

# *Risk Management Benefits from a Secondary Market for Lease Assumption*

By Robert F. Cunningham

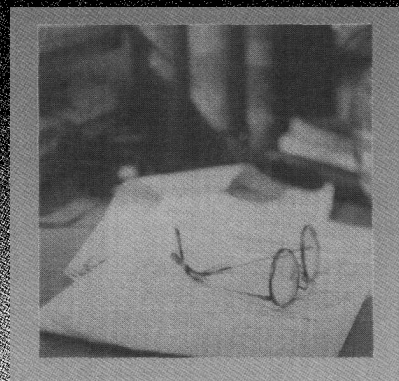
A continuing development in corporate finance has been the sophisticated risk management methodologies involving credit enhancement, hedging through derivative securities, and techniques and structures such as securitization for improved liquidity. This paper presents a brief economic and financial analysis of the developing secondary market for lease assumption, focusing on the incentive structure and the underlying rationale for a secondary market. The enhanced optionality and liquidity that this advance in the state of the art permits has the potential to create value for all market participants and, in particular, significant risk management benefits for lessors.

Some recent analytic work has fruitfully applied the general framework of options technology to the equipment leasing sector. Leasing firms and other participants in the leasing sector can be thought of as holding and exchanging various bundles of options and contingent claims against both real and financial assets. These include mid-term and end-of-term residual values, interest rates, issuer credit, term duration, and tax benefits.<sup>1</sup>

The equipment leasing market has not, however, developed a broad, robust, institutionalized structure for the trading of either the options embedded in leasing transactions or (in many cases) for the underlying assets from which the options are derived. There are, of course, well-developed secondary markets for used equipment in many vertical markets including automobiles, trucks, construction equipment, medical equipment, and office equipment in the small-ticket segments; and aircraft and railcars come to mind for larger ticket sizes. Lessors do exchange and syndicate leasing transactions among themselves,

In the equipment leasing

industry, the development of a secondary market for leasing risks



During the term of a typical lease there is very little liquidity in leasing markets, particularly for lessees.

but generally only at inception (except for the occasional large portfolio sale), and there are relatively thinly traded public and private funds for investment in leases.

THE "MISSING MARKET"

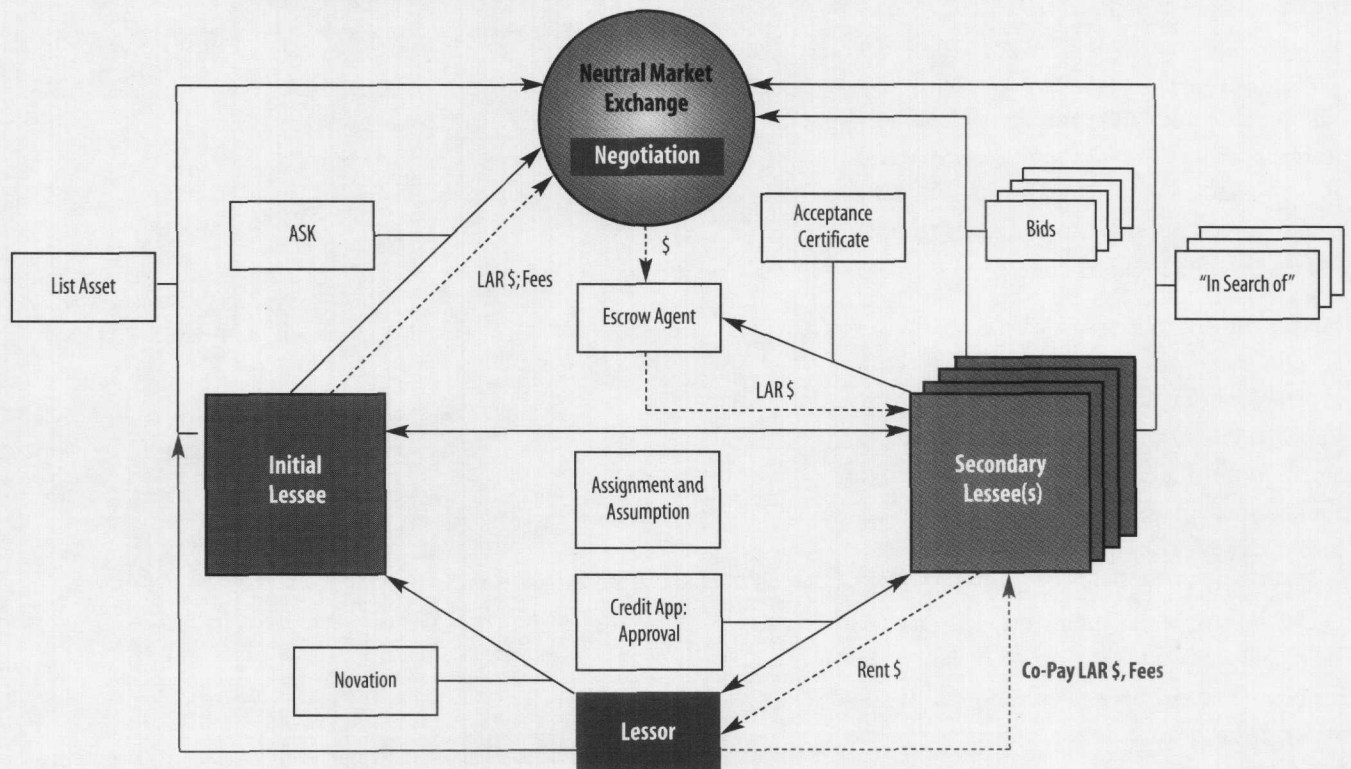
As these examples suggest, liquidity in the leasing sector is generally available only to lessors and only at origination (funding and syndication) and termination (real asset disposition, re-leasing). During the term of a typical lease there is very little liquidity in leasing markets, particularly for lessees. If the lessee's financial condition deteriorates or if it becomes desirable to terminate the lease, the parties may find that there is, indeed, a "mid-lease crisis." Unlike in other markets involving real assets (e.g., commodities) or financial assets (e.g., foreign exchange), there is little opportunity to hedge the mid-term holding risk with standardized derivatives or proxy securities such as forward contracts, though this has been suggested as a way to offset illiquidity.<sup>2</sup>

