally permitted to reduce its U.S. income tax liability dollar-for-dollar by creditable

income taxes paid to foreign countries. This credit is limited so that the foreign taxes offset only the U.S. taxes imposed on foreign source taxable income.

The source of shipping income depends upon the characterization of that income as rental income (bareboat charter hire) or transportation service income, e.g., time or voyage charter hire. If the income is rental income it is foreign source income to the extent allocable to periods when the vessel is outside the United States and its territorial waters. If the income is payments for transportation services between points in the United States and points outside the United States the income would be allocated between U.S. source and foreign source by comparing costs incurred in the United States and costs incurred outside the United States. Therefore, in either case, if the vessels spend most of their time outside U.S. territorial waters, most of the income would be foreign source. Likewise, the related deductions would be foreign source. Accordingly, the tax benefits available to the lessor could reduce its available foreign tax credit.

However, under a special exception to the normal source of income rules, income and related deductions of a lessor of a vessel are treated as U.S. source income provided the vessel qualifies for the investment tax credit, is manufactured or constructed in the United States, and the lessee is a U.S. person (section 861(e)). If the shipowner is the owner of the vessel for tax purposes, and if the Navy has a contractual right to transportation services rather than a possessory interest, the shipowner's income might qualify for this exception. If the shipowner incurs a net tax loss on the transaction for a taxable year the shipowner could treat the tax benefits as U.S. deductions which do not reduce its foreign source taxable income and therefore do not reduce its available foreign tax credits.

In contrast to the shipowner, the contractor is taking the position that its income is transportation service income not lease income. Assuming this position is sustained, and assuming that the vessels are used primarily in foreign or international waters, most of the contractor's income would be allocated to foreign sources (see Treas. Reg. sec. 1.863-4). This allocation would increase the foreign tax credit limitation of the contractor. If the contractor has foreign tax credits sufficiently in excess of its U.S. tax on its foreign source income, then this increase in its foreign tax credit limitation would enable it to offset any U.S. tax imposed on the income from this transaction with these excess credits. As a result the contractor would pay no U.S. tax on its profit from the transaction and very likely would not pay any foreign tax either.

IV. GOVERNMENT'S COST OF TAKX ARRANGEMENTS

In this part, an estimate is made of the change in the government's capital cost of obtaining the use of a TAKX ship through the type of agreement entered into by the Navy rather than through a purchase. Solely for ease of exposition and without inference with respect to any of the legal issues discussed in part III, the agreement will be called a "lease" in this part and the shipowner and contractor collectively will be called the "lessor."

Economic reasoning leads to the conclusion that the government's capital cost is greater when it leases on a long-term basis than when it buys. When it leases, the government's capital cost consists of rental payments and net tax benefits to the lessor. For the lessor to be willing to enter into the lease, these rental payments and net tax benefits must be large enough to cover the lessor's capital costs, which are the following: the decline in the value of a ship as it ages, interest and principal payments to lenders for loans used to purchase the ship, a rate of return on equity provided by investors and used to purchase the ship, and fees paid to third parties for setting up and carrying out the lease. The market rate of interest paid by the lessor and the rate of return expected by its shareholders generally exceed the interest rate on government bonds, because of the government's superior credit. Therefore, when the government leases, it compensates the lessor for greater financing costs than the government would have borne had it borrowed funds and purchased the ship. Similarly, to the extent that extra fees are involved in arranging a sale and lease, and not merely a sale, the government compensates the lessor for expenses that the government would not have borne had it purchased the ship. Therefore, as a theoretical matter, unless the lessor miscalculates and charges unprofitably low rents, it should be expected that the government's capital cost will be greater when it leases a ship than when it buys it.

Two consultants' reports commissioned by the Navy contend that none of the tax benefits generated by a TAKX arrangement should be counted as a governmental cost of leasing. This argument, however, is erroneous. As explained in detail in the Appendix, consistent accounting for governmental leases requires that associated tax benefits be taken into account. The argument for not counting the tax benefits assumes that private parties would find an alternative means of sheltering their income from tax if the TAKX opportunity were not available. In effect, the argument assumes that the totality of investors, when presented with an additional profitable investment in TAKX ships, abandons or fails to start certain other investments which it also regards as profitable and would have carried out (but for the TAKX opportunity). The realistic response, on the contrary, is for investors to add the TAKX arrangements to the pool of profitable ventures to be undertaken. This increases the

total amount of tax benefits claimed for investments. But even if investors were to react as the argument assumes, it would mean that the tax benefits going to the TAKX program were crowding out investments in other sectors of the economy. This lost investment represents a social cost that is properly attributed to the TAKX program. Thus, in either event, net tax benefits to the Navy's lessor should be counted in the government's cost of leasing a TAKX ship.

The staff has developed a methodology for quantifying the change in the government's capital cost when a governmental department leases an asset instead of buying. The methodology is explained in detail in the Appendix below. This methodology has been applied to the data contained in one agreement relating to the TAKX ship identified as "Maersk vessel number three". This is the only agreement made available to the staff at an early enough date to permit the detailed analysis which follows. Subsequently, four additional TAKX agreements were received in time to make certain computations that also are reported.

The results of the analysis of one TAKX agreement are summarized in the table. Each of the items in the table is expressed in dollars of constant value, so that they can be compared directly. Specifically, dollars are of the same present value as when the lease begins or, in the alternative, the purchase is made. A discount rate of 10.25 percent per year was used to compute these present values. This means, for example, that a $1 rental payment due one year after the lease begins is equivalent to a 90.7-cents payment on the day the lease begins. The 10.25-percent discount rate is the rate that bidders for the contract were instructed by the Navy to use in their submissions (Amended Solicitation N00024-82-R-2051, Attachment D, p. 3), apparently with reference to provisions of Circular A-94 of the Office of Management and Budget.

