

# CSBFA Capital Leasing Project Report

October 2000

## ***INTRODUCTION***

We have been engaged by Industry Canada to provide an analysis of the tax advantages of a capital lease versus a loan from a small business perspective and an analysis of the different administrative fee rates to be earned by Industry Canada that could be used for the ‘Capital Leasing Pilot Project’. In this regard our report is separated into two parts.

Part 1 – A comparative analysis of the tax advantages of a capital lease versus a loan from a small business perspective.

Part 2 – An analysis of the different administration fee rate alternatives under the capital leasing pilot project.

With respect to both parts, our comments may be considered fairly technical in nature. This was because we observed that previous reports and information published by other sources (including Industry Canada) had already provided a general overview of the topics.

### **Part 1 - A Comparative Analysis of the Tax Advantages of a Capital Lease vs. a Loan From a Small Business Perspective**

## ***TAX TREATMENT OF LEASES***

The classification of a lease as either a ‘capital lease’ or an ‘operating lease’ is important in determining how to account for lease payments for financial statement purposes. However, for tax purposes, there is not the same legal concept which parallels the classification of a capital lease that has been created for accounting purposes. Instead, the issue to be resolved is whether a particular transaction is in substance, a lease or an asset purchase. The Canada Customs and Revenue Agency (“CCRA”, formerly Revenue Canada) considers a lease to be a purchase (i.e. a capital lease) if there is a likelihood that the ownership of the asset will transfer to the lessee at some point during or at the end of the lease period. Although the test should be performed on a case by case basis, the CCRA provides some administrative guidance in their Interpretation Bulletin IT-233R, Lease-option agreements; Sale-leaseback agreements dated February 11, 1983.

Paragraph 3 of this bulletin states that “a transaction is considered to be a sale rather than a lease [if]:

- a) the lessee automatically acquires title to the property after payment of a specified amount in the form of rentals;
- b) the lessee is required to buy the property from the lessor during or at the termination of the lease or is required to guarantee that the lessor will receive the full option price from the lessee or a third party (except where such guarantee is given only in respect of excessive wear and tear inflicted by the lessee);
- c) the lessee has the right during or at the expiration of the lease to acquire the property at a price which at the inception of the lease is substantially less than the probable fair market value of the property at the time or times of permitted acquisition by the lessee. An option to purchase of this nature might arise where it is exercisable within a period which is materially less than the useful life of the property with the rental payments in that period amounting to a substantial portion of the fair market value of the property at the date of inception of the lease; or
- d) the lessee has the right during or at the expiration of the lease to acquire the property at a price or under terms or conditions which at the inception of the lease is/are such that no reasonable person would fail to exercise the said option.”

If any of these tests are met, the lessee is required to treat the transaction as though they have in fact purchased the equipment, and the lessee would be entitled to depreciate the asset for tax purposes and claim capital cost allowance (CCA). The aggregate of the total lease payments would be used as the cost base of the asset for determining CCA. If it can be established that part of the lease payments represent interest or other financing costs, that portion of the payment would be fully deductible in the year to which it relates rather than being included in the cost of the asset.

The CCRA’s principal concern in capital lease transactions is to ensure that lease payments which effectively pay for the purchase of an asset are not deducted from income without being subject to the recapture rules if the asset is subsequently resold for

a gain. Should capital lease treatment for tax purposes be desired by a lessee, an election can be filed with the CCRA to ensure this.

If a lease is considered an operating lease, the lessee is not eligible to deduct CCA but instead can deduct the entire lease payment as a business expense. This treatment may accelerate deductions for tax purposes where an object would be in a CCA class with a longer depreciation period than its lease term. Moreover, a purchased asset is usually subject to a 'half-year' rule which will cut the CCA claim by fifty percent in the year of acquisition resulting in a substantially lower deduction available to reduce the taxable income of a small business in the first year of business. Also in the first year of incorporation, the allowable CCA deduction is further prorated to a percentage of the number of days the corporation has been in existence throughout the year out of 365 days.

Whether a capital or operating lease is more beneficial to a small business should be determined on a case by case basis due to the qualitative advantages or disadvantages of each option. In addition, since the tax rate on eligible small business income is low and often a new corporation is not profitable, the tax benefit may not have value in the short term. Our numerical analysis below assumes that the tax deductions are required by the small business corporation and therefore have value.

