THE INFORMATIONAL EFFICIENCY OF TAX BENEFIT TRANSFERS THROUGH LEASING: AN EMPIRICAL STUDY

By

Joel Mark Shulman

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Finance and Insurance

1984

ABSTRACT

THE INFORMATIONAL EFFICIENCY OF TAX BENEFIT TRANSFERS THROUGH LEASING: AN EMPIRICAL STUDY

By

Joel Mark Shulman

The Economic Recovery Tax Act (ERTA) of 1981 relaxed the restrictions on tax-benefit transfers between financially stable (lessor) and financially unstable (lessee) firms, through the enactment of Safe Harbor Leasing. This study investigates whether safe harbor lease transactions created market inefficiencies, as alluded to by the popular press, and will attempt to ascertain the effect of safe harbor lease transactions on the equity shareholder returns. Stock return data of firms identified as actively involved with tax benefit transfers through the enactment of ERTA will be analyzed to examine the likelihood of shareholders having earned excess risk adjusted rates of returns, along with any resultant significant risk changes. The event date will focus on November 13, 1981. Risk adjusted returns prior to the event date will be compared with the residuals subsequent to the event date using an intervention time series model of risk and return. Results and conclusions about the claims found in the popular press will be offered.

DEDICATION

To Linda,

for all of her support

and encouragement.

ACKNOWLEDGMENTS

I am deeply indebted to my chairman, Larry Johnson, and to Professor John O'Donnell for their many insights and comments. I am also grateful to Professor James Marshall for his helpful suggestions.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

"We made money hand over fist."[1]

"Come Monday, November 13, 1981 deadline, there's going to be a lot of blood on the floor."[2]

"Leasing accords involve billions in gear as [the] initial round of tax credit sales ended."[3] These and other quotes concerning the new safe harbor leasing law filled the pages of most major newspapers and magazines[4] during the fourth quarter of 1981, creating quite a stir in the press[5] and in Congress. For a while, safe harbor leasing was the hottest tax issue in Washington.[6] Many openly debated the effectiveness of the new law and its ability to spur capital investment.[7] Consequently, within a few short months after the enactment of the new law, several prominent Congressmen were discussing the repeal of the tax provision.[8]

The Economic Recovery Tax Act (ERTA) of 1981 relaxed the restrictions on tax benefit transfers between financially stable (lessor) and financially unstable (lessee) firms through controversial safe harbor leasing provisions. The safe harbor lease (so called because such transactions were safe from Internal Revenue Service (IRS) scrutiny as long as IRS regulations were followed) provided lessees with a large cash down-payment and allowed lessors to take

investment tax credits and future depreciation write-offs (using what is popularly termed a "wash lease").

Much of the controversy surrounding these leases focused on lost Treasury revenues and inefficiency in the marketplace. John M. Samuels, a former Treasury Department official, noted: "There is tremendous Congressional dissatisfaction with the rules . . . . The drain on Treasury revenues looms larger each day. And rather than help[ing] ailing firms, as was intended, the original bill appears to have become more of a tax loophole for profitable ones."[9]

Politically, the issue heated up when General Electric Co. took advantage of safe-harbor leases to reduce its 1981 tax liability to near zero and sought refunds totaling $150 million for the three preceding years.[10] The issue was further complicated when a few highly profitable firms, notably Occidental Petroleum and CSX Corp. were able to sell credits, since they had a surplus of credits after reducing their domestic tax liability to zero for 1981.[11]

Much of the popular press alerted potential investors to the uses and abuses of the world's largest corporations. Terms such as "bonanza" were often used in conjunction with large numbers, to describe a safe harbor lease transaction.[12] For example, Industry Week magazine had an article depicting safe harbor leasing which stated, "Bonanza; A major black eye for safe harbor is the inescapable fact--and public embarrassment--that it has enabled profitable companies to reduce their tax bills markedly. G. E.

saved roughly $280 million, International Business Machines Corp. about $170 million." Similar articles appeared in the Wall Street Journal,[13] Fortune, and Business Week, among others. Table I, computed by the U.S. Treasury Department, attests to the magnitude of safe harbor lease transactions and the resulting loss of Treasury revenues.[14]

Professor Hempel, in his presidential address to the thirteenth annual meeting of the Financial Management Association, noted:

> There are numerous areas in financial management as well as other areas of finance in which we could benefit from quality research in the future. In a theoretical vein (I believe there is no chasm between good theory and practice), we need to learn even more about underlying contractual (or agency) relationships among a business' owners, creditors, and managers and we need to develop a more dynamic theory of financing decisions over time. Rather than add one more variable to a lengthy esoteric regression, we might use empirical research to test some of the many assumptions of and questions about efficient markets and to try to develop improved measures of risk. Practical research ideas can be obtained almost daily by reading the Wall Street Journal. . . . Quality research in any of these practical areas, if communicated in an understandable way, would seem valuable to peers, business people, and students.[15]

This study does precisely what Professor Hempel recommended: It analyzes the impact of these tax-benefit transfers on both lessors and lessees, using the form of an event study.

The popularity of firm-specific event studies is well documented, and has been increasing in recent years. Event studies explore the effect of new information (an event variable)

TABLE 1.1--Distribution of Benefits from Safe-Harbor Transactions

Benefits	Amount of Benefit (millions)	Share of Benefit (%)
Seller/Lessee	$ 4,262	76.5
Buyer/Lessor	1,202	21.5
Third Party Assets	109	2.0
Present Value of Revenue Loss	$ 5,571	100.0

on a security's specific return. The critical issue is whether or not an investor receives an abnormal rate of return. These studies provide a direct test of market efficiency. Stephen Brown and Jerold Warner further note:

> Systematically nonzero abnormal security returns which persist after a particular type of event, are inconsistent with the hypothesis that security prices adjust quickly to fully reflect new information. In addition, to the extent that the event is unanticipated, the magnitude of abnormal performance at the time the event actually occurs is a measure of the impact of that type of event on the wealth of the firms' claimholders. Any such abnormal performance is consistent with market efficiency, however, since the abnormal returns would only have been attainable by an investor if the occurrence of the event could have been predicted with certainty.[16]

The ensuing analysis explores the merits of the assertions in the popular press as they pertain to the safe-harbor lessee and lessor, and also investigates whether or not safe harbor lease transactions create market inefficiencies. An attempt is made to ascertain the effect of safe harbor lease transactions on equity shareholders. Stock-return data for firms identified as having been actively involved in tax-benefit transfers enabled by ERTA are analyzed to examine the likelihood that shareholders have earned excess risk adjusted rates of returns, along with any resultant significant risk changes. The event date is November 13, 1981--a critical trading deadline--and is explored in depth. Risk adjusted returns prior to the event date are compared with the residuals subsequent to the event date using an intervention time series model

of risk and return. Results and conclusions related to claims found in the popular press are presented.

This study is divided into seven sections. Chapter II examines the legislative history of leasing, and addresses the significant inequities and inefficiencies[17] associated with the safe harbor leasing bill. Alternatives are suggested and explored. Chapter III discusses the safe harbor leasing law, and provides an example explaining how it operates. The law that superceded the safe-harbor law, TEFRA 1982, is also examined. Chapter IV provides a chronological review of the finance-leasing literature, and a model for calculating safe harbor leasing benefits. Chapter V describes the methodology chosen for this study, and justifies its use vis-à-vis other commonly applied techniques. Chapter VI presents the results of the study, and Chapter VII offers concluding statements.

ENDNOTES

Chapter I

[1]Quote during a telephone conversation with a finance Vice President of a Fortune 500 company who was extensively involved with his firm's safe harbor leasing.

[2]Wall Street Journal, November 13, 1981, quote by Peter K. Nevitt President of Bank of America's Leasing Unit, "Drive For Tax Gains on Lease Accords Mired in Confusion as Deadline Nears."

[3]Wall Street Journal, November 16, 1981.

[4]Wall Street Journal, New York Times, Fortune, Time, Business Week, etc.

[5]Wall Street Journal, October 29, 1981, letter to the editor by Arthur Schlesinger criticizing President Reagan's proposal for cutting federal taxes and spending.

[6]Business Week, "Safe Harbor Leasing's Stormy Future", December 21, 1981.

[7]Ibid.

[8]Arthur Anderson & Co. "Survey of Selected Participants in Safe Harbor Lease Transactions Pursuant To Internal Revenue Code Section 168(b)(8)."

[9]Industry Week, January 11, 1982, "Safe Harbor Tax Leases May be sunk".

[10]"The Assault on Safe Harbor Leasing," Industry Week, June 14, 1982.

[11]"Safe Harbor Leasings Stormy Future", Business Week, December 21, 1981.

[12]"The Assault on Safe Harbor Leasing," Industry Week, June 14, 1981, and Wall Street Journal, November 13, 1981.

[13]Particularly around November 13, 1981 (a deadline date).

[14]The Treasury estimated that $17.4 billion of property was covered by safe harbor leases. This amount was equivalent to an approximate discounted present value of $5.6 billion in tax benefits.

[15]Journal of Financial Management, Winter 1983.

[16]"Measuring Security Price Performance", Stephen Brown and Jerold Warner, Journal of Financial Economics (8) 1980, 205-258.

[17]The U.S. Congress and Senate in Report Bulletin 27, Analysis of Safe-Harbor Leasing defined an "inefficiency" as a loss of Treasury revenue caused by tax benefit transfers. This usage should be kept distinct from the interpretation of "efficiency" applied in a capital market context.

CHAPTER II

EVOLUTION OF LEASING

The evolution of leasing law in sale-leaseback transactions, and the tax consequences of a particular transaction, involve different approaches and a myriad of judicial hearings, IRS regulations, and taxpayer interpretations. Past legal issues focused on the intent of the parties involved and an analysis of whether the transaction was a valid sale-leaseback for tax purposes, a mere financing device, or a sham. Treatment of taxpayers was often inconsistent and woefully inadequate. Proper legal and accounting forethought often made the difference between an acceptable sale-leaseback transaction and a sham.

This chapter offers a brief descriptive analysis of the sale-leaseback evolution[1] and addresses the equity issues raised by the law prior to the Economic Recovery Tax Act of 1981 (ERTA).

Court Criteria

The courts consider numerous factors in determining the validity of a sale-leaseback transaction for tax purposes. In Frank Lyon Co. v. U.S. (435 U.S. 561), the U.S. Supreme Court mentioned 25 factors in support of a ruling that the transaction was a financial arrangement, not a bonafide lease. The court failed to note which factors were controlling in the decision, and

thus offered minimal guidance for the future concerns of judges and tax planners.

Prior to the ERTA, courts consistently referred to four conditions in assuring the validity of sale-leaseback transactions. The first factor often used by courts involved the determination of which party held equity interest in the property. Such characteristics of equity interest included the reasonableness of the rental payments, the option price, the sale prices, and the burdens and benefits of ownership. Second, the courts assessed the intent of the parties and the legitimacy of the business purpose. A third factor employed by courts concerned the transferability of title during the normal course of the lease contract. Finally, the courts calculated present values of the lease contract in an attempt to ascertain the economic substance of the lease contract.

This chapter will examine the treatment of these four factors, and will provide a necessary history which existed prior to the ERTA. Only after a careful review of the case history and the IRS rules and regulations can the uninformed investor truly appreciate the magnitude of the safe harbor leasing law, and why it had such a significant impact in the capital marketplace.

Equity Interest

One of the fundamental considerations of courts in determining the appropriateness of a sale-leaseback transaction, and which party was legally entitled to the tax deductions, was in estimating the relative equity interests of the parties involved. Code section

162(a)(3) specifically denied rent deductions to a leasee that acquired an equity interest in leased property. Similarly, Section 167 specifically precluded a depreciation deducation unless a capital investment existed. The following categories enclosed were often examined in courts to decide the extent and relationship of equity interest.

1. Rental payments. Excessive or unreasonably high lease payments indicated that an equity interest might have been transferred to the leasee. The point was illustrated in Frenzel v. Commissioner (TC Memo. 1963-276). A large lease payment was especially suspect if it coincided with a low option price agreement.

   However, a low option price in addition to large rental payments was not always a guarantee that the leasee had an equity interest. Belz Investment Co. v. Comm (72 TC 1209) demonstrated that the inherent riskiness of the business operations was an important criterion in assessing whether or not lease payments were "reasonable".

   Rental payments judged unreasonably low did not indicate an equity interest in the lessee. The courts, however, questioned the validity of this arrangement, and usually ruled that the transaction was a financing device and not a bona-fide sale-leaseback (Helvering v. F. & R. Lazarus & Co., 308

U.S. 252). The courts generally held that sale-leasebacks which were in substance mere financing arrangements would not entitle purchasor-lessors to consequent tax benefits (see American Realty Trust v. U.S., 498 F. 2d 1194).

In Lazarus, the IRS sought to deny depreciation deductions to the lessee on the premise that the right to depreciations followed legal title. The Supreme Court permitted the deductions, and explained that transfers of title should be disregarded when given only as security for a loan.

Although the IRS lost in Lazarus, it continued to employ the Supreme Court's analysis in challenging sale-leasebacks which appeared to be motivated solely by the desire for tax benefits.[2]

2. Option price. The Belz case, previously mentioned, indicated that the value of the option price was often observed in accordance with the reasonableness of the leasee payments in deciding whether the lessee had an equity interest. The courts often focused on whether the lessee company had a "compulsion to exercise" the option. Compulsion was often described as the situation arising when the option price was set considerably lower than the fair-market value of the property.[3] If the courts ruled that the lessee was compelled to

exercise his option, then he would be considered as having an equity interest, and the transaction would be identified as a financing arrangement.

An option price less than fair-market value was not automatically construed to be compelling by courts. In American Realty Trust v. U.S. 498 F. 2d 1194, the court rejected the "economic compulsion" argument, holding that the seller eventually exercised his repurchase option as a result of the sudden availability of wraparound financing, not economic compulsion. The court noted that the seller initially sold for a fair price, not an unreasonably low one, and distinguished from the bargain price in Lazarus. The court also differentiated the 99-year initial lease term in Lazarus from the 21-year lease term in American Realty Trust.[4]

The length of the option period was critical in determining economic compulsion, since the courts were hesitant to speculate what the fair market value would be at the end of a long option period. Thus, the price of the option and length of the option period were considered in conjunction with other factors, such as the useful life of the property in relation to the lease term plus renewals. For example, a lessee engaged in a long-term lease would perhaps not be compelled to

exercise an option if he already had all of the benefits associated with the property.

3. Sale price. The sale price is an important factor in determining an equity interest. If the sale price of the property approximated the fair-market value, then the courts generally held that the purchaser-lessor had an equity interest. However, if the sales price greatly exceeded the fair-market value of the property, and non-recourse financing was involved, the courts have sometimes held the transaction invalid and denied both interest and depreciation deductions. In Estate of Franklin v. Comm'r (544 F. 2d 1045), the court held that when the purchase price in a sale-leaseback cannot be shown to approximate the fair-market value of the property, the "stuff of substance" is the purchaser-lessor's equity in the property. The court stated that a true investment "will rather quickly yield an equity in the property which a purchaser cannot prudently abandon."[5] The purchaser-lessor was denied an equity interest in the property, since the unpaid balance exceeded the fair market value of the property. The purchaser-lessor had only a minor chance to benefit from appreciation of the property, yet could abandon the arrangement at any time.

4. Burdens and benefits. In establishing an equity interest, the courts often considered such factors as burdens, benefits, risks, responsibilities and other miscellaneous factors identified in the lease contract. One sale-leaseback case which discussed burdens and benefits at great length was Sun Oil Co. v. Comm'r (562 F. 2d 258. cert. den., 436 U.S. 944). The court denied the rental deductions taken by the seller-lessee and made the following findings:

   (a) Sun Oil retained essentially all of the risks and responsibilities of the leased property, including casualty or condemnation.

   (b) Sun Oil maintained all of the benefits and prerequisites of ownership of the land through its repurchase options.

   (c) The rentals did not reflect the fair-market value of the leased property.

   (d) The absolute repurchase options would not appreciably benefit the lessor, since the appraised value of the property would have to consider lease encumbrances, which when discounted to a present-value term, amounted to nil.

The court surmised that Sun Oil in essence assumed the risks and burdens of the leased property as well as the benefits through its options and repurchase

agreements. The transaction was viewed as a financing arrangement which amounted to little more than a loan on a security of land with a stated rate of interest.[6]

Intent

In addition to addressing the equity concern, the courts often attempted to ascertain the true intent of the parties engaged in the lease contract. An intent test utilized by the courts' consisted of similar information used in determining an equity interest, as well as the conduct of the parties and the underlying business purpose. Frito-Lay Inc. v. U.S. (209 F. Supp 886) demonstrated that, on occasion, past conduct of the parties indicated that a sale was never intended.

The absence of tax avoidance is a significant issue which the courts used to infer intent. Such was the case with American Realty Trust, in which the court held in favor of the defendants that the parties intended ownership rights to transfer to the lessor. It was important for the parties to justify the transaction apart from the tax motives. In Hilton v. Comm'r (74 TC 305, aff'd per cur., 671 F. 2d 316), the court reasoned that the nature of financing a project was insufficient justification for determining a valid business purpose. This reasoning seriously reduced the appeal of sale-leaseback transactions, since a major advantage of this type of financing over mortgage financing arose from the tax advantages it offered. Although transactions financed by mortgage financing and sale-leaseback financing had essentially the same economic

consequences, namely provision of immediate capital and effective control over the property, the disparate tax consequences caused the IRS to intervene on the sale-leaseback transactions.[7]

Title Transfer

Generally, the transfer of title to the leasee by the end of the lease term resulted in the characterization by the courts that the transaction was a sale, not a lease. Frito Lay and Frenzel are two examples where the courts held that the lessees had title because they never released certain controls. However, in Lyon, where the title was not transferred to the lessee, the Supreme Court commented that "taxation is not so much concerned with the refinements of title as it is with actual command over the property taxed--the actual benefit for which the tax is paid." Consequently, the nontransfer of title did not necessarily indicate the worthiness of the lease.

