

PEEK v. COMMISSIONER
45 T.C.M. 1382
Tax Ct. Mem. Dec. (CCH) 40,063(M), (P-H) ¶83,224

Editor's Summary

Key Topics

CUTTING AS A SALE OR EXCHANGE

- Fair market value Of timber cut under the election
- how determined

VALUATION

- Fair market value of timber
- how determined

Facts

Taxpayers were partners in an integrated lumber manufacturing firm. Timber for use in their lumber business was cut from fee land, under U.S. Forest Service cutting contracts, and under private cutting contracts. During the tax year in question all timber was cut from the Eldorado National Forest. The Commissioner disagreed with taxpayers valuation of this timber for purposes of taxpayers' Section 631(a) election on two grounds.

First, the Commissioner contended that since the comparable sales used in the taxpayers' appraisal were for U.S. Forest Service timber, the statistical high bid price for such sales must be discounted to reflect the time value of money. According to this argument, winning bid prices, are based on the anticipated appreciation in timber prices over the several years during which the winning bidder had the right to cut the timber. Under U.S. Forest Service contracts the timber is paid for at the time of cutting, except for a 3 percent deposit made at the time the contract is awarded.

Second, the Commissioner contended that the taxpayers failed to consider the exchange between private parties of a large tract of timberland in the vicinity of the timber in question as a comparable sale for purposes of valuing their timber. The taxpayers contended that the tract was not comparable because of the nature of the transaction and physical differences between the tracts.

Tax Court

HELD: Fair market value determined. The Court rejected the government's argument that the method of valuation used by the petitioner in taking into account comparable U.S. Forest Service contracts was inappropriate. It concluded that, because the contracts contained an escalation provision, the time value of money was taken into account. In this regard, it observed that in

virtually every case, the present cash value of the escalated bid prices forecast exceeded the statistical high bid prices. Nevertheless, the Court determined that it was inappropriate to exclude the land exchange since the location of the exchanged land; its proximity, and its accessibility were comparable to the subject timber. Because of physical characteristics that were different from the physical characteristics of the subject timber and which had an impact on the value of the timber, however, the Court adjusted the value at which this land was taken into account.

Case Text

Memorandum Findings of Fact and Opinion

IRWIN, Judge: Respondent determined deficiencies in petitioner's Federal income taxes for the fiscal years ending May 31, 1973, and May 31, 1974, in the amounts of \$2,233 and \$23,107, respectively. In an amended answer, he alleges that for the fiscal year ended May 31, 1974, there should be an increase in deficiency of \$15,137 over the amount set forth in the notice of deficiency. Following concessions, the only issue remaining for decision is the fair market value for purposes of section 631(a)¹ as of June 1, 1973, of timber cut by Michigan, California Lumber Company, a partnership in which petitioner Kathleen W. Peek owned an interest.²

Findings of Fact

Some of the facts have been stipulated. The stipulated facts and the stipulated exhibits are incorporated herein by this reference.

Petitioners resided in Camino, California, at the time the petition herein was filed. For the fiscal year ended May 31, 1974, they timely filed a joint Federal income tax return with the Internal Revenue Service Center, Fresno, California.

Michigan-California Lumber Company (hereinafter Mich-Cal) is a partnership. During the fiscal year ended May 31, 1974, petitioner Kathleen W. Peek owned as her separate property a 7-1/2% interest in Mich-Cal.³ For the year in issue, Mich-Cal filed a partnership return for the fiscal year ended May 31, 1974 (hereinafter fiscal 1974). Mich-Cal is located in El Dorado County, California.

During fiscal 1974, Mich-Cal was an integrated lumber manufacturing firm, engaged in the production and sale of lumber. Mich-Cal acquired timber in that year partially by cutting its own fee timber (timber growing on land owned by it) and United States Forest Service (hereinafter USFS) timber pursuant to contracts that Mich-Cal previously had entered into with the USFS. Mich-Cal also acquired timber by cutting timber under a private cutting contract, "Swift" (hereinafter Swift timber). All the timber cut by Mich-Cal during fiscal 1974 was eligible for section 631(a) treatment. The following chart reflects the volume of timber cut by Mich-Cal on its own land and under cutting contracts in fiscal 1974:

I.R.C. § 631(a) Volume, MBF*											
	Old Growth Fee	Residual Old Growth Fee	USFS Round Tent	USFS Bunker Hill	USFS Peavine Ridge	USFS Granite	USFS Stone Breaker	USFS Stoney Rd. R/W	USFS Long John	Swift (Private)	Total
PP**	5,903	4,430	2524	7	68	925	2,891	122	3,113	1,804	21,814
SP	6,139	1,585	323	24	-	1,768	159	133	1,034	346	11,491
WF	13,082	5,495	837	139	5,725	6,887	339 ⁴	177	905	4,960	38,546
DF	421	1,265	561	-	-	-	1,051	-	42	-	3,340
IC	1,878 ⁵	689	372	7	-	506	256	21	610	915	5,254
	27,450	13,464	4,617	177	5,793	10,086	4,696	433	5,704	8,025 ⁶	80,445

* The term "MBF" is a unit of timber measurement which is used to describe timber volume in "thousand board feet."

** (PP) Ponderosa Pine; (SP) Sugar Pine; (WF) White Fir; (DF) Douglas Fir; and (IC) Incense Cedar.

All timber cut by Mich-Cal in fiscal 1974 was located in the Eldorado National Forest (hereinafter the Eldorado). The USFS conducts timber cruises of its land in the Eldorado to determine the timber to be offered for sale, the volume of each species of timber, and the grade of the logs that will be derived from that timber. Thereafter the USFS prepares a "Timber Sale Prospectus" for each sale, which it mails to prospective purchasers, and an "Appraisal Summary," which is available on request. These documents announce advertised rates for each species of timber, which are the minimum acceptable bid prices. The sales are also advertised in newspapers. All sealed bids submitted prior to the advertised sale date that are equal to or exceed the advertised rates are designated as qualifying bids. The persons who submit qualifying bids become entitled to participate in an oral auction at which the ultimate purchaser of the timber is determined.

