



INVESTMENT CONSIDERATIONS IN A DEPRECIATION-BASED TAX SHELTER: A COMPARATIVE APPROACH

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INVESTMENT CONSIDERATIONS IN A
DEPRECIATION-BASED TAX SHELTER: A COMPARATIVE APPROACH

Lawrence I. Gould and Stanley N. Laiken*

Depreciation-based tax shelters have been promoted to investors as an immediate means of saving taxes. This paper demonstrates the results of a more complete analysis using a common investment as a standard of comparison. It also considers the effects of the November 1981 Budget on the cash flows available from the tax shelters. The analysis will be useful in evaluating any such shelters introduced in the future.

Canadian tax legislation has provided an incentive through the depreciation and depletion systems to invest in certain areas. Recently, these have involved the investment areas of certain residential rental buildings, Canadian films and oil and gas drilling fund ventures. Even scientific research expenditures, computer software and rental apparel have been suggested as providing the essential features of an investment incentive.¹ All have been given considerable attention by investors and their advisers. The essence of these investment incentives has been to provide a relatively high or rapid write-off of the original investment against either revenues of the investment if they were present or, more likely, against other sources of the investor's income. The effect of shielding income from tax with these write-offs characterizes these investments as tax shelters and much promotion of these investments emphasized this feature.

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¹See Income Tax Act, Sections 37 and 37.1 and Income Tax Regulations, Schedule II, Class 12.

The purpose of this paper is to provide the investor with a better understanding of the effects of these depreciation-based investment incentives in areas of potential investment so that better investment decisions can be made. The approach will be to compare these tax effects with the effects that exist for the more common types of investments in capital property such as shares. The analysis will focus on the conceptual aspects of the tax incentive and its effects on investment, rather than the technical details of the various tax shelters available. The technical details have been well documented in the literature² and are subject to constant change.

While the deadline for the real estate tax shelter of multiple-unit residential buildings (MURB's) was not extended beyond 1981, many such investments qualifying as a tax shelter will continue to be available to investors for some time in the future. While the investment incentive in the area of Canadian films and other Class 12 assets will be reduced by

²For a discussion of the technical details of Canadian films see Richard M. Wise, "A Cineramic View of Motion Picture Film Investments," Canadian Tax Journal, March-April 1976, 157-170; Richard M. Wise, "Motion Pictures as a Tax Shelter," CA Magazine, October 1977, 36-41; Richard M. Wise, "Evaluating Motion Picture Film Investments," Report of the Proceedings of the Thirtieth Tax Conference, Toronto: Canadian Tax Foundation, 1979, 666-680 and Richard M. Wise, "Ought You to be in Pictures?" CA Magazine, December 1981, 22-27. For a discussion of multiple-unit residential buildings see C. Paul Daniels, "Real Estate Investment as a Tax Shelter," Report of the Proceedings of the Twenty-eighth Tax Conference, Toronto: Canadian Tax Foundation, 1977, 178-190; Edward D. Marchant, "MURB's: The Great Canadian Tax Shelter," CA Magazine, September 1977, 28-33 and Edward D. Marchant, "The MURB as an Investment," Report of the Proceedings of the Thirtieth Tax Conference, Toronto: Canadian Tax Foundation, 1979, 651-666. For a discussion of oil and gas drilling funds see Robert A. Brown, "Evaluating Oil and Gas Drilling Program Offerings," Report of the Proceedings of the Thirtieth Tax Conference, Toronto: Canadian Tax Foundation, 1979, 639-650; Martin J. Gungl and Leslie E. Skingle, "An Underground Tax Shelter That's Above Board," CA Magazine, November 1977, 44-47 and S.N. Sheinin, "Resource Tax Shelters - An Alternative," Report of the Proceedings of the Twenty-eighth Tax Conference, Toronto: Canadian Tax Foundation, 1977, 194-205.

proposed changes in the capital cost allowance system as a result of the November 1981 Budget and the draft regulations which followed³, the change will not become effective for films until 1983⁴ and, as a result, these Canadian film investments will continue to be available for some time. Finally, the investment incentives in oil and gas drilling funds have been reduced considerably since their original introduction, but the essential features of a tax shelter remain in this area.

Although the technical details of the investment incentives in the tax legislation are subject to constant change, the basic principles on which they are based have not been changed considerably over the years and can continue to be applied in these areas of incentive as well as others that may be introduced from time to time in the future. Thus, it is important for the investor to understand the implications of these incentives and to incorporate their effects in any analysis that might be done to arrive at an investment decision.

