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Financing Internal Buyouts of Private Companies: SCIN Attractive if Valuation Issues Can Be Resolved

Terry Crain
James Hamill

In planning for succession of ownership, oftentimes the owner of a private business seeks to sell the business to either family members or employees. Arranging outside financing may be difficult or costly, making internal financing attractive. Self-cancelling installment notes (SCINs) provide an opportunity to finance the transfer of ownership at a favorable interest rate and to obtain income and estate tax advantages. However, to pass muster with the Internal Revenue Service, the SCIN must include a risk premium for the cancellation feature. In this paper, we provide a mathematical model for computation of the required risk premium associated with the cancellation provision. The premium may be in the form of either an interest premium or a principal premium and the computations for both are demonstrated in this paper. Appendix A provides an example of the use of the formulas.

I. INTRODUCTION

A self-cancelling installment note (SCIN) is a deferred payment contract between a buyer and a seller in which the payment obligation terminates at the death of the seller.¹ The death termination feature results in avoidance of federal estate tax on the balance of the note unpaid at the seller's death. SCINs are often used when the owner of a small business wishes to transfer the ownership of the business to either family members or to employees of the business. Lenders may be in stronger bargaining positions than the small businesses, making the use of external debt expensive (Ang, 1991). Holmes and Kent (1991) support the existence of

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a "finance gap" created by an overreliance on commercial banks as the source of small business financing. Holmes, Dunstan, and Dwyer (1994) find significantly higher borrowing costs for small firms, primarily attributable to higher administrative costs incurred by the lender, and perhaps also due to a greater degree of asymmetric information. The higher borrowing cost incurred by small firms is one type of agency cost created by asymmetric information. If the owner of a private company seeks to retain equity ownership within the family or employee group, a signal of the type suggested by Leland and Pyle (1977) would not be available to mitigate the asymmetric information problem.

Internal financing of a transfer of ownership may generally take one of three forms. The stock may be sold to a leveraged employee stock ownership plan (ESOP), with the company making deductible contributions to the ESOP to fund the repayment of a third-party loan. ESOPs are costly to form and to administer, and as qualified plans under the tax law, must offer benefits to employees on a nondiscriminatory basis. The ESOP must also provide employees with a put option for nontraded shares, which may create cash flow concerns. If the owner wants to transfer control within the family, the nondiscrimination requirement of an ESOP may be a serious concern.

The second source of internal financing is a redemption of the owner's shares funded by an installment note issued by the company. Such a redemption reduces outstanding shares, "bootstrapping" other shareholders into a higher percentage ownership. A redemption of shares owned by a senior generation family member may create dividend income, and not capital gains, to the redeemed owner. The tax law provides limited opportunities for redemptions of family members to create capital gain income, and the steps necessary to create a favorable tax result are often unacceptable to the senior generation family member. Nonetheless, a redemption could be financed by a SCIN.

The third source of internal financing, particularly useful in a family setting, is the direct purchase of shares by individuals. The purchase could be financed by a note issued by the buyer, with payments made from future corporate profits. A direct purchase will ensure that the seller recognizes a capital gain, and the use of a SCIN as the financing vehicle will also offer estate tax savings, as discussed in the next section.

When the transfer of ownership of a private company is within either a family group or an employee group, asymmetric information and the lack of scale economies may result in difficulties obtaining outside financing. Internal financing funded from corporate assets may be the most attractive source of funds for a leveraged buyout of a departing

owner. A SCIN is an attractive source of financing for a leveraged buyout because the buyer's interest cost is lower than outside financing, and the seller may realize income and estate tax savings. However, tax savings are available only if the seller is adequately compensated for the risk of early cancellation of the payment obligation if the seller dies before receipt of all payments. In this paper, we show how to determine such a risk premium so that the SCIN form of financing may be used.

The remainder of the paper is organized as follows. Section II discusses the specific requirements for a note to qualify as a SCIN. In Section III, we develop the mathematical model to determine the risk premium for a SCIN. This premium may take the form of either a higher interest rate or a higher principal amount. Conclusions are presented in Section IV. Finally, we include an example of the use of the model in Appendix A.