The table is divided into three columns. The Navy account shows the change in on-budget capital outlays, over the useful life of the ship, when it is leased rather than purchased. The Treasury account shows the change in tax revenues when the ship is leased. The Government account is the sum of the Navy and Treasury accounts. It shows the total change in the government's capital cost for the ship due to leasing instead of buying.

In the Navy account, the government, by leasing, saves the cost of purchasing the ship. This amount, $178.2 million, does not include the additional $4.2 million in legal fees and other fees which were paid by the lessor for arranging the lease and which the lessor treats as a capitalized cost. Then, over the term of the lease, the Navy will pay capital rents amounting to $131.7 million in present value. Finally, in order to have the ship after the 25-year lease expires, as the government would if it had purchased the ship initially, the Navy will pay an estimated $9.5 million in present value to acquire the used ship. This estimate is based on an assumed inflation rate of 6 percent and a 1979 study of economic depreciation commissioned by the Treasury, which determined that 7.5 percent is the best estimate of the annual rate of decline in the market price of ships and vessels (measured in inflation-corrected dollars on a declining balance basis). Adding all items in the Navy

account, the leasing of this ship is estimated to reduce on-budget capital outlays by $37 million in present value.

In the Treasury account, leasing gives rise to income tax items for the lessor that the government would not provide to or assess against itself, were it the owner of the ship by purchase. The lessor is assumed to pay the top corporate tax rate of 46 percent. Thus, revenues are reduced by $81.2 million in present value for the 10-percent investment credit and cost recovery (ACRS) deductions allowed for the lessor's depreciable basis of $178.2 million. Solely for purposes of conforming with assumptions stated in the TAKX agreement, this assumes that the property is not subject to the general rule enacted in the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA), that depreciable basis must be reduced by one-half the investment credit allowed (Code sec. 48(q)). An estimated $4.4 million of the ACRS benefit is recaptured when the government purchases the ship at the end of the lease. In addition, revenues are reduced in present value by $39.5 million for the lessor's interest deductions and by $0.7 million for the amortization of legal fees and other fees. Finally, revenues are increased in present value by $59.2 million for the lessor's rental income. Adding all items in the Treasury account, the leasing of this ship is estimated to reduce tax revenues by $57.8 million in present value.[1]

Combining the accounts, the leasing of Maersk vessel number three is estimated to increase the government's capital costs of having the use of this ship by $20.8 million in present value. That is, the government's cost of this leased ship is estimated to be $199 million, approximately 11.7 percent higher than its purchase price. Inclusive of the residual value of the ship at the end of the lease, the lessor's estimated after-tax rate of return on investment is estimated to be 14 percent.

CHANGE IN GOVERNMENT'S CAPITAL COST BY LEASING INSTEAD OF BUYING MAERSK VESSEL NUMBER THREE

[In millions of dollars in present value, discounted at 10.25 percent annually]

Item	Navy account	Treasury account	Government account
Cost, new ship	−178.2		−178.2
Rental payments	131.7	−59.2	72.5
Tax benefit, ACRS		81.2	81.2
Cost, used ship	9.5	−4.4	5.1
Tax benefit, interest deductions		39.5	39.5
Tax benefit, amortized fees		.7	.7
Total	−37.0	57.8	20.8

[1] To maintain comparability with the data contained in the Navy's agreement, the lessor is assumed to be 80-percent current in the payment of corporate income taxes for the taxable year. However, as a result of changes made in TEFRA, corporations in general must be at least 90-percent in these payments (Code sec. 6655(b)).

The staff also has applied this methodology to data contained in the four additional TAKX agreements which subsequently became available. Analysis of the four contracts indicates that the government's cost of leasing a TAKX ship exceeds the purchase price by 11.7 percent, on average. Using this average for the entire TAKX program implies that the government will pay an extra $270 million by leasing rather then purchasing,

Two consultants' reports relating to the lease-versus-buy decision were completed for the Navy in 1982 (Coopers & Lybrand, "Analysis of the Convert and Charter Program;" and Argent Group, "TAKX Maritime Prepositioning Ships, Relative Financing Costs of Charter and Purchase, Supplemental Report"). The Coopers & Lybrand study considered hypothetical acquisition costs, rents and other dollar values, apparently because the actual lease terms were yet to be decided. It found that the government's cost of leasing would exceed the cost of purchasing in every case for which both on-budget outlays and net tax benefits were computed. However, the study termed it questionable to count tax benefits as a cost of the leasing program, on the assumption "that if the Navy does not go forward with its charter program, private sector firms will simply find other vehicles for sheltering their income" (pp. B-1 and B-3). The invalidity of this conclusion has already been discussed above. Subsequently, the Argent study was completed, using acquisition costs, rents and other dollar values that apparently were much closer to the actual terms of the Navy's contracts. This study concluded that the cost of leasing, inclusive of net tax benefits, would be less than purchasing. However, the Argent study includes as a revenue gain from leasing the income tax on interest income to the lessor's creditors, who are assumed to pay the top corporate tax rate on the income. Correction of this double-counting—as interest income also would have been earned had the government borrowed to purchase the ship—would reverse the study's conclusion. (A consistent way to account for interest income is elaborated in the Appendix below.) Argent's methodology differs from the staff's approach in two other respects. First, Argent assumes that in present value the ship is worthless at the end of the 25-year lease. Second, it assumes that an amount equal to the lessor's additional legal fees for arranging the lease would have been paid by the government even if the Navy purchased the ship instead of leasing it.