Judicial Treatment

It should now be readily apparent that on occasion, the courts gave overlapping and inconsistent treatment to transactions of similar form. The courts often tried to differentiate economic substance from its form. However, the multitude of factors involved and the minor nuances between cases caused inadequancies to develop in the effective rulings by the courts. The IRS attempted to substantiate the criteria viewed important, and issued Rev. Proc. 75-21 (1975-1 CB 715) and Rev. Proc. 75-28 (1975-1 CB 752). The IRS

guidelines mentioned six criteria which a lease had to meet prior to being judged acceptable for federal income tax purposes. The guidelines also provided an opportunity for an advanced revenue ruling by the IRS. The following is a brief review of the six criteria under Rev. Proc. 75-21.

1. Minimum unconditional at-risk investment. The intent of this rule was to guarantee lessor representation in the ownership risk in the leased asset. This rule provides that the lessor must have a minimum unconditional investment equal to or greater than 20 percent of the value of the asset at the inception of the lease. Furthermore, the lessor had to maintain this minimum unconditional investment throughout the lease period, and its value had to be at least 20 percent of the original purchase price at the termination of the lease.
2. Lease term and renewal options. This is a clause which defines "lease term" to include "all renewal or extension periods except those which are at the option of the lessee at fair rental value at the time of such renewal or extension."
3. Purchase and sale rights. The lessee was not entitled to enter a contractual agreement which would have permitted him to purchase the leased asset for a price which would be less than the fair market value.

4. No investment by the lessee. The lessee was not allowed to provide any part of the cost of any nonremovable improvement or additions to the leased property. Maintenance expenses or ordinary repairs were not prohibited by the guidelines.
5. No lessee loans or guarantees. The lessee was precluded from providing funds to the lessor or guaranteeing the lessor's indebtedness in connection with the purchase of the leased property.
6. Profit requirement. The lessor had to demonstrate a profit motive apart from the tax consequences.

Again, it should be noted that although specific criteria have been presented, the varying interpretations and general subjectivity of the subject matter could have resulted in inconsistent treatment between two similar taxpayers.

IRS Audit Guidelines

The Freedom of Information Act made the IRS audit guidelines public information in 1975. The IRS had ten criteria for establishing whether a lease was a valid transaction. The following is a listing of the criteria which could indicate a sale rather than a lease.

1. The lessee gains equity in the leased property through lease payments.
2. The lessee acquires title to the asset.

3. The total amount of the lease payments made by the lessee occur during a short period of time, and substantially include the value of the leased asset.
4. The lease payments are considerably in excess of the fair rental value.
5. The lessee has a nominal purchase option at the termination of the lease agreement.
6. The lessee provides loan guarantees to the lessor.
7. The lessor assumes little at-risk investment in the asset.

The IRS also considered the following factors to ascertain whether the transaction was a sale or a lease: (a) burdens and benefits of ownership; (b) a calculation of the present value of cash flows; and (c) the economic purpose and viability of the lease arrangement.

The IRS Guidelines offered little support to the taxpayer, since they were vague rather than specific and made no mention as to the combinations of criteria necessary to insure lease status. In 1976, the Financial Accounting Statements Board (FASB) issued Statement No. 13, in which four criteria were established for determining whether a capital lease exists and whether the lessee should be considered the owner of the property: (a) the lease transfers ownership of the property to the lessee by the end of the lease term; (b) the lease contains a bargain purchase option; (c) the

lease term is equal to 75 percent or more of the estimated economic life of the leased property; and (d) at the beginning of the lease term, the present value of the minimum lease payments is at least 90 percent of the fair-market value of the leased property.

The taxpayer was beseiged by rules, regulations, guidelines and opinions. There should be little wonder then, that the government introduced a new leasing law which relaxed the standards and clarified some of the confusion and inconsistency of prior court cases and IRS mandates. The new law was predicated upon four basic principles essential to rational tax treatment:[8]

1. Specificity. The rules should be absent of ambiguities and be well defined.
2. Feasibility. The information used to characterize the lease should be readily available.
3. Equity. The transactions should comport to horizontal and vertical equity standards. Horizontal equity refers to similar economic groups being treated fairly. Vertical equity refers to treatment among different groups.
4. Economic reality. The rules should be defined in a manner which allows economic substance to be recognized over form.

Much of the popular press dealt with the inequities and inefficiencies of the new law. For instance, Alan Greenspan, while

chairing the White House Council of Economic Advisors in the Ford Administration was quoted as commenting that the new leasing law is "'sort of the equivalent of food stamps for under-nourished corporations'. . . . The leasing law will 'basically subsidize capital investment in areas which the market wouldn't support'."[9] Senator Claiborne Pell (D., RI) added that "leasing helps concerns that don't need aid and 'inefficient, noncompetitive' ones that don't deserve it."[10]

The balance of this section will explore the merits of these arguments along with providing an in-depth analysis of tax expenditures and alternatives the government decided against.

The term tax expenditure generally refers to the tax incentives within the Internal Revenue Code--i.e., credits, deductions, etc.--which have been established by Congress in an effort to accomplish non-tax objectives.[11] While the format differs from issuing a check directly to the firm or individual of interest, the intent is essentially the same. The Treasury in either case loses revenues which otherwise might be spent elsewhere. Opponents to particular tax expenditures or direct-funding programs almost always argue the efficiency of a single program vis-à-vis other "more pressing" problems.

Indeed, the safe-harbor bill testifies to the advantages of having a strong, coordinated contingent lobbying in Congress. The legislative history indicates that the original bill was targeted to aid six distressed industries: the automotive, airline, steel,

paper, mining and railroad industries.[12] Nonetheless, the final draft enabled many unmentioned firms to share the rewards and sell tax benefits in ways that previously would have been ruled illegal.[13]

The primary purpose of the safe harbor leasing law was to provide immediate support to those industries that needed it the most--i.e., unprofitable or distressed industries. It further narrowed the competitive gap that existed between profitable and unprofitable firms. The Department of Treasury argued that companies with taxable income could immediately realize tax benefits, while those without income could not. Consequently, the after-tax cost of an investment for a profitable firm would be lower than the cost for an unprofitable firm, thus placing the latter group at "an intolerable competitive disadvantage."[14] The new law enabled "start-up companies" and "loss companies" to share in the tax benefits by openly permitting them to sell depreciation and tax credits for recently purchased equipment. Generally, the sellers of these tax benefits were tax-loss firms--firms which paid no taxes and had no use for tax benefits unless they could be transferred or sold. However, it was conceivable that a firm paying taxes at a high effective tax rate would be willing to bid these benefits away from even profitable firms, if those firms were being taxed at lower effective rates. In such cases, even taxable firms would be sellers of tax credits.[15] Thus, the leasing safe haven law was implemented to extend tax incentives for capital investment to all business entities, regardless of their tax liabilities.[16]

The popularity of this leasing tax expenditure has been well documented, and most certainly led to the quick demise of the safe harbor tax law. In many of the large scale capital intensive industries, investment tax credits were "piling up" because the firms were unable to use them.[17] Net revenue losses from the leasing safe-haven were conservatively estimated by the Treasury to be $33.6 billion through fiscal 1986.[18] Other sources speculated that the losses could total as much as $58 billion over the next five years.[19]

Many critics attacked the safe-harbor provisions as a tax bonanza for the most profitable corporations and a subsidy for losers. They criticized the "trafficking" in tax benefits as a dangeous precedent which, if extended, could undermine the entire tax system.[20] Others expressed concern about the open-ended nature of the tax expenditure. In other words, the tax expenditure, unlike a direct relief program, is unbounded. The amount of revenue loss is solely a function of taxpayer response to a particular tax provision.[21]

The Congressional Budget Office once described a tax expenditure program as follows:

> A tax expenditure is analogous to an entitlement program on the spending side of the budget; the amount expended is not subject to any legislated limit but is dependent solely upon taxpayer response to the particular provision. In this respect tax expenditure closely resemble spending programs that have no ceilings.[22]

The tax expenditure had a number of other severe deficiencies which included the following:[23]

1. Tax expenditures permit windfalls. Many taxpayers received a payment (or reduction in taxes) for an action which they would have taken anyway. In those cases, the law would not have stimulated the economy, but rather would have provided the involved parties with a windfall.
2. Tax expenditures are inequitable. Inequity often arises when the tax expenditure is in the form of a deduction, exclusion or deferral of income. Taxpayers in the highest income tax brackets usually benefit the most.
3. Tax expenditures keep tax rates high. Since tax expenditures reduce the aggregate Treasury revenue, the tax rates applied to the remaining balance must remain relatively high in order to maintain the funds needed to function normally.
4. Tax expenditures are often directly affected by changes in the tax rates. The value of a tax expenditure is dependent on the tax rate. If tax rates change, for reasons independent of the tax expenditure, then the objective of the tax expenditure might suddenly be impaired.
5. Tax expenditures complicate the tax laws. Each program has its own set of definitions, issues, objectives, etc. Additional laws burden a limited staff and complicate existing law.[24]

Further criticism has been directed at the members of the tax-writing committees of Congress--namely, the House Committee on Ways and Means and the Senate Committee on Finance. Tax expenditures have often been enacted without serious consideration of the resulting complications for the tax system, legislative process, or executive-branch administration.[25] Senator Kennedy made the following remarks on the ability of the tax-writing committees to competently review and adequately evaluate all of the issues underlying many of the proposed spending programs.[26]

> It is humanly impossible for the 18 members of the Finance Committee and the 37 members of the Ways and Means Committee to be Renaissance men and women in employment, commerce, energy, health, education, housing, banking, State and local finance transportation, investment, the cities, shipping, agriculture, foreign trade, life insurance, the environment, military personnel, veterans, the elderly, the handicapped, and all the other areas in which tax spending programs are now being used and in which expertise in the areas is obviously required.[27]

Perhaps the most controversial issue concerning the safe harbor leasing law dealt with the inefficiencies involved. Inefficiencies are described as the process in which "in the end only a part of the money goes to the activity which the tax expenditure is intended to assist."[28] Inefficiencies were a function of the respective bargaining positions of the related parties as well as the fees charged by the intermediaries. The latter amount was a non-trivial sum. The Treasury Department estimated that lessees paid third parties approximately $109 million for fees related to these transactions.[29] Senator Durenberger commented on the

"inordinate amounts of money [that] are siphoned off by intermediaries" and the notion that the complexities associated with leases "limit the market for buyers and sellers of tax incentives to relatively large and sophisticated institutions able and willing to undergo the pain, expense, and uncertainty of closing this kind of transaction."[30]

Data suggest that transaction costs arising from brokers, lawyers, bankers, syndicators and other intermediaries amounted to an average of 1.3 percent of all tax benefits associated with safe-harbor leases.[31] In addition, the lessors retained approximately 14.2 percent of the discounted value of the tax benefits to compensate them for transactions costs and profits.[32] The overall impact of the inefficiency of the lease mechanism was a lower level of investment by tax-loss firms than Congress intended.[33]

The inefficiency, and the resulting transfer of wealth to large profitable corporations, also led to the quick demise of the leasing law. The popular press (referred to earlier) focused attention on this tax subterfuge, and the public became increasingly wary of the costs of the tax expenditure compared to the benefits received by the nation. It is unlikely that the American public would have supported a direct expenditure program designed to subsidize distressed business, especially in a year in which the federal deficit reached nearly $100 billion.[34]

Among other members of Congress, Senator Robert Dole (R.-Kan.) Chair of the Senate Committee on Finance and a leading critic

of safe-harbor leasing, started to talk of repealing the leasing safe haven as early as November 1981, just three months after ERTA was enacted.[35] "A lot of members are talking about repealing leasing, root and branch," said one Capitol Hill source. The source further added that some members of Congress didn't understand the complicated laws providing cash to some profitable firms and were embarrassed to read stories regarding General Electric, IBM and other corporate giants which used the credits to reduce their federal taxes. "The problem with leasing is that it doesn't create much faith in the equity of the [tax] system," the Capitol Hill source said. "It makes the system look stupid."[36]

Senator Dole significantly curtailed trading of tax benefits in February 1982 when he declared that "Congress will either repeal or significantly tighten the controversial law allowing firms to trade tax benefits."[37] Although the Reagan Administration at that time continued to support the leasing law and vowed to fight any repeal, the Congress persisted, and on August 19, 1982 enacted the Tax Equity Fiscal Responsibility Act (TEFRA), which significantly restricted the leasing safe haven of ERTA.[38]

It appears that ERTA's safe harbor leasing provisions were ill-suited to effectuate Congress's intent to provide assistance to the distressed industries and maintain tax equity. The ERTA proved to be an inefficient and uncontrollable means by which to provide support. It is unclear whether the Administration intended to provide aid to all of the firms which were legally eligible, or

whether subsidy to all lessees was considered a necessary and acceptable cost in order to provide assistance to the targeted industries.[39]

Critics maintained that a direct subsidy would have allowed better control on costs and priorities.[40] The ERTA law is testimony to the notion that a direct subsidy would not have been politically feasible. Nonetheless, there seems to be little basis for a tax expenditure if the government is unwilling to appropriate the funds directly.[41] The leasing law was inefficient, insufficiently planned, and allocated resources to industries which the market refused to support. In the absence of safe harbor leasing, creative tax attorneys would have designed leases which could be accommodated within the IRS Code and the legislative history. However, the burden of policing this option would have been placed on the already over-burdened IRS.[42]

An alternative policy to leasing might be full refundability of tax benefits. This policy calls for the Treasury to issue a check for all benefits attainable through purchase of an asset.[43] The administration would simply send a refund to the firm upon receipt of valid proof of eligibility.

The refund policy is desirable in that it would avoid the inefficiencies which plagued the safe-haven leasing law. A refund form would be filed with the normal tax return. Furthermore, a refund policy would ensure equitable tax treatment among taxpayers in different income-tax brackets. The firm would accordingly make its most productive investment without regard to its tax status.[44]

The new system would require additional forms and IRS monitoring costs, but the IRS would be performing these functions anyway. Depreciation deductions and leasing forms, are already part of the IRS process, and as such should not add to the IRS burden.[45]

A refunding policy could be further refined to include incentives for stimulating "desirable purchases." Such a policy could more efficiently direct future assistance to particular industries and resources of concern. A refunding policy has the added benefits of simplicity and equity in purpose and use. Firms which previously did not have the wherewithall (sufficient tax and legal resources) to benefit from the safe-harbor provision would now be able to enjoy the tax amenities to the full extent of the law.

Enactment of a refund policy could fill the gaps left open by the 1981 ERTA and TEFRA 1982. That is, a refund policy could improve efficiency and equity, and provide an immediate incentive to purchase new capital equipment.

ENDNOTES

Chapter II

[1]The chronological summary of leasing law, by Harmelink and Shurtz, is reflected in the first part of this chapter. Sale-Leaseback Transactions Involving Real Estate: A Proposal for Defined Tax Rules. P. J. Harmelink, N. C. Shurtz So Calif L. Rev 55:833-94 My 1982.

[2]Hilton v Commissioner: Sale-leaseback Analysis Sharpened Virginia Tax Review, Vol. 2, No. 2, pp. 375-392, 1982.

[3]In Lyon and Lazarus, for instance.

[4]Sale and Leaseback: A Hollow Sound when tapped? - Part II Louis A. Del Cotto Tax Law Review, Vol. 37, No. 1, pp. 1-50, 1981.

[5]Hilton v Commissioner

[6]Tax Law Review - Sale and Leaseback A Hollow Sound When Tapped.

[7]Hilton v Commissioner.

[8]Sale-Leaseback Transactions Involving Real Estate: A Proposal for Defined Tax Rules. P. J. Harmelink, N. C. Shurtz So Calif L. Rev. 55:833-94 My 1982.

[9]Wall Street Journal, August 27, 1981, at 1, Col. 6.

[10]Wall Street Journal, December 9, 1981, at 1, Col. 5.

[11]Survey, Tax Incentives as a Device for Implementing Government Policy: A Comparison with Direct Expenditures, 83 Harvard L. Rev. 705, 706 (1970).

[12]Staff of Joint Comm. on Taxation, 97th Cong 1st Sess Summary of Administrative Tax Proposals Before the Committee on Ways and Means Industry representatives included: Vice Chairman of Phelps Dodge Corporation, President and Chief Executive Officer of the Air Transport Association of America, Chairman of CSX Corporation (Chessie Railroad), Special Consultant to the President of the UAW, Congressional Steel Caucaus, Chairman of the Capital Formation Committee of the American Mining Congress, and President of Transportation Association of America.

[13]John Chapoton (Assistant Secretary of the Treasury) acknowledged that "(t)his (the revised temporary regulations) will help Chrysler do a lease." Moreover, "(i)t may also help some other, smaller concerns as well." Wall Street Journal, Nov. 11, 1981, at 4, Col. 1.

[14]Office of Tax Analysis, Department of the Treasury, Preliminary Report on Safe Harbor Leasing Activity in 1981, March 26, 1982.

[15]S. Survey, Pathways to Tax Reform 310 n. 14 (1973).

[16]S. Rep. No. 144 97th Cong. 1st Sess 61-62 (1981).

[17]Tax Reduction Proposals: Hearings Before the Senate Comm. on Finance, 97th Cong., 1st Sess. 236, 239-40 (statement of John Snow) at 245 Robert Peabody indicated that $13-$14 billion pool of unused investment tax credits existed.

[18]Wall Street Journal, Feb. 22, 1982.

[19]Stephen Brobeck of Consumer Federation of America. See the MacNeil-Lehrer Report, Transcript No. 1615 (Dec. 4, 1981).

[20]Tax Expenditures Limitations and Control Act of 1981: Hearings on S 193 Before the Senate Comm. on the Budget, 97th Cong. 1st Sess. (1981).

[21]Surrey and McDaniel, The Tax Expenditure Concept: Current Developments and Emerging Issues. 20 B+ Indus. & Com L. Rev 225, 355 (1978-1979).

[22]The Leasing Safe Haven of the Economic Recovery Tax Act of 1981: Another Tax Expenditure Wisconsin Law Review - 1982. Nancy Delacenscrie.

[23]Surrey and McDaniel.

[24]McDaniel, Simplification Symposium Federal Income Tax Simplification: The Political Process, 34 Tax L. Rev. 27 (1978-79).

[25]Surrey, Tax Incentives as a Device for Implementing Government Policy: A Comparison With Direct Expenditures, 83 Harv. L. Rev. 705, 706 (1970).

