

A Valuation Model For Covenants Not to Compete

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Abstract

Recent tax legislation has intensified the valuation problem related to covenants not to compete. With this paper the authors examine the issues and propose a valuation model.

Introduction

The purchase of a business for a lump sum and the allocation of the purchase price to the various assets comprising the business have long been an area of tax controversy. Two provisions of the Tax Reform Act of 1986 (TRA) have had significant impact upon these transactions. The repeal and limited reinstatement of the capital gains preference have changed the relative bargaining positions of the buyer and seller. Second, the enactment of Sec. 1060 requires that goodwill be allocated a value using the residual method.

A highly litigated area involving purchase price allocations has related to the distinction between covenants not to compete (CNC's) and goodwill. This paper will include a discussion of prior litigation involving CNC's, the impact of the TRA, and implications for tax planning when a business is purchased, including a model to value CNC's.

Judicial Reliance Upon Tax Polarity

When the allocations of the values of the various assets were contained in the sales contract in an arm's length transaction, both parties could generally depend on their division to determine the various tax consequences stemming from the sale and purchase. The seller had some assurance as to how the purchase price would be divided between ordinary income resulting from the various recapture statutes and capital gain from the underlying capital assets. The buyer had some assurance of future depreciation, amortization, or depletion resulting from basis allocation to the various assets of his or her newly purchased business. Generally, in an arm's length transaction, an allocation that might provide a tax benefit for one party would have a tax detriment to the other. Allocations to assets producing capital gains, such as goodwill, would benefit the seller, but would reduce future tax benefits to the buyer by shifting basis away from depreciable or amortizable assets, such as a CNC.

Thus, "tax polarity" was said to exist between the buyer and seller because of their conflicting tax interests in the assets.

If the parties to the contract have agreed upon the allocation of the sales price and the allocation is included in the contract between the parties, the courts generally have not permitted one of the parties to later use a different allocation. Two lines of cases have developed that place a heavy burden of proof on a taxpayer questioning their own contract. In *Ullman* [59-1 USTC Para. 9314 (CA-2)], the Second Circuit refused to allow the taxpayers to disregard their sales contract which allocated a portion of their receipts from their sale of their stock to a CNC. The decision depended primarily on the fact that the taxpayers could not produce "strong proof" to override an agreed-upon allocation in their contract.

The burden of proof in the Tax Court is on the taxpayer, ... [W]hen the parties to a transaction such as this one have specifically set out the covenants in the contract and have there given them an assigned value, strong proof must be adduced by them in order to overcome that declaration. The tax avoidance desires of the buyer and seller in such a situation are ordinarily antithetical, forcing them, in most cases, to agree upon a treatment which reflects the parties' true intent with reference to the covenants, and the true value of them in money.

In *Danielson* [61-1 USTC 9423 (CA-3)], the Third Circuit imposed an even greater burden of proof on the taxpayer. Here, the court invoked the "parol evidence" rule. This line of thought would not allow contracting parties to attempt to alter the import of their contract in the absence of mistake or fraud in the writing of the contract.

Therefore, to permit a party to an agreement fixing an explicit amount for the covenant not to compete to attack

that provision for tax purposes, absent proof of the type which would negate it in an action between the parties, would be in effect to grant, at the instance of a party, a unilateral reformation of the contract with a resulting unjust enrichment. If allowed, such an attack would encourage parties unjustifiably to risk litigation after consummation of a transaction in order to avoid the tax consequences of their agreements. And to go behind the agreement at the behest of a party may also permit a party to an admittedly valid agreement to use the tax laws to obtain relief from an unfavorable agreement.

Neither the Ullman decision nor the Danielson decision places the same burden of proof on the IRS. As noted in Danielson, the IRS is free to question the "substance" of a transaction regardless of its "form."

Where the Commissioner attacks the formal agreement the Court involved is required to examine the 'substance' and not merely the 'form' of the transaction. This is so for the very good reason that the legitimate operation of the tax laws is not to be frustrated by forced adherence to the mere form in which the parties may choose to reflect their transaction.

Thus, even prior to the TRA, taxpayers could not completely depend upon the allocations included in their contracts. It was not unusual for the courts to find that the contract did not represent the economic reality of the transaction.¹

Issues Examined by the Courts

The strong proof necessary for a taxpayer to nullify an allocation contained in the contract has generally been that the agreement had no economic reality or that it did not reflect the true intent of the parties. The IRS has generally looked to factors reflecting the underlying economic reality of the CNC. Various specific factors have been evaluated in examining economic reality and intent.