The successful bidder enters in to a "Timber Sales Contract" with the USFS. The contract specifies, among other things, the period within which the timber subject to the contract is required to be cut, ecological requirements, requirements as to the construction and maintenance of specified roads and other facilities, and the purchase price for each species, subject to adjustment as hereinafter described. The contract further requires the purchaser to furnish a performance bond and a payment guarantee. The payment guarantee may be in the form of a surety bond, advance cash deposits, or negotiable United States securities. In terms of dollars, the purchaser must deposit on average approximately 3 percent of the total bid price.

Under the USFS contracts pertaining to timber in the Eldorado, entered into during the period from 1970 through 1973, the purchaser was obligated to pay for the timber as it was cut. The prices bid by the successful bidders at the USFS oral auctions for the major timber species located in the Eldorado are "tentative bid prices," since such prices may be adjusted to reflect the difference between the Western Wood Products Association (hereinafter WWPA) lumber price indices used by the USFS in preparing its appraisal for the sale and the WWPA lumber price indices on the date on which the timber is harvested.⁷ If the WWPA lumber price indices have increased, then the bid price is adjusted upward by an amount equal to 50 percent of the dollar increase in the index. On the other hand, the bid price is adjusted downward by an amount equal to 100 percent of any dollar decrease in the WWPA lumber price index occurring between the appraisal date and the date on which the timber is harvested. Downward adjustments cannot exceed the difference between the bid prices and "Base rates," which are reported in the USFS Appraisal Summary. The upward adjustments are similarly limited to an amount equal to the total possible downward adjustment. We shall hereinafter refer to the prices bid by the successful bidder as initial bid prices and to the prices payable for the timber when it is harvested as escalated bid prices (prices were escalating during this period).

USFS timber sales contracts require the purchaser to build roads in the area of the timber under contract. The USFS agrees to give the purchaser a credit in the amount the USFS estimates it will cost to build the roads. The high bid per MBF for each species is the amount bid per MBF by the purchaser at a USFS sale. The statistical high bid is the amount bid per MBF for each species less the amount of the specified road credit per MBF, which the purchaser will receive for construction of the roads.

By an exchange agreement dated March 19, 1973, Pacific Gas and Electric Company (hereinafter

PG&E) agreed to convey approximately 17,087 acres known as the American and Rubicon Rivers' watershed lands, in El Dorado and Placer Counties, California (hereinafter the PG&E property) to Yuba River Lumber Co., Inc., Brunswick Timber Products Corporation, and Cal-Pacific Redwood Company (hereinafter Yuba). The agreement provided that the PG&E property would be conveyed to Yuba by three separate land exchange transactions scheduled to be effected between July 1, 1973, and June 30, 1974, July 1, 1974, and June 30, 1975, and July 1, 1975, and June 30, 1976, respectively. The total exchange price for the PG&E property was \$6,758,000, payable by conveyance of real property from Yuba to PG&E.

Together with its offer to acquire the PG&E property, Yuba was required to submit a certified check in the amount of \$25,000 payable to Wells Fargo Bank Escrow No. G-483.⁸ This \$25,000 would have been returned to Yuba if Yuba and PG&E had been unable to resolve any differences and, consequently, had failed to enter into the exchange agreement. Upon execution of the exchange agreement, Yuba was required to deposit an additional \$75,000 to escrow G-483. The two deposits to escrow G-483, totaling \$100,000, were to remain in such escrow account to be applied toward the final land exchange transaction or to be forfeited to PG&E in the event of a default by Yuba under the exchange agreement.

Pursuant to the exchange agreement, on or before July 1, 1973 (before at Yuba's option), Yuba was required to deposit \$2,098,000, the portion of the exchange price applicable to the first land exchange transaction, to escrow G-484.⁹ PG&E agreed that, within 90 days after the exchange agreement was entered into and after Yuba had deposited the previously mentioned \$75,000 to escrow G-483, PG&E would deposit both a fully executed deed to the lands to be conveyed to Yuba in the first land exchange agreement, as basic instructions to the escrow agent, to escrow G-484.

The exchange agreement further provided that, on or before July 1, 1974 (before at Yuba's option and with PG&E's consent), Yuba was required to deposit \$2,030,000, the portion of the exchange price applicable to the second land exchange transaction, to escrow G-485. Similarly, the agreement required that, on or before July 1, 1975 (before at Yuba's option and with PG&E's consent), Yuba deposit \$2,530,000, the portion of the exchange price applicable to the third land exchange transaction, to escrow G-496. PG&E agreed to deposit fully executed deeds to the lands to be conveyed to Yuba in the second land exchange transaction and the third land exchange transaction in their respective escrow accounts within 30 days after Yuba deposited the exchange prices thereto.

By letter dated December 28, 1972, PG&E confirmed discussions between representatives of Yuba and representatives of PG&E concerning the terms of the then proposed exchange of the PG&E property. The letter contained the following provision concerning the right of PG&E to accelerate the second and third land exchange transactions:

Subsequent to the closing of the escrow for [land exchange transaction 1, PG&E] may elect to accelerate the balance of the exchange transactions by giving Yuba at least 120 days written notice of [PG&E's] intention to do so. Yuba will within the allotted time, deposit the total of the exchange prices of [the second land exchange transaction and/ or the third land exchange

transaction], or portions thereof, as directed by [PG&E] in accordance with its needs for effecting a land exchange, in the respective escrows for [the second land exchange transaction and the third land exchange transaction, that is, escrows G-485 and G- 486]. The closing of the escrows for [the lands to be exchanged in the second land exchange transaction and the third land exchange transaction and PG&E's] delivery of title thereto would, accordingly, be accelerated also.

A provision to the same effect is included in the exchange agreement between PG&E and Yuba.

From 1971 through 1973, PG&E had advertised the PG&E property as being available for sale. It continually received inquiries regarding the property from 1971 until the exchange agreement was entered into between PG&E and Yuba in 1973. Some potential buyers expressed negative feelings concerning the exchange feature of the proposed transaction. In all, however, PG&E received written offers to participate in the exchange transaction from five or six persons. Of those five or six offerors, two, Yuba and DiGeorgio Lumber Company, remained interested in the property after learning all the conditions applicable to the exchange transaction. Further negotiations ultimately were, therefore, pursued by PG&E with Yuba and with DiGeorgio Lumber Company. To clarify the results of such negotiations, a letter outlining in detail the conditions of the proposed exchange was sent by PG&E to each of the two offerors. Thereafter each offeror, if it agreed to the terms stated in such letter, was given the opportunity to submit a written bid, on a standard form furnished by PG&E, for the property. Both offerors chose to submit bids. PG&E accepted Yuba's bid, as it was more valuable to PG&E than the other bid received.