V. POLICY ISSUES: LEASING BY NONTAXABLE ENTITIES

A. General Issues

As a general rule, nonprofit entities such as Federal Government departments and agencies, State and local governments, and charitable and educational organizations receive no benefit from cost recovery deductions or the investment tax credit because they are tax-exempt.[1] However, in some circumstances, the law permits taxable companies to purchase, and claim certain tax benefits on, assets which are subsequently leased to nonprofit entities. In these lease transactions a portion of the tax benefit available to the lessor is passed through to the nontaxable lessee in the form of lower rents. Thus, the leasing arrangement allows certain tax benefits to flow through to nontaxable entities which are not eligible for them on their own account. This can result in a negative effective tax rate on the assets leased by nontaxable entities because they receive many tax benefits but, unlike taxable entities, do not pay tax on the income generated by these assets. The issue here is whether persons leasing assets to nontaxable entities should be granted, from the standpoint of legal and economic policy, *eligibility* for tax benefits on the same basis as persons leasing to taxable entities.

In addition to the eligibility issue, leasing raises the question of *efficiency:* does leasing create an incentive for nonprofit entities to select the least costly method of procurement? Alternatively, does all of Treasury's revenue loss due to leasing end up benefitting the nonprofit lessee, or is some of the benefit dissipated in the form of private profits and legal and administrative expenses?

A third policy issue is the impact of leasing on the budget process. Lease procurements are accounted for differently than ordinary purchases on the books of many nonprofit entities. This may disguise the nature of the outlays and reduce *accountability.* The problem is not limited to nonprofit entities: leasing constitutes a significant source of off-balance sheet financing in the corporate sector. Typically lease obligations appear in the operating budget rather than in the capital budget, thereby obscuring the multi-year financial commitment of the lessee. The budget process may also be distorted to the extent that a portion of the capital cost of the leased asset is shifted from the lessee's budget to the tax account of the U.S. Treasury.

A fourth policy issue is that control over leased property may be sacrificed by units of government in order to qualify for leasing tax benefits. A leveraged lease is an extremely complex legal arrange-

[1] The law provides, however, that the unrelated business income of tax-exempt organizations is subject to the corporate income tax. Thus, an unrelated business of a tax-exempt organization is eligible for the investment credit and ACRS depreciation, and its income is taxed at the corporate rate.

ment involving numerous participants, including investment bankers, commercial banks, insurers, contractors, trustees, and investors, each with their own set of interests. Government lessees may not be able to guarantee that the leased property is at all times used in the public interest, and there is a risk of prolonged litigation to enforce contractual obligations. In the case of the TAKX program, for example, serious conflicts of interest could arise if the Navy required sealift support in a high danger area, because the ships are manned with civilian crews under the Time Charter Agreement.

Finally, leasing by Federal, State, and local government units may erode the public's confidence in the tax system. After the enactment of the safe-harbor leasing provisions in 1981, there was a widespread public perception that these provisions were unfair. Ultimately, these sentiments played a role in Congress's decision to phase-out safe-harbor leasing in the Tax Equity and Fiscal Responsibility Act of 1982. To the extent that government leasing appears to be tax motivated the public may question the equity of the tax system as a whole.

From the perspective of Congress, the relative importance of these issues varies according to whether the nonprofit lessee is: (1) a Federal department, (2) a State or local government, or (3) a charitable or educational organization. The remaining portion of this part is devoted to a brief analysis of leasing issues in the context of these three types of nonprofit organizations, and a discussion of possible reforms.[2]

B. Federal Government Departments and Agencies

From an economic viewpoint, the after-tax price of capital should not depend on whether it is used by the private or the public sector; otherwise, it is likely that too much capital will be used in the sector where the price is cheap, and too little capital will be deployed where the price is dear. An implication of this viewpoint is the principle of neutrality which states that the effective rate of tax on capital (and other income-producing factors) should be equalized across all sectors of the economy. Starting from this proposition, some have argued that the public sector should be eligible for the benefits of accelerated depreciation and the investment credit (either directly or through leasing arrangements) because the private sector receives these tax benefits. This argument, however, neglects the fact that private corporations pay tax on the income generated from capital investments while government agencies do not. By the principle of neutrality, if tax benefits are passed through to government agencies, then so too should the burden of the income tax. Private companies have a relative advantage only to the extent that the tax benefits exceed the tax burdens of capital acquisition.

In certain circumstances, however, the law does permit private companies to enjoy the benefits without the burdens of the corporate income tax. This situation arises when a company in a non-tax

[2] The policy issues involved in leasing to taxable organizations are examined in, "Analysis of Safe Harbor Leasing," a report by the staff of the Joint Committee on Taxation, June 14, 1982, (JCS-23-82).

position, perhaps as a result of losses carried over from prior years, captures certain tax benefits by leasing from a taxable lessor. In the loss company case, tax benefits associated with a leased asset flow through without any offsetting tax liability on the income produced by the asset until the loss carryover is exhausted (if ever). As a result, long-term loss companies can achieve substantially negative effective tax rates by leasing.[3] Thus, the issue appears to be whether the government and other nontaxable entities should be put on the same footing as taxpaying corporations (by denying some tax benefits for property leased to them) or as loss corporations (by allowing full passthrough of tax benefits).