The courts have relied heavily on "tax polarity" when deciding cases involving taxpayers trying to disregard their own contract allocation of purchase price to a CNC. Rarely has the taxpayer been able to assign an amount to a CNC different than the amount allocated in the sales contract, primarily because of the tax polarity that existed in almost every case.

Taxpayers have sometimes unsuccessfully asserted that an allocation should be disregarded due to the fact that they were not aware of the tax implication of the allocation.² The IRS has been successful in arguing that an allocation did not represent the economic reality of a transaction because one of the parties was not aware of the tax implications [Schulz, 61-2 USTC Para. 9648 (CA-9)].

Intent and ability to compete has been another factor the courts have used to determine the existence and value of a CNC. In Ullman, the Ullman brothers argued that the allocation to a CNC was too high because of the brothers' advanced age and poor health. The Second Circuit noted that several years later, when the case was being tried, two of the brothers were actively involved in similar businesses. It also noted that all were in good health.

The courts have frequently scrutinized the taxpayers' negotiations to evaluate their intent. In Ullman, the court was impressed by the fact that significant negotiations were conducted and that the documents were carefully drawn to allow the Ullman brothers to carry on certain business activities and to disallow other activities. The allocation of the total purchase price to the CNC was also discussed at length and reduced from \$400,000 to \$350,000.

Section 1060

Fundamental Components of Sec. 1060

Sec. 1060 has three primary components. First, the general rule under Sec. 1060(a) requires a uniform allocation method for allocating the purchase price to various assets by both the purchaser and the seller. This is accomplished by both the buyer and the seller being required to use the residual method used by Sec. 338(b) (5).

Second, Sec. 1060(b) gives the IRS the authority to require certain information reporting by both the buyer and the seller. This information includes the amount the parties allocated to goodwill and going concern value when the transaction takes place or when the transaction is modified. This provision also gives the Treasury the authority to require any other information that it considers necessary to carry out the provisions of Sec. 1060.

The third and last component of this provision is provided by Sec. 1060(c). Sec. 1060(c) offers a brief definition of the types of transactions covered by Sec. 1060. The covered transactions are termed "applicable asset acquisitions." An applicable asset acquisition is defined as any transfer (direct or indirect) of assets which constitutes a trade or business where the transferee's basis in the assets is determined wholly by the amounts paid for the assets. This subsection also states that it is possible for Sec. 1031 (like kind exchange) to apply to part of the transaction and the rest of the transaction can be covered by Sec. 1060.

The Temporary Regulations

On July 18, 1988, the Treasury issued Reg. Sec. 1.1060-1T. In addition, the Treasury amended other

existing regulations by issuing Reg. Secs. 1.167(a)-5T, 1.755-2T and 1.1031(d)-1T and amending Reg. Sec. 1.338(b)-3T. These regulations relate to asset acquisitions under Sec. 1060. In addition, they coordinate the rules of Sec. 755 with Sec. 1060 when a partnership interest is transferred. These regulations became effective on July 18, 1988 and generally apply to asset acquisitions made after May 6, 1986. However, the reporting requirements of these regulations only apply to asset acquisitions occurring in a taxable year which the due date (including extensions) of the return is on or after September 13, 1988.

Reg. Sec. 1.1060-1T(b) defines an "applicable asset acquisition" as any transfer, whether direct or indirect, of a group of assets that constitute a trade or business where the purchaser's basis is determined wholly by reference to the consideration paid for the assets. This provision also provides that a group of assets will be treated as an "applicable asset acquisition" if use of the assets constitute a trade or business in the hands of either the seller or the purchaser.

According to both Reg. Sec. 1.1060-1T(b) and the Senate Report, a group of assets constitutes a business if goodwill or going concern value could under any circumstances attach to the assets. A group of assets that would constitute a business under Sec. 355 will in all events be considered a business for Sec. 1060 [U. S. Congress]. The existence of excess consideration over the fair market value of all tangible and intangible assets is one factor to be considered in determining whether or not the transaction is governed by Sec. 1060. Other factors include related transactions between the buyer and seller such as a covenants not to compete, management contracts, lease agreements, licenses, employment contracts or other similar agreements [Reg. Sec. 1.1060-1T(b)(2)].

The seller and buyer must allocate consideration among the assets transferred in a manner essentially as required under Reg. Sec. 1.338(b)-2T.³ The same four classes of assets that are used by Reg. Sec. 1.338(b)-2T are specified by Reg. Sec. 1.1060-1T(d). Class I assets are cash, demand bank deposits and similar items. Class II assets are certificates of deposit, U.S. government securities, readily marketable stock or securities, foreign currency, and other similar assets. Class III assets are all other assets other than Class I, II, or IV. Class III assets includes tangible assets such as furniture and fixtures, land, buildings, and equipment. It also includes intangible assets such as accounts receivable and covenants not to compete. Class IV assets consist of goodwill and going concern value.