This paper will begin by examining the nature of the investment decision faced by the investor in a complex tax environment offering a wide variety of investment incentives. It will then discuss the basic features of the tax shelters in question focussing on the conceptually simple Canadian film as a means of illustrating these features. This will be followed by an analysis of the investment and tax shelter aspects of the Canadian film as an example of all such investment opportunities. This analysis will be based on a conceptual comparison between an

³ See "Supplementary Information," Budget Papers, Department of Finance: Canada, November 12, 1981, p. 31.

⁴ See "Capital Cost Allowances," Release, Department of Finance: Canada, December 18, 1981. Furthermore, the Ontario Budget of May 13, 1982 indicated that "Ontario will not adopt the federal proposal to limit C.C.A. to one-half the normal rate in the year of acquisition." See Information Bulletin, Number 25-82, Ontario Ministry of Revenue, Corporation Tax Branch, May 13, 1982, p. 3.

investment in a Canadian film tax shelter and an investment in a common stock which will be used as a standard of comparison to highlight the investment incentive in a tax shelter. From this analysis some conclusions will be drawn on the comparative investment advantages of a depreciation-based tax shelter.

Investment Objectives and Priorities

The investment decision environment for a Canadian investor is highly complex making investment analysis directed toward the objective of maximizing after-tax return on investment for a given level of risk preference very difficult. Differential taxation of investment returns from basic investment media and a variety of tax incentives to investment should be considered and investment priorities for an investor with limited resources available for investment should be established based on prospects for after-tax return..

The question of investment priorities in maximizing after-tax return has been addressed to some extent in the literature. The Registered Retirement Savings Plan shelter has been examined in this context.⁵ The differential effects of taxation on the three basic investment returns of interest or similar forms of income from property, Canadian dividends and capital gains have also been examined in this context, with respect to both the individual who has not fully utilized the \$1,000 investment income deduction and the one who has.⁶ One question that remains to be

⁵Lawrence I. Gould and Stanley N. Laiken, "The Effects of Income Taxation on Investment Priorities: the RRSP," Canadian Tax Journal, November-December 1977, 658-676.

⁶Lawrence I. Gould and Stanley N. Laiken, "Effects of the Investment Income Deduction on the Comparison of Investment Returns," Canadian Tax Journal, March-April, 1982, 228-239 and Lawrence I. Gould and Stanley N. Laiken, "An Analysis of Multi-period After-tax Rates of Return on Investment," Canadian Tax Journal, forthcoming.

addressed is: where does the depreciation-based tax shelter fit into an investor's investment priorities based on his expected after-tax return on investment?

When depreciation-based tax shelters are offered to investors, very often investor attention is directed to the immediate benefit of the depreciation tax shield in offsetting income from other sources subject to tax. The initial tax saving from this write-off can be greater than the amount invested in a highly levered situation. The attractiveness of this immediate cash return often leads the investor to abandon the standard method of analysis of discounted cash flows and to disregard subsequent cash flows and their effects on total after-tax return from the investment. When the net present value of all of the expected after-tax cash flows which have been discounted by an appropriate rate adjusted for the risk-preference of the individual investor have been considered, the resulting decision can be entirely different.

Basic Features of the Depreciation-Based Tax Shelter

The essential features of a depreciation-based tax shelter can be summarized in three main points. First, the initial investment can be depreciated for tax purposes either at a high rate of capital cost allowance or in large absolute dollar amounts. The result is a large, tax-deductible, non-cash expense which may exceed net cash flows in the early years of the investment. The excess is, thus, made available to offset other sources of income, thereby reducing taxes on other income in the year.

Second, very high levels of leverage are usually available to help finance the investment. As long as the debt is provided on a full-recourse basis, that is, it is genuine debt fully repayable under any conditions, capital cost allowance is available on the full amount of the

investment irrespective of how much of that investment is financed by debt. As a result, the capital cost allowance deductible in the early years on the full investment and, in fact, the tax savings from the capital cost allowance shield on other income may be greater than the amount of the investor's equity investment.

This potentially high level of initial tax savings relative to the equity amount invested leads to a third feature of this type of tax shelter. There appears to be a common belief that the investor cannot lose money because the investment is financed with saved taxes. This particular aspect of the tax shelter may be dispelled, well after the investment decision has been made as these shelters mature, by considerable cash losses and the need to repay the debt with interest despite such losses.