From the supply side (i.e., lessors) the reasons are many and complex and include asymmetries in valuing tax benefits, residuals, and credit; termination costs for underlying funding; and differences in risk preferences for collateral and default priority in lease documentation. From the demand side (lessees), the searching costs for a sublease or assignment counterparty and the execution of a release and novation with the lessor have been prohibitive, and there are logistics, service, and warranty considerations.

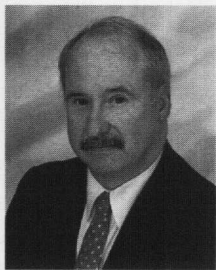
In the largest segments of the commercial finance and leasing market (small-ticket, middle-market) and in the consumer auto segment, the very nature of the transactions and the character of the market have made it difficult for lessors or lessees to have attractive terms of trade. The lack of optionality for both lessors and lessees during the term of a lease constitutes a classic case of an incomplete or "missing market" in the value chain of the equipment leasing sector.<sup>3</sup> The potential size of this missing market is appreciable in view of the fact that small-ticket commercial and auto leases in the United States total more

Figure 1

SCHEMATIC OF SECONDARY MARKET FOR LEASE ASSUMPTION



## About the Authors



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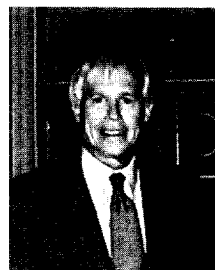
Robert F. Cunningham is managing director of business development at LeaseTrading Inc. in San Mateo, Calif. He is responsible primarily for program origination, relationship management, and strategic alliances with large bank and nonbank leasing and commercial finance companies. He has more than 20 years experience in leasing and structured finance. Most recently he was a managing director at Key Global Finance, the large-ticket advisory business of Keycorp. Prior to that, he was managing director/business head at Citicorp Bankers Leasing Corp. Mr. Cunningham also has been a member of the Equipment Leasing Association's Federal Government Relations Committee. He received a BA cum laude from Dartmouth College and an MBA from Harvard University.

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*Portfolio Management and Monitoring: Effective Methods to Risk-Rate the Existing Lease*

Vernon Gerety is senior vice president of Predictive Business Decision Systems (PBDS). He is responsible for the development of both knowledge-based solutions for new and existing clients and new products and services. Prior to joining PBDS, he spent more than 10 years in various management positions at AT&T, Dun and Bradstreet, GE Capital, and Advanta Business Services. Dr. Gerety earned a PhD in economics from the University of Arizona in Tucson and a BA in economics from California State University, Fresno.