II. REQUIREMENTS FOR A SCIN

SCINs are often used to transfer a private business to younger generation family members, thus keeping any additional appreciation in the business out of the seller's estate (Prestopino, 1992). Banoff and Hartz demonstrate that, after 1980 revisions to the installment method of reporting for tax purposes,² the SCIN is superior to alternative forms of deferred payment sales to family members (Banoff & Hartz, 1981). Banoff and Hartz also suggest that the attractiveness of SCINs as a wealth transfer mechanism was enhanced by 1986 guidance issued by the IRS with respect to the tax treatment of SCINs (Banoff & Hartz, 1986). Finally, they conclude that the Tax Court decision in *Estate of Frame* (Tax Court, 1992) enhances the value of a SCIN provided income tax rates remain below the maximum estate tax rates (Banoff & Hartz, 1992).

SCINs were not widely used prior to 1980 because the estate tax treatment of any unpaid installment obligation was not clear. In *Estate of Moss*, the Tax Court held that the unpaid balance of a SCIN was not included in the decedent's estate because the cancellation risk was separately bargained for by the decedent (Tax Court, 1980). If the seller fails to negotiate a risk premium for the cancellation risk, a gift (and a gift tax) should result as of the date of the sale, negating the potential estate tax savings. If a cancellation risk premium is incorporated into the SCIN, the seller should receive additional payments over the term of the note, and the unpaid balance at death would not be included in the taxable estate. The IRS acquiesced to the result in *Estate of Moss*, supporting the use of a SCIN to reduce the seller's taxable estate.

In GCM 39503 and Revenue Ruling 86-72 the IRS outlined the characteristics which distinguish a SCIN from an annuity, and the income tax consequences of a SCIN when the seller dies before all installment payments have been received (Internal Revenue Service, 1986). The attractiveness of SCINs was enhanced by the IRS pronouncements clarifying many uncertain aspects of the tax treatment of SCINs.

A SCIN is taxed under the installment reporting provisions of the tax law.³ Generally, the total amount of income to be recognized from the sale is allocated to each payment in the same ratio as the payment bears to the total payments to be received. Thus, if a contract provides for ten level annual principal payments, one-tenth of the total gain will be reported in each year.

To qualify as an installment sale, a SCIN must provide for a fixed monetary limit to be paid by the buyer, and the term must be less than the seller's life expectancy (Banoff & Hartz, 1986). The term selected will depend on many factors, which could include the buyer's ability to make annual payments, and the interaction of the payment term with other tax rules.⁴

If the contract is recognized as an installment sale, the seller will report both interest income and taxable gain from each payment. The buyer will report interest expense, and will receive a fair market value basis in the purchased property. The tax law requires that the contract provide for interest at a rate at least equal to the applicable federal rate (AFR), which represents a risk-free Treasury rate for a note of equivalent term. If the note is cancelled upon the death of the seller, the unreported gain is recognized in full in the year of cancellation (Schlenger, Madison, & Hayes, 1992).⁵ The seller then reports a gain with no cash receipts, but the buyer receives a tax basis for the acquired property in excess of the cash outlay.⁶

To avoid imposition of a transfer tax, the sale must be for full and adequate consideration. A normal installment sale that includes interest at the AFR will be respected for income tax purposes. However, use of the AFR does not protect against an IRS argument that the interest rate is below that which is fair, and that a transfer for less than full consideration was made.⁷

Because the term of a SCIN must be less than the seller's life expectancy, the cancellation feature would not typically apply. However, the possibility that the note may be prematurely cancelled requires that the seller be compensated with a risk premium above what would be appropriate for a normal installment sale. Failure to adequately

incorporate a risk premium will create adverse transfer tax consequences at the time the SCIN is created (Hartz & Banoff, 1986). There is no statutory, administrative, or judicial guidance with respect to determination of an appropriate premium for the early cancellation risk.

In this paper, we develop a general framework for determination of a premium to reflect the early cancellation risk of a SCIN. Our framework, which is based on the frequency distribution of the seller's life expectancy, can be applied to any payment terms, and can also be used with specific knowledge of the seller's health.⁸ In Appendix A, we illustrate how the individual would apply our framework to a representative SCIN assuming that the seller is of average health.