Another argument that has been made to justify government leasing is that it is more efficient than ownership. For example, a one day auto lease is presumably less expensive than buying a vehicle and reselling it the next day. To evaluate this argument it is useful to examine the nature of the service which a lessor provides. Four distinct services can be identified: (1) purchasing, (2) financing, (3) operating and maintaining, and (4) reselling. The relevant question is whether a lessor can perform these tasks at a lower cost than the government. To answer this question it is useful to divide leasing arrangements into two broad categories: long-term and short-term.

In a long-term lease, the lessee exercises continuous control over deployment throughout the useful life of the property; while in a short-term lease, the lessee controls the property for only a small proportion of its service life. If the property is useless to anyone but the current lessee, the lease must be long-term in nature. Examples include equipment which has been customized to the lessee's operation, or plant which is immobile (or movable only at high cost). On the other hand, property which can be used by a large number of lessees, is standardized in design, and relatively easy to transport, is more suitable for the purposes of short-term leasing. Examples include office equipment and automobiles.

As a general rule it is unlikely to be cost effective for the government to procure property through a long-term lease, since the lessor seldom has a cost advantage in any of the four tasks enumerated above. First, if the government intends to hold onto the property for its entire useful life, there are no reselling costs involved. Second, the lessor will generally have a purchasing cost advantage only in circumstances where he is a larger buyer than the government agency. Third, because of the government's superior credit, the lessor will almost never have lower financing costs. And, fourth, if the lessor has lower operating and maintenance (O&M) costs then the least cost option is likely to be to buy the property and to contract with the lessor only for O&M services.

Short-term leasing, on the other hand, may be cost effective for government agencies. Purchasing can be uneconomical when the government intends to use the property for only a small portion of its service life because the buying and reselling costs are written off over such a short period of use. However, even short-term leases

[3] See Jane G. Gravelle, "Safe Harbor Leasing Under the Economic Recovery Tax Act of 1981 and Investment Efficiency," Congressional Research Service, May 12, 1982; and "Analysis of Safe Harbor Leasing," a report by the staff of the Joint Committee on Taxation, June 14, 1982.

are not necessarily cost effective because lessors generally have higher financing costs than the government which are passed through (along with the lessor's profit) in the form of higher rental charges.

In the case of the TAKX program, the Navy has procured the use of 13 cargo ships, over a 25 year period, by means of a lease agreement described in the Charter Agreement. The Charter Agreement specifies that the Navy will control the deployment of these cargo ships over the lease period, and that the Navy has an option to purchase prior to the expiration of the lease term. The TAKX program appears to fall within the category of a long-term lease, as described above, since the ships are being built to the Navy's specifications, and the Navy intends to use the cargo ships over a substantial portion of their service life. Thus, by the foregoing argument, it is unlikely that leasing results in any cost advantage to the government relative to purchasing the ships outright. Whether or not private crews can operate and maintain these vessels at a lower cost than the Navy is a separate question. If private crews are cheaper, then the Navy's least cost alternative probably is to purchase the ships and contract out the O&M. (A detailed analysis of the excess cost due to the Navy leasing program is presented in part IV.)

An argument against leasing by government agencies is that it may distort the budget process. In the case of a Federal department, a multi-year procurement program is funded, at the start, by a budget authorization which appears in the procurement portion of the department's budget account. The actual cash expenditure in each year of the procurement program appears as an outlay item in the procurement portion of the budget account. If the department acquires the same property through a leasing arrangement, the authorization for cumulative lease payments does not appear as a separate item in the budget. The annual rental payments appear as an outlay item in the O&M budget rather than in the procurement account.

Leasing also distorts the budget process to the extent that procurement costs are shifted from the department's budget to the U.S. Treasury through reduced tax revenues. Since the portion of the department's procurement program paid for by reduced tax revenues to the Treasury does not appear as a separate budget item, the total government cost of procurement cannot be ascertained from the unified federal budget. In summary, leasing shifts the disbursement of funds from the department's procurement account to its O&M account, and from the department's budget to the tax account of the Treasury. These discrepancies between the budgetary accounting for procurement by purchase and by lease make it difficult to determine the true cost to the government of Federal department leasing programs.

Another argument that has been raised against government department leasing is that the department forfeits too much control over the project. In the case of a construction project, involving a substantial number of jobs, Congress may not be able to ensure that a portion of these jobs are created in areas of high unemployment if the department finances the project through a leasing arrangement. Another example is a defense agency lease of military

hardware. In the event of war, the interests of the lessor and the defense agency might differ considerably about the deployment of the property. Conceivably, a leasing arrangement could pose a serious threat to the national defense if leased hardware were needed in an emergency.

Finally, some assert that leasing by Federal government agencies reduces the public's confidence in the operation of the tax system. To the extent that large lessors are able to reduce their tax payments to the Treasury by engaging in leasing transactions, leasing may appear inequitable. Also it may seem improper for Federal departments to participate in tax-motivated leases. These perception problems could lead to lower taxpayer compliance.

C. State and Local Governments

In recent years there has been a large increase in the level of State and local government lease activity. This phenomenon may be due to the difficulty in passing bond issues and the abnormally high real interest rates which now must be paid on many municipal bond issues. Certainly, leasing by State and local governments raises the issue of accountability since it circumvents debt limitations and the bond referendum process. But the important issue, from the federal government's perspective, is the drain on the Treasury caused by this surge of State and local government leasing activity. Unfortunately, the proportions of the problem cannot be determined accurately at this time since no aggregate data exists on the level of State and local government leasing activity, or the terms on which these governments obtain lease financing.