The PG&E property consists of approximately 60 scattered parcels, most of which are located along the American River or the Rubicon River. The parcels, which are noncontiguous, comprise lands having a multitude of topographies, elevations, and degrees of vegetative cover. Of the approximately 17,087 acres composing the PG&E property, about 5,000 acres had merchantable and operable timber as of 1973.¹⁰ Most of such timber was located along the middle fork of the American River; some of it was located in the lower reaches of the American and Rubicon Rivers. In total, there were approximately 91 MBF of merchantable and operable timber on the PG&E property.

Insofar as development of the PG&E property for timber management purpose is concerned, the noncontiguity of the parcels would result in costs for logging, road building, and property line delineation being greater than they would be if the property were contiguous. In the event of a forest fire, however, the noncontiguity of the PG&E property would be advantageous as it would provide a certain amount of protection from catastrophic forest fire damage.

On its partnership return for fiscal 1974, Mich-Cal claimed that the timber it cut during such year had a fair market value of \$12,150,500.29 for purposes of section 631(a). In a notice of deficiency mailed to petitioners on June 8, 1978, respondent determined that the timber cut by Mich-Cal during fiscal 1974 had a fair market value of \$10,282,793. The following chart reflects the fair market values claimed by Mich-Cal in its partnership return and determined by respondent in the notice of deficiency for each species of timber:

Fiscal 1974		
	Fair Market Value per MBF	
Fee Timber	Partnership Return	Notice of Deficiency
Sugar Pine	\$267.41	\$167.00
Ponderosa Pine	214.91	162.00
Douglas Fir	74.76	122.00
White Fir	110.30	112.00
Incense Cedar	79.41	92.00
USFS Timber		
Sugar Pine	\$180.00	\$155.00
Ponderosa	185.00	150.00
Douglas Fir	105.00	110.00
White Fir	112.00	100.00
Incense Cedar	70.00	80.00

The following table shows the opinions of the appraisers who testified at trial for the respective parties of the fair market value, as of June 1, 1973, of the timber cut by Mich-Cal during fiscal 1974:

Eligible Fee and Swift Timber	Fair Market Value per MBF	
Species	Petitioner	Respondent
Ponderosa Pine	\$200.00	\$143.44
Sugar Pine	195.00	136.25
White Fir	140.00	103.30
Douglas Fir	175.00	109.50
Incense Cedar	135.00	92.76
Eligible USFS Timber	Fair Market Value per MBF	
Species	Petitioner	Respondent
Ponderosa Pine	\$180.00	\$131.90
Sugar Pine	175.00	134.71
White Fir	120.00	89.76
Douglas Fir	155.00	100.46
Incense Cedar	115.00	82.92

In an amended answer filed subsequent to the trial of this case, respondent alleged that the fair market value of the timber cut by Mich-Cal in fiscal 1974, as of June 1, 1973, is \$9,177,300, based upon the opinion of his appraiser as to the fair market value per species.

Opinion

Section 117(k)(1) of the Internal Revenue Code of 1939, which is the predecessor of present

section 631(a), was enacted by the Revenue Act of 1943. Prior to 1944, a taxpayer who cut his own timber for sale or use in the ordinary course of his business was required to treat the full gain that he ultimately realized therefrom as ordinary income. In contrast, a taxpayer who made an outright sale of standing timber, which had not been held by him for sale to customers in the ordinary course of his business, could treat any gain realized on the sale as capital gain. *United States v. Brown Wood Preserving Co.*, 275 F.2d 525,527 (6th Cir. 1960); Briggs and Condrell, *Tax Treatment of Timber*, pp. 4-6 (6th ed. 1978). This disparate treatment discriminated against timber owners who cut their own standing timber, rather than sold it outright. S. Rept. No. 627, 78th Cong., 1st Sess. (1943): 1944 C.B. 973,993. It also was a disincentive to conservation and reforestation. 90 Cong. Rec. 1950 (1944); *United States v. Brown Wood Preserving Co.*, *supra*; Briggs and Condrell, *supra* at 6-7.

Section 631(a)¹¹ is intended by Congress to provide the same tax treatment to growers who cut their own timber as is allowed those who sell their standing timber outright. S. Rept. No. 627, 78th Cong. 1st Sess. (1943); 1944 C.B. 973,993. It permits a taxpayer to elect¹² to treat the cutting of timber during a taxable year as a sale or exchange of a capital asset, provided the taxpayer has owned the timber or held cutting rights to it for more than 6 months before the beginning of the taxable year. Gain or loss on the deemed sale or exchange is recognized by an electing taxpayer in an amount equal to the difference between the fair market value of the timber as of the first day of the taxable year in which the timber is cut and the adjusted basis for depletion of the timber. Thereafter the fair market value of the timber as of the first day of the taxable year is considered to be the cost of the timber for all purposes for which cost is a necessary factor. Section 631(a).¹³

Section 1.631-1 (a)(1), Income Tax Regs., consistent with the intent of section 631 as reflected in its legislative history, provides, in effect, that the amount deemed realized on the deemed sale or exchange, under section 631(a), shall be equal to the cut timber's "fair market value as standing timber" as of the first day of the taxable year of cutting. (Emphasis added) The regulation's creation of fictitious sales proceeds in an amount equal to the fair market value of the timber as standing timber achieves the intended parity between taxpayers who make an outright sale of their standing timber and those who cut their timber. Valuation requires consideration of the highest and best use of the property being valued, *Buse v. Commissioner*, 71 T.C, 1129, 1137 (1979). Expectations that purchasers of standing timber who wait a number of years to convert their timber into a manufactured product will reap a higher profit than those who immediately so convert their timber must consequently be taken into account.¹⁴ For purposes of section 631 (a), we have, therefore, stated that use of the comparable method rather than the conversion return method of calculating value is the better approach.¹⁵

The appraisers for both parties used the market data or comparable sales approach to estimate the fair market value of Mich-Cal's timber eligible for section 631(a) treatment in fiscal 1974 as of June 1, 1973. This approach, as used by both appraisers, involved locating sales of timber similar to the timber in question, which had occurred within a reasonable time of June 1, 1973. This method entails adjusting the actual sales prices of comparable properties, which are stated in terms of cash or cash equivalent, so as to reflect the difference between the comparable properties and the property being valued. As so adjusted, the estimated values of the comparable properties

furnish an indication of the value of the subject property. This Court has often used this valuation approach. See *Wolfsen Land & Cattle Co. v. Commissioner*, 72 T.C. 1, 18-21 (1979). Moreover, it has found its use acceptable with respect to the valuation of timber. *Buse v. Commissioner*, *supra* at 1136-1137.