III. DETERMINING AN APPROPRIATE RISK ADJUSTMENT

The risk adjustment to reflect the cancellation risk can be reflected in a higher selling price (SCIN-PRIN because the adjustment is made to the principal) or in a higher interest rate (SCIN-INT). If the SCIN risk premium is miscalculated, adverse income or transfer tax consequences could result. In this section, we develop a model for computing the risk premium for a SCIN-PRIN or a SCIN-INT. We begin with an installment sale with no cancellation feature as a benchmark, then demonstrate the appropriate adjustments to reflect the cancellation risk in the principal or the interest of the installment contract.

Regular Installment Sale

A deferred payment contract must provide for the payment of principal and interest. The interest rate would reflect the risk characteristics associated with nonpayment of the principal. The principal would be the present value of the payment stream, discounted at the interest rate appropriate for the level of risk involved. For income tax purposes, the AFR is accepted as an appropriate interest rate, providing the parties to an installment contract with the ability to convert what should be interest into principal, because the buyer's risk characteristics would not be the same as the federal government. Whether the parties choose to take advantage of this opportunity will depend on the tax situation of each.⁹ In an arm's-length bargaining, however, the total payments should be the same regardless of how the payments are classified for tax purposes.

In a regular installment sale, the present value of the payments will equal the fair market value of the property as of the time of the sale.¹⁰

The fair market value of the property may be determined using the basic present value model.

$$\Sigma X_k (1 + r)^{-k} = FMV \text{ of property} \quad (1)$$

where

X_k = payment received in period k ($k = 1, 2, \dots, n$), and
 r = appropriate discount rate.

This form permits the payment stream to be level or non-level, and the discount rate to be set at the AFR or a higher rate. If the payment stream is level, the formula may be shown as the present value of an annuity.

$$X\{[1 - (1 + r)^{-n}]/r\} = FMV \text{ of property.} \quad (2)$$

Using these standard formulas, it is a simple exercise to solve for X given the fair market value, the discount rate, and the term of the note. The risk of nonpayment is reflected in the discount rate, and there is no separate risk of cancellation prior to completion of the term of the note. The total payments under the contract are nX , assuming a level payment stream, and $X\{[1 - (1 + r)^{-n}]/r\}$ is principal and $X\{[n - (1 + r)^{-n}]/r\}$ is interest.

SCIN with Risk Premium in the Principal

In a SCIN-PRIN, the risk of cancellation is reflected in a higher principal balance for the note. The discount rate is set at r , as in equation (1), which reflects all risk factors other than the cancellation feature. As in equation (1), r could be the AFR if the parties so desire, but that is not necessary. To reflect the additional risk, equation (1) is modified in two ways. First, the higher principal will result in a higher payment, which we designate as C_k to distinguish it from X_k . Second, each payment will be received only if the seller is alive on the payment due date. Since the probability is less than one that the seller will live to the k th payment date, we designate PR_k as the probability that the seller will be alive on the payment date, such that $0 < PR_k < 1$. The discount rate is the same as in equation (1) because the risk of early cancellation is reflected entirely in the principal. Then,

$$\Sigma(C_k)(PR_k)(1 + r)^{-k} = FMV \text{ of property.} \quad (3)$$

Because the fair market value of the property is not changed by an early cancellation risk, equation (1) and equation (3) are equal¹¹. With a specification of the probability of the seller living to each payment date, we can determine the amount of the principal adjustment by solving for C_k in

$$\Sigma X_k(1 + r)^{-k} = \Sigma(C_k)(PR_k)(1 + r)^{-k}. \quad (4)$$

With a level payment stream, the total payments under the contract would be expected to be nC , and $C\{[1 - (1 + r)^{-n}]/r\}$ is expected to be principal and $C\{n - [1 - (1 + r)^{-n}]/r\}$ is expected to be interest. Because $PR_k < 1$, then $[n/\Sigma PR_k] > 1$, and $C_k > X_k$. The principal and interest of a SCIN-PRIN are expected to be higher than a normal installment sale. The principal will be higher because the early cancellation risk premium is reflected in the principal; the interest is higher because the interest rate is the same but is applied to a higher principal balance.