[26]The Leasing Haven of The Economic Recovery Tax Act of 1981: Another Tax Expenditure 1982 Wis L. Rev. 117-49 1982.

[27]124 Cong. Rec. 10347 (1978).

[28]S. Surrey, Pathways to Tax Reform 310 n. 14 (1973).

[29]Treasury Preliminary Report.

[30]Tax Reduction Hearings 97th Cong. 1st Sess. at 278.

[31]Preliminary Report by the Treasury.

[32]Ibid.

[33]Stanford Law Review. Safe Harbor Lease: The Costs of Tax Benefit Transfers 6/82 Vol. 34:1309.

[34]Wisconsin Law Review.

[35]Ibid.

[36]Wall Street Journal, Nov. 19, 1981, at 6, Col. 2.

[37]Wall Street Journal, Feb. 22, 1982.

[38]H.R. 4961, Conference Report on The Tax Equity and Fiscal Responsibility Act of 1982, 97th Cong. 2d. Sess.

[39]Wisconsin Law Review.

[40]Ibid.

[41]Ibid.

[42]Tax Reduction Hearings 97th Cong.

[43]Senator Kennedy's Proposal of 1977 and a recent House bill included a direct refund provision. See Tax Reduction and Simplification Act of 1977: Hearings on H.R. 3477 Before the Senate Comm. on Finance, 95th Cong. 1st Sess. 179 (1977), The Refundable Investment Tax Credit Refund Act of 1981, H.R. 1863 97th Cong. 1st Sess. (1981).

[44]Stanford Law Review. Vol. 34:1309 Safe Harbor Lease: July 1982, The Cost of Tax Benefit Transfers.

[45]Ibid.

CHAPTER III

OVERVIEW

Virtually any asset that can be purchased can be leased. A lease is a means, usually contractual, by which a firm can acquire the economic use of an asset for a stated period of time.[1] Although there are essentially four different forms through which the user of the asset (the lessee) may engage in a lease contract with the owner of the asset (the lessor), this analysis will focus primarily on the sale and leaseback transaction.

Under a sale and leaseback arrangement, a firm may sell an asset it already owns to another party and then lease it back from the buyer. In this manner, the lessee receives the sale price in cash and the economic use of the asset during the basic lease period. In turn, the lessor receives the transfer of tax benefits, such as asset depreciation and the investment tax credit, in addition to any residual value upon disposition. However, the lessor does not enjoy complete retention of the tax benefits, since in competitive markets some of the benefits will accrue to the lessee in the form of reduced lease payments.[2] Although different tax brackets of both the lessor and lessee provide an opportunity for a mutually advantageous endeavor, it is the amount and timing of such tax considerations which will inevitably determine the final success of a sale and leaseback transaction. Consider, for instance, when a lessee is in a tax-loss

position or has investment tax credit carry-forwards and does not reasonably expect an improvement in tax-loss position in the foreseeable future. If the lessee could transfer tax benefits to a lessor in exchange for lower financing costs, both parties would gain.

The Economic Recovery Tax Act of 1981 provided an opportunity for exactly that type of lease financing, and accordingly, resulted in a tremendous amount of use and abuse by those eligible for such consideration.[3] In addition to providing new "safe-harbor" rules which condoned the practice of tax-benefit transfers, Congress enacted a new Accelerated Cost Recovery System (ACRS). By increasing the available asset amortization expense, the ACRS created the opportunity for more taxpayers to be in tax-loss and/or investment credit carry-over positions, and consequently expanded the respective bargaining positions of both lessor-lessees.

The net effect of ERTA was such an amount of leasing activity and lost Treasury revenue[4] that overbearing criticism[5] prevailed and the transfer of tax benefits (via leasing) has been impeded through the enactment of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA).

This chapter will continue with the analysis of the previous chapter which pertained to the rules and regulations regarding leasing activity prior to the ERTA of 1981. This chapter will include (a) the subsequent benefits and efficiency of leasing during the effective period of ERTA, and (b) the expected impact on safe-harbor leases of TEFRA.

Safe Harbor Law

A leasing agreement was provided safe harbor or federal lease status under Code Sec. 168(f)(8) only if the following five general conditions were met: (a) all the parties to the agreement entered into a written agreement and safe-harbor status; (b) the lessor was in effect a regular corporation; (c) the lessor had at-risk investment in the property at all times; (d) the duration of the lease did not exceed certain prescribed minimum and maximum limits; and (e) the lease covered only "qualified lease property." If any of these conditions were not met, either at the time the arrangement was entered into or at a later date, the arrangement could be denied or lose its safe-harbor status.[6]

1. Agreement of the parties. All parties had to elect in the lease agreement to treat the agreement as a safe-harbor lease for income-tax purposes and elect in writing to treat the lessor as the owner of the property.

2. A qualified lessor. The lessor must have been (a) a corporation other than a tax-option, Subchapter S Corporation, or personal holding company; (b) a partnership in which all the partners were composed of such qualifying corporations; or (c) a grantor trust whose grantor and beneficiaries were all either qualified corporations or qualified partnerships.

3. Lessor's minimum at-risk investment. The lessor had to have a minimum "at-risk" investment of not less than 10 percent of the adjusted basis of the property (a) at the time the property was first placed in service, and (b) at all times during the term of the lease.
4. Term of lease requirements. The maximum term of the lease (including all options to extend) could not exceed the larger of (a) 90 percent of the useful life of the leased property, or (b) 150 percent of asset depreciation range midpoint class life of the leased property.
5. Qualified leased property. To be qualified property, the leased property had to (a) be new Sec. 38 property (eligible for the investment credit as defined in Code Sec. 48(b); (b) be new Sec. 38 when acquired; (c) be leased within three months after it was placed in service; (d) have an adjusted basis to the lessor that was not in excess of that of the lessee, and (e) have qualified mass commuting vehicles[7] that were financed in whole or in part by tax-exempt obligations.

Although Sec. 168 rules generally specify that property qualifies for safe-harbor treatment only if the lease was entered into within three months after the property was placed into service, the Code also provides an exception for all qualified property placed in service after 1980 and before August 13, 1981, if the lease was entered into by November 13, 1981.[8] This "window period"

enabled taxpayers to transfer substantial unexpected tax benefits.

A transaction meeting all the above requirements would have qualified as a lease for Federal income tax purposes regardless of any other characterisitcs. Thus, the transaction could have included a fixed price purchase option of only $1. There was no requirement that the lessor had to derive a pre-tax profit or generate a positive cash flow from the agreement. In addition, the lessee could provide the financing or guarantee the lessor's debt except for the required 10 percent minimum investment.

These rules were clearly a deviation from the law prevailing prior to ERTA of 1981. The prior rules attempted to distinguish between true leases, in which the lessor held title to the asset for tax purposes, and conditional sales or financing arrangements, in which the user of the property owned the property for tax purposes. Typically, the final determination under prior law required a case-by-case analysis. The general principles applied were not written in the Internal Revenue Code; rather, they evolved over the years through a series of court cases, revenue rulings, and revenue procedures issued by the IRS.

The following example will offer insight into how a safe-harbor lease operated and the ease with which tax benefits were transferred. The example also demonstrates the importance of the timing of the cash flows.

Tax-Benefit Transfer: An Example

A tax-benefit transfer essentially operated as follows. A lessee bought an asset with his own funds and then "sold" it to a buyer subject to the terms of the 1981 ERTA. The lessor gave a cash downpayment to the lessee and assumed a nonrecourse note for the balance. No additional funds ever changed hands, since the lessee immediately leased the property back with the lease payments being identical to the debt-service payments from the nonrecourse note. At the termination of the lease, the lessee was granted the option to purchase the asset for a token amount (often $1).

Although the lessee would retain all incidents of State law ownership, the lessor would be granted the associated Federal income tax deductions, such as depreciation and the investment tax credit. However, the lessor would be required to recognize as income the excess of lease rent over interest for any taxable year.[9] The lessee, accordingly, would have a deduction for the same amount. Since it was in the best interests of both parties to postpone any tax payable by the lessor, the parties typically agreed to maximize the interest rate payable on the nonrecourse note. The IRS prescribed that the maximum interest rate was not to exceed three percentage points above other specified interest rates, such as the rate charged by the IRS on underpayments and overpayments. Since the IRS rate has been 20 percent as of February 1, 1982, most transactions used the maximum 23 percent rate permitted.[10]

An Example

Assume that a user of property recently purchased a $100,000 asset, is in a tax-loss position, and does not reasonably expect to be taxable in the foreseeable future.[11] The lessee would like to transfer some of the tax benefits to a lessor in the form of a sale-leaseback arrangement. Assume the buyer purchases the property from the user (lessee) for $22,000 down and a 12-percent note for $78,000 payable on a level basis (principal and interest) over 10 years. The lessor (buyer) then leases the property to the lessee for 10 years at a rental exactly equal to the debt service on the note. The user retains legal title to the property, and ultimately will repurchase the property at the end of the 10 year lease term for $1. The taxable income and cash flows to the lessor and lessee are described in the following paragraphs.

What may initially appear as a dubious investment for the lessor makes economic sense once the timing of the cash flow is evaluated. The lessor is receiving positive cash inflow in years 2-5, which, when reinvested at current interest rates, will more than compensate the investor for the cash outflows in years 6-10. Similarly, the lessee is receiving a lump sum of cash in year 1, and will receive added tax shields throughout the lease term should the firm ever attain profitability. Both parties gain. The lessor is presumably receiving a competitive rate of return on the initial investment, and the lessee is receiving tax benefits that would not otherwise be obtained.

TABLE 3.1--Results to Lessor

Year	Rent Income	Interest Expense	Cost Recovery*	Taxable Income (Loss)	Tax Rate	Tax Benefit (Cost)	ITC**
1	$ 13,429	$ 9,129	$ 15,000	($10,700)	50	$ 5,350	$10,000
2	13,429	8,583	22,000	(17,154)	50	8,577	
3	13,429	7,969	21,000	(15,540)	50	7,770	
4	13,429	7,276	21,000	(14,847)	50	7,424	
5	13,429	6,496	21,000	(14,067)	50	7,034	
6	13,429	5,617	-	7,812	50	(3,906)	
7	13,429	4,626	-	8,803	50	(4,402)	
8	13,429	3,509	-	9,920	50	(4,960)	
9	13,429	2,251	-	11,173	50	(5,589)	
10	13,429	834	-	12,595	50	(6,298)	
	$134,290	$56,290	$100,000	$22,000		$11,000	$10,000

*Maximum Allowed
**Investment Tax Credit

TABLE 3.1 (Continued)

Year	Total Tax Benefit (Cost)	Inv	Net Cash Flow	Cumulative Cash Flow
1	$15,350	($22,000)	($ 6,650)	($ 6,650)
2	8,577		8,577	1,927
3	7,770		7,770	9,697
4	7,424		7,424	17,121
5	7,034		7,034	24,155
6	(3,906)		(3,906)	20,249
7	(4,402)		(4,402)	15,847
8	(4,960)		(4,960)	10,887
9	(5,589)		(5,589)	5,298
10	(6,298)		(6,298)	(1,000)
	$21,000		$22,000	($ 1,000)

TABLE 3.1--Results to Lessee

Year	Interest Income	Rent Expense	Cash Received
1	$ 9,129	($13,429)	$22,000
2	8,583	(13,429)	
3	7,969	(13,429)	
4	7,276	(13,429)	
5	6,496	(13,429)	
6	5,617	(13,429)	
7	4,626	(13,429)	
8	3,509	(13,429)	
9	2,251	(13,429)	
10	834	(13,429)	
	$56,290	$134,290	$22,000

Efficiency of Safe-Harbor Leases

On June 17, 1982, the Treasury completed an extensive analysis of safe-harbor leasing,[12] a large portion of which was devoted to the efficiency of transactions entered into prior to February 20, 1982. It is estimated that approximately $17.4 billion worth of property was covered by safe-harbor leases.[13] The Treasury estimated that the $17.4 billion of property translated into a present-discounted value of $5.6 billion in tax benefits.[14] The efficiency of the lease to the lessee was a function of: (a) the size of the transaction; (b) the date the lease was executed; and (c) the industry of the lessee. Most of the transactions offered the lessee between 70 and 90 percent of the tax benefits and occurred in the months of November and December 1981. The aggregate efficiency was 76.5 percent. Additionally, it appears that a "learning curve" was in effect: As investors became more sophisticated in their approach to the value of these benefits, the lessee received a larger percentage.[15]

Naturally, the most active lessees were companies in distressed industries, such as forest products, utilities, railroads, autos, and airlines. While most lessees received between 70 and 80 percent of the value of the tax benefits, several received 84 to 86 percent (e.g., in forestry, chemicals, and nonferrous metals). Local and intercity transit received only 60 percent.[16]

TABLE 3.2--Distribution of "Treasury Loss"

	Efficiency Percentage			
	Under 50	50-60	60-70	70-80
Percentage of Transactions	5.7	10.1	14.3	29.5
	80-90	90-100	Over 100	
Percentage of Transactions	35.3	4.5	.6	

TABLE 3.3 --Distribution of Benefits According to Size of Transaction

	Size of Transaction (%)			
	Under $0.1 Million	$0.1 - 1.0 Million	1 - 10 Million	Over $10 Million
Share of Benefits to:				
Seller/Lessee	61.7	66.7	70.2	77.0
Buyer/Lessor	33.9	28.3	23.4	21.4
Third Party Agents	4.4	5.0	6.4	1.6
All Parties	100.00	100.00	100.00	100.00
Percentage of Transactions	6.0	16.9	31.2	45.9

TABLE 3.4 --Use of Safe-Harbor Leasing by Industry ($ Millions)

	Basis of property	Cash payment to lessee*	Present value of revenue loss	Efficiency percentage**
Mining - metals & coal	$ 330	$ 86	$ 114	74
Oil and gas	1,202	308	402	76
Nonmetallic minerals	196	61	70	86
Forest products	1,801	541	642	84
Chemicals	1,316	336	398	84
Rubber	266	65	87	74
Cement	551	149	194	76
Ferrous metals	1,082	326	444	73
Nonferrous metals	414	108	125	86
Local and intercity transit	174	28	44	60
Communication equip.	157	44	53	82
Motor vehicles	1,315	238	299	79
Aircraft manufacturing	221	56	71	78
Railroads	1,594	412	569	71
Fabricated metal products	158	37	52	70
Shipping	223	63	80	78
Airlines	1,392	361	495	72
Communications	430	101	127	79
Utilities	1,685	419	555	75
Financial institutions	361	71	92	77
Equipment and other lessors	1,548	289	378	75
Total (including industries not listed separately)	17,410	4,316	5,571	77

* Does not include any offset for fees paid by lessee to third parties.
**This is the cash payment to the lessee minus fees assumed to be paid by the lessee to third parties divided by the revenue loss. All present value calculations assume a 12 percent discount rate.

TABLE 3.5 --Distribution of Transactions According to Execution Date (Percentages)

	Date Lease Was Executed				
	Nov. 1981	Dec. 1981	Jan. 1982	Feb. 1982*	Other**
Share of Benefit to:					
Seller/Lessee	73.8	81.1	75.5	80.4	74.2
Buyer/Lessor	24.0	17.4	22.1	18.1	25.2
Third Party Agents	2.2	1.5	2.5	1.5	.6
All Parties	100.0	100.0	100.0	100.0	100.0
Percentage of Transactions	55.7	31.1	4.4	7.0	1.8

*Before February 20.
**Primarily September and October 1981.

Although safe-harbor leasing was utilized extensively by many companies, a computer search of all companies specifically reporting the use of safe-harbor leases produced a mere 38 firms (asterisk indicates a lessor).[17]

Bethlehem Steel
*RR Donnelly
*Hercules Incorporated
*Independent Bankshares
*CBI Industries
*Pennsylvania Power & Light
Southern Pacific
*Gleason Works
*Pepsi Co.
Phelps Dodge
*Oxford First Corp.
*Dynalection
*Equifax
*Bank of Commonwealth
*Foot Cone & Belding Communications
Marriott
Allis Chalmers
Susquehanna
*Baldor Electric
*Mesa Petroleum
*Illinois Tool Works
Central Bankshares of the South
Pan American
Philadelphia Electric
*PSA
Air Florida
*Alexander & Alexander
GAF
Levitz Furniture
Phoenix Steel
*Thermo Electron
*Cray Research
*Ponderosa
Nicklos Oil & Gas
*Carson Pirie Scott
Comcast Corp.
*Baltimore Gas & Electric
Hudson's Bay Oil & Gas Limited

Firms conspicuous by their absence include General Electric, Occidental Petroleum, Ford, IBM, Chrysler, and General Motors.[18]

Accounting for Safe Harbor Leases in Financial Statements

Although the previously mentioned firms did not specifically disclose their safe-harbor transactions as such, this should not presuppose the issue of whether or not the data was disclosed in another fashion, or under the guidelines of FASB Statement No. 13, "Accounting for Leases." On October 29, 1981[19] the Financial Accounting Statements Board issued an exposure draft delineating the proposed accounting treatment for safe harbor leases. Under the provisions of this draft, the FASB concluded that leases should be accounted for not under Statement No. 13 but rather as a purchase or sale of tax benefits. The Board concluded that sale-leaseback leases should be accounted for as follows:[20]

Seller of investment credits. The seller of investment credits should recognize its net-of-tax proceeds in income for the initial year of the transaction.[21]

Buyer of investment credits. The purchase should be accounted for as an investment. The net gain should be amortized into income at a constant rate of return based on its unrecovered investment at the beginning of each period.

Seller of ACRS deduction. The seller should account for the sale price as a reduction of the carrying amount of the related

property, thereby recognizing the income over the asset's useful life.

Buyer of ACRS deductions. The buyer should amortize the cost of its asset over the lease term based on a prescribed constant rate of interest method.

Disqualifying Events

Permanent safe harbor treatment for a lease transaction is by no means guaranteed. There are at minimum 14 different situations which can precipitate the disqualification of safe-harbor treatment. In the event such disqualification occurs, ownership of the property is assumed to revert back to the lessee from the lessor--in essence, the event is considered a sale of the property by the lessor to the lessee. Therefore, the amount realized by the lessor includes the outstanding amount of the lessor's debt on the property plus any other consideration received by the lessor.