The comparables selected and the reasonableness of the adjustments to their selling prices determine the usefulness of a valuation made, by, the comparable sales approach. Petitioner's appraiser, Dean Solinsky, limited his comparables to 10 USFS timber sales that occurred between 6 months before the June 1, 1973, valuation date and 6 months thereafter. Besides USFS timber sales, respondent's appraiser, Robert T. MacDougall, used the PG&E transaction as a comparable.

The parties primarily differ as to (1) whether the statistical high bids on 1973 USFS contracts for timber in the Eldorado are cash equivalent prices, as petitioners contend, or must be discounted to reflect the time value of money, since the timber under such contracts is not paid for until it is harvested, as respondent contends, and (2) whether respondent's appraiser, in arriving at a fair market value estimate, properly used the exchange of the PG&E property as a comparable transaction.

Respondent's position, in essence, is that "bid prices" for USFS timber-cutting contracts, which were used by the appraisers for both parties as comparable transactions, are a form of future prices that must be discounted to their present value. He claims that petitioners' appraiser failed to give recognition to the time value of money since he treated such bid prices as evidence or a current market transaction. In support of his position, respondent relies heavily on a report prepared by Professor Barney Dowdle, an economic expert retained by him.

To comprehend the technicalities of Professor Dowdle's report and the conclusions reached therein, it is necessary to have an understanding of the fundamentals of the net present value method of making capital budgeting decisions. Capital budgeting is applicable in any situation in which a person is deciding whether to currently incur a cash outlay to receive a return in the future. Under the net present value approach, recognition is given to the fact that a dollar to be received in the future is worth less than a dollar received today; Unlike money in possession, future income or savings from an investment is subject to the risk that it will not be received. Moreover, it cannot itself be used to earn income.¹⁶ The longer the period before returns are to be received, the greater the difference between the amount to be received and the present value of the amount to be received. To calculate the present value of increased revenues or reduced costs to be realized in the future, an appropriate discount rate is applied to the future income.¹⁷

Respondent's expert witness, Professor Dowdle, has developed the following formula which he claims can be used to determine the fair market value of timber sold under a USFS timber contract:

(Equation 5)

$$P_b = P_m \left[\frac{\sum \left[\frac{1+r}{1+i} \right]^t}{(a \cdot T) + \sum \left[\frac{1+br}{1+i} \right]^t} \right]$$

The table of symbols on page 118 indicates Professor Dowdle's explanation of each symbol used in the above formula, as well as the symbols used in each of the equations discussed, *infra*, from which equation 5 was derived. As indicated therein P_m is purported to be the market price of the timber under a USFS contract on the date of the timber sale. A table prepared by Professor Dowdle and included by him in his report indicates that the Pros averaged 77 percent of the statistical high bid prices on the 10 USFS timber sales analyzed by him. Thus, if Pros are treated as the fair market value of timber under USFS contracts for purposes of section 631(a), as P_m s were treated by Professor Dowdle, then Professor Dowdle's report supports respondent's theory that statistical high bid prices on USFS timber sales must be discounted before they can be used as evidence of fair market value. The derivation of equation 5 indicates, however, that the P_m s reported by Professor Dowdle do not represent the fair market value of the timber sold under the 10 USFS contracts as *standing timber*.

Symbols:

a = The variable is defined as the percent of the total sale price (defined to mean bid price multiplied by the volume of timber in the sale) which must be deposited with the Forest Service at the time of the sale. This deposit, although somewhat negligible in terms of the total value of the timber, is, nevertheless, an initial investment cost on which the buyer can rightly expect to realize a return.

b = The percent of the expected rate of change in the market price of timber by which the pay-as-cut price paid to the Forest Service will be escalated. Bid prices, as noted by the Forest Service, are merely "tentative rates" which will change during the period of timber harvest. When a timber purchaser makes his bid he will take into account the expected rate of change in the pay-as-cut price. This variable can be estimated from trends in prices actually realized by the Forest Service, trends in the Western Wood Products Association lumber price indices, and the price base from which adjustments must be made.

As an example of the latter, suppose that the lumber price index rises by 10 points, and that the escalation factor is 50 percent, as used in timber sales on the Eldorado National Forest. Subject to some exceptions, the pay-as-cut price for timber would be increased by \$5 per thousand board feet (MBF). If the original pay-as-cut price were \$100 per MBF, then the increase would be 5 percent. If the original price were \$50 per MBF, then the rate of increase would be 10 percent. The original estimated price of the timber must, therefore, be taken into account in the estimation

of b.

br = Expected rate of increase in pay-as-cut price (P_0).

C_0 = Initial investment cost.

C_t = Expected costs in t^{th} period.

i = The interest (discount) rate. The interest rate used in the present analysis was 8 percent. This relatively conservative rate was justified on the basis of the fact that the successful bidder for Forest Service timber does not have to assume any risk of timber losses between the time of acquisition and the time that the timber is cut. The Forest Service retains title to the timber, and assumes the risks of ownership until the timber is harvested.

P_b = Bid price of timber at the time that it is auctioned. Bid prices are announced by timber species, and they are reported on Forest Service Form 2400-17.

P_m = Market price on the date of the sale.

PNW = Present net worth.

q = Rate of timber harvest.

r = The expected rate of change in the market (spot) price of timber. The expected value of r will be affected by inflationary expectations, and the expected real price change of the commodity in question. During 1973 commodity prices rose by an estimated 15 percent (Economic Report of the President, 1975). It is reasonable to assume that an expected rate of price increase of at least this much would have been incorporated in bid prices for national forest timber which was sold on a Pay-as-cut basis.

R_t = Expected revenues in t^{th} period, $t = 1, 2, \dots, T$.