The Canadian Film as an Example of the Depreciation-Based Tax Shelter

The Nature of the Canadian Film Shelter

Since the Canadian film is being used only as an example, because of its conceptual simplicity, for the purpose of analyzing the features of a tax shelter, no attempt will be made to discuss all of the tax legislation pertaining to this tax shelter. This has been well presented in the existing literature.⁷ Thus, a brief summary should be sufficient for an understanding of the investment and tax aspects of the shelter.

The 100% capital cost allowance rate of Class 12 is available, at least through 1982,⁸ only to certified feature films, feature productions

⁷See the articles by Wise cited in footnote 2.

⁸The November 1981 budget proposed to reduce first-year capital cost allowance write-offs to one-half of the prescribed rate for the class, but the December 1981 Release deferred the application of this proposal to Canadian films until 1983. Also, Ontario announced in its May 13, 1982 Budget that it will allow the full rate of C.C.A. to be applied in the first year.

and short productions which are being referred to generally in this paper as Canadian films. These terms are defined and criteria set in subsection 1104(2) of the Income Tax Regulations. In addition to establishing conditions for minimum Canadian content, the Regulations also require a minimum cash investment of 20%. Any debt commitments undertaken by the investor for the balance must be repaid within four years of the end of the year in which the investment is made.

While the investor continues to hold an interest in the film for distribution, the return to the investor in the form of net income will be fully taxed as ordinary income. However, should the investor sell his interest in the film he would be liable for recapture of capital cost allowance previously taken to the extent of proceeds up to the original cost of the investment. This would be taxed fully as ordinary income. Any amount of proceeds in excess of original cost would be considered a capital gain, half of which would be taxable as ordinary income.

The Canadian Film as an Investment

In order for the investor to receive a positive return on investment, the film, of course, must earn in excess of its cost of production which is represented by the original investment. While some of these investments have been very successful, the probability of such a positive return would appear to be very low from past experience. Since everyone associated with the production of the film has been compensated for his participation through the budget which comprises the cost of production and represents the investment, the investor is, in effect, one of the last to benefit and must depend on strong distribution incentives to earn a return.

This, of course, is not substantially different from any business investment, including shares, in which the investor has, effectively, little or no managerial control over the business operations. Unlike investment in shares, however, the liquidity of the investment in a Canadian film is very low with virtually no secondary market for the sale of interests in such films. Thus, risk is very high making the investment, given a past history of low realized return, rather unattractive to typically risk-averse investors.

The Canadian Film as a Tax Shelter: A Comparative Approach

If a Canadian film is not a particularly attractive investment, as such, for most investors, the question as to whether or not its tax sheltering features can redeem it must be addressed. In order to address this question appropriately it is necessary to introduce a common standard of comparison in the form of an investment in a non-dividend paying common stock. Consider the essential features of investing in such a capital property which is expected to produce a capital gain. The initial investment may be financed on margin to a maximum of 50% of the total cost and this debt must be carried with interest until the disposition of the shares. These carrying charges on funds borrowed to acquire shares of taxable Canadian corporations may be fully tax deductible unless limited by the ultimate implementation after 1982 of a proposal in the November 1981 Budget⁹. All of the cost of investment in the shares, represented

⁹ See Resolution 23 in the Budget Papers, supra footnote 3 and "Restricted Interest Expense" in the December 1981 Release, supra footnote 4.

by their adjusted cost base, in essence, is written off when the shares are sold. Any excess of proceeds of disposition over that cost is taxed as a capital gain, in essence, at half the rate of the tax on ordinary income. However, losses are only half deductible.

By comparison, consider the essential features of investing in a Canadian film regarded as a tax shelter. The initial investment may be financed by debt to a maximum of 80% of the total cost and this debt must also be carried with interest until net revenues to the investor from the film are sufficient to repay the debt. Such net revenues may not commence for, perhaps, three years. Interest expense incurred to carry this investment may be restricted to income from this and other investments if the Budget proposal discussed earlier is implemented after 1982. Except for the extent of possible leverage, this feature is very similar to that for a common stock.

All of the cost of investment (at least until 1983) in the film can be written off in the year an interest in the film is acquired. This is, of course, quite different from the common stock investment and, in terms of the time value of money, favours the film investment. However, the Budget proposal and draft regulations which would restrict capital cost allowance in the first year to 50% of the prescribed rate will reduce this advantage substantially.

Any net revenues paid to the investor on distribution of the film are fully taxed as ordinary income. This is also quite different from the common stock investment, but it favours the stock investment unless losses are experienced. Thus, it can be seen that the major differential advantage of a Canadian film as a tax shelter is the 100% write-off for the cost of the investment in the year that investment is made.