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*Risks and Returns in a Portfolio of Leases*

Townsend Walker is a partner in Aperimus, LLC, in San Francisco. The firm is an advisor and consultant to the equipment finance and leasing industry. It specializes in providing sophisticated modeling and structuring services that include comprehensive portfolio analysis, in-depth risk assessment, pricing guidance, equity allocation, and derivative structuring. Prior to this he was a managing director with Banc of America Leasing, responsible for developing and implementing portfolio management strategies and tools for the company. Dr. Walker has a bachelors degree from the School of Foreign Service, Georgetown University, and a doctorate in economics from Stanford University. He has written two books, A Guide to Using the Foreign Exchange Market and Managing Risk with Derivatives.

than \$650 billion in lease outstandings.

Although it is difficult to find data on voluntary terminations, delinquencies in these segments range from about 1% to 6%.<sup>4</sup> If we take this as a proxy for the minimum demand for exiting leases, the potential "missing market" is over \$20 billion and likely to be much larger when the desire for voluntary termination is considered.

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### A SECONDARY MARKET FOR LEASE ASSUMPTION

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A solution to this missing market problem may lie in the development of a specialized secondary market. Improvements in information processing technology and the growth of the Internet have benefited the conventional trading activities with web-enabled remarketing and auction sites and lease origination and syndication platforms. Technology developments have also made possible and inspired a new solution involving creation of a secondary market for lease assumption/lessee substitution.

The following analysis illustrates the somewhat obvious value creation to lessees from a secondary market for lease assumption. But of perhaps more interest are the benefits to lessors in the appropriate segments (middle-market, small-ticket, consumer auto). The improvement of the lessee's mid-term position by introduction of optionality and improved liquidity also creates significant value for the lessor, principally in the form of risk management benefits.

The basic concept of a secondary market for lease assumption/lessee substitution is that of a "neutral market exchange." The neutral market exchange is an open forum for initial and secondary lessees to list assets available and desired as well as to bargain for assumption of an existing lease obligation. Figure 1 (page 12) is a simplified schematic of the standard model of the lease assumption secondary market.

The standard model presumes that a lessee desiring to exit a lease transaction would seek a complete release (novation) from the lessor.

Clearly, to permit a novation, a lessor would desire at least that the original rental stream remain intact and that an assuming lessee be creditworthy. To induce a qualified secondary lessee to assume the original lease obligation, the original lessee must pay to the secondary lessee a premium, designated as the lease assumption rebate (LAR). The initial and secondary lessees make "bid" and "ask" quotes for the LAR through the neutral market exchange.

The LAR negotiated by the parties would presumably lie in a "zone of agreement" as shown below. When the market LAR is found, the secondary lessee is credit qualified by the lessor, and the assumption is executed. Upon equipment delivery by the initial lessee and acceptance by the secondary lessee, the LAR is paid out over the remaining term of the lease, resulting effectively in a discounted rent stream to the secondary lessee while the original rent stream to the lessor is unaffected.

This kind of centralized, neutral market exchange reduces searching costs for the trading parties and can produce network externalities as it offers economies of scale in trading. The reduction in transaction costs induces more parties to trade, which in turn creates a benefit for potential participants as the market gets bigger and trading opportunities grow.<sup>5</sup>

Building the "demand side" of the market for lease assumption among equipment users is clearly a significant challenge and critical to the value of the secondary market to lessees and lessors. One approach is for the neutral market exchange to network with other participants in the various equipment vertical markets, that is, demand "aggregators" in autos, to offer lease assumption to equipment users. A full presentation of this practical issue, however, is beyond the scope of the present discussion.

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### GAINS FROM TRADE

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Where are the gains from trade from this model? If the LAR is high enough, the assuming lessee can obtain the use value of the equipment