T = Effective term of the timber sale in years. T , as used here, is the time period in years between the bid date and November 1 of the year preceding the expiration of the timber sale contract. The effective term of the sale is less than the actual term because timber sale contracts typically expire on March 31, and timber harvesting operations typically do not take place between November 1 and March 31 on the Eldorado National Forest. It can be obtained from Form 2400-17.

t = Any time during the term of a timber sale.

V = Timber sale volume.

An explanation of how Professor Dowdle derived Equation 5 follows. Professor Dowdle treated each USFS timber contract as a capital asset, which would generate cash inflows and result in cash outflows in subsequent periods. He, accordingly, concluded that the present net worth of a timber contract could be computed by means of the following formula:

(Equation 1)

$$PNW = \frac{(R_1 - C_1)}{(1+i)^1} + \dots + \frac{(R_T - C_T) - C_0}{(1+i)^T}$$

Thereafter Professor Dowdle assumed that the interest rate is equal to the internal rate of return¹⁸ and that the expected costs and the expected revenues are separately discounted. He thereby derived the following equations:

(Equation 2)

$$C_0 + C_1/(1+i)^1 + \dots + C_T/(1+i)^T = R_1/(1+i)^1 + \dots + R_T/(1+i)^T$$

(Equation 3)

$$C_0 + \sum C_t/(1+i)^t = \sum R_t/(1+i)^t$$

As pointed out in our Findings, the purchaser of a USFS timber contract is required to make a deposit that, on average, is equal to 3 percent of the initial bid price. Professor Dowdle, by treating such deposits as the initial investment cost (C_0), formulated the equation $C_0 = a(P_b \cdot V)$. If the timber were harvested at a uniform rate throughout the length of a timber contract, then V would equal $(T \cdot q)$. Thus, by assuming a uniform rate of harvest, Professor Dowdle was able to substitute a $(P_b \cdot T \cdot q)$ for C_0 in equation 3.

Professor Dowdle assumed that at any time (t) the costs to be incurred by a purchaser of timber under a USFS timber contract would be a function of the amount of timber harvested and the escalated bid prices in effect at that time. He further assumed that the escalated bid price in effect at any time (t) would be a function of the initial bid price and a specified rate of increase. Thus, he formulated the following equation:

$$C_t = P_b(1+br)^t q$$

The revenues that would be derived at any time (t) by a purchaser under a USFS timber contract were assumed by Professor Dowdle to be a function of the amount of timber harvested and the prevailing market price for timber at that time. The prevailing market price for timber at any time (t) was, in turn, assumed by Professor Dowdle to be a function of the market price of timber on the bid date (P_m) and the expected rate of increase in the market price (r). Thus, he formulated the following equation:

$$R_t = P_m(1+r)^t(q)$$

Substituting a $(P_b \cdot T \cdot q)$ for C_0 , $P_b(1+br)^t(q)$ for C_t , and $P_m(1+r)^t(q)$ for R_t in equation 3, Professor Dowdle derived the following equation:

(Equation 4)

$$a(P_b \cdot T \cdot q) + \sum P_b q \left[\frac{1+br}{1+i} \right]^t = \sum P_m q \left[\frac{1+r}{1+i} \right]^t$$

Thereafter, by simplifying equation 4, Professor Dowdle derived equation 5 above.

After having carefully examined Professor Dowdle's analysis and his testimony, it is apparent to us that the estimates of P_m contained in his report, which he considers to be the fair market value of timber under the USFS contracts on their bid dates, are estimates of the revenues that hypothetical owners of timber under the USFS contracts would expect to obtain by harvesting the timber subject to the contracts and effecting a sale of the timber harvested on the bid date. The expert economists for both parties agreed that if, on the bid date of a USFS contract for timber on the Eldorado during the relevant period, a hypothetical owner of the contract were to harvest the timber subject to the contract, effect a sale of the timber cut on the market, and pay the statistical high bid prices in cash to the USFS, he would sustain a net economic loss. However, the fact that statistical high bid prices plus logging costs exceeded the then prevailing market prices for cut timber does not necessitate the conclusion, as respondent would have us find, that the statistical high bid prices are not cash equivalent prices. As previously noted, the fair market value in cash terms of standing timber on any date is necessarily affected by expectations that a higher profit could be obtained by converting the timber into a manufactured product on a subsequent date than by so converting it immediately.¹⁹

Overall, it is clear from the record that purchasers of USFS timber sales on the Eldorado during the relevant period did not intend to cut their timber on the bid dates of the sales. They instead intended to harvest their timber at a later date when they expected the revenue derived from effecting a sale of the cut timber would exceed their costs.

Petitioner's economic expert, Professor William McKillop, forecasted, based upon the historical movement of the WWPA lumber price indices, the amount of the escalated bid prices that would be payable for the species Ponderosa Pine, Sugar Pine, and White Fir in each logging season under the 10 USFS sales that Professor Dowdle analyzed. By discounting at 7 percent the escalated bid prices that he predicted,²⁰ Professor McKillop determined that virtually in every case the present cash values as of 1973 of the escalated bid prices forecast exceeded the statistical high bid prices. We think that, contrary to respondent's contention, Professor McKillop's analysis identifies more than the present value of a future series of payments to the USFS. Since purchasers of USFS timber contracts did expect to make a profit, it can be inferred from Professor McKillop's report that the expected present cash value as of 1973 of the gross revenue capable of being generated by effecting future sales of the timber harvested exceeds the statistical high bid prices. For purposes of section 631 (a), this is the relevant revenue, not merely the revenue that can be received as of the valuation date. Any other approach would result in taxpayers who cut their timber and then sell it and those who make an outright sale of their standing timber being treated differently: an outcome that section 631(a) is designed to prevent.

Respondent's argument that Solinsky failed to give recognition to the time value of money is without foundation. Respondent argues that, since Solinsky merely multiplies the "bid price" times the volume of timber subject to a USFS contract to estimate fair market values, he obtained fair market value estimates that are too high and, thus, unreasonable. The flaw in respondent's argument is its failure to distinguish initial bid prices from escalated bid prices under USFS contracts. Solinsky multiplied the volume of timber subject to each contract by statistical high bid

prices that had been reallocated to eliminate irregular bidding procedures and escalated to the relevant valuation date. Solinsky had reviewed Professor McKillop's report, which indicates that the present cash values as of 1973 of the escalated bid prices forecast by Professor McKillop equaled or exceeded the statistical high bid prices and that, therefore, if any adjustment were made to statistical high bid prices to reflect the fact that payment does not occur until the timber is harvested, it should be upward. Solinsky chose to adopt a conservative approach, making no adjustment. Thus, Solinsky did recognize the present value in 1973 of the escalated bid prices to be paid to the USFS in the future and hence, gave recognition to the time value of money.