SCIN with Risk Premium in the Interest Rate

In a SCIN-INT, the risk adjustment is reflected entirely in a higher interest rate. The only difference between a SCIN-PRIN and a SCIN-INT is whether the risk is reflected in additional interest or principal. Thus, the total expected payments, for any term, must be identical because the underlying risk characteristics are the same. The annual payment is the same as determined for a SCIN-PRIN, C_k . If we designate (Θ) to be the interest rate that reflects both the normal risk factors associated with the installment sale as well as the specific risk of early cancellation, then

$$\Sigma C_k(1 + \Theta)^{-k} = \Sigma(C_k)(PR_k)(1 + r)^{-k}. \quad (5)$$

Since $PR_k < 1$, then $(1 + \Theta)^{-k} < (1 + r)^{-k}$, which holds only if $\Theta > r$. With a level payment stream, Θ can be determined by finding an annuity factor that sets the fair market value of the property equal to the annual payment determined from equation (5):

$$C_k = FMV / \{[1 - (1 + \Theta)^{-n}]/\Theta\}. \quad (6)$$

The total payments for a SCIN-INT and a SCIN-PRIN are the same, and can be expressed as nC for a level payment stream. The principal for a SCIN-PRIN is $\Sigma C_k(1 + r)^{-k}$, and for a SCIN-INT $\Sigma C_k(1 + \Theta)^{-k}$. The principal for a SCIN-PRIN then exceeds that for a SCIN-INT. The

interest for a SCIN-PRIN is $C[n - \Sigma(1 + r)^{-k}]$ and the interest for a SCIN-INT is $C[n - \Sigma(1 + \Theta)^{-k}]$. The interest for a SCIN-INT then exceeds that of a SCIN-PRIN.

The early cancellation risk adjustment for a SCIN-INT is entirely in the interest rate. This means that the principal of a SCIN-INT is the same as in the normal installment sale. The interest in the normal level-payment installment sale was determined to be $X[n - \Sigma(1 + r)^{-k}]$. The total payments for the SCIN-INT exceed the total payments for the normal sale by $n(C - X)$, assuming all payments are made.¹² If the principal is the same in either case, then each period the interest for the SCIN-INT exceeds that for a normal installment sale by $C_k - X_k$. This result is intuitive because all incremental payments must be interest in a SCIN-INT.

Assigning Values to Model Parameters

For the individual seller to compute a cancellation risk adjustment a determination of the values of five parameters is required: r , n , FMV , PR_k and Θ . The fair market value of the property and the term of the note will be agreed upon by the parties. The interest rate, r , will be negotiated to reflect the risk of nonpayment under a normal installment sale, with the AFR as a safe harbor for the income tax. The values would be the same for a SCIN. The variable, X_k , is determined by use of equation (1), and C_k is determined by use of equation (3). Equation (3) incorporates the probability of receiving each payment. For a seller of average health, this probability can be determined by reference to the frequency distribution of life expectancies. If more specific information regarding the seller's life expectancy is known, then the average mortality tables can be amended (Banoff and Hartz (1986) note that the IRS approves of using specific health information in determining a SCIN risk adjustment). After determining PR_k , then C_k and Θ follow from equations (3) and (5) respectively, which would each have one unknown.

In Appendix A, we demonstrate how an individual would use this method, assuming the seller is of average health. With a level payment stream, we first determine the payments required for a normal installment sale, and then solve for the appropriate risk adjustment for a SCIN-PRIN and a SCIN-INT.

IV. CONCLUSION

A major concern to many small businesses is transfer of ownership to successors when the current owners are ready to retire from the business.

Two issues that must be addressed are (1) the availability and cost of financing for the sale and (2) the tax consequences of the transaction to the seller. A SCIN provides internal financing that may be offered on more attractive terms than outside financing and may provide tax savings to the seller. A sale of property at fair market value, including consideration of financing terms, can avoid any immediate transfer tax liability, and the advantages of a sale can be magnified by use of a SCIN, avoiding inclusion of the value of any unpaid note balance in the gross estate of the decedent-seller.