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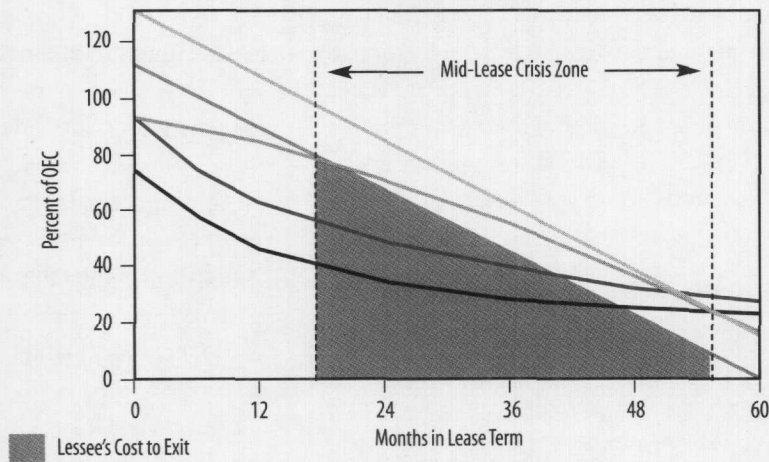
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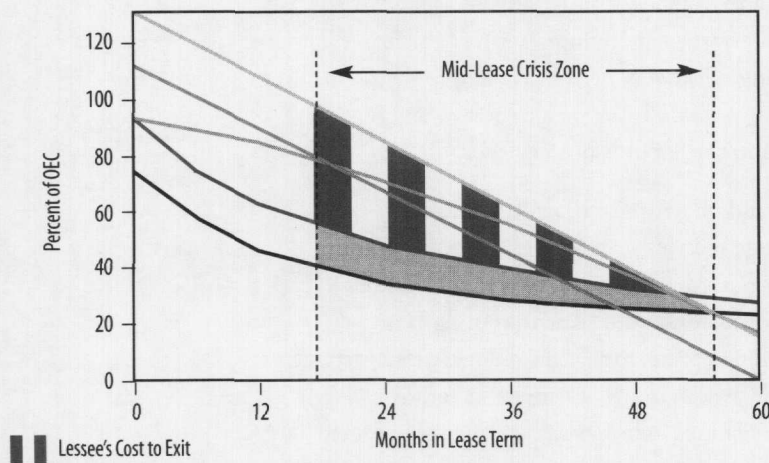
Figure 2

LESSEE'S COST TO EXIT OPTIONS

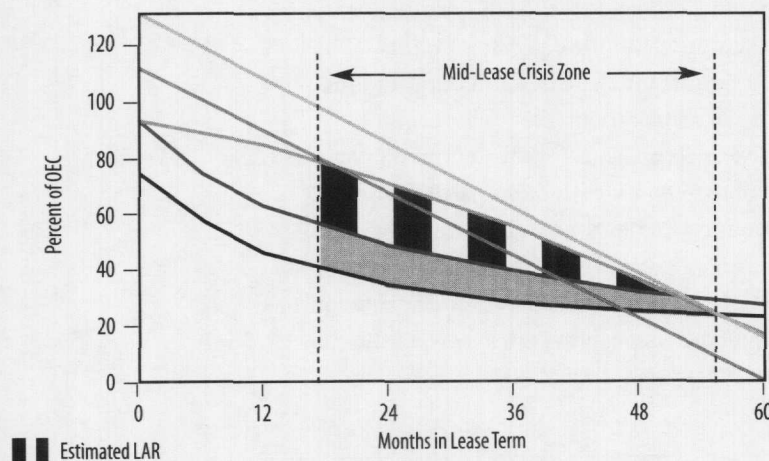
(legend at bottom)



Case 1: Lessee pays remaining payments



Case 2: Lessee pays remaining payments + RV less FMV



Case 3: Lease Transfer: Lessee pays LAR based on BV - FMV difference

**Legend (all cases):**

- FMV curve (Wholesale's Retail - 20%)
- Book value
- Remaining payments = RV
- FMV curve (Retail)
- Remaining payments

subject to the lease for its remaining term for a substantial bargain relative to rents based on book value (i.e., original rents). As the LAR approaches the full book value/wholesale full market value (FMV) difference, the financing advantages of assuming an in-place lease become compelling compared to funding a loan collateralized by used equipment. Further, since the lease is assumed mid-term, the equipment is newer than end-of-term off-lease equipment, and at the same time an attractive alternative to new equipment.

For the *initial* lessee the gains from trade are substantial, as figures 2 and 3 show. They graphically illustrate the alternatives generally available to lessees in the segments of the leasing market under consideration here. Each represents a typical small-ticket lease and the cost of exit to the lessee. Case 1 in figure 2 illustrates the lessee's exit option of making the remaining undiscounted payments. Case 2 shows the lessee's cost of paying off the payment stream plus booked residual value offset by remarketing the asset at FMV, while case 3 illustrates the cost to exit with the optionality provided by a secondary market in lease assumptions. The shaded area in case 3 represents the potential "zone of agreement," where an initial and secondary lessee may uncover the LAR that clears the market and results in a trade. The upper bound is the wholesale FMV and the lower bound is the book value.

Figure 3 (page 15) summarizes and compares these lessee exit options. The two lowest curves approximate the estimated cost to the original lessee of an LAR payment sufficient to induce lease assumption by a secondary lessee. Clearly, as figure 3 illustrates, the lessee's least-cost exit option for most of the lease term is lease assumption.