The value of this differential advantage can best be analyzed by a simple numerical example. First, assume that an investment of \$40,000 for three years in non-dividend paying common stock is made by an individual taxpayer in the 50% marginal tax bracket (that is, over \$53,376 of taxable income in Ontario in 1982). Further, assume the investment is financed by 100% equity. Table 1 considers the effect on the net present value of the resultant after-tax cash flows discounted at an after-tax rate of 10% for the following three possible outcomes of the investment chosen for illustrative purposes only:

Case (a) - the original investment is doubled in three years, that is, the shares are sold for proceeds of \$80,000;

Case (b) - the original investment is returned in three years, that is, the shares are sold for proceeds of \$40,000; and

Case (c) - the original investment is completely lost in three years, that is, the shares are worthless.

Next, assume that an investment of an equal \$40,000 in a Canadian film is made by the same individual and is subject to the full 100% capital cost allowance (as would be the case in 1982). Assume, again, that the investment is financed with 100% equity. Table 2 considers the effect on the net present value of the resultant after-tax cash flows discounted at an after-tax rate of 10% for the following three possible outcomes of this investment again chosen for illustrative purposes only:

Case (a) - the original investment is doubled by net revenue to the investor in the third year, that is, the investor earns \$80,000 in income;

Case (b) - the original investment is returned by net revenue to the investor in three years, that is, the investor earns \$40,000 in income; and

Case (c) - the original investment is completely lost by the third year, that is, the investor earns nothing.

Before proceeding in a further comparison of these investments, two points should be clarified. First, the comparisons were done using 100% equity cash flows in order to avoid the problems inherent in comparing investments with different degrees of financial leverage. As was noted previously, investments in Canadian films are typically financed by 80% debt, while common stock can only be financed on margin to a maximum of 50%, although the investor could use personal borrowing to equate the financial leverage of the two investments.

To illustrate the leveraged case for the film, Table 3 presents the after-tax cash flows which result when the film is financed with 80% debt with interest which is fully deductible at a rate of 20%. It can be seen that debt financing will change the timing of the cash flows, providing an inflow of money in the year of the investment, but the net present value of the investment is exactly the same as the unleveraged case shown in Table 2. Thus the primary tax effect can be demonstrated by the unlevered case.

Second, Table 2 shows that the \$40,000 investment in the Canadian film is offset by an inflow of \$20,000 from the tax effect of the immediate write-off. It can be argued that an investor would perceive the \$20,000 as a reduction in the cost of the film, rather than as a benefit or cash inflow. This difference is more than just terminology, since the investor would then scale his investment to be equivalent to the \$40,000 investment in common stock. Table 4 shows the after-tax cash flows and net present values that result from a scaled investment of \$80,000 in a Canadian film, resulting in a \$40,000 net cash outflow equivalent to the investment in common stock.

It should be noted that cash flows resulting from tax benefits may not be received immediately. It can be shown that lagging all tax effects by one year provides a relatively greater benefit to the common stock investment.

Investment in Canadian Film
20% Equity, 80% Debt Investment

NPV @ 10% = \$10,053

Scaled Investment in Canadian Film
100% Equity Investment

Case (1)	Year (2)	Income From Film (3)	Capital Cost Allowance (4)	Interest on Loan (5)	Tax Effect (6) = .5((3)-(4))	Investment or Loan Repayment (7)	After-Tax Cash Flows (8) = (3)+(5)+(6)+(7)
(a)	0	-θ-	\$80,000	-θ-	\$40,000	(\$80,000)	(\$40,000)
	1	-θ-	-θ-	-θ-	-θ-	-θ-	-θ-
	2	-θ-	-θ-	-θ-	-θ-	-θ-	-θ-
	3	\$160,000	-θ-	-θ-	(80,000)	-θ-	80,000
							NPV @ 10% = \$20,105
(b)	0	-θ-	\$80,000	-θ-	\$40,000	(\$80,000)	(\$40,000)
	1	-θ-	-θ-	-θ-	-θ-	-θ-	-θ-
	2	-θ-	-θ-	-θ-	-θ-	-θ-	-θ-
	3	\$80,000	-θ-	-θ-	(40,000)	-θ-	40,000
							NPV @ 10% = (\$9,947)
(c)	0	-θ-	\$80,000	-θ-	\$40,000	(\$80,000)	(\$40,000)
	1	-θ-	-θ-	-θ-	-θ-	-θ-	-θ-
	2	-θ-	-θ-	-θ-	-θ-	-θ-	-θ-
	3	-θ-	-θ-	-θ-	-θ-	-θ-	-θ-
							NPV @ 10% = (\$40,000)