Although a SCIN may result in additional income tax relative to an installment sale, the estate tax advantages generally create overall savings since estate tax rates are higher than individual income tax rates.¹³ Also, any additional income tax paid by the seller due to additional interest income (or principal) is offset by an interest deduction (or higher tax basis) reported by the buyer. However, intra-family transfers are closely scrutinized by the Internal Revenue Service to ensure that the seller is not transferring wealth to heirs by providing an artificially low selling price. The use of a SCIN requires that it be properly structured to avoid gift tax consequences at the date of sale. In this paper we have provided a model to aid the individual in the proper structure of a SCIN. By providing objective support for the risk premium required to reflect the early cancellation risk, this model can reduce tax law uncertainty surrounding the use of a SCIN, making this wealth transfer mechanism more attractive to individuals with large estates.

APPENDIX A

Example of a SCIN Premium

The following example demonstrates how the individual would use the model developed in this paper. Assume an individual, age 50, has stock in a small corporation valued at \$1,000,000 that he wishes to sell. He is willing to sell the stock in exchange for an installment note payable annually for 15 years, with a provision that upon his death the note is cancelled. As long as the length of the installment note is less than his life expectancy, the arrangement will qualify as a SCIN.¹⁴

While the individual's life expectancy is greater than the terms of the installment note, there is uncertainty that he will live to receive all of the payments. Therefore, there is a risk of cancellation that must be reflected in either the principal (SCIN-PRIN), or the interest rate (SCIN-INT).

First, the installment payment is computed without the cancellation premium. The AFR for June, 1994, 7.52 percent, is used in this example.¹⁵ If payments are made at the end of each of the 15 years, the annual payments are \$113,427.98.¹⁶

Table 1
Probability Factors for Receipt of SCIN Payments for Given Ages

AGE	L(X)	50	51	52	53	54
50	91526					
51	90986	0.994100				
52	90402	0.987719	0.993581			
53	89771	0.980825	0.986646	0.993020		
54	89087	0.973352	0.979129	0.985454	0.992381	
55	88348	0.965278	0.971007	0.977279	0.984149	0.991705
56	87551	0.956570	0.962247	0.968463	0.975270	0.982758
57	86695	0.947217	0.952839	0.958994	0.965735	0.973150
58	85776	0.937176	0.942738	0.948829	0.955498	0.962834
59	84789	0.926393	0.931891	0.937911	0.944503	0.951755
60	83726	0.914778	0.920208	0.926152	0.932662	0.939823
61	82581	0.902268	0.907623	0.913486	0.919907	0.926970
62	81348	0.888797	0.894072	0.899847	0.906172	0.913130
63	80024	0.874331	0.879520	0.885202	0.891424	0.898268
64	78609	0.858871	0.863968	0.869549	0.875661	0.882385
65	77107	0.842460	0.847460	0.852935	0.858930	0.865525
66	75520	0.825121	0.830018	0.835380	0.841252	0.847711
67	73846	0.806831	0.811619	0.816862	0.822604	0.828920
68	72082	0.787558	0.792232	0.797350	0.802954	0.809119
69	70218	0.767192	0.771745	0.776731	0.782190	0.788196
70	68248	0.745668	0.750093	0.754939	0.760246	0.766083
71	66165	0.722209	0.727200	0.731898	0.737042	0.742701
72	63972	0.698949	0.703097	0.707639	0.712613	0.718085
73	61673	0.673830	0.677830	0.682208	0.687004	0.692278
74	59279	0.647674	0.651518	0.655727	0.660336	0.665406
75	56799	0.620578	0.624261	0.628294	0.632710	0.637568
76	54239	0.592608	0.596125	0.599976	0.604193	0.608832
77	51599	0.563763	0.567109	0.570773	0.574785	0.579198
78	48878	0.534034	0.537204	0.540674	0.544474	0.548655
79	46071	0.503365	0.506353	0.509624	0.513206	0.517146
80	43180	0.471779	0.474579	0.477644	0.481002	0.484695
81	40208	0.439307	0.441914	0.444769	0.447895	0.451334
82	37172	0.406136	0.408546	0.411186	0.414076	0.417255
83	34095	0.372517	0.374728	0.377149	0.379800	0.382716
84	31012	0.338833	0.340844	0.343046	0.345457	0.348109
85	29760	0.305487	0.307300	0.309285	0.311459	0.313851
86	24961	0.272720	0.274339	0.276111	0.278052	0.280187
87	22038	0.240784	0.242213	0.243778	0.245491	0.247376
88	19235	0.210159	0.211406	0.212772	0.214267	0.215913
89	16598	0.181347	0.182424	0.183602	0.184893	0.186312
90	14154	0.154645	0.155562	0.156567	0.157668	0.158878