Transaction costs and exact location in the zone of agreement for the LAR will determine the trading gain for the initial lessee, but given a sufficiently deep market for the asset in question there should be substantial opportunity for the lessee to benefit compared to conventional exit options. In effect, the LAR becomes the exercise price, determined ex post facto, on an option to



exit that is external to the transaction, although it requires approval and acceptance of the secondary lessee by the lessor.

How does the lessor benefit from the presence of the secondary market for lease assumption? In the scenario outlined above the lessor would be indifferent, assuming that the secondary lessee is creditworthy and that the rental stream is uninterrupted. Qualitatively, the lessor is likely to find the overall situation very attractive, however. An existing customer has a preferred exit option – one that does not come at the expense of the lessor. Further, the lessor can acquire a new customer with zero or even negative customer acquisition costs (if a fee is charged for credit scoring and other costs), and a revenue point is possible through assessment of a novation charge to the initial lessee.

Finally, the lessor may be able to extend the term of the original lease with the secondary lessee and thereby liquidate a residual value position more favorably than otherwise. These are all reasons for the lessor—when other things are equal, that is, the original rental stream is preserved and the new lessee is at least as creditworthy as the original—to find the secondary market for lease assumption beneficial.

It is beyond the scope of this discussion to identify completely the potential benefits to lessors in the origination and customer acquisition process. It is worth noting, however, that economically attractive exit options have significant value to lessees, approximating an option to cancel or renew.<sup>6</sup> Reliance on the secondary market for the exercise of the option makes it difficult to assess the value of the option at inception of the lease, but it is clearly substantial and increases with the length of the lease term.<sup>7</sup> One approach is to offer a standard transaction at standard pricing and a transaction with prepaid secondary market transaction costs capitalized into the lease at a premium. The lessor could also have a sliding scale novation fee depending on the required LAR, which, as noted above, is determined by the market ex post facto.

## RISK MANAGEMENT IMPLICATIONS

The above discussion assumes a situation in which the lessee voluntarily and, presumably for operational reasons, wishes to terminate the lease. From the lessor's viewpoint the potential of the secondary market for lease assumption to provide an alternative risk remediation solution for lessees in financial distress is a substantial benefit to the liquidity enabled by such a market. Obviously, leases already in default can be traded by a lessor in the lease assumption secondary market as an attractive alternative to liquidation at wholesale in the normal secondary market for the asset. The value offered by the market will depend on a number of factors including overall demand for the assets, interest rates, financial market conditions, time to remarket versus re-lease, and so on.

A more compelling proposition for the lessor is the value of the secondary market for lease assumption in managing portfolio risk for lessees that have become financially distressed but *prior* to default. At default the usual remediation is repossession and liquidation in the used equipment market. For many equipment verticals

Economically attractive

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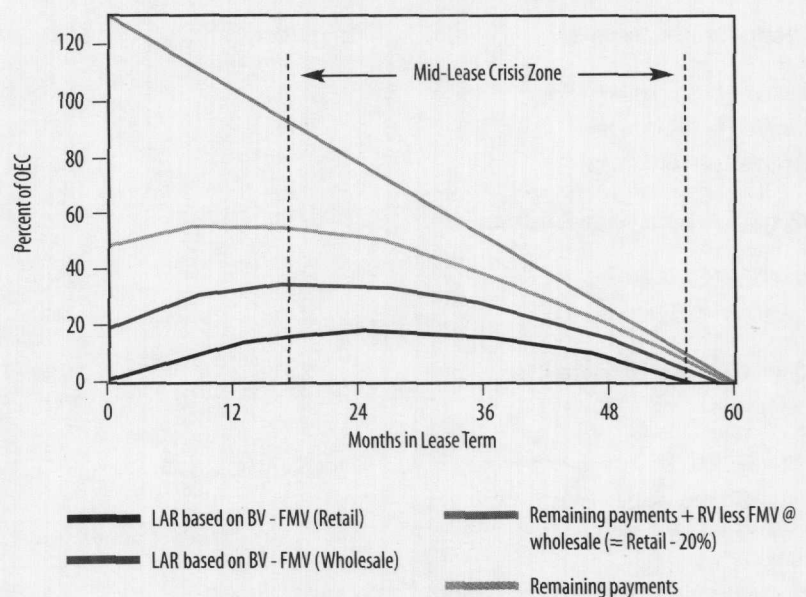
lessees, approximating

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Figure 3

### SUMMARY OF LESSEE'S COST-TO-EXIT OPTIONS



**Lessors with distressed or delinquent assets in the portfolio must take into account the timing as well as the magnitude of potential losses.**

the cost of repossession and liquidation is extremely high and with covarying risks. For example, default rates are high when general economic conditions are poor, but this is also the case when asset values are dropping.