Under the residual method consideration is first allocated to Class I and then to Class II assets to the extent of their fair market value. Next, consideration is allocated to Class III assets to the extent of their fair

market value. Any remaining consideration is then allocated to Class IV (goodwill or going concern value). Consideration is allocated to the various assets of Class II and III in proportion the assets relative fair market values on the purchase date. The amount allocated to assets in Class I, II, and III cannot exceed their fair market values on the purchase date.⁴ Reg. Sec. 1.1060-1T(e)(2) also limits the amount of consideration that can be allocated to individual assets to any other applicable limitation under the Code or general principles of tax law.

The IRS "may challenge the taxpayer's determination of the fair market value of any asset by any appropriate method and take into account all factors, including any lack of adverse tax interests between the parties" [Reg. Sec. 1.1060-1T(e)(4)]. In an examination of a return, the IRS also has the authority to disregard the parties agreement and directly revalue other assets.

Due to the fact that the IRS now has regulatory authority to disregard the taxpayer's allocation, it might be especially prudent of the purchaser to gather evidence as to the fair market value of certain consequential assets. Certainly, if the contract calls for a CNC and if the tax consequences are significant to the purchaser, it would behoove the purchaser to gather evidence that will help establish the fair market value of the covenant. Based on the IRS's success in the past, this would be true even if Congress were to restore a significant capital gains preference. The remainder of this paper is devoted to establishing a method to help provide a reasonable approximation of the value assigned to a CNC.

A Valuation Model

Elements of Covenants Not to Compete

If the value of an asset is the net present value of the net cash flows the asset will produce, then the purchaser should be willing to pay the net present value of the detriment the firm would suffer if the purchaser did not require a CNC from the seller. The detriment the firm would suffer would be the net present value of the reduction in cash flows that would result from the lack of a CNC.

At least two factors should be considered in order to estimate the value of a CNC: (1) the reduced cash flow to the firm if the covenantor did compete; and (2) the probability that the covenantor would actually compete. The model developed by this paper uses the above factors to estimate an approximate value of a CNC. The reader is cautioned that this model is a generalized approach to the problem and must be adapted and changed to fit each specific situation. Also, the model is not meant to be a precise valuation of a CNC. It is meant only to be a rough estimate that parties may find helpful in attempting

to place a reasonable estimate on the value of a CNC.

With this model, an attempt is made to approximate the value of a CNC using a three step process. First, the firm's past cash flows and forecasting techniques are used to forecast the detriment to cash flows that the buyer would suffer if in fact the covenantor did compete. Second, the net present value of these forecasted amounts is computed to approximate the value of noncompetition to the buyer on the date of the sale. This amount assumes there is a 100% probability that the covenantor will compete. Third, a probability that the covenantor will in fact compete is determined. This probability can range from 100% to 0% depending upon the fact situation. This probability is incorporated into the net present value formulas derived in step 2. The result is a dollar value that is meant to approximate the value of a CNC.

Forecasting the Cash Flow Detriment

Using time series data to forecast or predict future values is nothing new. Attempts are made to predict future Gross National Product (GNP) through the use of time series data such as past GNP figures and certain leading economic indicators. Individual firms use various forecasting techniques to project cash flows in their planning activities in order to keep the firm liquid and running effectively. By definition, forecasts deal with the future and the future is always uncertain. Thus, forecasts are simply estimates based on judgments and information contained in historical data.

A basic assumption in forecasting is that there exists some pattern in past activity. Sometimes this pattern is detectable simply by examining the historical values of the items to be forecasted. That is, it might be possible to examine only past cash flows of the seller and predict future cash flows on that basis alone. However, the historical data from a single variable such as past cash flows may not contain all the information needed about the underlying pattern. Relationships between two or more variables may affect the underlying patterns that exist. When this is the case it may be helpful to have several variables and identify the relationships that exist among them.

This model attempts to forecast the effect that a seller's competition could have on the purchaser's future cash flow if indeed the seller competed with the purchaser. Net cash flows are made up of several components. Accordingly, net cash flow forecasts are usually several forecasts of the components that make up the net cash flow of a firm. When these components of cash flow are available they should provide a better basis for forecasting possible future cash flows than aggregate data. However, the information relating to the various components of a seller's net cash flow may not be available to the purchaser in sufficient detail and quantity to be able

to make forecasts of the various components of net cash flow. The assumption is made that the following data is available for at least five previous years: (1) past financial statements of the seller, and/or (2) past tax returns of the seller. If only past income statements are available, they need to be adjusted in order to present a better picture of cash flows. After 1987, many firms will be presenting a statement of cash flows along with their other financial statements. Prior to 1987, many firms provided a statement of changes in financial position that is useful for extracting cash flow information. If tax returns are available, cash flows can be approximated by adjusting for non-cash items.