Source: L(X) for each age is from the 1980 Census Table 80CNSMT.

Table 2
Amortization of SCIN-PRIN Note

	<i>C_k</i>	<i>BALANCE</i>	<i>INT</i>	<i>PRIN</i>
1	120,162.48	1,059,372.33	79,664.80	40,497.68
2	120,162.48	1,018,174.65	76,619.37	43,543.11
3	120,162.48	975,331.54	73,344.93	46,817.55
4	120,162.48	928,513.99	69,824.25	50,338.23
5	120,162.48	878,175.76	66,038.82	54,123.66
6	120,162.48	824,052.10	61,968.72	58,193.76
7	120,162.48	765,858.34	57,592.55	62,569.93
8	120,162.48	703,288.41	52,887.29	67,275.19
9	120,162.48	636,013.22	47,828.19	72,334.29
10	120,162.48	563,678.93	42,388.66	77,773.82
11	120,162.48	485,905.11	36,540.06	83,622.42
12	120,162.48	402,282.69	30,251.66	89,910.82
13	120,162.48	312,371.87	23,490.36	96,672.12
14	120,162.48	215,699.75	16,220.62	103,941.86
15	<u>120,162.48</u>	111,757.89	<u>8,404.59</u>	<u>111,757.89</u>
	<u>1,802,437.20</u>	-0-	<u>743,064.87</u>	<u>1,059,372.33</u>

Next, the payment is computed under the assumption that the risk of cancellation is reflected in the principal (SCIN-PRIN). Each of the 15 annual payments must consider the probability that the seller will not live to collect the payment. From Table 1 it may be shown that an individual, age 50, has a probability of 0.994100 of living until age 51.¹⁷ However, the probability of living to collect subsequent payments decreases annually so that the probability of collecting the 15th payment, at age 65, is 0.842460.¹⁸

Next, the probability factors from Table 1 are multiplied by the appropriate discount factors for the k th payment, using a 7.52 percent discount rate, to obtain $\Sigma(PR_k)(1+r)^{-k}$. The amount of the required annual payment for a SCIN may be determined by substituting $\Sigma(PR_k)(1+r)^{-k}$ into equation (3), to obtain \$120,162.48.

The annual payments of \$120,162.48 are the same for a SCIN-PRIN and a SCIN-INT. However, the bifurcation of the payments into principal and interest is different. For the SCIN-PRIN, the early cancellation risk premium is reflected in the principal. From Table 2, the risk premium can be seen to be \$59,372.33, the additional principal paid under the SCIN-PRIN. Table 2 shows the allocation of total payments between principal and interest.

The payments for the SCIN-INT note are the same as for the SCIN-PRIN, however, the classification between principal and interest are different. The interest rate, which reflects the risk premium, may be

Table 3
Amortization of SCIN-INT Note

	C_k	BALANCE	INT	PRIN
1	120,162.48	1,000,000.00	84,643.00	35,519.48
2	120,162.48	964,480.52	81,636.52	38,525.96
3	120,162.48	925,954.56	78,375.57	41,786.91
4	120,162.48	884,167.65	74,838.60	45,323.88
5	120,162.48	838,843.77	71,002.25	49,160.23
6	120,162.48	789,683.54	66,841.19	53,321.29
7	120,162.48	736,362.25	62,327.91	57,834.57
8	120,162.48	678,527.68	57,432.62	62,729.86
9	120,162.48	615,797.82	52,122.98	68,039.50
10	120,162.48	547,758.32	46,363.91	73,798.57
11	120,162.48	473,959.75	40,117.38	80,045.10
12	120,162.48	393,914.65	33,342.12	86,820.36
13	120,162.48	307,094.29	25,993.38	94,169.10
14	120,162.48	212,925.19	18,022.63	102,139.85
15	<u>120,162.48</u>	110,785.34	<u>9,377.14</u>	<u>110,785.34</u>
	<u>1,802,437.20</u>	-0-	<u>802,437.20</u>	<u>1,000,000.00</u>