Despite the protestations to the contrary of respondent's appraiser, MacDougall, we believe that he failed to take into account the fact that bid prices on the comparable USFS sales would be escalated beyond the June 1, 1973, valuation date and that his fair market value estimates, therefore, are too low. MacDougall attempted to use essentially the same techniques as Solinsky used in reallocating the statistical high bid prices on USFS contracts to eliminate irregular bidding procedures and in adjusting the statistical high bid prices for escalation from the auction dates of the timber contracts to the applicable valuation date. MacDougall, however, then, in essence, considered these amounts to be payable in future years under the USFS contracts on the comparable sales and determined their present values, as so payable, as of 1973. While undoubtedly initial bid prices payable in the future are worth less than if payable in the present, it by no means follows that escalated bid prices payable sometime in the future are worth less than initial bid prices payable today.

PG&E Transaction. The PG&E-Yuba land exchange upon which respondent's appraiser relied, as a comparable transaction tending to prove the fair market values estimated by him, involved the transfer of approximately 17,087 acres in El Dorado and Placer counties, of which about 5,000 acres were covered by merchantable and operable timber. The acreage was acquired by Yuba at a price of \$6,758,000.

Petitioners initially maintain that inasmuch as 10 USFS sales were available for use as comparable sales, the PG&E-Yuba land exchange is not a suitable comparable. Clearly, absent factors such as nontypical conditions affecting the sale price, the character of the timber to be valued, not the identity of the seller, is determinative of appropriate comparable sales of timber.²¹

Petitioner asserts that potential purchasers were excluded or at least the \$6,758,000 purchase price was deflated because PG&E required the exchange features of the transaction. However, petitioner has failed to prove this was the case.²² The only evidence that potential purchasers expressed negative feelings about the exchange feature is the testimony of Edwin E. Domeney, who was employed by PG&E as the supervisor of land sales and leasing during 1973.²³ However, Mr. Domeney's testimony is not unequivocally to the effect that such negative feelings influenced the selling price of the PG&E property, as the following colloquy between respondent's counsel and Mr. Domeney indicates:

Q, Did any potential buyers express negative feelings about the exchange feature of the contract?

A. There was some, yes.

Q. Strong negative feelings?

A. Not really. The parties that were interested were interested in timber and facilitating that exchange and exchanging further with the Forest Service. That was the only part-- the length of time at that working with the Forest Service took about four or five years to make an exchange, and that was the only negative part we had.

Petitioner contends that the record is replete with evidence indicating that the PG&E property differed physically from the property on which the subject timber was located. The specific differences that petitioner calls to our attention are the PG&E property's scattered nature, topography, size, and inaccessibility.

Although physical similarities are relevant in choosing comparable transactions, we cannot say that respondent's appraiser erred in choosing the PG&E timber as a comparable. The following factors at least warrant, if they do not dictate, the use of the PG&E transaction as a comparable: (1) the location of the subject timber with reference to the PG&E property, see section 1.611-3(f)(1)(ii), Income Tax Regs.; (2) the proximity of the date on which the PG&E exchange agreement was executed to the relevant valuation date; and (3) the similarity of the accessibility of the PG&E timber and the subject timber, as explained below, where accessibility is given the meaning ascribed to it by section 1.611-3(f)(1)(iii), Income Tax Regs.

Our finding that the PG&E transaction was properly selected as a comparable, however, does not end the matter. We must further determine whether the PG&E timber exhibited physical characteristics that (1) were different from the physical characteristics of the subject timber and (2) had an impact on the value of the PG&E timber. If the preceding question is answered in the affirmative, we must then consider whether respondent's appraiser made reasonable adjustments to the price paid for the PG&E timber to reflect its value if it were property of a condition or quality of the subject timber. See *Wolfsen Land & Cattle Co. v. Commissioner*, 72 T.C. 1, 19-20 (1979).

With respect to the first difference advanced, petitioner intimates that the scattered nature of the PG&E property resulted in a deflated price for the property. We can readily understand the increased costs for logging, road building, and property line delineation resulting from the noncontiguity of the parcels composing the PG&E property. Yet petitioner's witness, Myron Wall, who prepared a letter critiquing the PG&E transaction's reliability as an indicator of the value of Mich-Cal's section 631 timber, testified, on cross-examination, that there was no doubt that the insulation provided from catastrophic forest fire damage by the noncontiguity of the parcels is "a real advantage." Furthermore, in his appraisal prepared in 1973 for Yuba to be used by it to secure additional financing from a lending institution, Wall cited the dispersed ownership pattern causing less danger of catastrophic loss from fire or insect attack as one of the factors making unnecessary an adjustment to the PG&E timber's "current retail value to account for differences in the wholesale-retail relationship."²⁴ Unfortunately for petitioner, no evidence was presented that would permit us to determine the proper weights to be given to both the potential disadvantages and the potential benefits of the noncontiguous configuration of the PG&E property. All that we have is Wall's conclusory testimony that he "think[s] there are probably more disadvantages," which is insufficient to convince us that an adjustment was required.

We reserve our discussion of the PG&E property's topography and proceed to consider first its size (see section 1.611-3(f)(1)(iii), Income Tax Regs., indicating that any consideration of the accessibility of timber should encompass, inter alia, an analysis of the topography of the ground upon which the timber is located). Unfortunately, petitioner has failed to amplify her argument concerning the size of the PG&E property. Presumably she would have us find that the large size of the property had a depressing effect on its sale price. In this regard, the so-called blockage rule, which recognizes the impact on a market of an offer of a large number of securities, serves as a useful analogy. See *Helvering v. Safety Deposit & Trust Co. of Baltimore*, 95 F.2d 806, 811-812 (4th Cir. 1938), affg. 35 B.T.A. 259, 262-264 (1937). Cf. *Estate of Smith v. Commissioner*, 57 T.C. 650, 658 (1972), affd. 510 F.2d 479 (2nd Cir. 1975).