### ***GOODS AND SERVICES TAX***

For the purposes of the goods and services tax (GST), the provision of a lease is not considered an exempt financial service. Therefore, leases are taxable supplies and are subject to GST, which is generally payable by the lessee on each lease payment. However, most small business (if registered) will be entitled to claim an input tax credit for any GST charged by the lessor on lease payments. Thus, the GST does not form part of the cost of leasing to them. This is no different than when property is purchased where any GST paid on the purchase price is available as an input tax credit to the purchaser in the period of acquisition.

## ***IMPROVED CASH FLOW***

The primary advantage of leasing an asset instead of purchasing it is because a lease will generally require lower monthly payments to be made by the small business. Capital leases enable the firm to take advantage of the risks and rewards of owning the asset without having to pay for the full value of the asset up front. There are several reasons for this.

- The business is not required to pay and therefore finance the sales taxes up front as is the case when the asset is purchased. Instead, the taxes are spread out and paid monthly with each lease payment.
- The business does not have to finance the salvage value of the asset (the estimated value of the asset at the end of the lease term). The result of having to finance a smaller percentage of the total asset cost means that in the short run, from a cash flow perspective, new businesses are better off by not having to devote as much of their income financing asset purchases.
- Lease financing is done at a fixed interest rate allowing a new business the ability to better predict expenses and protect itself from interest rate fluctuations. This is not the case with lines of credit from a bank which usually apply the floating interest rate to outstanding balances, making the business vulnerable to fluctuations in the market rate, and
- The lessee can sometimes obtain 100% financing of the leased asset, although this is usually the case of a lessee with a high credit rating and an easily marketable asset. Typically, if the asset were purchased outright, a bank will not lend over 80% of the asset's value when financing the acquisition.

In the long run, however, the total cash outlay for a lease tends to be greater than if the lessee had purchased the asset outright. This is because interest rates inherent in lease calculations are generally higher than those charged on a straight loan. In effect, the lessee is paying a higher rate in order to compensate the lessor for absorbing risks associated with the lease transaction such as estimating the salvage value of the asset at the expiration of the lease.

## ***IMPROVED OPERATING RATIOS***

Another advantage is that certain structured leases enable a firm to obtain the full use of assets without having to report the assets and the associated debt obligations on its balance sheet. This is also known as off-balance sheet financing or synthetic lease financing. By not reporting the lease obligations, the lessee's return on assets and debt-to-equity ratio look better than if the asset had been purchased directly using borrowed funds.

## ***FLEXIBILITY OF LEASE TERMS***

Leases are also generally a better option for new businesses with an unestablished credit rating or those companies with prior credit problems. Leasing companies are usually more willing to lease without requiring extensive guarantees. This is because a lessor retains title to the asset and can therefore quickly recover the equipment and remarket it in the event of default.

Leases are also popular for small business owners because they provide the lessee with more flexibility and protect them against the obsolescence of their assets. For example, lease contracts often allow for upgrading, replacement or renewal privileges. However, in some instances, a lease agreement will require service agreements or renewal terms which may result in less flexibility in the long run.

## ***NUMERICAL ANALYSIS***

In order to illustrate the differences on the cash flow drain of a small business when an asset is leased instead of being purchased, a numerical example is set forth in Table 1. The example assumed a small business was going to lease an asset for five years that was worth \$50,000 on January 1, 2001. The salvage value of the asset at the end of the term was estimated to be \$10,000 and the rate of interest inherent in the lease was 14% (estimated as a rounded 6% yield on Government of Canada bonds plus an 8% premium as contemplated under the pilot leasing program). Lease payments under various options were computed including treatment of the lease as both capital and operating in nature for tax purposes in addition to a purchase alternative.

**Table 1**  
**Analysis of Discounted Cash Flows (DCF) Paid Out**

<u>Option Chosen</u>	<u>Financing Rate</u>	<u>Lease/loan Payment (Monthly)</u>	<u>5 Year DCF (Cumulative)</u>	<u>Excess after-tax Payments over Option A</u>	<u>Asset Value (Year 5)</u>
A. Capital lease	14%	\$1,047	\$33,689	-	-
B. Operating lease	14%	1,047	34,088	\$ 399	-
C. Purchase Option (financed at lease rate)	14%	1,163	38,855	5,166	\$10,000
D. Purchase Option (financed at comparable rate)	10.5%	1,075	39,386	5,697	10,000

*Note: (For detailed calculations of the annual cash flows see Appendix A).*

The above table highlights the differences in cash flow paid out between several lease versus buy scenarios. This differences will depend on the interest rate, lease term and salvage values set out in the lease agreement. In addition, the tax rate of the business will also increase or decrease the value of tax deductions to a company.