determined to be 8.464 percent by substitution into equation (5). The annual amortization schedule for the SCIN-INT is shown in Table 3.

The model parameters can be adapted to meet any specific fact pattern, including a seller who is expected to live longer or shorter than suggested by the average mortality tables.

NOTES

1. A SCIN may also be known as a DTIS (Death Terminating Installment Sale) or a SCIS (Self-Cancelling Installment Sale).
2. The Installment Sales Revision Act of 1980 amended Section 453(b) of the Internal Revenue Code to permit the use of installment reporting even when receipt of some of the future payments is contingent.
3. The rules for installment sale reporting for federal income tax purposes are included in Sections 453 and 453A of the Internal Revenue Code of 1986 as amended.
4. For example, a SCIN could be used by a closely held corporation purchasing the interest of a retiring shareholder. If family members control the corporation, the retiring shareholder must generally file an agreement with the IRS under Section 302(c)(2) to waive attribution of stock ownership from family members. The waiver permits the retiring shareholder to avoid dividend treatment for sale payments, but requires that the shareholder not acquire an interest in the corporation other than as a creditor for 10 years after the redemption. If the installment note is for a long term, the note assumes equity characteristics. The IRS has stated that it will not issue a favorable advance ruling on such a transaction unless the term of the note does not exceed 15 years. Even if no advance ruling is requested, taxpayers generally

attempt to satisfy the IRS ruling position. Thus, the term of a SCIN issued in such a transaction would be set at no more than 15 years.

5. See also *Estate of Frane* which relies on Section 453B of the Internal Revenue Code. The income is included on the income tax return of the decedent's estate (Internal Revenue Service, 1986).
6. If the buyer and seller are related parties, the basis adjustment for the buyer may be achieved at a lower tax cost than if the property had passed through the seller's estate. The basis adjustment that occurs at death could come at a cost as high as 55 percent, the current maximum estate tax rate. The cost basis acquired in a SCIN transaction comes at a maximum cost of 39.6 percent, the current highest individual income tax rate.
7. The Tax Court, in *Krabbenhoft* (1990), held that the Section 483 safe harbor rules for imputed interest for income tax purposes do not apply for gift tax purposes. The Eighth Circuit Court of Appeals agreed with the Tax Court, but the Seventh Circuit Court of Appeals disagreed (Ballard, 1988). Both of these cases, however, dealt with years prior to the enactment of Section 1274, which may now control this issue.
8. An individual's specific health condition may occasionally be so exceptional so as to justify departure from use of the actuarial tables (Internal Revenue Service, 1980).
9. If the interest rate is specified to be the AFR, the buyer will report less interest expense and will receive a higher tax basis for the acquired property. This may be advantageous if the property can be rapidly depreciated. The seller will report less interest income, but more gain from the sale of the property. This may be advantageous if the principal amortization defers the timing of gain recognition relative to interest income, or if gains from sale are taxed at a lower rate. Of course, the parties may have competing interests in such an allocation.
10. We adopt a discrete-time formulation of present value to be consistent with Section 1274 of the Internal Revenue Code.
11. Of course, it may be argued that, if the seller is risk-averse, the seller's utility function will affect the required risk premium. It is important to recognize that our analysis is intended solely to value the note for federal income tax purposes. There is no support for federal tax authorities ever requiring specification of a particular utility function to value a financial instrument. Instead, there is substantial support for use of objective approaches to administration of the tax laws. Use of the risk-free AFR is an example of such an objective approach. Our approach to adjusting for the cancellation risk is similarly objective and should encounter no challenge from tax authorities solely because no utility function was specified.
12. If the risk adjustment is properly selected, the expected payments under each contract, determined on a present value basis, are equal.
13. The highest individual income tax rate is only 39.6 percent while the highest estate tax rate is 55 percent.
14. The life expectancy of an individual age 50 is 28.6 years (National Center For Health Statistics, 1971).
15. Section 1274(d) provides that the long-term federal rate is used when the term of the note is longer than nine years. Revenue Ruling 94-36 states that the long-term federal rate for June, 1994 for annual payments is 7.52 percent (Internal Revenue Service, 1994).
16. In this example, we assume that payments are made at the end of each year, therefore, we use the applicable federal rate for annual payments. Revenue Ruling