Analytic Techniques of Forecasting with Time Series Data

The cash flow detriment possibilities of a competing seller is a difficult number to approximate. The evaluation of the various factors could result in a well-informed subjective appraisal.

Here, forecasting techniques are used to estimate the detriment in cash flows that could be suffered if there were no CNC. This detriment for any specific year would be the difference in the forecasted contribution to cash flows assuming there was a CNC and the forecasted contribution to cash flows assuming there was not a CNC.

Generally there are two goals in analyzing past cash flow data. First, any patterns of the past data need to be described. Second, possible future cash flow effects on the purchaser (assuming the seller does indeed compete) need to be predicted.

Time series data is generally viewed as consisting of three components: (1) the trend component, (2) the cyclical component, and (3) the irregular component.⁵ The trend component is the component that increases or decreases smoothly with time. This component can be identified by various techniques such as the moving average method, exponential smoothing, or regression analysis with time as the independent variable. Cyclical variations are caused by the general business cycles and cycles of the specific industry. The length of past cycles cannot be used to predict future cycles, but cycle effects play an important part in projecting future business activity. The irregular component is generally used to explain time series movements that cannot be explained by a trend or by cyclical variations.

Various quantitative forecasting techniques exist. The choice of technique depends on several existing conditions, including the data available, the relative cost of the various techniques, and the sophistication of the users. Three methods will be discussed: moving averages, simple regression, and multiple regression.

Forecasting with a moving average assumes that the trend is close to horizontal. This method also assumes that the average of the most recent periods is a reasonable estimate of the next period. An estimate of cash flow using a moving average can be represented as:

$$CF_{t+1} = \frac{\sum_{i=t-n}^t CF_i}{n}$$

where

CF = cash flow

t = the current time period

n = the number of time periods to be included

Where a forecast is needed for more than one period in the future, the calculated forecast for the initial future periods can be used to forecast subsequent periods.

Simple regression can also be used to forecast cash flows. Forecasting with simple regression assumes there is a linear relationship between time and cash flows. Prior periods' cash flows are used to derive a linear function that represents a trend line. Future years' cash flows are predicted to be on or near that trend line unless some non-random event occurs to affect those future cash flows. Using the ordinary least squares method of regression, the linear function can be represented as:

$$CF_c = a + bx + e$$

where:

CF_c = the dependent variable - cash flow

x = the independent variable - time

e = the error term

a and b = the parameters of the line derived by the ordinary least squares method

Simple regression should be a better method than the moving average method because it considers upward or downward trends. However, it does not allow the forecaster to include the effect of multiple variables. Since many factors may affect future cash flows, it might be desirable to estimate the effect of more than one factor. Forecasting with multiple regression assumes there is a linear relationship between cash flows and a number of variables. Again, prior years' data are used to derive a linear function that can be used to estimate future cash flows using estimates of the relevant independent variables. The linear equation can be represented by:

$$CF_c = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_nX_n + e$$

where

CF_c = the dependent variable - estimated cash flow

$X_1 - X_n$ = the independent variables - the various factors affecting cash flow

e = the error term

a and $b_1 - b_n$ = the parameters of the line estimated by the ordinary least squares method

A major advantage of the multiple regression method is that the forecaster can select the variables that provide the most explanatory power by evaluating the t-statistic, the F-statistic, the coefficient of determination and other tests of statistical significance. The major disadvantage is the small sample sizes that are usually available for this type of forecasting.⁶ In addition, the number of variables that can be used is very limited.⁷ Another problem with multiple regression is that the independent variables must be estimated for future periods. For example, if sales is determined to be a significant factor in estimating cash flows, then a sales number must be estimated for the future period for which cash flows are being forecast. Any error in estimating sales will be further compounded in estimating cash flows.

The following example will be used to illustrate the use of these methods. Owner and Service Manager (SM) make up the management team of an electric motor repair business. The business is located in a small city. In addition to repairing large motors required for various businesses and industries in the city, the business derives a substantial portion of its business by repairing irrigation motors for farmers in the area.

Owner is approaching retirement age (62 years old) and is spending less time with the day-to-day operation of the business. However, he has a long-standing business relationship and personal relationship with many of the farmers in the area. SM was initially employed as a repairman, but became service manager after completing a business degree at the community college. He has significantly improved the profitability of the business by instituting various inventory controls and reducing employee turnover through the use of incentive programs and employee benefit programs.