Consider the case of a city government which wishes to acquire a new $4 million building to use as its city hall. The conventional procedure is for the city to hold hearings and to have a referendum on a $4 million bond issue. Alternatively, the city government could, without a bond referendum, enter into a long-term lease for the building, and use general revenues to pay rent to the lessor. Due to tax benefits, the present value of lease payments is *less* than the $4 million it would cost the city to buy the building itself. An estimate of the present value of the city's rental and residual payments might be $3 million. The lessor can afford to set rental payments below the purchase price of the building because of the tax benefits he receives from deductions for accelerated depreciation and interest expense. The value to the lessor of these tax benefits could easily amount to $1.5 million. Of these tax benefits, $1 million would go towards the purchase price of the city hall building, and $0.5 million would be left over to cover the lessor's profit and administrative costs. Although there is no line item in the Federal budget, the city government has nevertheless been able to pay for one-quarter of its new city hall with federal tax dollars. This could be viewed as off-budget revenue sharing, and it may be a less efficient way to aid State and local governments than ordinary revenue sharing because some of the Federal cost is absorbed by middlemen involved in structuring the lease.

Congress already provides assistance through the tax system by means of the exclusion, from federal tax, of interest paid on municipal bonds. The 1982 combined cost to the U.S. Treasury of the ex-

clusion of interest on State and local housing, pollution control, hospital, industrial development, and general purpose bonds was over $10 billion. Leasing increases the amount of assistance that State and local governments receive through the tax system. In some instances, State and local governments combine the benefits of leasing and tax-exempt debt in the same transaction (tax-exempt leverage lease financing). Because the magnitude of these leasing tax benefits is unknown, it is difficult for Congress to evaluate this type of assistance. Unlike housing or hospital bonds, for example, the use of leasing benefits is not restricted to any particular purpose. Furthermore, for both municipal bonds and leasing arrangements, Congress relies on intermediaries to pass through tax benefits to State and local governments. A sizable portion of the revenue loss to the Treasury may be drained away by these intermediaries instead of being passed through to State and local governments. Therefore, in an efficiency sense, on-budget revenue sharing is more efficient than assistance through the tax system.

D. Tax-Exempt Organizations

As in the case of State and local governments, there is no aggregate information available on the level of leasing activity by tax-exempt organizations. Thus, there is no way to estimate the revenue loss to the Treasury as a result of these types of leases. In the case of leasing by unrelated businesses owned by tax-exempt organizations, the law treats the income of these businesses as taxable. The policy issues here are the same as for corporate leasing generally, since the tax treatment is the same. However, for leased property used in a related activity, the question of eligibility arises: did Congress intend that tax-exempt organizations should receive tax benefits from leased property which they would not be eligible for if they purchased the property? Furthermore, because these tax benefits do not appear in the unified federal budget, it is difficult for Congress to determine the amount of tax revenue given up as a result of nonprofit leasing.

E. Possible Directions for Change

Leasing raises important issues of eligibility, efficiency, and accountability at all levels of government. Federal departments, state and local governments, and tax-exempt organizations can obtain tax benefits through leasing which would otherwise be denied to them. These tax benefits come directly out of Treasury's receipts and increase the federal deficit. In addition, there is reason to suspect that a significant portion of the benefit is drained away by middlemen instead of benefiting the nontaxables. Thus, compared to on-budget outlays, assistance through the tax system may be inefficient. Last, because the revenue loss to the Treasury does not appear in the budget, and is not broken down by agency or function, it is hard for Congress to evaluate the costs of leasing.

Under current law, the investment credit is denied on property used by units of government and tax-exempt organizations unless use of the property is obtained by means of a service contract. One possible change would be to deny the investment credit to property used by units of government that is obtained by a long-term lease,

whether or not the contract is structured as a service or a capital lease. Generally, this would have the effect of denying the investment credit to nonprofit entities where tax benefits are an important motivation for the lease.

A corollary change would be to deny some of the benefit from ACRS depreciation to property used by units of government and tax-exempt organizations where use is obtained by means of a long-term lease, whether or not the contract is structured as a service or a capital lease.

Another direction for reform would be to increase accountability for long-term lease transactions. In the case of federal departments, this might be achieved by a requirement that the authorized amount for cumulative lease payments appear in the procurement section of the department's budget rather than in the O&M account. Second, federal departments might be required to compute the cost to the Treasury of their long-term leasing proposals for the use by the congressional authorizations and appropriations committees.

For State and local governments as well as tax-exempt organizations, accountability could be improved by including the Treasury cost of their long-term leasing agreements in the tax expenditure budget prepared annually by the OMB, the JCT staff, and the Congressional Budget Office.

APPENDIX: ACCOUNTING FOR GOVERNMENT LEASES

The purpose of this Appendix is to describe the method of accounting for government leases used in part IV. This economic accounting framework measures both the outlay and revenue costs of leasing and adjusts for the fact that outlays in future years are less burdensome than current outlays.[1] This provides a more accurate indication of the costs to the government of multi-year procurement programs than does the unified federal budget. The staff believes that the economic accounts permit a more meaningful comparison of the real costs to the government of leasing versus buying.

Economic accounts can be calculated on a pre-tax or an after-tax basis. The pre-tax method discounts before-tax outlays at a before-tax discount rate, while the after-tax method discounts after-tax outlays at an after-tax discount rate. Although both methods yield similar results, the pre-tax method is easier to implement since tax reflows to the Treasury need not be measured. The pre-tax accounting system is explained in the first part of this section. Some analysts have claimed that while leasing appears unfavorable to the government from a pre-tax point of view, the after-tax accounting method shows leasing to be advantageous. To address this issue, an after-tax accounting methodology is described in the second section of this Appendix. The staff's conclusion is that both methods of accounting show leasing to be more expensive to the government than buying.