- 94-36 also provides rates for semiannual and quarterly payments (Internal Revenue Service, 1994).
17. Section 7520 provides that Treasury will prepare mortality tables, which shall be revised at least every 10 years. The initial tables were provided in Notice 89-60 and were based on mortality data from the 1980 census (Census Bureau, 1989). From Table 80CNSMT, included in Notice 89-60, the probability that an individual who is currently age 50 will attain age 51 is computed by dividing $L(X)$ of age 51 by $L(X)$ of age 50. That is, $90986 / 91526 = 0.994100$, as shown in Table 1.
 18. This analysis is similar to Crabb (1992) which used life expectancy factors in developing probabilistic estate planning models.

REFERENCES

- Ang, J. S. (1991). Small business uniqueness and the theory of financial management. *Journal of Small Business Finance*, 1(1), 1-13.
- Ballard* 854 F2d 185 (7th Circuit, 1988).
- Banoff, S. I., & Hartz, M. O. (1981). Sales of property: Will self-cancelling installment notes make private annuities obsolete? *TAXES-The Tax Magazine*, 59, 499-530.
- _____. (1986). Self-cancelling installment notes: New IRS rulings expand opportunities. *Journal of Taxation*, 65, 146-154.
- _____. (1992). New tax court case expands opportunities for self-cancelling installment notes. *Journal of Taxation*, 76, 332-340.
- Census Bureau. (1989). Notice 89-60, 1989-1 C.B. 700.
- Crabb, R. R. (1992). Probabilistic estate planning. *Financial Services Review*, 1(2), 143-157.
- Estate of Frane*, 998 F2d 567(Tax Court, 1992).
- Estate of Moss*, 74 TC 1239, acq. 1981-1 C.B. 2 (Tax Court, 1980).
- Hartz, M. O., & Banoff, S. I. (1986). Planning opportunities available using a private annuity for a term of years. *Journal of Taxation*, 65, 302-312.
- Holmes, S., Dunstan, K., & Dwyer, D. (1994). The cost of debt for small firms: Evidence from Australia. *Journal of Small Business Management*, 32(1), 27-35.
- Holmes, S., & Kent, P. (1991). An empirical analysis of the financial structure of small and large Australian manufacturing enterprises. *Journal of Small Business Finance*, 1(2), 141-154.
- Internal Revenue Service. (1980). Revenue Ruling 80-80, 1980-1 C.B. 194.
- _____. (1986). Revenue Ruling 86-72, 1986-1 C.B. 253.
- _____. (1994). Revenue Ruling 94-36, 1994-23 I.R.B. 14.
- Krabbenhof*, 94 TC 87 (1990), affirmed 68 AFTR 2d No.90-2876 (Eighth Circuit, 1991).
- Leland, H., & Pyle, D. (1977). Information asymmetries, financial structure, and financial intermediation. *Journal of Finance*, 32, 371-385.
- National Center for Health Statistics. (1991). *Vital statistics of the United States, 1988. Vol. II: Mortality Part A.*[DHHS Pub. No. 91-1104]. Public Health Service. U.S. Government Printing Office: Washington, D.C.
- Prestopino, C. J. (1992). *Estate planning and taxation*. Dubuque, IA: Kendall/Hunt Publishing Company.
- Schlenger, J. T., Madden, R. E., & Hayes, L. H. R. (1992). Installment obligations cancelled at death result in taxable gain, rules the Tax Court. *Estate Planning*, 19, pp. 238-240.