Moreover, as equipment users become financially distressed, they are likely to defer maintenance, especially on leased equipment, which, upon repossession, may need some make-ready expense prior to liquidation or redeployment. There is a very high premium on avoiding default and repossession costs for lessors.

Lessors can focus the application of the secondary market for lease assumption on that portion of the portfolio that has started to show signs of distress. Obvious candidates would be those already in arrears on rent payments; some lessors have sophisticated risk prediction software, which enables them to segment the portfolio very narrowly and to relate leading indicators

precisely to future default rates.<sup>8</sup> Lessees in a "virtuous gray zone," those having the ability and the willingness to pay or co-pay an LAR to avoid default, are good candidates for this application of the secondary market for lease assumption. A lessor may systematically offer to absorb the transaction expenses of the secondary market or even to copay the LAR to induce lessees to identify themselves as candidates for either redeployment in the secondary market for lease assumption or for restructuring the lease.

Table 1 is a financial model demonstrating the potential benefits in cost of credit savings from use of the secondary market for lease assumption for a lessor with a distressed portfolio and large remediation costs. The portfolio is assumed to consist of lessees that are distressed but not defaulted; lessees are given certificates prepaying transaction costs to induce self-identification and create opportunities for lease restructurings and lease transfers in the secondary market. The results are obviously sensitive to the "penetration" rate of the portfolio, the success rate in completing restructurings and lease transfers, and the relative losses from repossession compared to restructuring or lease transfer in the secondary market. Nonetheless, the model clearly indicates the robustness of the savings since even substantial change in these variables indicates dramatic cost of credit savings for lessors.

Table 1

**POTENTIAL SAVINGS IN COST OF CREDIT FOR LESSOR FROM SECONDARY MARKET (\$ MILLIONS)**

		Repossession	Secondary Market
Book Value of Lease Portfolio		\$250	\$250
Book Value Listed Assets <sup>(a)</sup>		<b>93.75<sup>(a)</sup></b>	<b>93.75<sup>(a)</sup></b>
Leases Transferred	25%	0.00	23.44
Leases Re-written	20%	0.00	18.75
<b>Net after Transfers/Re-writes</b>		<b>93.75</b>	<b>51.56</b>
Loss Factor for Non-performing Assets	30%	28.13	15.47 <sup>(b)</sup>
Loss Factor for Re-written Assets	15%	0.00	2.82
Estimated Losses on Listed Assets		28.13	18.29
<b>Cost of Credit before Expenses and Fees</b>		<b>28.13</b>	<b>18.29</b>
Contributions to LAR @	10% <sup>(c)</sup>	0.00	2.34 <sup>(c)</sup>
Lease Transfer Completion Fees @	5% <sup>(d)</sup>	0.00	2.11 <sup>(d)</sup>
<b>Cost of Credit after Expenses and Fees</b>		<b>28.13</b>	<b>22.74</b>
<b>Net Savings</b>			<b>5.39 19%</b>

<sup>(a)</sup> Based on 50% contact rate against lease portfolio and 75% listing rate against contacts.

<sup>(b)</sup> Loss percentage applied to leases not transferred or re-written.

<sup>(c)</sup> Assumes lessor contributes given % of value of leases transferred as contribution to lease assumption rebate (LAR).

<sup>(d)</sup> Assumes lease transfer completion fees as given % on leases transferred/re-written.

**ASSET WRITE-DOWNS AND DEFICIENCY NOTE STRUCTURE**

Lessors with distressed or delinquent assets in the portfolio must take into account the timing as well as the magnitude of potential losses. Financially distressed lessees seeking to use the secondary market as a liability management strategy may be limited in the amount of the LAR they can offer a secondary lessee. The lessor then faces the dilemma of taking asset "shrinkage" or write-downs immediately or waiting for future default. Managing portfolio risk using the secondary market for lease assumption in the scenario described above implies taking smaller losses in the aggregate but

taking them earlier. However rational this may be in the long term, the short-term consideration of avoiding a certain loss against an uncertain future situation may seem imperative.