The explanation for the additional after-tax payments required in options C and D over options A or B, are that the monthly payments in both leasing options didn't include the financing of the salvage value of \$10,000. However, under the purchase options, the small business operator owns an asset worth \$10,000 at the end of year 5 which is not the case when the asset is leased. In order to acquire the asset at the end of the lease term, the lessee would have to finance another \$10,000 and continue to make monthly payments until the new loan was repaid which would negate the difference between the lease versus buy option.

## **Part 2 - An Analysis of the Different Administration Fee Rate Alternatives Under the Capital Leasing Pilot Project**

### ***OBJECTIVE***

To provide an analysis of the annual 1.25% administration fee revenue earned by the government under the current loan program and suggest alternative fee rates that could be used to earn a similar level of income for the capital leasing project.

### ***METHODOLOGY***

In order to fully understand the amount of revenue received on each loan by Industry Canada under the terms of the small business loans program, KPMG performed calculations to establish a base fee revenue that would be earned under various scenarios. This was done by calculating administration fees payable using loan amortization templates with an asset salvage value of zero to simulate simple loan repayment terms. The results from our testing were noted and then certain variables were manipulated to determine how the administration lease fees earned would change when different variables were altered as they would be in a real life leasing situation. Appendix B and B-1 illustrate the results of the fee calculations summarized in a table. The lease variables that were manipulated during our testing process were the:

- Lease term;
- Interest rates;
- Salvage Value;
- Asset Cost;

(Calculation note: The administrative fees were calculated as 1.25% of the average monthly loan balance outstanding. Whether the monthly balance outstanding or a quarterly loan balance outstanding was used in the process didn't significantly change the results. As outlined in Appendix B-2, the difference between using a monthly or quarterly balance was approximately plus or minus 1% of the total fees earned.)



Testing showed that the fee revenue charged as a percentage of the asset price ranged from 0.263% to 8.42% for our test data. We chose our variables to reflect the parameters of the contemplated lease program (i.e. lease terms between 6 months and 10 years) and current economic conditions for the interest rate.

From our calculations, we determined that the lease term was the variable with the greatest impact on the percentage of fees charged. Another point was that the administration fees were the same no matter what the cost of the asset was when calculated as a percentage of the original asset cost (i.e. lease/loan balance outstanding). This point assumed that the salvage value and interest rate were the same percentage for each lease. These results can be seen in Appendix B-1 where the cost of the asset was changed but the remaining variables were held constant.

## ***Alternative 1***

### ***Statistical Analysis of Variable Relationships***

In order to establish if there was any relationship between the dependent variable (fee revenue as a percentage of the asset cost) and the various independent variables (lease term, interest rate, salvage value), a statistical test called regression analysis was used.<sup>1</sup> We wanted to prove our hypothesis that the administration fee was dependent on one or more of these independent variables.

We used our sample calculations of the administration fee revenue earned on a \$25,000 lease with varying interest rates and salvage values (Appendix B) as the test data. This data was plotted and the output from the regression analysis can be seen in Appendices C and D. In the Appendix D output, the calculated  $F$  is shown to be greater than the critical  $F$  which allows us to conclude that the relationship between the independent variables and the dependent variable is statistically significant.

To then determine specifically which of the variables were significant, we had to test whether the coefficient of each variable in our regression formula was statistically different from 0 (i.e. an influencing factor). If the  $t$  stat for each variable is greater than the critical value of approximately 2 (based on the appropriate degrees of freedom) then

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<sup>1</sup> In simple terms, a regression analysis tries to establish a relationship of  $Y = a + b.X1 + c.X2 + d.X3 + \dots$  for a population where  $Y$  is the dependent variable, while  $a, b,$  and  $c$  are the unknown parameters used to define the intercept and slope of the regression line for the independent variables -  $X1, X2, X3$ .

we were able to conclude that the coefficient of the variable was  $> 0$  and therefore the variable was significant. In our regression, the results of the  $t$  test show that the  $t$  stat of each coefficient was greater than the critical value and the independent variables were an influence on the administration fee calculation.