More importantly, the normal rules for investment tax credit and ACRS recapture will apply. As a result, a significant portion of the tax benefits received by the lessor during ownership would be returned to the government. The earlier disqualification occurs, the larger the loss to the lessor.[22]

The terminating events are as follows:[23]

1. The lessor fails to file a copy of the Safe Harbor Lease Information Return, Form 6793, with its income-tax return for its taxable year during which the lease term begins.

2. For agreements executed before January 1, 1982, both the lessor and the lessee fail to file the required information return by Januey 31, 1982.
3. The lessor sells or assigns its interest in the lease or in the qualified leased property in a taxable transaction.
4. The lessee, or any transferee of the lessee's interests, sells or assigns its interest in the lease or in the qualified leased property in a transaction other than a disposition in bankruptcy or similar proceeding covered by Temporary Reg. 5c 168(f)(8)2(a)(b), and the transferee fails to execute the required consent; or either the lessor or the transferee fails to file with their income-tax returns the required statements.
5. The property is no longer Section 38 (qualified) property, in the hands of the lessor or lessee, as defined in the regulations.
6. The property, leased under the provisions of Code Sec. 168(f)(D)(iii), is no longer a qualified mass commuting vehicle.
7. The lessor becomes an electing small business (tax option) corporation or a personal holding company and thus ceases to be a qualified lessor.
8. The lessor's minimum investment becomes less than 10 percent of the adjusted basis of the leased property.

9. The lease terminates.
10. The property becomes subject to more than one lease for which an election is made under the safe-harbor provisions.
11. The property is transferred in a bankruptcy or similar proceeding and the lessor fails to furnish the required notification or to file a statement with its income-tax return as required by Temporary Reg 5C. 168(f)(8)2(a)(b).
12. The property is transferred in a bankruptcy or similar proceeding and not all lenders with perfected and timely interests in the leased property specifically excluded as required by Temporary Reg 5c. 168(f)(8)-2(a)(b)(iii).
13. Subsequent to a bankruptcy or similar proceeding, the property is transferred and the lessor fails to furnish notice to the transferee prior to the transfer or fails to file a required statement with its income tax return, and either the lessor fails to secure the transferee's consent or the lessor or the transferee fails to file statements with its income-tax returns.
14. Certain retirements or casualties occur.

It would seem that the greatest probability of disqualification would come to pass through either an inappropriate assignment or sale by the lessee or wrongful transfer of lessee's interest in bankruptcy.

Avoiding Disqualification

Unwind and Indemnification Clauses

The lessor had several means available by which to reduce the exposure to ACRS and investment-tax recapture. Fist, the lessor could insert indemnification and unwind clauses in the lease contract. Under an indemnification clause, a lessee would be required to make a payment to the lessor who was denied his full tax benefits as a result of a violation by the lessee of one of the terms in the lease contract. An unwind clause would require both parties to return any cash payments that would have been exchanged through the duration of the lease agreement such that each party would be in the identical position as at the inception of the lease agreement. This latter clause was designed to reduce the risk borne by the lessor in the event of any future or retroactive changes in the safe-harbor law.[24]

Insurance

Although the lessor could engage in legal recourse against the negligent lessee for damages caused by tax-benefit recapture, it was possible that the lessor might have insured benefits instead. Safe harbor insurance coverages fell into two key areas: (a) recapture of the benefits due to physical losses--e.g., damage to the leased property; or (b) non-physical losses, like bankruptcy. Most insurance firms were reluctant to provide bankruptcy coverage because of the faltering economy and the escalating number of bankruptcies. However, two insurance firms--Tax Lease Management's Tax Benefit

Indemnity Insurance, and Lloyds of London--provided coverage for lessors and lessees.[25] In the event of bankruptcy by the lessee, the insurance company would have to pay the lessor and then would immediately file a claim for the loss against the lessee. The insurance company would presumably argue on the lessor's behalf under the jurisdiction of the bankruptcy code.

Thus, the lessor could "lock in" a risk free rate of return. For instance, if the efficiency percentage of benefits paid to the lessee was an average 76 percent and the insurance premiums ranged in cost from 3 to 10 percent[26] of the average termination value of the property or equipment, the lessor could have purchased the tax benefits from the lessee and then immediately thereafter would purchase insurance from Lloyds (or Benefit Indemnity), thereby guaranteeing the tax proceeds for the next five years,[27] all at a presumable profit. However, the lessor might have decided to self insure the tax benefits, and accordingly rely exclusively on indemnification and unwind clauses as enforced through proper litigation. The decision to insure or not insure was a function of corporate management's level of risk preference vis-à-vis the insurance company and the perceived rate of return available before and after insurance.

Tax Equity and Fiscal Responsibility Act of 1982

The enactment of TEFRA was basically designed to reduce the attractiveness of safe-harbor leases and eliminate the perceived abuses previously mentioned. In essence, TEFRA addressed four primary

areas concerning safe harbor leases:[28] (a) the reclassification of some "qualified leased property"; (b) limitations on the lessor; (c) limitations on the lessee; and (d) adjustments to the ACRS and investment tax credits. TEFRA also has provisions that apply to lease transactions effective after December 31, 1983.[29]

1. Qualified leased property. The general definition of "qualified leased property" has not been changed. However, certain limitations have been mandated such that safe-harbor leases can be used for no more than 45 percent of the 1982 and 1983 property placed in service by a lessee.[30] Any property exceeding the 45 percent limitation in any calendar year will be disqualified to the extent of the excess amount. The limitation is determined on a first in-first out basis, so that property will be eliminated in a reverse chronological fashion, based on the dates when the lease agreements were executed. Leases entered into prior to July 1, 1982, will not be retroactively denied, but will be taken into account for purposes of calculating the limitation on other leased property.

   In addition to the lessee limitation, the Act also precluded the use of safe-harbor leasing for: public utility property described within Section 167(l)(3)(A); property defined under Section 297(b),[31] property leased to an organization which has held tax-exempt status

within the past five years, and certain property used by a nonresident alien individual or a foreign corporation.

2. Limitations on the lessor. Perhaps the most significant change affecting the lessor is that which limits the available reduction in tax liability via safe harbor leasing credits and deductions to no more than 50 percent. In the event the lessor purchases credits and deductions in excess of the 50 percent tax liability limitations, such amounts may be carried forward. Although the 50 percent limitation will not be applied retroactive to property placed in service and leased prior to July 2, 1982,[32] it should be noted that the new law prohibits the carryback of credits or losses generated by a safe-harbor lease.

   The new Act also prohibits safe-harbor leasing among related parties as defined in Section 1504.[33]

3. Limitations on the lessee. The new act alters the way a lessee computes the percentage depletion deduction such that taxable income will now be smaller, and accordingly, so will the depletion deduction. Under the 1981 rules, the lessee would have had a deduction equal to the lease rentals minus the interest income. Since the net rental deduction would usually be smaller than the related ACRS benefits available, taxable income would be

larger, as would the percentage depletion. The new provision requires lessees to compute the 50 or 65 percent depletion limitation[34] as if they were still the owners of the property leased under the safe harbor lease arrangement. Therefore, they would claim depreciation and other deductions associated with property ownership. However, the new law softens the overall impact to the extent that the depreciation deduction will be determined not using the ACRS methods of 1981, but rather by the new recovery methods discussed below.

4. Adjustments to the ACRS deduction and investment tax credits. The new Act reduces the tax benefits available to the lessor, and as a result, decreases the attractiveness of safe harbor lease transactions. The lessor must now claim the investment tax credit over a five-year period (20 percent per year), compared to the former law which permitted 100 percent in the year placed in service. In addition, the ACRS deduction previously allowed is no longer permitted. The lessor must now depreciate the purchased property over a longer life by using the 150 percent declining balance method with a changeover to the straight line method (see Table 3.6).

Type of Property	Recovery Period
3-year	5 years
5-year	8 years
10-year	15 years

TABLE 3.6--Depreciation Deductions under the New Act.

Year of Lease	ACRS CLASS*		
	3-year	5-year	10-year
1	15	9	5
2	25	17	10
3	20	14	9
4	20	12	8
5	20	12	7
6		12	7
7		12	6
8		12	6
9			6
10			6
11			6
12			6
13			6
14			6
15			6

*Tax Equity and Fiscal Responsibility Act of 1982.

In addition to the ACRS changes, the maximum lease term has been decreased from 150 percent of the ADR midpoint to the greater of 120 percent of the ADR guideline life or the depreciation period previously discussed. Also, the at-risk rules have been modified.

The new act eases the restriction of the at-risk rules relating to losses and the investment credit as they apply to closely held corporations. Prior law provided that the lessor was subject to the stricter of the at-risk rules as they applied to both the lessor and the lessee. Now the closely held lessor is subject to the at-risk rules only to the extent that the lessee is subject to the same rules.

Effective Dates

Most changes in the safe harbor leasing law are effective for property placed into service after July 1, 1982. The new rules do not apply to property placed into service before January 1, 1983, if the lessee had entered a binding contract to purchase or construct the property during the period from January 1, 1981 to July 1, 1982. In addition, changes in the new Act concerning the percentage depletion limitations and related party leases are effective for leases entered into after February 19, 1982. Finally, the provisions will be repealed for property placed into service as of January 1, 1984, and qualified mass commuting vehicles as of January 1, 1988. Property may be placed into service pursuant to the dates above, if the property was subject to a binding contract entered into before April 1, 1983.

Finance Leases

Congress established a new category of leases, called finance leases, which will be effective for lease agreements entered into after December 31, 1983. These new rules appear to be a compromise of sorts, relaxing the restrictions of the pre-ERTA rules yet still providing the safe-harbor limitations. There are two major differences compared to the pre-ERTA rules: (a) the lessee is provided a fixed price purchase option, which is at least 10 percent of the original cost of the property, and (b) the lease may cover "limited-use" property (property which can only be used by the lessee). Aside from these two changes, a finance lease must satisfy all other "pre-safe harbor" requirements in order to be classified as a lease for federal tax purposes.

ENDNOTES

Chapter III

[1]Schall and Haley Introduction To Financial Management, Second Edition.

[2]Schall and Haley note: ". . . a lessor can also take the tax credit and use depreciation and will in a competitive market pass at least some of the tax benefits on to the lessee in the form of lower rental charges". Introduction To Financial Management, Second Edition.

[3]U.S. Congress and Senate, Committee on Ways and Means, Analysis of Safe-Harbor Leasing. Report Bulletin 27 (New Jersey: Prentice-Hall, Englewood Cliffs), 1982.

[4]Through reduced taxes paid by lessors.

[5]Most notably from Senator Dole.

[6]Code Section 168(f)(8).

[7]As defined in Code Sec. 103(b)(9).

[8]U.S. Congress and Senate, Committee on Ways and Means, Analysis of Safe-Harbor Leasing. Report Bulletin 27 (New Jersey: Prentice Hall, Englewood Cliffs), 1982 - estimated in excess of $1 billion worth of property were involved in lease transactions prior to November 13, 1981.

[9]The debt service payment consists of both interest and principal. The excess amount is thus the principal repayment.

[10]Taxes - October 1, 1982 Vol. 6 No. 10. The Tax Equity and Fiscal Responsibility Act of 1982 - Safe Harbor Lease Provisions Corralled, But Still Alive and Kicking.

[11]The example was adapted from Arthur Anderson & Co. - Capital Cost Recovery Planning under the Economic Recovery Tax Act of 1981.

[12]U.S. Congress and Senate, Committee on Ways and Means, Analysis of Safe Harbor Leasing. Report 27 (New Jersey: Prentice Hall, Englewood Cliffs), 1982. (Tables 3.2-3.5 on pages 45-48 can be found in this publication).

[13]In actuality $22.2 billion was involved, but $4.7 billion was not of the sale-leaseback arrangement previously described.

[14]This amount is adjusted for tax reductions from cost recovery deductions and investment credits minus tax increases from net rental income for the buyer/lessor, discounted at 12%.

[15]It should be noted that although the efficiency percentage dropped in January 1982 (compared to December 1981), this could have been caused by the reduced incentive of calendar-year taxpayers to purchase tax benefits away from the close of their taxable year (P.V. of benefits would be lower).

[16]Much of the inter-city transit consisted of the highly publicized purchase by General Electric of Amtrak benefits.

[17]Using the Lexis/Nexis Program.

[18]Data was received from The Wall Street Journal and will be included in the data set.

[19]Revised as of April 13, 1982.

[20]Code Section 168.

[21]This method assumes a flow through method of accounting. If the corporation uses the deferral method, then they of course would amortize the net proceeds consistent with existing policies.

[22]U.S. Congress and Senate. Committee on Ways and Means, Analysis of Safe Harbor Leasing. Report 27 (New Jersey: Prentice Hall, Englewood Cliffs), 1982.

[23]Code Section 168

[24]U.S. Congress and Senate, Committee on Ways and Means, Analysis of Safe Harbor Leasing.

[25]Business Insurance, August 23, 1982.

[26]Business Insurance, August 23, 1982.

[27]The effective termination date for most safe harbor transactions.

[28]Tax Equity and Fiscal Responsibility Act of 1982 An Analysis of The New Legislation and Related Tax Planning Opportunities, Arthur Young and Company, August 1982.

[29]For the entire calendar year.

[30]For example, Section 291(b) property refers to certain deducations affiliated with mine exploration and development costs.

[31]This property will still be used to calculate the limitation for other property, i.e. purchased after July 1, 1982.

[32]Disregarded for Section 1504(b).

[33]As defined in Code Section 613.

[34]Conf. Rep. No. 760, 97th Cong., 2d, Sess 497.

CHAPTER IV

LITERATURE REVIEW

Much of the literature on leasing theory focuses on two key areas: (a) Should the firm lease or borrow and buy? (b) What is the appropriate discount rate to use on the different cash flows?

The former question was first addressed by Schall (1974) in the now familiar format of lease-or-buy. He presented an analysis for determining whether an asset should be acquired and how acquisition, if warranted, should be financed. Two characteristics of the decision rule were emphasized. First, the asset's value depended upon its after-tax returns. Computation of these returns under each lease and purchase option was based upon the relevant flows. Second, he suggested that cash-flows from a project should be discounted at a rate commensurate with the risk associated with the flows. Many models have since been presented in order to correctly ascertain the appropriate discount rates.[1]

A series of articles by Miller and Upton (1976), Lewellen and Long (1976), and Myers and Dill (1976) helped develop the theoretical foundations of the financial literature on leasing.

Miller and Upton (1976) were the first to suggest that rental rates for capital equipment are expected to adjust until, in equilibrium, the financial advantage of either arrangement is identical.

This presumption of financial equivalence has since been used as a standard format for lease-or-buy decision models under uncertainty. However, the presumption disintegrates when allowance is made for the specifics of U.S. tax laws. The symmetry is eliminated by the fact that lessee firms, which may be in a tax-loss position, may not always be able to take full advantage of some of the tax subsidies available that Congress allows. Thus, they reasoned, leasing companies offer equilibrium rental rates which are intended to maximize the utilization of these subsidies.[2]

Similarly, Lewellen and Long (1976) suggested that environmental factors which can produce significant differences in the costs of asset purchase and asset leasing will seldom prevail, particularly since the tax-rate effect on the transaction is unpredictable. Deviations from equilibrium cannot be excluded, but market pressures can be expected to eliminate most of these efficiently and rapidly. The corporate-decision rule for testing those possibilities was portrayed, and the securities market context of such a decision was identified. The implications of that analysis were that subsequent research in the leasing realm might most advantageously focus on the scope of the market imperfections (e.g., taxes) as distinct influences and on the empirical prevalence of the factors discussed which could result in exploitable gains. They concluded that in an idealized competitive environment, a reliable rationale for leasing attractiveness could not reasonably be maintained.

Myers and Dill (1976) corroborated that notion by suggesting that the importance of different tax rates exists for lessees versus lessors, particularly when interest rates are high and accelerated depreciation is permitted for tax purposes. However, they noted, saving taxes appeared to be the only significant motive; other frequently cited reasons appear artificial or transitory. In efficient[3] and competitive capital markets, the lease versus borrow problem would be an irrelevant issue apart from tax considerations. Leasing was conceivably a convenient legal form for arranging secured debt. If so, they conjectured, the popularity of financial leasing may have been the consequence of a gradual shift to secured debt, as witnessed by firms' increased debt ratios. At that time, there had not yet been any documented empirical work to determine what types of firms would lease and under what circumstances.

Several empirical studies have since been done. Sorensen and Johnson (1977) conducted a study to analyze the costs of leasing. It was predicated on several earlier studies indicating that the cost of leasing was more than the cost of debt to the asset user.[4] The data used in the study included 520 lease contracts from four lessor firms. Each contract was analyzed with respect to outlay costs of the asset, repayment requirements, length of lease period, collateral, lessor and asset category. The study indicated that the cost rates were quite high, averaging 25 percent on a before-tax basis. Although no specific debt-versus-lease analysis was conducted, it implied that debt would be a less costly alternative, given the existing

market conditions. Finally, they noted that lease contract provisions differed significantly among lessors, indicating that opportunities were available for those able to negotiate better terms.

The Anderson and Martin (1977) study was a survey of 48 of the largest industrial firms to determine how they approached lease-versus-purchase decisions. The questionnaire included a case study and some questions. The results of the survey indicated that 50 percent of the respondents used a traditional internal rate-of-return model and approximately 22 percent used the conventional net-present-value model. The use of these two methods tended to bias the analysis in favor of the purchase alternative, since these methods did not account for differential risk. The bias was exacerbated by the fact that justification based on the purchase analysis was usually made prior to consideration of the lease alternative.

Finally, Crawford, Harper and McConnell (1981) sought to ascertain why yields on financial leases greatly exceeded yields on equivalent debt financing arrangements. Fifty financial leases issued by three Houston banks from April 1973 to June 1980 were examined. The data gathered included: (a) the issue date of leases; (b) the cost of the assets, (c) prepayment requirements, (d) the time period of the contract, and (e) the size and recipient of the investment tax credit. The internal rates of return were calculated for each lease. Multivariate regression analysis was used to examine the impact of the lease terms on the leasing cost.