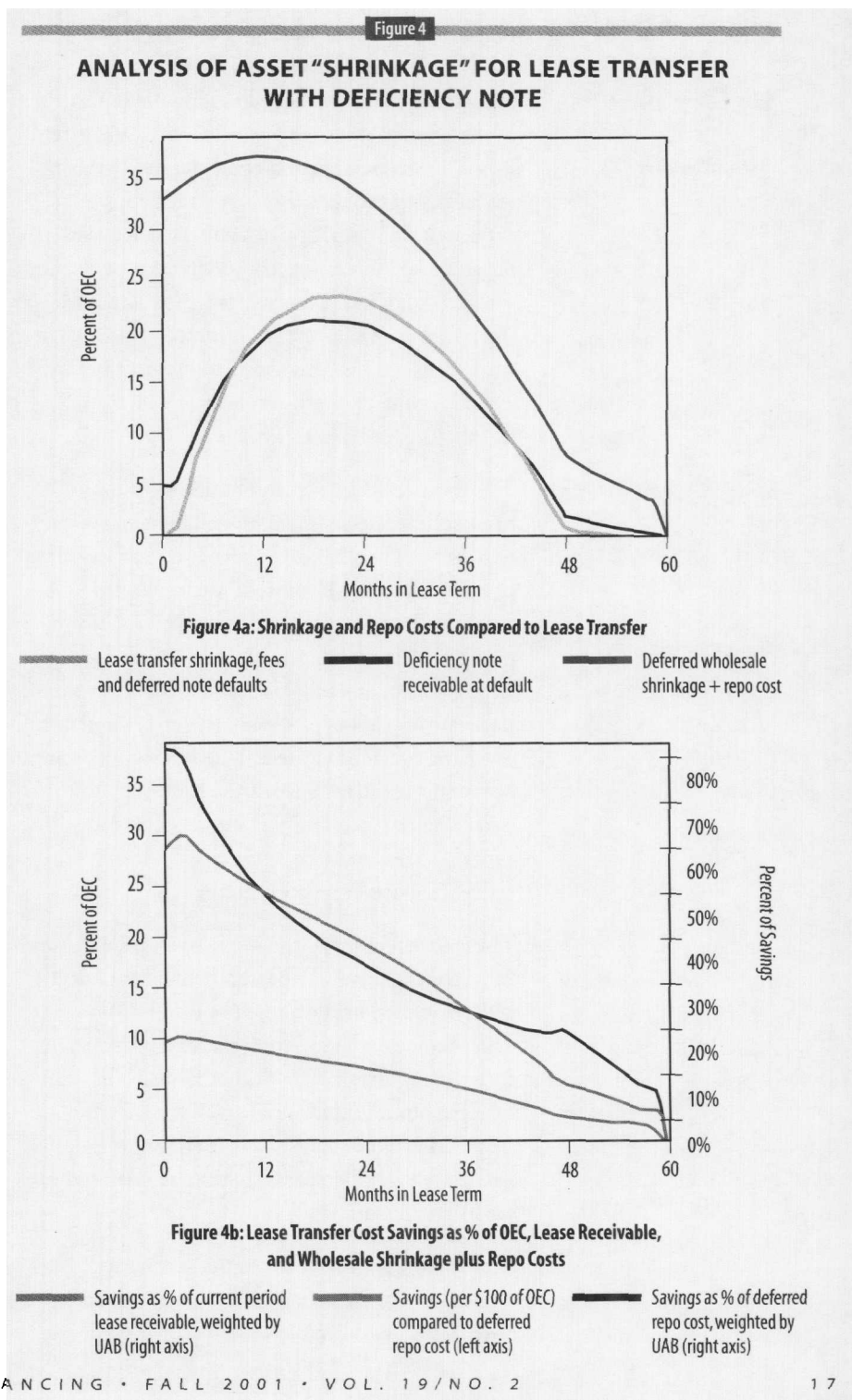
In dealing with this dilemma, a more aggressive technique for applying the optionality of the secondary market for lease assumption is available. Any shortfall in the capitalized value of the secondary rent stream arising from that market-determined LAR that induces lease assumption by a qualified secondary lessee can be covered by having the initial lessee issue a deficiency note back to the lessor. The note would cover the shortfall and amortize over the remaining term of the lease.

Clearly, no asset reduction or write-down need be taken unless and until a default on the note takes place. A novation of the lease obligation net of the note is a clear cash-flow benefit for the initial lessee; the lessee in the virtuous gray zone may prefer lease assumption and servicing a deficiency note to other options, including lease termination or default. The combination of lease assumption by a qualified secondary lessee, a (partial) LAR from the initial lessee, and an amortizing deficiency note from the initial lessee, net of transaction expenses, should provide a superior solution to potential lessee default for the lessor as well. This is likely to be the case notwithstanding that the underlying lease will amortize during the period prior to anticipated default, reducing the magnitude of the future loss.