SM is negotiating with Owner to purchase the business. He believes there is a possibility that Owner may enter into competition with the business. In attempting to value a covenant, SM has identified the following variables which he believes have a significant effect upon cash flows: (1) sales (approximately equal to cash collected⁸), (2) parts and supplies cost, (3) average experience level of the repairmen, (4) advertising efforts, and (5) the weather's effect on the area farmers.

The data in Table 1 is available:

SM believes that Owner could have 2 significant effects on the business if he entered into competition. First, due to his close ties with the area farmers, he could

Table 1
Historical Data

	1984	1985	1986	1987	1988
Cash collected from customers	\$1,000,000	\$1,100,000	\$1,000,000	\$1,100,000	\$1,200,000
Cash paid for:					
Parts and supplies used	\$ 200,000	\$ 240,000	\$ 180,000	\$ 209,000	\$ 216,000
Labor - fixed (SM and Owner)	60,000	61,000	62,000	63,000	64,000
Labor - variable	400,000	429,000	426,000	426,000	458,000
Other - fixed	50,000	51,000	52,000	53,000	64,000
Other - variable	190,000	199,000	190,000	229,000	268,000
Total	\$ 900,000	\$ 980,000	\$ 910,000	\$ 980,000	\$1,070,000
Net cash flow	\$ 100,000	\$ 120,000	\$ 90,000	\$ 120,000	\$ 130,000
Advertising Expense	\$4,500	\$5,000	\$5,500	\$5,000	\$5,500
Average Experience (in years)	3	3.5	3	4	4.5
Weather	(No quantitative measurement identified.)				

reduce the business's sales by approximately 25%. In addition, some of the repairmen that had worked for the business for many years would probably follow Owner and reduce the average experience of the repairmen to 3.5 years. However, SM believes that the inventory and parts cost would remain at about the current level (as a percentage of sales). He also believes that the payments on the loan to finance the purchase the business will closely approximate the cash that Owner now takes out of the business.

The detriment in cash flows would be forecast using a five-year moving average is included in Table 5. (It is assumed that a 25% decrease in sales would result in a 25% decrease in cash flow.)

Simple regression would result in the following linear function:

$$CF_t = \$94,000 + \$6,000(t)$$

where $t = 6$ in 1989, 7 in 1990, etc.

This equation results in the forecast of cash flows illustrated in Table 5, again assuming that a 25% reduction in sales would result in a 25% reduction in net cash flow.

Multiple regression requires many more steps. First, several models were derived using various combinations of variables. The best model⁹ for this situation resulted in the following linear function:

$$CF_t = -23,114 + .3412(\text{INVENTORY COST}) + 17,722(\text{EXPERIENCE})$$

The next step is to forecast the values of the two independent variables. SM has been able to reduce the inventory and parts cost to about 18% of sales, and believes this percentage will continue. Sales was forecast for the next five years using simple regression. The cost variable was then expressed as 18% of those forecasted values for the independent variable if Owner did not compete. Those numbers were reduced by 25% to reflect the expected values if Owner did compete. The experience variables were amounts expected by SM based on his efforts to reduce turnover. The values used for the forecast are listed in Table 2.

Now, cash flows under the two assumptions can be forecast by using these independent variables and the linear equation, resulting in the cash flow detriments listed in Table 5.

For all three of the methods, simplifying assumptions have been made even though the computation of cash flows

Table 2
Projected Independent Variables

	-----Inventory Cost-----		-----Experience-----	
	No Competition	Competition	No Competition	Competition
1989	216,000	162,000	4.5 years	3.5
1990	223,200	167,400	4.5	3.5
1991	230,400	172,800	5.0	4.0
1992	237,600	178,200	5.0	4.0
1993	244,800	183,600	5.0	4.0

is a complex computation. The moving average assumes a horizontal trend. Simple regression required the assumption that a 25% reduction in sales would result in a 25% reduction in cash flow. Multiple regression is severely limited due to the small sample size. A more realistic approach would involve the use of these methods, but applied to specific components of net cash flow and using a worksheet approach. For purposes of this example, the various components of net cash flows have been computed as follows:

1. Cash collected from customers (sales) - Simple regression has been used to forecast this number. However, this would be an appropriate use of multiple regression. Many external factors, such as general economic conditions, would affect this number. Multiple regression could incorporate such factors as the consumer price index, price levels of various agricultural products, local economic indicators, etc.
2. Cash paid for parts and supplies used - Based on SM's experience, this number is computed as 18% of cash collected from customers.
3. Cash paid for fixed labor - SM's salary, with a \$500 yearly increment. Simple regression or a moving average could be used.
4. Cash paid for variable labor - Based on the multiple regression above, there appears to be a strong relationship between cash flows and the average experience of the repairman. For purposes of the worksheet, the average experience was regressed against variable labor costs as a percentage of cash collected from customers. The following equation was derived. $\text{Percentage of cash collected} = 47.7\% - 2.3(\text{Experience})\%$ This equation results in 39.9% for 3.5 years, 38.8% for 4 years, 37.7% for 4.5 years, and 36.5% for 5 years.
5. Payments on loan to purchase business - Estimated by SM.
6. Other fixed cash expenditures - Expenditures for 1984 were incremented \$1,000 each year. Simple regression or a moving average could be used.
7. Other variable cash expenditures - An approximate average of the last two years, 22%, was used. Again, simple regression or a moving average could be used.

Tables 3, and 4 detail forecasted cash flows with no competition and forecasted cash flows with competition. Forecasted cash flow detriments using this method are included in Table 5.

Table 3
Forecasted Cash Flow - No Competition
Worksheet Approach

	1989	1990	1991	1992	1993
Cash collected from customers	\$1,200,000	\$1,240,000	\$1,280,000	\$1,320,000	\$1,360,000
Cash paid for:					
Parts and supplies used	\$ 216,000	\$ 223,200	\$ 230,400	\$ 237,600	\$ 244,800
Labor - fixed (SM and Owner)	32,500	33,000	33,500	34,000	34,500
Labor - variable	452,400	467,480	467,200	481,800	496,400
Payments on loan	32,000	32,000	32,000	32,000	32,000
Other - fixed	65,000	66,000	67,000	68,000	69,000
Other - variable	264,000	272,800	281,600	290,400	299,200
Total	\$1,061,900	\$1,094,480	\$1,111,700	\$1,143,800	\$1,175,900
Net cash flow	\$ 138,100	\$ 145,520	\$ 168,300	\$ 176,200	\$ 184,100

Table 4
Forecasted Cash Flow - Competition
Worksheet Approach

	1989	1990	1991	1992	1993
Cash collected from customers	\$ 900,000	\$ 930,000	\$ 960,000	\$ 990,000	\$1,020,000
Cash paid for:					
Parts and supplies used	\$ 162,000	\$ 167,400	\$ 172,800	\$ 178,200	\$ 183,600
Labor - fixed (SM and Owner)	32,500	33,000	33,500	34,000	34,500
Labor - variable	359,100	371,070	372,480	384,120	395,760
Payments on loan	32,000	32,000	32,000	32,000	32,000
Other - fixed	65,000	66,000	67,000	68,000	69,000
Other - variable	198,000	204,600	211,200	217,800	224,400
Total	\$ 848,600	\$ 874,070	\$ 888,980	\$ 914,120	\$ 942,260
Net cash flow	\$ 51,400	\$ 55,930	\$ 71,020	\$ 75,880	\$ 80,740

Table 5
Cash Flow Detriment

	1989	1990	1991	1992	1993
Moving Average					
Projected cash flow - No competition	\$112,000	\$114,000	\$113,280	\$117,360	\$117,408
Projected cash flow - Competition	84,000	85,800	84,960	88,020	88,056
Projected cash flow detriment	\$ 28,000	\$ 28,600	\$ 28,320	\$ 29,340	\$ 29,352
Simple Regression					
Projected cash flow - No competition	\$130,000	\$136,000	\$142,000	\$148,000	\$154,000
Projected cash flow - Competition	97,500	102,000	106,500	111,000	115,500
Projected cash flow detriment	\$ 32,500	\$ 34,000	\$ 35,500	\$ 37,000	\$ 38,500
Multiple Regression					
Projected cash flow - No competition	\$130,334	\$132,791	\$144,108	\$146,565	\$149,022
Projected cash flow - Competition	94,187	96,030	106,733	108,576	110,418
Projected cash flow detriment	\$ 36,147	\$ 36,761	\$ 37,375	\$ 37,989	\$ 38,604
Worksheet Approach					
Projected cash flow - No competition	\$138,100	\$145,520	\$168,300	\$176,200	\$184,100
Projected cash flow - Competition	54,400	55,930	71,020	75,880	80,740
Projected cash flow detriment	\$ 86,700	\$ 89,590	\$ 97,280	\$100,320	\$103,360

Net Present Value Computation

Once the reduction in cash flows has been estimated, the net present value of this detriment can be computed.. The formula will first be presented assuming that the probability that the covenantor would compete is 100%.

$$NPV = \sum_{t=1}^n \frac{[C_t (1 + a)^t] (1 - T) + (NPV/n) T}{(1 + k)^t}$$

Where:

NPV = net present value = the amount paid for the CNC
 C_t = Projected cash flow detriment in year t in nominal dollars
 n = number of years under covenant
 a = inflation rate
 T = tax rate
 k = discount rate, including the effects of business risk and inflation

The first term in the numerator represents the estimated cash flow detriment adjusted for the tax effect and inflation. The second term is the tax benefit of amortizing the CNC. Since both sides of this equation contains the NPV term, the equation can be simplified to the following:

$$\text{NPV} = \frac{(1 - T) \sum_{t=1}^n \frac{C_t (1 + a)^t}{(1 + k)^t}}{1 - (T/n) \sum_{t=1}^n \frac{1}{(1 + k)^t}}$$

For example, assume the yearly detriment for a five-year CNC is estimated to be \$85,000 in year one, \$90,000 in year two, \$95,000 in year three, \$100,000 in year four and \$105,000 in year five. The inflation rate is assumed to be 5%, the discount rate 15%, the tax rate 40% and, again, the probability that the covenantor would compete 100%.

$$\text{NPV} = \frac{(1 - .4) \sum_{t=1}^5 \frac{C_t (1.05)^t}{(1.15)^t}}{1 - (.4/5) \sum_{t=1}^5 \frac{1}{(1.15)^t}} = \$296,029$$

Probability the Covenantor Will Compete

In determining the probability that the seller will compete, factors that are indicative of the both the seller's ability to compete and intention to compete should be examined. Factors that affect the seller's ability to compete can be separated into at least two categories: (1) factors specific to the covenantor and (2) factors specific to the market in which the business will compete.

Factors specific to the covenantor that would be indicative of the covenantor's ability to compete might include:

1. the covenantor's age;
2. the covenantor's health;
3. the market advantages that the covenantor has acquired as a result of his/her position in the business being sold, including: (a) extent of client contact; (b) extent of other contacts important to that firm, such as suppliers, legislators, industry organizations, community leaders, etc.; (c) managerial skills specific to that firm or industry; (d) other skills specific to that firm or industry; and (e) access to secret formulas, recipes, or processes;
4. whether the covenantor is an owner or an employee; and
5. the covenantor's reputation, both specific to that firm and industry, and in general.

Factors specific to the marketplace that would be indicative of the covenantor's ability to compete might include:

1. the type of business - for example, an accounting practice where client contact and reputation are important versus a manufacturing business where the product is more important than the contacts;

2. the size of the business - for example, a "one-person show" where the covenantor has all contacts, etc, versus a large firm where employees can maintain continuity of contact with clients, suppliers, etc.;
3. the past success of the firm;
4. the firm's sales area - local, regional, national or international;
5. entry barriers into the industry, including: (a) market saturation - that is, if the covenantor started a similar business in the area, would there be sufficient demand for the product that both businesses could be successful; (b) initial capital requirements - that is, could the covenantor start a new business with little capital, and, if not, how difficult would it be to obtain the needed capital to take advantage of economies of scale; (c) product differentiation, including buyers' preferences for existing products, patents, contracts or other controls over distribution outlets, and research and development efforts; and (d) cost advantages, including the advantages of experience, lower financing, and contracts or other controls over materials, labor, etc;
6. industry trends (local and national) that might affect the covenantor's ability to re-enter that business; and
7. general economic conditions.

Factors that would be indicative of the covenantor's intention to compete could include:

1. the covenantor's stated intentions;
2. the covenantor's preparations (or lack thereof) for other activities, either business or personal; (For example a person of retirement age may be making arrangements to move to Florida. A younger person may be preparing to enter another business or move to another location.)
3. the covenantor's prior behavior under similar circumstances.

It is impossible to assign a priori weights to the above factors. Each situation is unique. One factor might completely overshadow the others. For example, a covenantor in extremely bad health might result in a probability of virtually zero regardless of the effect of the other factors. Thus, a thorough evaluation of all of the factors can at best result in a well-informed subjective probability.

Table 6 illustrates a possible approach to assigning weights to the above factors based on the facts of our example. This table is presented in a worksheet format with comments to provide some documentation for the reasoning used in deciding upon the various weights assigned to the factors.

From this example, one would assume there is a 50% probability that the covenantor will actually compete with the seller. Again, the assigned values should be changed to fit the actual facts of each situation. Likewise, the specific factors may change from one situation to another. The format of the above worksheet can be a starting point and a tool to aid in determining a probability that a seller will compete with a buyer of a business.