The study also examined leases involving computers and those grouped by the purchase price of the assets. The sample had a before-tax yield of 20.7 percent, which was much higher than that of government securities (8.1 percent) or BBB bonds (10.5 percent) of that period. The best explanation for this result was that lease contracts differed in some essential but undetermined way from "comparable" debt contracts. Alternatively it could be that the markets were not operating efficiently.

Table 4.1 depicts the most common leasing models employed. Although the discount rates may vary for different cash flows, each model has been uniquely established as part of the foundation of leasing theory.[5] All of the academic approaches require inputs that include purchase price of the asset to be leased, A_o; lease payment at the end of period, R_j; depreciation charge relevant for tax payment at the end of a period, D_j; cash operating cost expected to occur in aperiod if the asset is purchased but not if it is leased, O_j; expected after-tax salvage value of the asset at the end of the last period covered by the lease agreement, v_n; pre-tax interest rate on term loans "comparable to the lease, r; after-tax cost of capital for the corporation, k; the corporate income tax rate, t; and the number of periods covered by the lease agreement, n.

TABLE 4.1--Approaches to Lease Evaluation

Approach	Summary measure	Excluded flows or other Comments	Equivalent Loan Calculation*	Discount rate used for: X_2	X_3	X_4	X_5	X_6	X_7
Beechy	1	tL_j is used instead of tR_j in the 3rd term of the equation.	$P_o = A_o$ $B_o = \sum_{j=o}^{n} (R_j/(1+r)j)$ $L_j = R_j(P_o/B_o)$	1	1	1	1	1	1
Bower, Herringer, Williamson (4)	NAL		$P_o = A_o$ $B_o = \sum_{j=0}^{n} (R_j/(1+r)j)$ $L_j = R_j(P_o/B_o)$	r	k	k	k	k	k
Doenges Mitchell Wyman	1(1-t)	I_j is excluded. Wyman provides a probability distribution of rates.	None	1(1-t)	1(1-t)	1(1-t)	-	1(1-t)	1(1-t)
Findlay	NAL	Certainly equivalents of O_j and V_n are used in the 6th and 7th terms.	$P_o = \sum_{j=o}^{n} (R_j/(1+r)j)$ $L_j = R_j$	r	r(1-t)	r(1-t)	r(1-t)	r(1-t)	r(1-t)
Johnson and Lewellen	NAL	I_j is excluded	None	r(1-t)	r(1-t)	k	-	k	k
Roenfeldt and Osteryoung	1(1-t)	I_j is excluded. Certainly equivalents of O_j and V_n are used in the 6th and 7th terms.	None	1(1-t)	1(1-t)	1(1-t)	-	1(1-t)	1(1-t)

Approach	Summary measure	Excluded flows or other comments	Equivalent Loan Calculation*	Discount rate used for: X_2	X_3	X_4	X_5	X_6	X_7
Vancil	NAL		$P_o = A_o$ $L_j = R_j$	r	k	k	k	k	k

*Only the first two or three equations required to produce the equivalent loan flows are shown in each box. The remaining equations are the same for each approach. The full set of equations for Beechey's approach is:

$$P_o = A_o \qquad L_j = R_j(P_1/B_o) \qquad Q_j = L_j - I_j$$

$$B_o = \sum_{j=o}^{n} (R_j/(1+r(j) \qquad I_j = rP_{j-1} \qquad P_j = P_{j-1} - Q_j.$$

The approaches differ regarding relevant alternatives and the choice of a best summary measure of comparison. The relevant alternatives are expressed in terms of outstanding principal of the loan equivalent, P_j; loan payment at the end of period, L_j; interest component of the loan payment, I_j; principal component, O_j; present value of the lease claim, B_o; and in discount rates to be applied to cash flows in each category, X_m, intended to reflect opportunity costs.[6]

The following model was used for determining the price that a prospective lessor/buyer would pay a lessee/seller for his tax benefits.

Consider a sale-leaseback with the following terms:

1. The user purchases the property for price P and sells it to the investor also for price P.
2. The investor gives the user a cash payment of X and an n-year note for P-X, with level payments and interest rate r.
3. The user leases back the property for n years with the annual rental payment just equal to the annual payment on the loan.
4. The user can purchase the property at the end of the lease for $1.

Given the price P, the term of the lease n, and the interest rate on the note r, what cash payment will the investor be willing

to make for the tax benefits, assuming he must earn an after-tax rate of return of i percent? From standard investment theory, we know that the present value of the cash flow from the investment must be equal to X, the initial cash outlay. The cash flow from the investment may be broken into three components: (a) the present value of the investment tax, plus (b) the present value of the tax savings from the depreciation deductions, minus (c) the present value of the tax on the amortization of the note. The annual amortization of the note is the difference between the rental income the investor receives and the deduction he receives on the interest of the note. This difference is, of course, taxable income.

An algebraic expression for the cash payment, therefore, would be:

$$X = PV(ITC) + uPV\ (Dt) = u(P-x)\ PV(at).$$

where:

PV(ITC) = present value of the investment tax credit, discounted at rate i

u = marginal tax rate of investor

$PV(D_t)$ = present value of the depreciation deductions, discounted at rate i

PV(at) = present value of the amortization payments on a level payment loan of $1 for n years at interest rate, discounted at rate i.

Solving for X:

$$X = \frac{PV(ITC) + uPV(Dt) - uPPV(at)}{1 - uPV(at)}$$

Development of a Safe-Harbor Model

The value of a safe-harbor lease is similar in calculation to other leasing models. The value of the tax benefits to the lessor will be a function of: (a) the timing of the benefits, (b) the likelihood of government revisions or repeal of the law, (c) the probability of property conversion by the lessee, and (d) the degree of market efficiency.

Although it may be argued that a "learning curve" was in effect as the new law became popular, the efficiency and pricing of tax benefits by the market after a brief interval presumably reached a relatively mature state. Tax leasing services provided an orderly market for companies to sell their unused tax credits.[7] For example, the New York Leasing Exchange offered its members a computerized listing of equipment that was available for tax-leasing deals. The average transaction was in the $5-$10 million range.

Since it can be assumed that the market is fairly efficient for the larger and most important transactions, perhaps the greatest risk is inherent in the solvency of the lessee. The approach taken

by the Internal Revenue Service in temporary regulations differs from a proposal of some members of Congress in that the occurrence of specified events causes the transaction to cease to qualify as a safe-harbor lease, placing the risk of loss of safe-harbor protection on the lessor with respect to third-party secured creditors. Safe-harbor protection is lost as a result of conversion of the leased property for personal use. Another disqualifying event is the failure to comply with the requirements of a safe-harbor lease.

The tax consequences of a disqualifying event depend upon the characterization of the parties involved. Indemnification payments can ameliorate the risk that the tax consequences of the transaction will be different from those originally anticipated. Other areas of potential risk are the possibility that contemplated tax benefits could be affected by future legislative changes and by their treatment by state taxing authorities.

TBT Lease Valuation Model

Fabozzi and Yaari (1983) explored the area of joint tax benefit to each of the lessors and lessees who participated in safe-harbor lease transactions. The "net benefit" was a function of negotiation between the parties with respect to the relevant variables, as follows:

P - down payment, paid by the lessor upon entering a lease contract

L - wash loan offered by the lendor (lessee) to the borrowed (lessor) to cover the balance of the contract (leased asset price - lessors' down payment)

R - the annual rental charged to the lessee through the term of the lease; the rental annuity exactly coincides with the loan annuity charged to the lessor

D_t - the annual depreciation claimed by the lessor

T_c - the investment tax credit claimed by the lessor

I_t - the annual interest charge on the laon to the lessor

i - rate of interest implicity in the wash loan

r - lessor's relevant discount rate

τ - lessor's marginal tax rate (assumed to remain constant)

Since R is a rental annuity which exactly offsets the loan annuity discounted at the rate i, L (loan balance) can be written as a discounted value of that annuity.

$$L = R \frac{1}{i} \left[1 - \frac{1}{(1 + i)^n}\right] \tag{1}$$

implying

$$R = L \left[\frac{i}{1 - (1 + i)^{-n}}\right]$$

Interest Payments. The loan annuity R consists of an accelerated repayment of principal and a decelerated payment of interest. The interest expense is relevant for tax purposes and may be stated in terms of i and the existing loan balance.

where:

$$I_1 = iL$$

$$I_2 = i\ (L + I_1 - R)$$

$$I_3 = i\ (L + I_1 + I_2 - 2R)$$

$$I_n = i\ [L + I_1 + I_2 + \ldots . I_{n-1} - (n-1)R]$$

By substituting R and the preceding I values:

$$I_1 = L_i\ (1 + i)^0\ \frac{(1+i)^n - 1}{(1+i)n - 1}$$

$$I_2 = L_i\ (1 + i)^1\ \frac{(1+i)^{n-1} - 1}{(1+i)\ n - 1}$$

$$I_3 = L_i\ (1 + i)^2\ \frac{(1+i)^{n-2} - 1}{(1+i)\ n - 1}$$

$$I_n = L_i\ (1 + i)^{n-1}\ \frac{(1+i)^1 - 1}{(1+i)n - 1} \qquad (2)$$

Lease value to the lessor. The TBT value to the lessor is nothing more than the discounted cash value of the TBT components.

$$V = -P + T_c + \tau \sum_{t=1}^{n} D_t\ (1 + r)^{1-t}$$

$$- \tau \sum_{t=1}^{n} R(1+r)^{-t} + \tau \sum_{t=1}^{n} I_t\ (1 + r)^{-t}$$

$$- (1 - \tau) \sum_{t=1}^{n} x_t\ (1 + r)^{-t} \qquad (3)$$

The first term is the downpayment made by the lessor; the second term, the investment tax credit; the third term, the discounted value of the depreciation tax shield; the fourth term, the negative value of tax payments on superficial rental income; the fifth term, the discounted value of superficial interest payment deductions; and the sixth term, the after tax expense of extraneous items borne by the lessor such as legal fees, intermediators costs, and insurance.[8]

Fabozzi and Yaari (1983) further defined V by making the following substitutions. Based on equation (1), the fourth term of (3) can be restated in closed form:

$$-\tau L\left[\frac{i}{1-(1+i)^{-n}}\right]\left[\frac{1-(1+r)^{-n}}{r}\right] \tag{4}$$

Similarly, based on (2), the fifth term becomes:

$$\frac{\tau L i}{(1+i)^{n}-1}\sum_{t=0}^{n-1}\left[(1+i)^{n-t}-1(1+i)^{t}(1+r)^{-t-1}\right.$$

$$=\tau L\left[\frac{i}{1-(1+i)^{-n}}\right]\left[\frac{1-(1+r)^{-n}}{r}\right] \tag{5a}$$

$$-\tau L\left[\frac{i}{1-(1+i)^{-n}}\right]-1\left[\frac{1-(1+i)^{n}}{r-1}\frac{(1+r)^{-n}}{}\right] \tag{5b}$$

The first component, (5a), is identical to (4) but in the opposite sign, allowing substitution of the second component, (5b), for the fourth and fifth terms in (3) (Note: $L = 1 - P$).

$$V = -P + C^* + \tau D^* = \tau(1 - P)\left[\frac{i}{(1+i)^n - 1}\right]\left[\frac{1 - (1+i)^n(1+r)^{-n}}{r-1}\right] \quad (6)$$

where C* and D* are the discounted values of the ITC and depreciation allowances, respectively, assuming optimal ITC/depreciation policy on the part of the lessor. The down payment is the price which the lessor pays for the tax credits. Equation (6) indicates that an increase in the price of the lease does not cost the same amount. Any increase in P results in an identical inverse decrease in the size of the loan assumed by the lessor. The net effect causes an exact decrease in both rental receipts and loan payments. The former has a greater tax effect, where $0 > \partial/\partial P > -1$, such that:

$$\frac{\partial V}{\partial P} = -1 + \tau\left[\frac{i}{(1+i)^n - 1}\right]\left[\frac{1 - (1+i)^n(1+r)^{-n}}{r - 1}\right]$$

The price at which the lessor is indifferent is derived by setting at zero the value given by (6) and solving for P

$$P = 1 - \frac{1 - C^* - \tau D^*}{1 - \tau\left[\frac{i}{(1+i)^n - 1}\right]\left[\frac{1 - (1+i)^n(1+r)^{-n}}{r - i}\right]} \quad (7)$$

If the lessee is currently in a tax-loss position and expects to remain that way for the foreseeable future, then the net benefit to the lessee is entirely comprised of the down payment received from the lessor. Since the only direct cost to the lessor is the

down payment, which is a dollar-for-dollar cost, the joint benefit to both parties, V_j (at the Treasury's expense), can be estimated by dropping the down payment term from (6):

$$V_j = C^* + \tau D^* - \tau(1 - P)\left[\frac{i}{(1 + i)^n - 1}\right]\left[\frac{1 - (1 + i)^n(1 + r)^{-n}}{r - i}\right] \quad (8)$$

This value is increasing in the price paid by the lessor to the extent indicated by:

$$\frac{\partial V_j}{\partial P} = \tau\left[\frac{i}{(1 + i)^n - 1}\right]\left[\frac{1 - (1 + i)^n(1 + r)^{-n}}{r - 1}\right] \quad (9)$$

The maximum joint benefit occurs when the lessor receives zero benefit, and is stated in (7).

Fabozzi and Yaari (1983) addressed a hypothetical situation in which the participants of the transaction stipulated an a-priori agreement on how to best maximize the tax benefits and subdivide the portions thereof. Equation (8) implies a maximization of benefits when payment equals the full asset price (P = 1). Such a situation, however, would be inconsistent with the existence of differential tax effects between the lessee and the lessor. If the parties agreed that the lessee was to receive a stipulated percentage (w) of the joint benefit, then the correct price paid could be determined by substituting (6) and (8) in $V = (1 - w)V_j$, and solving for P,

where:

$$P = 1 - \frac{1 - wC^* - \tau D^*}{1 - w\tau\left[\frac{i}{(1+i)^n - 1}\right]\left[\frac{1 - (1+i)^n (1+r)^{-n})}{r - 1}\right]} \tag{10}$$

The loss of tax revenue to the Treasury (or joint tax benefit) is also affected by the duration of the lease and the interest rate charged on the phantom wash loan. The rate of interest charged should have no tax effect on the lessee. The increase in interest income should be offset by an increase in rental expense.

The same result does not hold for the lessor. An identical increase in total interest expense and rental income would result in the lessor having a net tax benefit in the early years. The tax benefit is caused by the concentration of interest expanse owing to a large initial principal balance. Consequently, the tax benefit accruing to the lessor increases as the phantom interest rate increases.[9]

The IRS recognized the anomoly early in the safe-harbor proceedings, and mandated a ceiling on the interest rate charged. The rate utilized by the parties could not exceed the existing penalty rate charged by the IRS for underpayment of taxes.

Since the concentration of the interest payments in early years favors the lessors, any increase in term of the lease would have a greater impact on the tax effect of rental income than on the tax shield of interest expense. The extension of the lease term would therefore enlarge the tax benefit to the lessor.[10] The IRS

recognized this feature as well, and stipulated that the lease term plus extensions could not exceed (a) 90 percent of the extended recovery period of the leased asset, or (b) 120 percent of the asset depreciation range midpoint class life.

The Tax Benefit Transfer lease formula provides a means by which to price the tax benefits received by the lessor and the lessee. The model encompasses the impact of changes in the sharing of benefits as well as changes in the interest rate charged and the term structure of the lease agreement. The final price paid was a function of these variables, as well as implicit time constraints, respective bargaining positions, and any inherent learning curves. However, the redeeming qualities of this model though relevant and precise for large firms--are perhaps inconsequential to small firms, since it fails to consider the intermediary costs, legal fees, and insurance provisions. These expenses could easily be cost prohibitive for small entities, and were the single most important factor attributed to the nonparticipation of these firms.[11]

ENDNOTES

Chapter IV

[1]See Table 1.

[2]Miller and Upton (1976). Further explained that leasing firms specialize for this primary purpose.

[3]This application of efficiency should be differentiated from the Treasury's usage of "inefficiency", as defined and applied in Chapters I, II and III. The balance of the dissertation will refer to "efficiency" in the context of pricing assets in capital markets.

[4]See Table 1 for comparison of studies and implicit assumptions.

[5]Adapted from Richard S. Bower, "Issues in Lease Financing" (1973).

[6]This model and analysis was adopted from the paper by Emil Sunley (1982).

[7]Business Week, April 19, 1982, as well as The Wall Street Journal elaborated on this issue.

[8]This variable was added on to the Fabozzi/Yaari model for completeness. It does not appear again in the context of the remaining formuli.

[9]Proof available in Appendix A of Fabozzi and Yaari (1983).

[10]Proof available in Appendix B of Fabozzi and Yaari (1983).

[11]Leasing Safe Haven of the Economic Recovery Tax Act of 1981: Another tax expenditure, 1982 Wis L Rev 117-49, 1982.

CHAPTER V

METHODOLOGY

Efficiency is of paramount concern in an event study. Uncertainty arises over whether the leases were "accurately priced," or any of the parties settled for a sub-optimal amount, given time constraints and the strength of the respective bargaining positions. Assuming relevant information was available to "informed investors," stock prices should have been an accurate reflection of updated cash flow and tax information. Additionally, stock prices should have reflected significant risk changes caused by new leasing information.

Several articles have addressed the issues of market efficiency and the ability of the market to disseminate new information. A brief review follows.

Fama (1970, 1976) established three types of market efficiency: weak-form, semi-strong-form, and strong-form. Each differs by amount of information disclosed. The weak-form hypothesis presumes that no investor will earn excess returns from trading rules based on historical price information. The semi-strong model states that no investor will earn excess returns from trading rules based on any publicly available information. The strong form suggests that no investor will earn excess returns based on any information, including inside information. All forms imply that prices fully reflect all

relevant information. Consequently, an event study such as the one posited could test either semi-strong or strong-form market efficiency, depending upon the assumptions made regarding leasing information disclosure.