A. Pre-tax Accounting Method

For capital budgeting purposes, OMB directs government agencies to measure the real resource cost of multi-year outlay programs using the pre-tax method. All future outlays obligated by and incidental to a procurement program are discounted at a specified pre-tax rate. OMB chooses a discount rate which reflects the pre-tax cost of funds: the prevailing interest rate on government bonds. The pre-tax cost of funds is larger than the after-tax cost by the amount of taxes paid on the interest income received by the owners of government bonds. Since this tax reflow to the Treasury is already included in the pre-tax discount rate, it would be double-counting for government agencies to adjust their outlays by the estimated reflows. The Argent study's conclusion ("TAKX Maritime Prepositioning Ships, Relative Financing Costs of Charter and Purchase, Supplemental Report"), that leasing is less expensive than buying TAKX ships, appears to be a result of their inappropriate double-counting of tax reflows.

[1] It is assumed that whether or not the government leases, it intends to control deployment throughout the useful life of the property.

On a pre-tax basis, the cost to a government agency of buying an asset is just the purchase price. If the agency leases, the cost which should appear on the agency's budget is the present value of all payments to the lessor pursuant to the leasing agreement. These payments include rents and the cost of buying the property from the lessor at the end of the lease (the residual). From the Treasury's perspective, there is no revenue impact if the agency buys the asset since the normal reflow attributable to the tax on interest paid to government bondholders is accounted for in the pre-tax discount rate set by OMB. However, if the agency enters into a leveraged lease, there is a reduction in Treasury receipts due to the net tax benefits available to the lessor. The lessor's overall tax liability decreases as a result of the lease because the investment credit and the deductions for accelerated depreciation and interest expense exceed the income attributable to rental and residual payments. Since government agencies cannot claim the investment credit or accelerated depreciation, there is no comparable revenue loss to the Treasury if the agency buys rather than leases from a taxable intermediary. Clearly, leasing is an arrangment which allows tax benefits to be passed through to entities which are not eligible for them on their own account, such as federal government departments, State and local governments, and non-profit institutions.

The total government cost of procurement is the present value of the outlays which appear on the agency's budget plus the present value of the revenue loss to the Treasury. This revenue loss does not, of course, appear under the agency's outlay budget but is reflected in reduced tax revenues and, hence, a larger budget deficit. The agency, Treasury, and total government cost of procurement is shown in Table 1. For lease financing, the total government cost of procurement equals the present value of rent and residual payments (on the agency budget), plus the present value of tax benefits to the lessor (on the Treasury account). If, instead, the agency buys, the total government cost of procurement just equals the purchase price on the agency account (since there is no Treasury impact). Thus, from a total government perspective, the additional procurement cost due to lease financing is the difference between the total government cost of leasing (agency plus Treasury cost) and the purchase price.

TABLE 1.—PRE-TAX ECONOMIC ACCOUNTS: LEASE VERSUS BUY

[All amounts in present value and discounted at a pre-tax rate]

Agency finance method	Agency cost	Treasury cost	Total Government cost
Lease	Rent +Residual	Tax benefits	Rent +Residual +Tax benefits.
Buy	Purchase price.		Purchase price.

TABLE 1.—PRE-TAX ECONOMIC ACCOUNTS: LEASE VERSUS BUY—Continued

[All amounts in present value and discounted at a pre-tax rate]

Agency finance method	Agency cost	Treasury cost	Total Government cost
Lease minus buy.	Rent ..... +Residual..... −Purchase price.	Tax benefits	Rent +Residual +Tax benefits −Purchase price.

B. After-Tax Accounting Method

Some advocates of government leasing have claimed that the pre-tax accounting method is unfair to leasing since certain tax reflows to the Treasury are ignored. In particular, it is argued that the tax paid on the interest received by the holders of the lessor's debt reduces the revenue loss to the Treasury. To evaluate this type of argument, it is necessary to calculate the economic accounts in after-tax dollars. Since outlays are reported net of tax reflows in the after-tax method, future year amounts should be discounted at the government's after-tax cost of funds. The after-tax discount rate is just the pre-tax cost of funds specified by OMB minus the portion of costs recovered through the tax reflow on bondholders' interest income. Notice that it is inappropriate to discount after-tax outlays at OMB's pre-tax cost of funds since this effectively double-counts tax reflows.

If in 1985 the Department of Defense (DOD) intends to purchase a ship, and other spending is not cut, then either tax revenues must be increased or the Federal debt will rise to cover the ship's cost. Therefore, the government's cost of financing is the general revenue devoted to the project plus the present value of principal and interest payments on the government's bond issues used to finance the project. However, if the DOD hires a lessor to finance the ship, the Department's cost is just the present value of rent and residual payments.

Accounting for tax reflows, Treasury's revenues increase when the government buys a ship because of the taxes paid by the recipients of interest on government bonds. Thus, the cost of buying a ship is negative on the Treasury's account. In the case of a lease, Treasury's revenues are reduced by the tax benefits in the lease, and revenues are increased by the reflow from: (1) taxes paid by the lessor's creditors, and (2) taxes paid on the fee income earned by the attorneys and other middlemen who structure the lease.

The total government cost of procurement is the present value of the agency's outlays plus the Treasury's revenue loss, discounted at the after-tax rate. The agency, Treasury, and total government cost of procurement are shown in Table 2. In the after-tax accounting framework, the total government cost of leasing is the present

value of the agency's payments to the lessor plus the Treasury's net revenue loss after reflows. If the agency buys, the total government cost is the financing expense (general revenue and debt service) minus reflows to the Treasury from the taxes paid by government bondholders. The difference between the total government cost of leasing and buying, as shown in Table 2, depends on the relative financing costs of the government and the lessor (after reflows), and the tax benefits in the lease.