The financial modeling to demonstrate the value of this structure is complex. Assumptions required include the structure of a typical middle-market lease, the wholesale and retail depreciation curves for the asset, and the parameters of the secondary market for lease assumption (LAR and transaction expenses). Limitations of space preclude a comprehensive presentation here but figure 4 illustrates the results of modeling the scenario outlined above. A standard five-year lease is assumed with modest residual value booked and a typical FMV depreciation curve for the equipment under distressed economic conditions. In every period the costs of repossession and liquidation at the end of an assumed deferral period in the future are compared to

costs and future defaults in a deficiency note arising from lease transfer in the current period.

Figure 4a displays the asset write-down from future repossession compared to current period lease transfer with an amortizing deficiency note, net of future note defaults, while figure 4b shows the percent savings (weighted by lease unamortized balance) over the lease term. Using standard and conservative assumptions it can be





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shown that, even with a substantial note default rate, significant savings in asset shrinkage from lease transfer with a deficiency note executed earlier in the credit process are likely compared to a subsequent default with repossession and asset write-down.

## SUMMARY AND CONCLUSION

Application of the liquidity and hedging tools of modern corporate finance in the equipment leasing industry has lagged behind other sectors of the financial services business. To a great extent this is due to the inherent character of the leasing markets and the nature of the underlying transactions. The association of financial assets with physical assets in a leasing context limits the arbitrage available to participants in leasing markets and thus limits the value of the options embedded in lease transactions.<sup>9</sup> Liquidity has generally been available only to lessors at inception and termination of transactions.

The creation of a deep and liquid secondary market for lease assumption will enable liquidity to be made available and provide more flexibility to both lessees and lessors. The developing secondary market for lease assumption has the potential for making the options embedded in lease transactions more valuable.<sup>10</sup> Gains from trade are apparent for secondary lessees and are dramatic for initial lessees. The lessees' gains are not made at the expense of the lessor but arise in part from reduced searching and transaction expenses and from the network effects of a centralized, neutral market exchange.

The improvement of the lessee's position creates value for the lessor. The lessor's principal benefit is the potential improvement in risk management using the secondary market for lease assumption. Because repossession is so costly, lessors are able to come out ahead even when sharing in the transaction expenses and the exercise premium necessary to induce participation by qualified secondary lessees.

A more sophisticated use of the secondary market for lease assumption involves targeting potentially defaulting lessees and offering lease

assumption as a liability management strategy. Asset write-downs can be mitigated with the issuance of a deficiency note. Financial modeling suggests that the benefit to lessors in managing portfolio risk is substantial.

*The author's biography may be found on page 32.*

## Endnotes

<sup>1</sup> Kagolanu, Kishore, "Analysis of Leasing: Applications of Options Technology," *Journal of Equipment Lease Financing*, Vol. 19, No. 1 (Spring 2000), pp. 8 - 17.

<sup>2</sup> *Ibid.*, p. 16.

<sup>3</sup> Unpublished Note, Dennis C. During, Adjunct Professor of Management, Zicklin School of Business at Baruch College of the City University of New York.

<sup>4</sup> See, for example, Fitch IBCA, Duff & Phelps, "Finance, Leasing & Credit Card Company Stats," 2nd Quarter 2000.

<sup>5</sup> Spulber, Daniel F. *Market Microstructure: Intermediaries and the Theory of the Firm* (Cambridge: Cambridge University Press, 1998), p. 263.

<sup>6</sup> Grenadier, Steven R., "Valuing Lease Contracts: A Real-Options Approach," *Journal of Financial Economics*, Vol. 38 (1995), p. 319.

<sup>7</sup> *Ibid.* See also McConnell, John J. and James S. Schallheim, "Valuation of Asset Leasing Contracts," *Journal of Financial Economics*, Vol. 12 (1983), pp. 237-261.

<sup>8</sup> See, for example, Ford Motor Credit Co., 2000 Form 10-K SEC Filing.

<sup>9</sup> Grenadier, *op. cit.*, p. 304.

<sup>10</sup> Myers, Stewart C., "Determinants of Corporate Borrowing," *Journal of Financial Economics*, Vol. 5, No. 2 (November 1977), pp. 163-164.

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