The regression analysis provided us with the following formula that will accurately calculate the “Predicted Fee Rate” (Y):

$$Y = \frac{-224.5 + 200.7 * \text{Lease Term} + 8 * \text{Interest Rate} + 6.7 * \text{Salvage Value}}{25,000}$$

(See Appendix D for detailed statistical data.)

This Predicted Fee Rate, ‘Y’ would then be multiplied against the original asset lease price to calculate a gross administration fee amount.

Appendix C shows the results based on our test data for a \$25,000 asset price. To demonstrate the use of the formula, the 26<sup>th</sup> test lease in Appendix C shows that for a two year lease with a 15% interest rate and the salvage value of the asset being 10% of the original cost, total administration fees of \$346 would be received if we calculated 1.25% of the average monthly loan balance outstanding each year.

Alternatively, using the regression formula, the predicted gross fees on this same lease would be \$364 calculated as follows:

$$\text{Fees} = -224.5 + (200.7 * \text{Lease Term}) + (8 * \text{Interest Rate}(\%)) + (6.7 * \text{Salvage Value})$$

$$\text{Fees} = -224.5 + (200.7 * 2) + (8 * 15) + (6.7 * 10)$$

$$\text{Fees} = \$364 \text{ (rounded)}$$

In order to determine the percentage fee rate (Y), we would then divide the fees by the asset cost to determine that  $Y = 1.456\%$  ( $\$364 / \$25,000$ ). This would be the equivalent upfront percentage fee rate that should be charged on a lease with these terms.

The result of this relationship is that by inserting the specifics of any individual lease into the formula above, a reasonably accurate Predicted Fee Rate can be established for every

lease. Small discrepancies will exist on individual leases and these cannot be avoided. However, for the total of all administration fees charged on the entire population of leases written using this formula, the differences will be insignificant and should result in the desired cost recoveries of the leasing program.

With respect to the short term leases, the residual differences resulting from the formula were too large to be acceptable. Therefore, it is recommended that a minimum percentage fee be set for 6 month and one year leases. Looking at the results from the Average Rate discussion below, .25% and .5% are reasonable minimums for 6 month and one year leases respectively.

The statistical analysis in Appendix D resulted in a 'coefficient of determination' or the adjusted R squared of .99. This number measures the percentage of total variation in the dependant variable that is explained by the variation in the independent variables. More simply, our formula should explain 99% of the variation in the calculation of the administration fee revenue.

The formula is a starting point that can easily be modified as the actual results of the leasing program are realized. For instance, if the revenue recovered is less than desired due to a higher than expected default rate, the formula could be multiplied by a factor to increase the expected fee revenue on all leases.

### ***Multicollinearity***

We have used the term 'independent variable' in this regression analysis to refer to any variable being used to predict or explain the value of the dependent variable. The term does not however mean that the independent variables themselves are independent of each other in any statistical sense. Most independent variables in a multiple regression are correlated to some degree with one another. However, the difficulty caused by multicollinearity in conducting *t* tests for the significance of individual parameters is that it is possible to conclude that none of the individual parameters are significantly different from zero when an *F* test on the overall multiple regression equation indicates a significant relationship. We did not have this problem which is avoided when there is very little correlation among the independent variables.

Intuitively, the correlation among the three independent variables used in our regression formula is low as salvage values could not be used to predict the length of a lease nor

could the interest rate be used to predict the salvage value. Each individual lease will have these terms defined by the market. We agree there is a relationship between the risk profile of a lessee and the interest rate inherent in a lease or certain other lease terms. This regression formula will allow for a higher risk lessee to be charged a higher administration fee.

***Alternative 2***

***Average Fee Rate Based on Lease Term***

One thing that was clear from our statistical analysis was how significant a role the lease term played in the calculation of the administration fees for a lease or loan. This can be seen by the size of the coefficient of each variable in the regression equation. If it is determined that a formula approach is too cumbersome or may be met with resistance by the leasing industry, a less accurate but more simple approach can be used.

Looking at the results of our testing in Appendix B-1, we can see that the asset cost doesn't have an impact on the administration fees if they are expressed as a percentage of the cost. Therefore, we have taken an estimated percentage of fees for each lease term (in years) as an average fee rate as shown in Table 2 below.