TABLE 2.—AFTER-TAX ECONOMIC ACCOUNTS: LEASE VERSUS BUY

[All amounts in present value and discounted at an after-tax rate]

Agency finance method	Agency cost	Treasury cost	Total Government cost
Lease	Rent +Residual	Tax benefits −Creditor's tax. −Middlemen's tax.	Rent. +Residual. +Tax benefits. +Creditor's tax. −Middleman's tax.
Buy	General revenue. +Interest +Principal	−Bondholder's tax.	General revenue. +Interest. +Principal. −Bondholder's tax.
Lease minus buy.	Rent +Residual −General revenue. −Interest −Principal	Tax benefits −Creditor's tax. −Attorney's tax. +Bondholders' tax.	Rent. +Residual. +Tax benefits. −Creditor's tax. −Attorney's tax. −General revenue. −Interest. −Principal. +Bondholder's tax.

C. Pre-tax Economic Analysis of Lease Versus Buy Decision

The pre-tax and after-tax accounting methods described above can be used to compare the total government cost of leasing and buying. In this section it is shown that the additional costs of leasing can be allocated to three sources: (1) the lessor's profit, (2) the difference between the lessor's and the government's cost of financing, and (3) the legal and administrative fees associated with the lease. The staff concludes that long-term leasing cannot be cheaper than buying unless the lessor has such a large financing cost advantage over the government that it offsets his profits and fees.

The measurement of leasing costs starts with the definition of the lessor's net economic income (profit). Profit equals rent plus residual income, less the sum of taxes, interest, principal, and fee payments and the equity insertion

$$\text{PROFIT} = \text{RENT} + \text{RESIDUAL} - \text{TAXES} - \text{INTEREST} - \text{PRINCIPAL} - \text{FEES} - \text{EQUITY}.$$

The lessor's tax benefit is the reduction in his tax liability as a result of the lease (i.e., the negative of taxes paid)

$$\text{TAX BENEFITS} = -(\text{TAXES PAID}).$$

The agency's cost of leasing is the present value of rent and residual payments made to the lessor

$$\text{AGENCY COST} = \text{RENT} + \text{RESIDUAL}.$$

The lessor's pre-tax financing cost consists of equity, debt service, and fees

$$\text{LESSOR FINC COST} = \text{EQUITY} + \text{INTEREST} + \text{PRINCIPAL} + \text{FEE}.$$

Using these definitions, the lessor's profit can be written as the sum of tax benefits and agency costs minus the lessor's financing cost

$$\text{PROFIT} = \text{TAX BENEFIT} + \text{AGENCY COST} - \text{LESSOR FINC COST},$$

where all amounts are in present value.

On a pre-tax basis, the excess procurement cost due to lease financing is the difference between the total government cost of leasing (agency cost plus tax benefits) and the direct purchase price (see Table 1). Therefore, the pre-tax excess cost of leasing is given by

$$\text{PRE-TAX EXCESS COST} = \text{AGENCY COST} + \text{TAX BENEFIT} - \text{PRICE}.$$

Using the formula for the lessor's profit derived above, it can be seen that the pre-tax excess cost of leasing is equal to the lessor's profit and financing cost minus the purchase price

$$\text{PRE-TAX EXCESS COST} = \text{PROFIT} + \text{LESSOR FINC COST} - \text{PRICE}.$$

Therefore, leasing imposes an excess cost to the extent that the government must pay for the lessor's profit and excess financing costs.

The lessor's financing cost can be analyzed by exploiting the "bond interest rule." [2] The bond interest rule states that the pres-

[2] The bond interest rule holds for all debt instruments, such as government bonds, on which: (1) interest is paid on the unpaid principal, and (2) cumulative principal payments sum to the loan amount.

ent value (PV) of principal payments equals the loan amount minus the product of the present value of interest payments and the ratio of the discount rate (g) to the interest rate (i)

$$\text{PV PRINCIPAL} = \text{LOAN} - \left(\frac{g}{i} \times \text{PV INTEREST}\right)$$

Using the bond interest rule, the lessor's financing cost can be rewritten as the sum of the project's equity and loan amounts, plus the cost due to the difference between the lessor's pre-tax borrowing rate (i) and the government's pre-tax cost of funds (g)

$$\text{LESSOR FINC COST} = \text{EQUITY} + \text{LOAN} + \left(i - \frac{i-g}{i} \times \text{PV INTEREST}\right) + \text{FEE}.$$

The difference between the lessor's and the government's borrowing rates (i−g) is attributable to the market's perception that the lessor has a greater risk of default than the government. Accordingly, the last term in the lessor's financing cost equation can be thought of as the risk premium on the lessor's debt. Since the equity and loan financed portions of the project sum to the full purchase price, the expression for the lessor's financing cost can be simplified to yield

$$\text{LESSOR FINC COST} = \text{PRICE} + \text{RISK PREMIUM} + \text{FEE}.$$

This shows that the lessor's financing cost can be broken down into three components: the price of the project, the risk premium on the lessor's debt, and the fees paid to third parties to structure the lease.