Grossman and Stiglitz (1975, 1976, 1980) addressed the efficiency of the stock markets with traders utilizing diverse information. In essence, they postulated that prices reflect the information of "informed" individuals (arbitrageurs) only the extent that they are compensated for expending resources to obtain their information. Equilibrium prices are established through the manipulation of "informed" investors buying and selling on the basis of information which is subsequently made public to the "uninformed" or naive investor. Both investors are satisfied in equilibrium to the extent they are being adequately compensated for their risk and resources expended (i.e., time, capital, etc.). The "informed" investor may receive a larger absolute gross return than the "uninformed" investor, but this is not considered "abnormal" or "excessive" given the considerations previously mentioned.

Prior to concluding that a return is abnormal, a return-generating model must first be established, describing an expected or normal return. Several readily available market models may serve as a benchmark in generating ex-ante expected returns. The test hypothesis should be defined so that a return is considered abnormal or excessively risk adjusted only if the ex-post returns are significantly different than the returns predicted under the ex-ante

process. Some of the market models assessed in an event study include the following.

The mean adjusted return model assumes that risks and returns are constant for each particular security. Consequently, a security j may have a constant return k_j such that the ex-ante return $E(\tilde{R}_{jt}) = k_j$. The corresponding ex-post return in time period t will thus be equal to k_j. The abnormal return $\tilde{\varepsilon}_{jt}$ is equal to the difference between the actual return R_{jt} and the expected return $k_j(\tilde{\varepsilon}_{jt} = R_{jt} - k_j)$. This model is deficient in its descriptive power, since risk is not explicitly defined. It is, however, robust for mis-specifications in the measurement of risk and return relationships.

Market and risk adjusted return models have more descriptive power, since risk and risk-return relationships are explicitly defined. These models are not robust for mis-specifications in either the risk measure or the risk-return relationship.

Most tests of the efficient market hypothesis (EMH) use a version of the Capital Asset Pricing Model (CAPM) introduced by Sharpe and Lintner (1964). The typical one-factor market model stated by Sharpe and Lintner is $(\tilde{R}_{jt} - \tilde{R}_{ft}) = \alpha_j + \beta_j (\tilde{R}_{mt} - \tilde{R}_{ft}) + \tilde{\varepsilon}_{jt}$, where α_j and β_j are parameters pertaining to security j and are constant over time. The $\tilde{\varepsilon}_{jt}$ term is the firm specific return component; it has a mean of zero and varies randomly over time.

Although much has been written regarding EMH tests and models,[1] care should be exercised with the results and subsequent inferences of data. Notable controversy originating with Richard

Roll's (1969) critique addressed the problem of tests of the efficient-market hypothesis as always being joint tests of market efficiency and the corresponding market model. However, Mayers and Rice (1979) pursued the Roll critique and concluded that tests of portfolio performance using the security market benchmark, tests of the effects of informations events through residual analysis, and tests of the CAPM itself, though plagued with potential problems, are still valid.[2]

A methodology commonly utilized to determine if excess risk adjusted returns exist around an event date is the cumulative average residual technique (CAR), as initially demonstrated by Fama, Fisher, Jensen, and Roll (1969). This technique explores the performance of average market model residuals of the sample securities about a hypothesized event date. The CAR for a given month t is defined as the value of the CAR in the previous month plus the value of the current period's average residual, AR_t.

$$CAR = \sum_{t=1}^{T} AR_t,$$

where:

$$AR_t = \frac{1}{N} \sum_{j=1}^{N} \tilde{\varepsilon}_{jt} = \text{the average abnormal return in a}$$

given month.

N = number of months

A significance test would be designed for whether the value of CAR, during an event period, drifted significantly away from

zero. The behavior of CAR can be compared to the random-walk hypothesis. Small drifts in residuals would be interpreted as normal or abnormal depending upon the corresponding significance region encompassing the CAR data (see Figure 5.1).

If abnormal performance truly existed then the spike illustrated in Figure 5.2 should be in evidence (Brown and Warner, 1980). Researchers would conclude that such a spike was an indication of an abnormal performance in time period (3).

In the past, event studies generally used the CAR technique and were testing for a spike similar to that illustrated in Figure 5.2. Rogers and Owers (1983) used the CAR technique to test for excess risk adjusted returns arising from safe harbor lease transactions using an August 13, 1981 event date--the date the ERTA went into effect. They concluded that investors did not earn abnormal rates of return.

The CAR methodology is deficient in that it does not account for changes in β.[3] There may be many a priori reasons to expect a β change throughout an event study. Further complications arise due to the nonstationarity of β.[4] Consquently, the CAR technique, in ignoring β changes, might produce biased results.[5] Sunder addressed this problem, (1973) and cited the following pitfalls: (a) such analysis may indicate abnormal price changes when in fact none exist; (b) even when abnormal price changes are present, this analysis may not be able to detect them due to the presence of changes in relative risk; and (c) in the presence of risk changes,.estimated abnormal

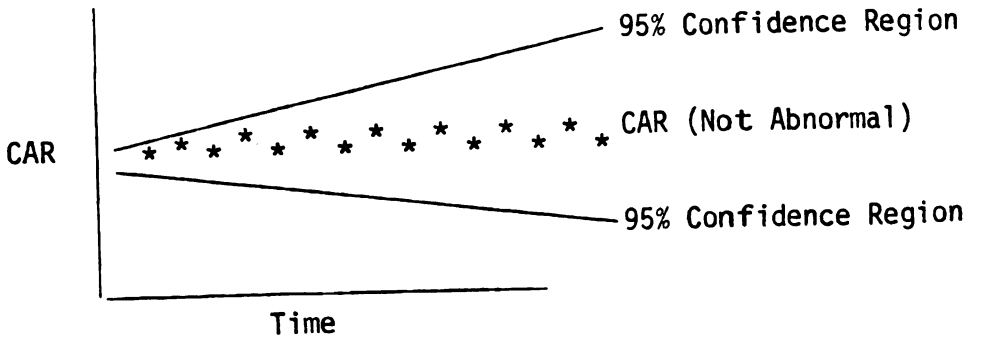


Figure 5.1--Illustration of Significance Interval

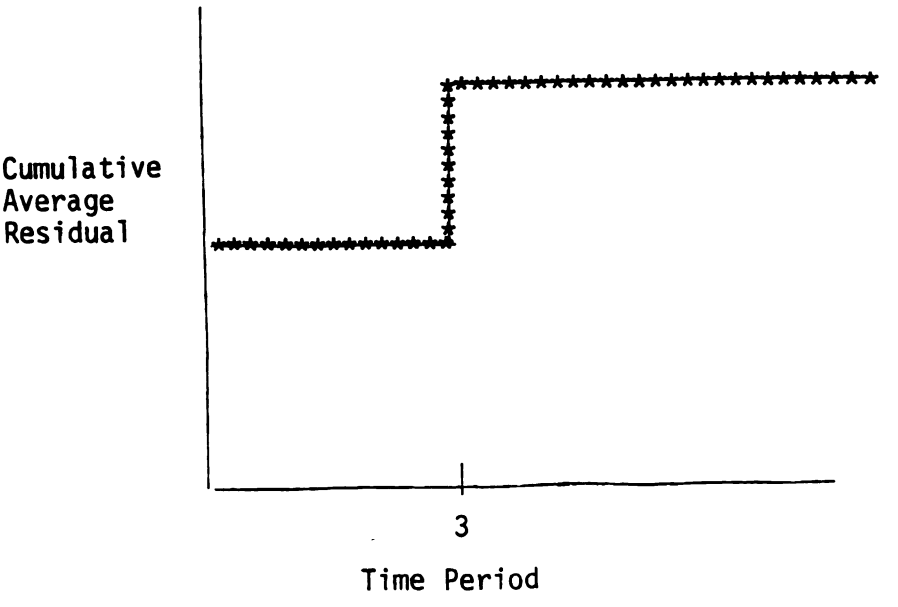
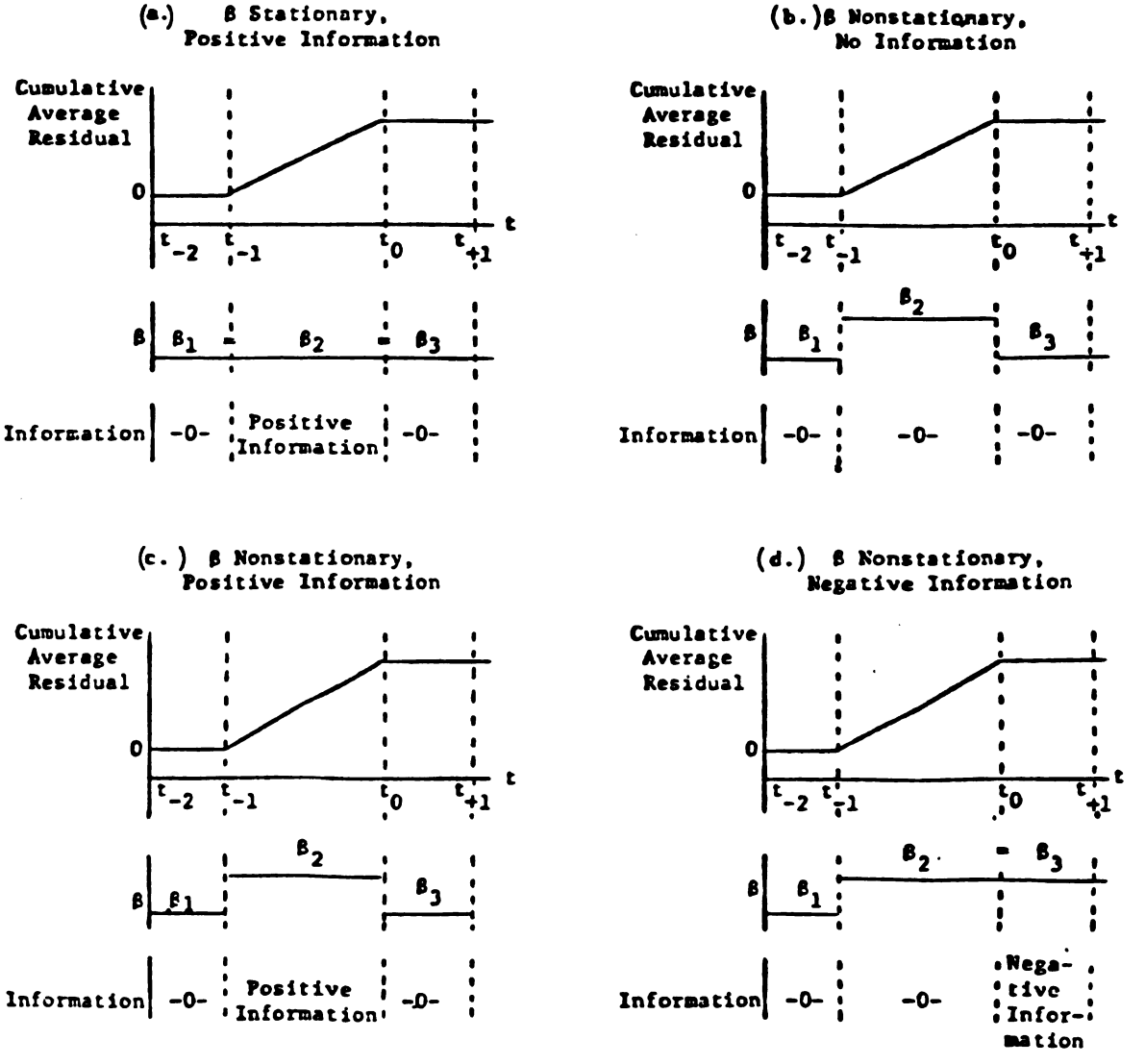


Figure 5.2--Illustration of Abnormal Performance

returns on stock are dependent on the time series data used for estimation of relative risk; and to the extent that this choice is made arbitrarily, estimated abnormal performance is also arbitrary.

Larcker, Gordon and Pinches (1980) analyzed the confounding that could occur with shifts in β. They examined four possible combinations of shifts in β and information which would result in an identical CAR pattern (Figure 5.3). Figure 5.3(a) depicts the normal situation, for which the CAR methodology is well suited: The β is stationary throughout the event study, and the positive information in the preannouncement period causes the CAR to rise. This figure indicates excess risk-adjusted returns. Figure 5.3(b) has a similar CAR pattern, but does <u>not</u> exhibit risk-adjusted returns. The increase in the residuals during the t_0 -to-t_{+1} period are attributed to a nonstationary downward shift in β. Figure 5.3(c) represents an occurrence where a β increase in the pre-announcement period coincides with a release of positive information. Although a naive investor in that situation might believe he is receiving an abnormal return, he in actuality is receiving a normal risk-adjusted rate of return. In other words, the return is commensurate with the increased adjustment for risk (β). No excess risk-adjusted return is therefore demonstrated by Figure 5.3(c). Figure 5.3(d) presents a situation where β increases in both the pre- and post-announcement periods. Again, the confounding variables illustrates a similar CAR pattern. However, negative excess risk-adjusted returns are observed in the post-announcement period.



Time period t_{-2} to t_{-1} is the estimation period, t_{-1} to t_0 is the preannouncement period, t_0 is the announcement date, and t_0 to t_{+1} is the post-announcement period.

FIGURE 5.3.--Cumulative Average Residual Patterns Caused by Changing Betas or Information

An Intervention-Market Model of Security Returns

Abnormal return effects such as those described are simple to detect if the risk level is assumed to be constant. However, such a simplistic assumption can lead to erroneous conclusions when risk levels change. Consequently, models of this nature have limited application.

The implementation of the Economic Recovery Tax Act (ERTA) provisions created an opportunity for risk levels to change for both lessees and lessors. Lessees received large cash infusions as part of the lessors' downpayment in the wash-lease agreement. The lessees' debt-to-equity ratios would by necessity drop, thus lending credence to the lower risk entity argument.[6] A commensurate risk reduction would accordingly be expected from the lessor.

Many lessors established low level risk investment portfolios by insuring their tax credits and depreciation through reputable agencies, and properly utilizing indemnification clauses in their lease contracts.[7] Systematic risk among lessors would be expected to decline simply by virtue of increased investment in low-risk assets.

Larcker, Gordon and Pinches (1980) criticize the use of the traditional CAR methodology, since it fails to detect a change in the systematic risk (β) of a firm as a result of an announcement. The intervention technique is able to differentiate the information effect in the return series as distinct from the information effect in the risk changes. This particular methodology requires a

case-by-case analysis. Individual-case examination would be preferred to grouped data because aggregated information might obscure significant individual difference, and naive conclusions might be drawn from CARs comprised of a few skewed cases. The traditional CAR methodology does not enable a determination to be made whether the CAR pattern is a function of excess risk-adjusted returns or due to a shifting of systematic risk. The intervention technique which is being employed can be used to test for a change in either the risk or return in the pre- and post-announcement periods. The basic model can be explained as:

$$R_t = f(w, \delta) + N_t$$

where:

R_t = return on a specific security in time period

w = exogenous variables

δ = the intervention variable which may change the level of return

N_t = noise

The preferred model would include possible changes in the systematic risk of a firm as a function of the intervention variable. The model can be broken into pre-announcement and post-announcement period risk components as expressed by the following:

$$R_t = \alpha + \beta_1 R_{mt} I_{[t_{-1},t_0]}(t) + \beta_2 R_{mt} I_{[t_0,t_{+1}]}(t) + \varepsilon_1 I_{[t_{-1},t_0]}(t) + \varepsilon_2 I_{[t_0,t_{+1}]}(t) + \Theta(b)\, a(t) \quad (1)$$

where

β_1 = pre-announcement systematic risk

β_2 = post-announcement systematic risk

R_{mt} = return on the market portfolio in period t

t_0 = intervention date

t_{-1} = pre-announcement period

t_{+1} = post-announcement period

$\theta(b)$ = noise model corrected for autocorrelation

β and ε are the model parameters

ε_1 and ε_2 are the intervention coefficients in the pre-announcement and post-announcement periods, respectively.

In this model, either β or ε may shift around the event date.

The following interpretations of ε are considered.

$\varepsilon_1 = 0$,	$\varepsilon_2 = 0$	no excess risk adjusted return in the pre- or post-announcement period
$\varepsilon_1 = 0$,	ε_2 = positive	post-announcement excess risk adjusted return, no pre-announcement excess risk adjusted return
ε_1 = positive,	$\varepsilon_2 = 0$	anticipatory excess risk adjusted return, no corresponding post-announcement excess return
ε_1 = positive,	ε_2 = positive	anticipatory excess risk adjusted return, subsequent post-announcement excess risk adjusted return

Consequently, a shift in β, corresponding to ($\varepsilon_1 = 0$, $\varepsilon_2 = 0$) would imply not excess risk-adjusted return but a shift in risk and a visible shift in returns. In other words, returns would

appear to be different, but could be "explained" by a change in the systematic risk. Use of the CAR methodology might incorrectly interpret a shift in β as an abnormal return. The intervention model provides an opportunity to detect these differences in risk and hence returns around the event date.

This study will simultaneously test the following two null hypotheses. The parameter estimates were obtained using the Pack program.[8]

Significant Risk (Hypothesis I)

$$H_o: \beta_1 - \beta_2 = 0$$

$$H_1: \beta_1 - \beta_2 \neq 0$$

Significant Return (Hypothesis II)

$$H_o: \varepsilon_1 - \varepsilon_2 = 0$$

$$H_1 \quad \varepsilon_1 - \varepsilon_2 \neq 0$$

changes were determined using the following statistical tests for β and ε shifts.[9]

$$Q = \frac{\hat{\beta}_1 - \hat{\beta}_2}{\sigma(\hat{\beta}_1 - \hat{\beta}_2)} \quad \text{and} \quad K = \frac{\hat{\varepsilon}_1 - \hat{\varepsilon}_2}{\sigma(\hat{\varepsilon}_1 - \hat{\varepsilon}_2)}$$

where the standard error ($\hat{\sigma}$) between risk and return changes are:

$$\hat{\sigma}(\hat{\beta}_1 - \hat{\beta}_2) = \hat{\sigma}^2(\hat{\beta}_1) + \hat{\sigma}^2(\hat{\beta}_2) - 2\ \text{Cov}(\hat{\beta}_1 - \hat{\beta}_2)$$

$$\hat{\sigma}(\hat{\varepsilon}_1 - \hat{\varepsilon}_2) = \hat{\sigma}^2(\hat{\varepsilon}_1) + \hat{\sigma}^2(\hat{\varepsilon}_2) - 2\ \text{Cov}\ (\hat{\varepsilon}_1 - \hat{\varepsilon}_2)$$

ENDNOTES

Chapter V

[1]Menachem Brenner (1979) studied the sensitivity of the conclusions of empirical studies on the efficiency of capital markets when different market models were used. He noted that different market models might lead to different conclusions.