However, the conclusions of the analysis will not be affected as long as it is assumed that an investor would be willing to scale his investment in the Canadian film on the basis of the discounted tax benefits resulting from the write-off of the investment. This would seem to be a reasonable assumption since the tax savings normally would be realized within six months. Consequently, the \$40,000 pre-tax investment in common stock shown in Table 1 should be compared with the \$80,000 pre-tax investment in Canadian films shown in Table 4, using 100% equity to abstract from debt financing effects and to equate initial after-tax cash outflows.

It is instructive, however, to begin by analyzing the differences between the \$40,000 pre-tax investment in both the common stock and the Canadian film by comparing Table 1 and Table 2. It should be clear from these data that there is a definite advantage, in net present value terms, attributable to the immediate write-off of the investment in a film. The tax effect allows the investor to defer taxes on income shielded by the immediate write-off. However, this effect is not enough to redeem an unprofitable investment and this will be worse after 1982 as a result of the proposals in the November 1981 Budget.

Notice that the write-off of the \$40,000 cost of the stock on disposition provides that investment with a sheltering feature similar to that provided by the \$40,000 write-off of capital cost allowance for the film. The film's advantage, therefore, lies in both the timing and the size of the write-off. When the Budget proposal and draft regulations which reduce first-year capital cost allowance are implemented, this timing is affected. The result in this example is a reduction in the net present value of cash flows from the film of \$909 in all three alternatives. This amount represents the net present value of deferring \$20,000 of C.C.A. with its \$10,000 in tax shield effect for one year at a 10% after-tax discount rate. There is a separate effect, however, resulting

from the differential taxation of the returns. Profits from films which are taxed as ordinary income will be less than comparable profits in the stock taxed more favourably as a capital gain. On the other hand, losses in the film will be less since the losses are fully deductible compared with the less favourable treatment of capital losses on the stock.

In this particular comparison, if the investment is expected to break even, the net present value of the losses which result from the after-tax opportunity or carrying costs are lower for the film investment because of the 100% immediate write-off of the investment. If the investment is expected to generate a loss of the magnitude assumed in this example, the losses are lower for the film not only because of the immediate write-off of the investment, but also because of the full deductibility of the losses. If the investment is expected to make a profit of the magnitude assumed, the gains are higher for the stock investment because of the favourable capital gains treatment of the proceeds in excess of cost.

However, it has been argued that an investor reasonably might be expected to consider the write-off of his investment in Canadian films as a reduction in cost, making the \$80,000 pre-tax investment in Canadian films shown in Table 4 the appropriate comparison with the \$40,000 pre-tax investment in common stock, shown in Table 1. In this comparison, if the investment is expected to break even, the common stock and the Canadian films result in equal net present values. If the investment is expected to generate a loss, the losses are lower for the common stock. If the investment is expected to make a profit, the gains are higher for the Canadian film. These dramatically different results arise from capturing the benefits of the immediate write-off of the investment in the film as a cost reduction, allowing a scaled increase in the investment. An interesting result is that the film

becomes a riskier investment in this case in terms of the wider distribution of after-tax cash flows.

Finally, it should be noted that in calculating the net present value of these investments the expected after-tax cash flows of the common stock and the Canadian film would not be discounted by the same rate. It would be necessary to use a higher discount rate for the film due to the higher risk of its after-tax cash flows and its lower liquidity.

Conclusions

The purpose of the foregoing analysis was to illustrate the general principles of a depreciation-based tax shelter investment using the conceptually simple example of a Canadian film. The results of this analysis should hold for any similar tax shelter opportunity that might arise in present and future tax legislation.

As a result of the analysis presented, some general conclusions can be reached. While all investments shelter the cost of the investment from taxation, the pattern of after-tax cash flows is shifted in a depreciation-based tax shelter with a high initial capital cost allowance to provide a write-off which reduces the after-tax cash outflow for the investment initially. However, the advantage of the faster write-off cannot provide a profit for an investment which does not return its cost and the after-tax carrying charges on the investment. The benefits of a positive cash flow generated in early years only appear to be an advantage to the extremely myopic investor. In addition, investment returns are subject to differential taxation. An investor must consider the tax consequences of an investment in their entirety.

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