From the preceding expression for the lessor's financing cost it may be seen that the pre-tax excess cost to the government of leasing is equal to the sum of the lessor's profit, risk premium, and fees.

$$\text{PRE-TAX EXCESS COST} = \text{PROFIT} + \text{RISK PREMIUM} + \text{FEE}.$$

In conclusion, even if the lessor and the government have exactly the same cost of funds, there can be no gain to the government from leasing if the lessor earns a profit or there are legal and other fees associated with the transaction. Normally the lessor's cost of funds exceeds the government's by a risk premium which is passed on to the government in the form of higher rents. That is, the government pays an excess cost to lease whenever it contracts with a lessor whose borrowing rate is larger than its own.

D. After-tax Economic Analysis of Lease Versus Buy Decision

On an after-tax basis, the excess cost attributable to lease financing is net of tax reflows arising from taxes paid by the lessor's creditors and lawyers, if the government leases, and from the government's bondholders, if the government purchases. By definition, the difference in reflows between leasing and buying is given by

$$\text{REFLOW} = \text{CREDITOR'S TAX} + \text{ATTORNEY'S TAX} - \text{BONDHOLDERS' TAX}.$$

Notice that the leasing reflows (creditor's and middleman's tax) are offset, more or less, by the reflows that arise if the government purchases (the tax paid by the government's bondholders).

The government's financing cost is the sum of the general revenues devoted to the project plus the present value of interest and principal payments discounted at the after-tax cost of funds

$$\text{GOVT FINC COST} = \text{GENERAL REVENUE} + \text{INTEREST} + \text{PRINCIPAL}.$$

Using these definitions, the after-tax excess cost of lease financing (see Table 2) may be written as

$$\text{AFTAX EXCESS COST} = \text{AGENCY COST} + \text{TAX BENEFIT} - \text{REFLOW} - \text{GOVT FINC COST}.$$

From an after-tax perspective, the excess cost of leasing is equal to the difference between the total government cost of leasing (agency cost plus Treasury cost minus net reflow) and the cost to the government of self-financing. From the definition of the lessor's profit the after-tax excess cost of leasing can be re-expressed as

$$\text{AFTAX EXCESS COST} = \text{PROFIT} + \text{LESSOR FINC COST} - \text{GOVT FINC COST} - \text{REFLOW}.$$

Therefore, leasing imposes an excess cost to the extent that the government must pay for the lessor's profit and excess financing costs (after reflow).

The lessor's and government's financing costs can be analyzed by means of the bond interest rule. The appropriate rate for discounting outlays net of tax reflows is an after-tax rate. From the government's perspective, the after-tax cost of funds (r) is the pre-tax rate on government bonds (g) times (l-m), where m is the marginal tax rate on interest income

$$r = (1 - m)\, g.$$

Using the bond interest rule it can be seen that the government's cost of financing may be re-expressed as

$$\text{GOVT FINC COST} = \text{GEN REVENUE} + \text{LOAN} + \left(\frac{g - r}{g} \times \text{PV INTEREST}\right).$$

The last term in the government's financing cost equation is equal to the taxes paid by government bondholders: that is, the tax rate on interest income (m) times the present value of interest payments on the government's bonds. Since the general revenue and loan financed portions of the project sum to the purchase price, the

expression for the government's financing cost may be simplified to yield

$$\text{GOVT FINC COST} = \text{PRICE} + \text{BONDHOLDERS' TAX}.$$

Lessor's financing cost, at an after-tax discount rate, can also be determined from the bond interest rule

$$\text{LESSOR FINC COST} = \text{EQUITY} + \text{LOAN} + \text{FEE} + \left(\frac{i-r}{i} \times \text{PV INTEREST}\right).$$

The last term of the expression for lessor's financing cost can be rewritten as follows:

$$\left(\frac{i-r}{i} \times \text{PV INTEREST}\right) = (1-m) \times \left(\frac{i-g}{i} \times \text{PV INTEREST}\right). + (m \times \text{PV INTEREST}).$$

This can be interpreted as the sum of the after-tax risk premium on the lessor's debt and the taxes paid on the interest income received by the lessor's creditors. Since the equity and loan financed portions of the project sum to the purchase price, the expression for the lessor's financing cost may be simplified to yield

$$\text{LESSOR FINC COST} = \text{PRICE} + (1-m) \times \text{RISK PREMIUM} + \text{FEES}.$$

This shows that the lessor's financing cost can be broken down into three components: the price of the project, the after-tax risk premium on the lessor's debt, and the fees paid to structure the lease.

From this analysis of the government's and lessor's financing costs, it may be seen that the after-tax excess cost to the government of leasing is equal to the sum of the lessor's profit, after-tax risk premium, and after-tax fees.

$$\text{AFTAX EXCESS COST} = \text{PROFIT} + \text{AFTAX RISK PREMIUM} + \text{AFTAX FEES}.$$

In conclusion, even if the lessor can borrow at the same rate as the government, there can be no gain to the government from long-term leasing if the lessor earns a profit or there are middleman's fees associated with the transaction. Since lessors normally borrow at a higher rate than the government, and pass these costs through as higher rents, it generally will be less expensive if the government does its own financing rather than relying on a lessor.

E. Summary

Both the pre-tax and after-tax economic accounting methods indicate that the cost to the government of leasing exceeds that of buying. This conclusion is a result of the fact that leasing involves excess costs which would not have to be borne if the government

bought. Regardless of the accounting method adopted, these excess costs are attibutable to three sources: (1) the profit absorbed by the lessor, (2) the generally higher borrowing cost of the lessor (i.e., the risk premium on the lessor's debt), and (3) the legal and administrative expenses associated with a lease that are avoidable if the government buys. These results are unchanged when credit is given for reflows to the Treasury resulting from the taxes paid by the lessor's creditors and middlemen.

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