**Table 2  
Administration Fee Using an Average Fee Rate**

Lease Term (years)	PV Discount Factor
1/2	.25%
1	.50%
2	1.25%
3	2.00%
4	2.75%
5	3.50%
6	4.30%
7	5.20%
8	6.00%
9	7.00%
10	8.00%

The fee rates in this table are not a mathematical average, but more of a rounded guess. To establish a more accurate weighted average, we would need to know the cost of the

asset, salvage value and interest rate for each lease that was financed under the pilot program. Once a better understanding of users of the leasing program is obtained, the average lease rate can be better established.

### ***Alternative 1 vs. Alternative 2***

Through regression analysis, we have derived a formula which should calculate administration fees with a 99% accuracy rate. However, this formula may be more difficult to administer. As an alternative, the average fee rate could be based on the term of the lease and applied to the asset cost to determine an estimated upfront fee. Although, since the average fee rate is static and not flexible like a formula, it will not account for interest rate or salvage value fluctuations. On the other hand it has been found that such fluctuations have very little bearing on the total administration fees, as the weighting of these variables is very low. Therefore, it is likely that using an average fee rate would likely sacrifice little in terms of the accuracy of the applicable fees. Any deficiencies could be corrected and the average rates adjusted up or down if there are significant market changes in the interest rates or if salvage values become significant.

### ***CONCLUSION***

We were asked to develop a formula that would allow Industry Canada to charge an upfront fee on lease amounts that was comparable to the 1.25% annual fee charged in the loan program and the regression formula has accomplished that. The administration fee premium is currently included in the lease rate so the leasing companies would be required to remit this fee up front as calculated.

However, this formula does not take into consideration the discounting of future cash flows when calculating the total fees to be received. In cases where the lease term is longer and the administration fee revenue increases substantially, it is unlikely that leasing companies would be willing to pay the entire fee upfront.

To factor in a reduction in fees for the time value of money, an appropriate discount rate has to be determined. (The discussion as to whether industry Canada would use the Government of Canada long bond rate or something higher needs to be addressed. For illustrative purposes however, we have used a 6% discount rate but our discount factor could be easily adjusted up or down depending on the rate. From the point of view of a

leasing company, this amount would definitely be higher and the results would be different.) We calculated that at a 6% rate, the upfront fee determined using the Predicted Fee Rate formula would have to be multiplied by the PV Discount factor in Table 3.

**Table 3**  
**Discount Factor for Upfront Payment (using 6% rate)**

Lease Term (years)	PV Discount Factor
2	93.012%
3	90.900%
4	89.008%
5	87.390%
6	85.246%
7	83.398%
8	81.577%
9	79.786%
10	78.452%

As an alternative to a discounted upfront fee, the administration fee could be paid over the term of the lease similar to the way the loan revenue is paid. Based on a review of the different leases we analyzed, we recommend that the percentages remitted each year be comparable to those calculated under the loan program. These percentages rounded for ease of administration are shown in Table 4.

**Table 4**  
**Lease Term in Years**

Year that certain percentage of administration revenue is recovered		<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
	1	75%	50%	40%	35%	30%	25%	20%	20%	15%
	2	25%	35%	30%	25%	20%	20%	20%	15%	15%
	3	-	15%	20%	20%	20%	15%	15%	15%	15%
	4	-	-	10%	15%	15%	15%	15%	10%	10%
	5	-	-	-	5%	10%	10%	10%	10%	10%
	6	-	-	-	-	5%	10%	10%	10%	10%
	7	-	-	-	-	-	5%	5%	10%	10%
	8	-	-	-	-	-	-	5%	5%	5%
	9	-	-	-	-	-	-	-	5%	5%
	10	-	-	-	-	-	-	-	-	5%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Using the Predicted Fee Rate formula along with a staggered administration fee reimbursement by the leasing companies as set out in Table 4, we feel that Industry Canada could achieve its goal of a cost recovery program with simplified administration procedures that the market would find acceptable.

## ***IMPACT OF ADMINISTRATION FEES ON LOSS AMOUNTS***

If it is determined that an upfront administration fee will be charged at the inception of a lease, it would be fairly easy to credit a lessee for an overpayment of fees if a lease went into default. Using the chart in Table 4 above, the cumulative percentage of the fee that is considered unearned could be returned to the leasing company and credited against the outstanding balance of the lease payments owing. For example, if a lessee were to default on lease payments of a five year lease after year two, the earned portion of administration fees would be 60%. The unearned portion of fees would be 40% (calculated as the sum of fees in years three through five = 20%+15%+5%). This amount could be credited to the lessee in the loss calculation that the leasing company would submit to Industry Canada.