Petitioner has adduced no evidence indicating that a higher price per unit of timber could have been obtained by PG&E by disposing of the PG&E property in separate transactions of lesser quantities. In fact, once again here, Wall's 1973 appraisal report for Yuba belies petitioner's contention. As noted above, Wall's report indicates that he concluded it was unnecessary to discount the current retail value of the PG&E timber to reflect "differences in the wholesale-retail relationship." Among the factors mentioned in support of such conclusion, in Wall's report, are that a minimal level of risk is associated with owning the timber inasmuch as owing to its relatively small volume only a short period would be required to harvest it and that any hope that a potential purchaser might have of purchasing the timber at a wholesale price would be effectively eliminated as a result of "local strongly-competitive market conditions." Under these circumstances, we are unable to conclude that petitioner has established that the size of the PG&E property affected its selling price.

Next, we consider petitioner's argument concerning the accessibility of the PG&E timber, including the topography of the ground on which the timber stands and over which it must be transported in the process of exploitation. See section 1.611-3(f)(1)(iii), Income Tax Regs. As noted in our findings of fact, most of the parcels comprising the PG&E property are located along the American River or the Rubicon River. Petitioner strikes a comparison between transporting the PG&E timber in the process of exploitation across the Rubicon River and the historical meaning of the phrase "Crossing the Rubicon," that is, starting on a path from which there is no retreating.²⁵ Although the analogy is attractive because of the common term "Rubicon," Wall's appraisal report prepared for Yuba in 1973 indicates the Yuba was not faced with deciding whether to embark on a "path of transport" that was in any way comparable to choosing to "Cross the Rubicon," as historically understood. To the contrary, under the subject heading "Access," the appraisal report provides the following comments:

Exterior access to the property is good via three major routes. Well-maintained, dirt and partially-paved roads connect the property with Foresthill on the west side and the Georgetown-Lake Edson area to the southwest. Also, a wide, paved road leading from Riverton to Loon Lake provides fairly close exterior access to the eastern parcels. Overall interior access, however, is only fair. The best roads are confined generally to Ralston Ridge and Nevada Point Ridge. These put most of the merchantable timber located on operable ground within easy reach. *** On the other hand, very poor or no vehicular access exists in

the steep canyons or in the "high country".

Petitioner, in her brief, portrays the PG&E property as located in extremely rough terrain. Yet the evidence shows, and we have found, that the parcels composing the PG&E property had a multitude of topographies and elevations. Moreover, there were 91 MBF of merchantable and operable timber on the PG&E property. Thus, topographic conditions were not an obstacle to harvesting 91 MBF of timber with the types of technology available in 1973.²⁶ In using the PG&E transaction as a comparable, MacDougall considered no timber outside the 91 MBF of merchantable and operable timber as being of value to a hypothetical purchaser of the PG&E property. Thus, his report reflects adjustments for the difference between the costs of logging merchantable and operable timber on the PG&E property and the costs of logging the subject timber. We are unable to conclude that these adjustments are erroneous.

Petitioner further seeks to refute the propriety of respondent's appraiser selecting the PG&E transaction as a comparable sale on the ground that the sales data on the PG&E transaction was "evidently difficult to verify." In this regard, she asserts that MacDougall incorrectly relied upon the letter dated December 28, 1972, confirming discussions between representatives of Yuba and representatives of PG&E, to determine that the PG&E sale was a cash sale and that MacDougall had no knowledge of when the payments actually were made. We disagree with petitioner.

First, we are convinced that either the exchange agreement, dated March 19, 1973, between Yuba and PG&E or a copy thereof was available for MacDougall's use when he prepared his report appraising the subject timber. MacDougall testified that, in the course of preparing his appraisal, he looked at the contract. Moreover, at one point in his report, we have found a quote of language contained in the March 19, 1973, exchange agreement, but not in the earlier letter.²⁷ Second, considering the fact that an exchange agreement including the same basic terms relating to acceleration of payments as the letter dated December 28, 1973, was signed a little over 2 months after the letter, we do not think it was inappropriate for MacDougall to rely on the letter. *Cf. Sammons v. United States*, 433 F.2d 728, 731 (5th Cir. 1970). Third, as petitioner appears to recognize in her brief, MacDougall's lack of knowledge of when Yuba in fact paid PG&E was not attributable to any difficulty in verifying when Yuba paid, but instead was attributable to MacDougall's choosing to not go beyond the June 1, 1973, valuation date. Nor can we agree with petitioner that, by failing to go beyond the June 1, 1973, valuation date, MacDougall improperly analyzed the PG&E transaction after including it as a comparable sale. It was uncertain, when the exchange agreement was executed, whether PG&E would permit the consideration to be paid into escrow accounts over 3 years or would accelerate the final two land exchange transactions, as it was entitled to do under the agreement.

Petitioner, relying on *Ellingson Timber Co. v. Commissioner*, T.C. Memo. 1977-197, would have us reject the PG&E transaction on the ground that it is an isolated sale inasmuch as MacDougall considered its sale date to be January 15, 1973, 4-1/2 months before the valuation date. We are somewhat mystified by petitioner's argument, since Solinsky used sales dated even earlier than January 15, 1973. In any event, we did not premise our rejection of two isolated sales in *Ellingson Timber Co.*, on merely the fact that they occurred 4 to 5 months after the valuation date, but rather emphasized that during the intervening period timber and lumber prices had

moved dramatically upward. In the present case, there is no evidence of a dramatic change in the price trends for timber and lumber between January 15, 1973, and the June 1, 1973, valuation date.

The parties dispute whether the requirements contained in USFS contracts were more restrictive, and if so, to what extent, than the requirements imposed by the California State Forest Practice Act.²⁸ Respondent argues that the costs incurred under USFS contracts were no more burdensome than costs resulting from the requirements of the Forest Practice Act.

As indicated by the amounts set forth in our Findings as the opinion of petitioner's appraiser as to the fair market value of the subject timber, it was Solinsky's judgment that there was a difference in value of \$20 per MBF between the eligible USFS timber and the eligible fee and Swift timber for each species. To arrive at the eligible fee and Swift timber valuations in his report, Solinsky first determined the value of eligible USFS timber species and then added \$20 per MBF to each of those values.