The Full Model

In order to add the effect of estimating the probability of the covenantor actually competing, another factor, P, must be added to the net present value formulas discussed above.

$$NPV = P \sum_{t=1}^n \frac{[C_t (1 + a)^t] (1 - T) + (NPV/n) T}{(1 + k)^t}$$

$$NPV = \frac{P (1 - T) \sum_{t=1}^n \frac{C_t (1 + a)^t}{(1 + k)^t}}{1 - (PT/n) \sum_{t=1}^n \frac{1}{(1 + k)^t}}$$

In the example, assume the probability that the covenantor would actually compete is only 50%.. Then:

$$NPV = \frac{.5(1 - .4) \sum_{t=1}^5 \frac{C_t (1.05)^t}{(1.15)^t}}{1 - [(.5 \times .4)/5] \sum_{t=1}^5 \frac{1}{(1.15)^t}} = \$125,095$$

The model presented is only intended to be a reasonable approximation of the value of a CNC. However, in the light of the authority given to the IRS. by the Temporary Regulations under Sec. 1060, this model might be very helpful to taxpayers that are in the process of attempting to justify reasonable values assigned to a legitimate CNC. On the other hand, the IRS. might find this model useful in determining whether or not the values assigned to a CNC is reasonable or not. Also, the parties involved in the sales negotiation might find this model to be useful in their bargaining process or at least as a starting point in assigning a value to a CNC.

Table 6

Worksheet for Assigning Weights for the Possibility of a Seller Competing With a Purchaser of a Business

Relevant Factors	Possible Probability Index	COMMENTS	Assigned Probability Index
A. Factors Indicating Covenantor's Ability to Compete			
1. Age	10	Almost retirement age	2
2. Health	10	Average (for age)	4
3. Market skill & advantage	10	Good knowledge of business & good customer relations	7
4. Owner or Employee	5	Owner	5
5. Reputation	10	Good	8
B. Market Factors			
1. Type of Business	5	Some specialized skill required	3
2. Size of Business	5	Small/Medium, moderate capital required	3
3. Past Success	5	Owner built company from moderate investment	3
4. Sales Area	5	Three county area (rural)	2
5. Industry Trends	5	Slightly declining	2
6. General Economic Conditions	5	Somewhat depressed	2
C. Factors Indicating Covenantor's Intent to Compete			
1. Stated Intention	15	Stated he probably will not compete	5
2. Covenantor's preparation for other Activities	5	Trained for a broad base of activities and employment	2
3. Prior Behavior in similar Situations	5	Information not available but seller has reputation of keeping his word	2
Total	100%		50%

References

- 1 U. S. Congress, Senate, S. Rept. No. 313, 99th Cong., 2nd Sess. 255.

Endnotes

- 1 For example see *Douglas J. Lemery et al v. CIR*, 71-2 USTC Para. 9760 (9th Cir.), affirming 52 TC 367 (1969) and *Ray H. Schulz v. CIR*, 61-2 USTC Para. 9648 (9th Cir.), affirming 34 TC 235 (1960).
- 2 For example, see *Clarence C. Hamlin Trust v CIR*, 54-1 USTC Para. 9215 (10th Cir.), affirming 19 TC 718 (1953), and *CIR v Carl L. Danielson*, 61-1 USTC Para. 9423 (3rd Cir.) cert. denied, vacating and remanding 44 TC 594 (1965), on remand 50 TC 782 (1968).
- 3 Reg. Sec. 1.338(b)-2T allocates the adjusted grossed-up basis among the assets of the target corporation using the residual method when a Sec. 338 election is made.
- 4 For this purpose Reg. Sec. 1.1060-1T(c)(2) defines fair market value as its gross fair market value. That is, the fair market value determined without regard to related liabilities. However, when there are assets subject to nonrecourse debt, the fair market value of such property is treated as being not less than such debt. This rule applies only to the seller and not the buyer.
- 5 The seasonal component is another important component that is used to analyze time series data. However, we are using yearly data and there is no seasonal component in yearly data.
- 6 For example, if data is available on an annual basis for only 5 years, the sample size is only 5, requiring large t-statistics for a reasonable confidence level. To determine that a coefficient is significantly different than zero with a 95% confidence level, the t-statistic must be greater than 3 for a sample size of 5.
- 7 In computing the F-statistic, the degrees of freedom computation requires that there be fewer variables than observations. Again, with 5 years of annual data, no more that 4 variables may be used.
- 8 For purposes of this example, it is assumed that sales and cash collected from customers are approximately equal and the terms are used interchangeably.
- 9 The t-statistics were -2.63 for the constant, 7.32 for INVENTORY COST, and 11.23 for EXPERIENCE. The F-statistic was 242, R^2 was .99, and the Durbin-Watson statistic was 2.10.