[2]Bradford Cornell (1979) reactivated the controversy by arguing that although Mayers and Rice were able to demonstrate the effectiveness of CAPM in detecting superior investors in a world of asymmetric information, the CAPM is not a practical tool for performance measurement. He emphasized that correct usage of the Mayers-Rice model required an assumption that the CAPM hold for uninformed investors. In order to avert the problem of testing the CAPM he outlined a performance measure based only on returns. He justified this measure as being robust in detecting superior investor performance in the context of CAPM, the arbitrage pricing model and other equilibrium models of security pricing.

[3]Sunder (1973), Bar-Yosef and Brown (1977) among others have documented changes in β.

[4]Fabozzi and Francis (1978).

[5]Larcker, Gordon and Pinches (1980).

[6]The cash infusion increased the lessess total asset and equity base. Consequently, the debt:equity ratio would drop. See Kim (1978) for additional coverage of capital structure and risk relationships.

[7]For example, Lloyds of London and Tax Lease Management's Tax Benefit Indemnity Insurance. Business Insurance, August 23, 1982.

[8]See Box and Jenkins (1970) for additional information.

[9]See Larcker, Gordon, and Pinches (1980) and Jan Kmenta, (1971).

CHAPTER VI

RESULTS

Data was obtained from the daily tapes of the Center for Research in Security Prices (CRSP) covering those firms identified as having bought or sold safe harbor lease contracts prior to December 31, 1982. A computer procedure using the Lexis/Nexis Package facilitated the search for safe harbor lease information disclosed in 1981 and 1982 annual reports. Additional data was acquired from articles found in the popular press depicting the daily exploits of perceived "abusers" of the newly created tax transfer system. An assessment of the collected data revealed a comparable balance within the 39 firm sample base, of which approximately 24 were buyers and 15 were sellers of lease benefits.

The study conducted a comparison within each security of weekly returns for a period of time one year before and after the indicated event intervention date. The Standard & Poor's (S&P) Industrial Index was chosen as the market return benchmark, since the securities within the sample consisted primarily of industrial stocks traded on the NYSE.

Daily stock returns were not utilized since they have been found to depart more from normality than monthly returns (Fama, 1976). In addition, Scholes and Williams (1977) have found that use of daily

data in estimating a systematic risk parameter could result in a non-synchronous trading problem. Weekly data points were chosen over monthly returns, since use of the latter would have yielded too few observations, given the short duration of the pre- and post-announcement periods.

November 13, 1981 was chosen as the event date due to a critical deadline existing for all assets purchased by lessees subsequent to January 1, 1981 but prior to August 13, 1981. Numerous Wall Street Journal articles[1] and Table 6.1 (from the U.S. Treasury) support November 13, 1981 as being an extremely important date.

Brown and Warner (1980) noted that if the calendar date of the event cannot be pinpointed (e.g., via an announcement in the Wall Street Journal), and the date itself becomes a random variable, then abnormal returns for a number of periods before and after the "announcement date" should be scrutinized for evidence of "abnormal" performance.

The sample base includes lessees in all of the distressed industries that were previously cited in Chapter II. It furthermore represents the majority of firms that were publicized throughout the active trading period extending from October 1981 to February 1982.

Tables 6.2 and 6.3 denote the results of the parameter estimates and the associated standard errors. An α of 0.05 was applied.

TABLE 6.1.--Distribution of Transactions According to Execution Date (Percent)

	Date Lease Was Executed				
	Nov. 1981	Dec. 1981	Jan. 1981	Feb.* 1981	Other**
Share of Benefit to:					
Seller/Lessee	73.8	81.1	75.5	80.4	74.2
Buyer/Lessor	24.0	17.4	22.1	18.1	25.2
Third Party Agents	2.2	1.5	2.5	1.5	.6
All Parties	100.0	100.0	100.0	100.0	100.0
Percentage of Transactions	55.7	31.1	4.4	7.0	1.8

*Before February 20.
**Primarily September and October 1981.

TABLE 6.2--Model Parameters

Firm	α	β_1	β_2	ε_1	ε_2	θ_B	Box Pierce (df)
Allis Chalmers (EE)	-.0121 (.0574)	.766 (.333)*	1.407 (.2648)*	.0012 (.0569)	.0029 (.0569)	1	22.35 (23)
Anheuser Busch (OR)	-.0066 (.0336)	.415 (.195)*	.670 (.155)*	.0142 (.0333)	.0133 (.0333)	1	17.54 (23)
Asarco (EE)	.0702 (.0532)	1.48 (.309)*	1.32 (.246)*	-.0735 (.0525)	-.0705 (.0525)	1	26.86 (23)
Baldor Electric (OR)	.0501 (.0377)	.406 (.218)	.889 (.1734)*	-.0512 (.0373)	-.0465 (.0373)	1	25.33 (23)
Baltimore Gas & Elec. (OR)	.0132 (.0880)	.534 (.159)*	.395 (.126)*	-.01 (.027)	-.0083 (.027)	1	21.94 (23)
Bethlehem Steel (EE)	-.0035 (.0418)	.6801 (.243)*	.8835 (.193)*	.0019 (.0414)	-.0001 (.0414)	1	26.78 (23)
CBI Inds (OR)	.0201 (.046)	.925 (.267)*	1.049 (.212)*	-.0233 (.0456)	-.0233 (.0456)	1	34.52 (23)
CSX Corp (EE)	-.0078 (.0388)	1.173 (.2258)*	1.157 (.1792)*	.0165 (.0385)	.0071 (.0385)	1	19.30 (23)
Chrysler (EE)	.0913 (.0791)	.9933 (.459)*	.4414 (.3645)	-.0981 (.081)	-.0733 (.078)	1	18.39 (23)
Cray Research (OR)	-.0169 .0348	1.67 (.345)*	1.626 (.276)*	.0274 (.0593)	.0173 (.0594)	1	18.81 (23)
Digital Equipment (OR)	-.0293 (.0357)	1.089 (.207)*	1.53 (.163)*	.0330 (.0354)	.0284 (.0354)	1	12.40 (23)
Donnelley RR and Sons (OR)	.0068 (.0289)	.67 (.166)*	.786 (.124)*	-.0039 (.0286)	.0007 (.0286)	1	20.01 (23)
Equifax (OR)	-.0042 (.0353)	.283 (.205)	.0433 (.162)	.0049 (.0349)	.0191 (.0349)	1	18.84 (23)
Foote Cone & Belding (OR)	.0555 (.0242)	.281 (.251)	.499 (.195)*	-.0596 (.042)	-.0496 (.042)	1	26.71 (23)
Ford Motor (EE)	.0477 (.0444)	.486 (.258)*	.9012 (.205)	-.0532 (.0438)	.0379 (.044)	1	24.14 (23)
GAF (EE)	.0794 (.0806)	.759 (.468)	.968 (.372)*	-.0727 (.0799)	-.0799 (.0799)	1	29.10 (23)
General Electric (OR)	.0425 (.0229)	.845 (.133)*	.906 (.105)*	-.0391 (.0227)	-.0347 (.0227)	1	18.19 (23)
Gleason Works (OR)	.0142 (.0429)	.474 (.249)	.757 (.198)*	-.0219 (.0425)	-.0192 (.0425)	1	21.54 (23)
Hercules (OR)	-.0266 (.0363)	.855 (.211)*	1.17 (.166)*	.0282 (.0359)	.0302 (.0359)	1	17.35 (23)

TABLE 6.2 (Continued)

Firm	α	β_1	β_2	ε_1	ε_2	θ_b	Box Pierce (df)
Hilton Hotels (OR)	-.0688 (.0423)	1.001 (.2449)*	1.45 (.1944)*	.0696 (.0418)	.0708 (.0418)	1	25.87 (23)
IBM (OR)	.0059 (.0224)	.817 (.130)*	.8619 (.1036)*	-.0088 (.0222)	.0022 (.0222)	1	23.58 (23)
Ideal Basic (EE)	.0417 (.0546)	.903 (.317)*	.431 (.251)	-.0434 (.0538)	-.0432 (.0538)	1	28.77 (23)
Illinois Tool Works (OR)	.0137 (.0309)	.564 (.179)*	.554 (.142)*	-.01179 (.0306)	-.00898 (.0306)	1	33.29 (23)
Levitz Furn (EE)	-.0129 (.0563)	.6096 (.3266)	1.0941 (.2593)*	.02018 (.0558)	.0159 (.0558)	1	33.78 (23)
Marriott Corp. (EE)	-.0059 (.0368)	.869 (.2137)	1.334 (.1699)*	.0079 (.0365)	.0133 (.0365)	1	17.14 (23)
Marsh McLennan (OR)	.0162 (.0359)	.7215 (.2083)*	.844 (.1654)*	-.0132 (.0355)	-.01336 (.0355)	1	31.14 (23)
McDermott (OR)	-.0587 (.0488)	1.71 (.286)*	1.54 (.225)*	.0667 (.0484)	.0467 (.0484)	1	27.22 (23)
MESA Petroleum (OR)	.0599 (.0631)	2.072 (.3568)*	.9861 (.2905)*	-.0556 (.0624)	-.0667 (.0625)	1	22.72 (23)
Metro Media (OR)	.0298 (.0467)	.752 (.271)*	.751 (.215)*	-.0209 (.0462)	-.0193 (.0462)	1	20.44 (23)
Occidental Petroleum (EE)	.0022 (.0337)	1.32 (.198)*	.916 (.155)*	-.0016 (.0334)	-.0064 (.0334)	1	27.42 (23)
PSA (OR)	.0052 (.0500)	1.76 (.29)*	1.17 (.23)*	-.0046 (.0495)	.0007 (.0488)	1	18.51 (23)
Pan Am (EE)	-.0076 (.0687)	.5015 (.398)	.5368 (.316)	-.0013 (.068)	.0106 (.068)	1	23.21 (23)
Penn Power & Light (OR)	.0041 (.0255)	.254 (.148)	.3988 (.1175)*	-.0046 (.0252)	.0011 (.0252)	1	22.40 (23)
Pepsico (OR)	-.0102 (.0354)	.6083 (.205)*	.947 (.163)*	.0180 (.0350)	.0114 (.0350)	1	29.21 (23)
Phelps Dodge (EE)	.0708 (.0439)	1.489 (.2612)*	1.464 (.2120)*	-.0645 (.0434)	-.0772 (.0434)	.4451 (.0969)*	21.78 (22)
Phil Elec (EE)	-.0031 (.0219)	.37 (.128)*	.32 (.099)*	.0051 (.0217)	.0074 (.0217)	1	26.89 (23)
Ponderosa (OR)	.0114 (.0596)	1.15 (.3439)*	1.412 (.274)*	-.0007 (.0589)	-.0022 (.059)	1	21.84 (23)
Southern Pacific (EE)	.0154 (.0473)	1.33 (.274)*	1.21 (.22)*	.0104 (.0469)	-.0152 (.0469)	1	20.42 (23)
Thermo Electron (OR)	.0105 (.0538)	.8788 (.311)*	.9915 (.248)*	-.0157 (.053)	-.0168 (.053)	1	28.49 (23)

EE = lessee.
OR = lessor.
* = significant at $\alpha = .05$.

TABLE 6.3--Parameter Differences and Standard Errors

Firm	$\hat{\beta}_1 - \hat{\beta}_2$ $(\theta(\hat{\beta}_1 - \hat{\beta}_2))$	$\varepsilon_1 - \varepsilon_2$ $(\theta(\varepsilon_1 - \varepsilon_2))$
Allis Chalmers (EE)	-.641 (.425)	.0012 (.0109)
Anheuser Busch (OR)	-.255 (.249)	.0009 (.0022)
Asarco (EE)	.16 (.395)	-.0030 (.010)
Baldor Elec (OR)	-.483 (.279)	-.0047 (.0071)
Baltimore Gas & Elec. (OR)	.139 (.203)	-.0017 (.005)
Bethlehem Steel (EE)	-.204 (.310)	.0020 (.0034)
CBI Inds. (OR)	-.124 (.374)	-.0010 (.0087)
CSX (EE)	.016 (.2338)	.0094 (.0074)
Chrysler (EE)	.5519 (.586)	-.0248 (.0155)
Cray Research (OR)	.044 (.4418)	-.0101 (.0114)
Digital Equipment (OR)	.441 (.263)	.0046 (.0068)
Donnelley RR and Sons (OR)	-.116 (.207)	-.0005 (.0055)
Equifax (OR)	.2397 (.261)	-.0142 (.0067)
Foote Cone and Belding (OR)	-.218 (.318)	-.01 (.008)
Ford Motor (EE)	-.4152 (.329)	-.0152 (.0084)
GAF (EE)	-.209 (.598)	.0072 (.0153)
General Electric (OR)	-.061 (.169)	.0208 (.0043)
Gleason Works (OR)	-.283 (.318)	-.0027 (.008)
Hercules (OR)	-.315 (.268)	-.002 (.0068)

TABLE 6.3 (Continued)

Firm	$\beta_1 - \beta_2$ $(\theta(\hat{\beta}_1 - \hat{\beta}_2))$	$\varepsilon_1 - \varepsilon_2$ $(\theta(\varepsilon_1 - \varepsilon_2))$
Hilton Hotels (OR)	-.449 (.312)	-.0012 (.008)
IBM (OR)	-.0449 (.1662)	-.0109 (.0042)*
Ideal Basic (EE)	.472 (.404)	.0002 (.0103)
Illinois Tool Works (OR)	.01 (.228)	-.0029 (.0058)
Levitz Furn (EE)	.4848 (.417)	.0043 (.0194)
Marriott Corp. (EE)	-.465 (.27)	-.0054 (.0070)
Marsh McLennan (OR)	.1225 (.266)	.0002 (.00679)
McDermott (OR)	.17 (.23)	.020 (.0092)*
MESA Petroleum (OR)	1.086 (.467)*	.0111 (.0119)
Metro Media (OR)	.0010 (.346)	-.0016 (.0088)
Occidental Petroleum OEE)	.404 (.25)	.0048 (.0062)
PSA (OR)	.59 (.37)	-.0053 (.0094)
Pan Am (EE)	-.0353 (.508)	-.0119 (.013)
Penn Power & Light (OR)	-.1448 (.189)	-.0057 (.0048)
Pepsico (OR)	-.3387 (.262)	.0066 (.0067)
Phelps Dodge (EE)	.025 (.332)	.0127 (.0068)*
Phil Elec (EE)	.0500 (.162)	.0023 (.0041)
Ponderosa (OR)	-.262 (.4398)	.0015 (.0113)
Southern Pacific (EE)	.12 (.35)	.0048 (.0089)
Thermo Electron (OR)	-.1127 (.398)	.0011 (.0101)

EE = lessee.
OR = lessor.
* = significant at $\alpha = .05$.

The 24 lessors and 15 lessees were designated with the initials OR and EE, respectively. Two firms, IBM and Equifax, had a positive excess risk-adjusted rate of return during the post-announcement period. Two firms, McDermott and Phelps Dodge, had a negative significant risk-adjusted return during the equivalent post-announcement period. One firm, Mesa Petroleum, had a significant systematic risk (β) reduction. None of the firms exhibited a systematic risk increase.

Phelps Dodge had to be corrected for autocorrelation. The accompanying correlation (Θ_β) and Box Pierce statistics are shown in Table 6.2.

ENDNOTES

Chapter VI

[1]See e.g., "Drive for Tax Gains on Lease Accords Mired in Confusion as Deadline Nears," Wall Street Journal, November 13, 1981.

CHAPTER VII

SUMMARY AND CONCLUSIONS

The data tend to strongly support the null hypothesis that no differences exist in an individual security's risk or return from the pre- to the post-intervention period. Consequently, an individual holding a portfolio of securities of firms which were identified as having been actively involved with safe harbor lease transactions would not have been provided with an abnormal rate of return. Furthermore, the individual would not have been provided with a significant risk change in his securities portfolio. The evidence therefore supports the efficient market hypothesis and contradicts frequent statements made in the popular press which have led the public to believe that firms and their shareholders received abnormal positive returns.

Interpretation of the results yields four plausible explanations. First, the cash flows generated by the leases may not have been significant relative to the firms' total sssets. Due to the secretive nature of the safe harbor leasing information, many specific details were not made available to the public, thus causing, in some cases, widespread speculation. The sample described in this study included virtually all firms cited in the Wall Street Journal as active participants and those that specifically mentioned safe-harbor leasing in their annual stock reports. This analysis has

assumed throughout that the transactions were sufficiently significant to warrant either national press exposure or inclusion in an annual report. Telephone interviews conducted with financial officers of many of these corporations often disclosed additional terms of the lease agreement. All financial officers contacted by telephone interviews indicated that safe-harbor leases were significant or material transactions for their respective firms.

The material argument notwithstanding, other reasons could explain the results. For instance, there may have been an insufficient amount of relevant information available for shareholders to react. The paucity of accurate, "clean" information may have prevented prospective speculators from purchasing the publicized stock. However, this explanation would be irrelevant for investors trading illegally on inside information. Additionally, many investment bankers, lawyers, corporate middle managers, intermediaries, etc. had sufficient knowledge to trade on beneficial information. If the transactions had been as desirable as the press illustrated, then enough "pseudo-insiders" and relatives of these investors would have been tempted to buy desirable stock. The price would then be expected to rise to the new commensurate value.

A third explanation for the results includes the notion that the value of the safe harbor lease transaction is already implicit in another corporate security. For example, a wealth transfer may have been delivered to the bondholders, completely bypassing the equity shareholders. Future research could explore the merits of this concern.

The final explanation rests with the prudence and accuracy of the popular press. It's conceivable that the press erred by generalizing the results of a few firms to the entire safe-harbor population.

For instance, IBM was one of only two firms in the sample to have received a significant risk-adjusted positive return. Given the activity of the IBM stock and the manner in which it is closely monitored by many analysts, it seems reasonable to suspect that the "success" of IBM might be generalized to other firms engaged in safe harbor lease contracts. If members of the press focused on IBM and generalized the conduct of other firms based on the actions of IBM, then the press would have significantly distorted the true impact in the marketplace. More importantly, the misinterpretation would occur regardless of whether the results for IBM were caused by significant purchases of safe-harbor leases or were spurious (caused by an unknown third variable).

Questions of the objectivity and accuracy of the press have not gone unnoticed in recent years, particularly in terms of how the media relates to large corporations.[1] How or why the press may have exaggerated the impact of safe-harbor leasing is beyond the scope of this analysis. Nonetheless, much of the events could be explained on the premise that the press incorrectly judged the entire forest on the basis of a few trees.[2]

The value of this research does not rest solely on the issue of inaccuracies in the press. Rather, it rests on issues of

inefficiencies, inequities and the impact on the macroeconomic society. Issues of who won or who lost, in the macro sense, are easily enough resolved. The Treasury lost, and a few individuals might have retained their jobs for a short period longer.

Much has been made of the Treasury loss--how it will amount to billions over the next five years. The true impact will never be ascertained, given the change in employment and recapture of income taxes.

The ramifications of the safe harbor tax subterfuge have applied tremendous insight to Congressmen prepared to repeal the current law. Additional usage could be realized by the governments of foreign countries, such as Canada, which was rumored to be interested in this procedure at one time in the recent past.

Answers to questions such as "did it work?" are largely a function of the intent and immediate purpose for which the questions are asked. The law was deemed a necessary solution for an immediate problem. It provided direct (though apparently not significant) assistance to many distressed industries. However, it did so at the cost of relative inefficiency, and created many complaints of inequities.

In the final analysis, Michael Fleming, president of the American Association of Equipment Lessors, perhaps summarized the merits of the law best: "I think the major benefactors of the new rules are the investment bankers and financial packagers."[3]

ENDNOTES

Chapter VII

[1]For example, several Nightline ABC features in March 1984 discussed the faults and exaggerations of the press and how it is often biased against "big business."

[2]There is an old addage on Wall Street "When IBM sneezes the rest of the world catches cold" (Moneyline, June 14, 1984). Statements such as this tend to support the argument being presented.

[3]Fortune, September 1981.

BIBLIOGRAPHY

BIBLIOGRAPHY

Anderson, Paul F. and Martin, John D. "Lease vs. Purchase Decisions A Survey of Current Practice." Financial Management, Spring 1977, Vol. V6N1, pp. 41-47.

Athanasopoulos, Peter J. and Bacon, Peter W. "The Evaluation of Leveraged Leases." Financial Management, Summer 1980, Vol. V9N1, pp. 76-80.

Auster, R. "Should the lessors' investment tax credit be passed through to the lessee?" Tax Adviser 12:744-6 D'81.

"Boeing Tries to Maneuver out of a Downdraft." Business Week, April 26, 1982, Vol. N2736, pp. 97-99.

Bostick, George H. and Davis, Warren N. "Structuring Safe Harbor Leasing Transactions Under the New Temporary Regulations." March 1982, Vol. V56N3, pp. 130-137.

Bower, Richard S. "Issues in Lease Financing," Financial Management, Winter 1973, pp. 25-32.

Box, G. E. P., and Jenkins, G. M., "Time Series Analysis, Forecasting and Control," Holden-Day, Inc., San Francisco, 1970.

Brealey, R. A. and Young, C. M. "Debt, Taxes and Leasing - A Note." Journal of Finance, December 1980, Vol. V35N5.

Brenner, Menachem, "The Sensitivity of the Efficient Market Hypothesis to Alternative Specifications of the Market Model." The Journal of Finance, September 1979, Vol. XXXIV, No. 4, pp. 915-929.

Bray, Margaret, "Futures Trading, Rational Expectations, and the Efficient Markets Hypothesis." Econometrica 49 (May 1981), 575-96.

Brooks, Stephen H. "Selling Depreciation a Boon to High Technology." New England Business, Dec. 1981, Vol. V3N20, pp. 43-44.

Brown, Stephen J. "Measuring Security Price Performance." Journal of Financial Economics, 8, (1980), 205-258.

Capettini, Robert and Roole, Howard. "Designing Leveraged Leases: A Mixed Integer Linear Programming Approach." Financial Management, Autumn 1981, pp. 15-23.

Cohn, R. S. and Levine, H. J. "New leasing rules--get them while they're hot." Tax Adviser, 13:68-76 F '82.

Cooper, Kerry and Strawser, Robert H. "Evaluation of Capitol Investment Projects Involving Asset Leases." Financial Management, Spring 1975, pp. P44-49.

Cornell, Bradford, "Asymmetric Information and Portfolio Performance Measurement." Journal of Financial Economics 7 (1979), 381-390.

Coogan, P. F. "Is there a difference between a long term lease and an installment sale of personal property?" NYU L Rev 56: 1036-60 N/D '81.

Crawford, Peggy J., Harper, Charles P. and McConnell, John J. "Further Evidence on the Terms of Financial Leases." Financial Management, Fall 1981, Vol. V10N4, pp. 7-14.

Davis, Warren N. "Recognizing and Addressing Risks in Safe Harbor Leasing Transactions (Part II)." Journal of Taxation, Vol. V56N4, pp. 215-219.

DelCotto, Louis A. "Sale and Leaseback: A Hollow Sound When Tapped? Part II" Tax Law Review, Vol. 37, No. 1 pp. 1-50, 1981.

Dranginis, Eileen M. "Safe Harbor Equipment Leasing Under the Economic Recovery Tax Act of 1981." Corporation Law Review, Spring 1982, Vol. V5N2, pp. 160-164.

Dyl, Edward A. and Martin, Stanley A. Jr. "Setting Terms for Leveraged Leases." Financial Management, Winter 1977, Vol. V6N4, pp. 20-27.

Edwards, James B. "Leasing Under the Economic Recovery Tax Act of 1981." Business and Economic Review, April 1982, Vol. V28N5, pp. 28-31.

Ehrbar, A. F. "The Battle Over Taxes," Fortune, April 1982, Vol. V105N8, pp. 58-63.

Fabozzi, Frank J. and Yaari, Uzi. "Valuation of Safe Harbor Tax Benefit Transfer Leases" Journal of Finance, Vol. XXXVIII No. 2, May 1982, pp. 595-612.

Falk, M. H. "Damages Against taxpayers in the Tax Court under TEFRA," 61 Taxes 92-6 F '83.

Fama, Eugene F., "Efficient Capital Markets: A Review of Theory and Empirical Work." Journal of Finance 25 (May 1970), 383-416.

Fama, E. F., Fisher, L., Jensen, M. and Roll, R. "The Adjustment of Stock Prices to New Information," International Economic Review, February 1969, 1-21.

Franks, Julian R. and Holdges, Stewart D. "Valuation of Financial Lease Contracts: A Note." Journal of Finance, May 1978, Vol. V33N2, pp. 657-669.

Friedlander, W. A., "Gift Leaseback: the IRS misguided Campaign: 19 Cal W L Rev 288-305 Wint '83.

Gaumnitz, Jack E. and Ford, Allen. "The Lease or Sell Decision," Financial Management, Fall 1978, Vol. V7N3, pp. 47-51.

Green, D. D., "Highlights of the Tax Equity and Fiscal Responsibility Act of 1982," 13 Tax Adviser, 644-57 N '82.

Grossman, Sanford J., "On the Efficiency of Competitive Stock Markets Where Traders Have Diverse Information." Journal of Finance 31 (May 1976), 573-85.

- "The Existence of Futures Markets, Noisy Rational Expectations and Informational Externalities." Review of Economic Studies 44 (3) (October 1977), 431-49.

- "Further Results on the Informational Efficiency of Competitive Stock Markets." Journal of Economic Theory 18 (June 1978), 81-101.

- and Robert J. Shiller, "The Determinants of the Variability of Stock Market Prices." American Economic Review 71 (May 1981), 222-27.

- and Joseph E. Stiglitz, "Information and Competitive Price Systems." American Economic Review 66 (May 1976), 246-53.

- "The Impossibility of Informationally Efficient Markets." American Economic Review 70 (June 1980), 393-408.

Harmelink, J. Phillip and Shurtz, E. Nancy, "Sale Leaseback Transactions involving Real Estate: A Proposal for Defined Tax Rules." Southern California Law Review, Vol. 55:833-894.

Henderson, Glenn V. Jr. "On Capitalization Rates for Riskless Streams." Journal of Finance, Dec. 1976, Vol. V31N5, pp. P1491-1493.

Hilton, V. Commissioner: "Sale-Leaseback Analysis Sharpened" Virginia Tax Review Vol. 1, No. 2 pp. 375-392, 1982.

Honig, Lawrence E. and Coley, Stephen C. "An After-Tax Equivalent Payment Approach to Conventional Lease Analysis." Financial Management, Winter 1976, Vol. V4N4, pp. P28-35.

Idol, Charles R. "A Note on Specifying Debt Displacement and Tax Shield Borrowing Opportunities in Financial Lease Valuation Models." Financial Management, Summer 1980, Vol. V9N2, pp. 24-29.

Johnson, Lindsay. "The Economic Recovery Tax Act of 1981 and Public Utilities." Public Utilities Fortnightly, March 1982, Vol. V109N5, pp. 31-40.

Johnson, Neil. "Confusion Follows Euphoria in the U.S. Market." Banker, April 1982, Vol. V132N674, pp. 63-65, 67.

Johnson, Robert W. "Analysis of Lease-Or-Buy Decision." Journal of Finance, September 1972, Vol. 27, pp. 815-823.

Jones, P. G., "Tax Court further restricts ITC for noncorporate lessors." 13 Tax Adviser 724-32 D '82.

Kamerow, M. L. "Compliance provisions of TEFRA" 14 Tax Adviser 136-43 Mr '83.

Kim, Han E. "A Mean Variance Theory of Optimal Capital Structure and Corporate Debt Capacity." Journal of Finance, Vol. 33, March 1978, pp. 45-63.

Kmenta, Jan, "Elements of Econometrics", Macmillan Publishing, NY, 1971, pp. 347-407.

Korn, Donald Jay. "How to Buy a Tax Loss." INC, Feb. 1982, Vol. V4N2, pp. 110-113.

Larcker, David F., Gordon, Lawrence A., Pinches, George E. "Testing for Market Efficiency: A Comparison of the Cumulative Average Residual Methodology and Intervention Analysis." JFQA Vol. 15 June 1980, pp. 267-287.

Leary, F. Jr. "Procrustean bed of finance leasing" NYV L Rev 56: 1061-116 N/D '81.

Leasing Safe Haven of the Economic Recovery Tax Act of 1981: Another tax expenditure. 1982 Wis L Rev 117-49 1982

LeRoy, Stephen F., "Expectations Models of Asset Prices: A Survey of Theory." Journal of Finance Vol. 37 (March 1983), 185-217.

Levine, Howard J. and Cohn, Ronald S. "The New Leasing Rules - Get Them While They're Hot." Tax Adviser, Feb. 1982, Vol. V13N2, pp. 68-76.

Levy, Haim and Sarnat, Marshall. "Leasing, Borrowing, and Financial Risk." Financial Management, Winter 1979, Vol. V8N4, pp. 47-54.

Lewellen, Wilbur G. and Emery, Douglas R. "On the Matter of Parity Between Financial Obligations." Journal of Finance, March 1981, Vol. V36N1, pp. 97-111.

Lewellen, Wilbur G. and Long, Michael S. et al. "Asset Leasing in Competitive Capital Markets." Journal of Finance, June 1976, Vol. V31N3, pp. P787-798.

Lomas, Eric J. "Impact of Changes in Capital Markets." Dun's Business Month, June 1982, Vol. V119N6, pp. 106-110.

Marks, Barry S. "Equipment Leasing and the New Tax Law." Business, September/October 1981, Vol. V31N5, pp. 46-48.

Masulis, Ronald W. "The Effects of Capital Structure Change on Security Prices." Journal of Financial Economics 139, 1980.

Mayers, David and Rice, Edward M., "Measuring Portfolio Performance and the Empirical Content of Asset Pricing Models." Journal of Financial Economics 7 (1979), 3-28.

Malnick, Richard J. "A Second Look at Impact on Banks of New Leasing Law." Aba Banking Journal, Feb. 1982, Vol. V74N2, pp. 102-103.

Miller, Merton H. and Upton, Charles W. "Leasing Buying, and the Cost of Capital Services." Journal of Finance, June 1976, Vol. V31N3, pp. P761-786.

Miller, William H. "Get Ready for Higher Business Taxes." Industry Week, May 1982, Vol. V213N4, pp. 19-20.

Mount, Steven F. "The Tax Equity and Fiscal Responsibility Act of 1982 - Safe Harbor Lease Provisions Corralled, But Still Alive and Kicking." The Tax Magazine, Vol. 60, No. 10, October, 1982.

Moyer, R. Charles. "Lease Evaluation and the Investment Tax Credit - A Framework for Analysis." Financial Management, Summer 1975, Vol. V4N2, pp. P39-42.

Myers, Stewart C. and Dill, David A. et al. "Valuation of Financial Lease Contracts." Journal of Finance, June 1976, Vol. V31N3, pp. P799-819.

Ofer, Aharon R. "The Evaluation of the Lease Versus Purchase Alternatives." Financial Management, Summer 1976, Vol. V5N2, pp. P67-74.

Pack, David J., "A Computer Program for the Analysis of Time Series Models Using the Box-Jenkins Philosophy," May 1, 1977.

Perlman, B. S. and Purcell, T. J. III "Charting the leasing Sea: safe harbors after ERTA Creighton L Rev 15:619-37 '81/82.

Perg, Wayne F. "Leveraged Leasing: The Problem of Changing Leverage." Financial Management, Fall 1978, Vol. V7N3, pp. 47-51.

Roenfeldt, Rodney and Henry, James B. "Lease - Cost Measurement of Hospital Equipment Under Cost-Based Reimbursement." Financial Management, Summer 1979, Vol. V8N2, pp. 24-35.

Rogers, Ronald C., Owers, James E. "The Windfall of Safe Harbor Leasing: Fact or Illusion?" Working Paper No. 90-83, School of Business Administration, University of Connecticut, November, 1983.

Roll, R., "A Critique of the Asset Pricing Theory's Tests," Journal of Financial Economics, March 1977, 129-176.

Ross, Stephen A. "The Arbitrage Theory of Capital Asset Pricing." Journal of Economic Theory 13 (December 1976), 344-49.

"Safe harbor" as tax reform: taxpayer ejection of lease treatment. Harv. L. Rev 95:1648-68 My '82.

Safe harbor leases: the costs of tax benefit transfers. 34 Stan L Rev 1309-21 Jl '82.

"Safe Harbor Leasing's Stormy Future." Business Week, December 1981, Vol. N2719, pp. 104, 107.

"Safe Harbor: Middlemen Wade In." Business Week, April, 1982, Vol. N2735, p. 97.

Schall, Lawrence D. "The Lease-Or-Buy Asset Acquisition Decisions." The Journal of Finance, Sept. 1974, Vol. V29N4, pp. P1203-1214.

Schall, Lawrence D. and Haley, Charles W. Introduction to Financial Management Second Edition.

Scott, James H. Jr. "Bankruptcy, Secured Debt, and Optimal Capital Structure." Journal of Finance, March 1977, Vol. V32N1, pp. P1-19.

Sharpe, W. F., "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk," Journal of Finance, September 1964, 425-442.

Sharkey, Betsy. "Tax Bill Renews Interest in Safe Harbor Coverage." Business Insurance, August, 1982.

Shiller, Robert J. Rational Expectations and the Term Structure of Interest Rates. Unpublished Ph.D. dissertation, Massachusetts Institute of Technology, 1974.

- "The Volatility of Long-Term Interest Rates and Expectations Models of the Term Structure." Journal of Political Economy 87 (December 1979), 1190-1219.

- "Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?" American Economic Review 71 (June 1981), 421-36.

Sorensen, Ivan W. and Johnson, Ramon E. "Equipment Financial Leasing Practices and Costs - An Empirical Study." Financial Management, Spring 1977, Vol. V6N1, pp. P 33-40.

Sunley, Emil M. "Safe Harbor Leasing." Tax Review, April 1982, Vol. V43N4, pp. 17-20.

U.S. Congress and Senate. Committee on Ways and Means. Analysis of Safe-Harbor Leasing. Report Bulletin 27, New Jersey: Prentice Hall, Englewood Cliffs, 1982.

Verespe, Michael A. "The Assault of Safe Harbor Leasing." Industry Week, June 1982, Vol. V213N6, pp. 84-85, 87-88.

Warren, A. C. Jr. and Auerbach A. J. "Transferability of tax incentives and the fiction of safe harbor leasing" Harv. L. Rev. 95:1752-86 Je '82.

Wenig, Kalman and Robinson, Jeff. "Use Safe-Harbor Lease Provisions by Year End to Maximize Tax Savings." Cash Flow, December, 1981, Vol. V2N10, pp. 35-37.

"Where America Stands on Tax Increases." Nation's Business, May, 1982, Vol. V70N5, pp. 86-87.

Wiar, Robert C. "The Economic Implications of Multiple Rates-Of-Return in the Leveraged Lease Contract." The Journal of Finance, Dec. 1973, Vol. V28N5, pp. P1275-1286.

Wiesner, P. J., "Traditional leasing: is there life after ERTA? 41 NYU Inst. on Fed Tax 11.1-26 '83.

Wolfe, Arthur D. and Naffziger, Frederick J. Legal Perspectives of American Business Associations. Columbus: Grid, Inc., 1977.

Young, Arthur. Tax Equity and Fiscal Responsibility Act of 1982. Arthur Young & Co., 1982.

Yost, George J. "Safe Harbor Leasing: The New Tax Haven." Tax Executive, January 1982, Vol. V34N2, pp. 85-101.

Zakupowsky, Alexander Jr. "Storm Over Safe Harbor is Off Course." Pensions and Investment Age, Vol. V10N7, pp. 13, 15.