The evidence on this point consists primarily of the testimony of Solinsky and Vernon S, Lindgren, who has been the general manager of Mich-Cal since 1970, to the effect that the requirements of USFS contracts are more restrictive than those imposed by the Forest Practice Act. Respondent has introduced no testimony or other evidence to the contrary. In addition, Lindgren described some of the ecological requirements contained in one USFS contract and one USFS contract was submitted into evidence (Join Exhibit 5-E). There is no detailed analysis, however, addressing the issue of the amount of the costs arising from the various contract provisions.

Despite respondent's position, the figures appearing in MacDougall's appraisal report indicate that he estimated that logging USFS timber would cost \$9.84 per MBF harvested over the cost of logging eligible fee and Swift timber. No explanation of this estimate is furnished in the report. Nor was it explained at trial. We think that the reasonable inference is that MacDougall made such an adjustment for at least some of the same reasons as Solinsky made his \$20 adjustment.

The judgment of an appraiser can be no better than the factual foundation on which it is premised. Although we are faced with a paucity of evidence supporting the estimates of logging costs made by both petitioner's and respondent's appraisers, it is our judgment that there was some difference between the cost of logging USFS timber and fee and Swift timber and that a determination of fair market value requires that we make an estimate of that difference based upon the evidence before us.

Any attempt to introduce talismanic precision into the valuation process would necessarily be in vain. *Messing v. Commissioner*, 48 T.C. 502,512 (1967). We, therefore, see no reason to endeavor to enunciate any mathematical formula to be used to value timber. Instead, in resolving the issue, we have carefully weighed all the facts and circumstances revealed by a record consisting of 755 pages of testimony and over 60 exhibits. We conclude that the June 1, 1973, fair

market values of the timber cut by Mich-Cal during the fiscal year ended May 31, 1974, are as follows:

Species	Eligible USFS Timber	Eligible Fee & Swift Timber
Ponderosa Pine	\$163	\$178
Sugar Pine	168	173
White Fir	116	133
Douglas Fir	128	140
Incense Cedar ²⁹	82.93	92.76

Decision will be entered under Rule 155.

1 All statutory references are to the Internal Revenue Code of 1954, as amended, unless otherwise indicated.

2 The notice of deficiency shows adjustments for an accrual of management fees which were omitted from income by the partnership, a recharacterization of a loss on the sale of a snowmobile, a decrease in claimed depreciation on a crane and log-loader, and a disallowance of deductions for repair expenses. As to these adjustments, petitioners made no assignments of error in their petition, presented no evidence at the trial, and made no arguments in their brief. We, therefore, deem these adjustments to be conceded by petitioners. See Rules 34(b)(4) and 149(b), Tax Court Rules of Practice and Procedure.

3 Husband-petitioner is a party only because he signed the joint return.

4 The stipulation of facts shows that Mich-Cal cut 229 MBF of White Fir timber under the USFS Stonebreaker cutting contract. The underlying documents on which the stipulation is based, however, show that 339 MBF of White Fir timber was cut under USFS Stonebreaker contract and we have used that figure.

5 The stipulation of facts shows that Mich-Cal cut 1,876 MBF of old growth fee Incense Cedar. The underlying documents on which the stipulation is based, however, show that 1,878 MBF of old growth fee Incense Cedar was cut by Mich-Cal in fiscal 1974 and we have used that figure.

6 The parties stipulated the column amounts and totals. They stipulated that the volumes of timber cut under the USFS Round Tent contract and under the Swift contract sum to 3,617 and 8,024, respectively. We have found, however, that the volumes of timber cut under such contracts sum to the amounts indicated.

7 The prices bid for Sugar Pine, Ponderosa Pine, White Fir, and Douglas Fir are subject to adjustment. The price bid for Incense Cedar is not subject to adjustment.

8 All escrows mentioned herein in connection with the transaction between Yuba and PG&E were opened by PG&E at Wells Fargo Bank, 400 Montgomery Street, San Francisco, California. For

convenience, we will hereinafter refer to them as escrow G-483, escrow G-484, escrow G-485, and escrow G-486.

9 Of approximately 6,611 acres to be conveyed by PG&E in the first land exchange transaction, about 455 acres were subject to a lease by PG&E to Bruce Wadsworth. Pursuant to the exchange agreement, if Mr. Wadsworth elected to exercise his right under the lease to purchase the leased premises, the 455 acres would have been removed from the first land exchange transaction and the price applicable to such transaction would have been reduced by the amount of \$136,000.

10 Timber is generally considered "inoperable" when geographic and topographic conditions, such as steep terrain or concentrations of rock, make it extremely difficult to harvest the timber with the types of technology then available for harvesting.

11 SEC. 631. GAIN OR LOSS IN THE CASE OF TIMBER, COAL, OR DOMESTIC IRON ORE.

(a) Election to Consider Cutting as Sale or Exchange.--If the taxpayer so elects on his return for a taxable year, the cutting of timber (for sale or for use in the taxpayer's trade or business) during such year by the taxpayer who owns, or has a contract right to cut, such timber (providing he has owned such timber or has held such contract right for a period of more than 6 months before the beginning of such year) shall be considered as a sale or exchange of such timber cut during such year. If such election has been made, gain or loss to the taxpayer shall be recognized in an amount equal to the difference between the fair market value of such timber, and the adjusted basis for depletion of such timber in the hands of the taxpayer. Such fair market value shall be the fair market value as of the first day of the taxable year in which such timber is cut, and shall thereafter be considered as the cost of such cut timber to the taxpayer for all purposes for which such cost is a necessary factor. If a taxpayer makes an election under this subsection, such election shall apply with respect to all timber which is owned by the taxpayer or which the taxpayer has a contract right to cut and shall be binding on the taxpayer for the taxable year for which the election is made and for all subsequent years, unless the Secretary or his delegate, on showing of undue hardship, permits the taxpayer to revoke his election; such revocation, however, shall preclude any further elections under this subsection except with the consent of the Secretary or his delegate. For purposes of this subsection and subsection (b), the term "timber" includes evergreen trees which are more than 6 years old at the time severed from the roots and are sold for ornamental purposes.

12 Since the election affects the computation of taxable income derived from a partnership, the election must be made at the partnership level. Sec. 703(b).

13 In this case, since Mich-Cal used a fiscal year ending May 31, 1974, the relevant valuation date is June 1, 1973.

14 See *Ellingson Timber Co. v. Commissioner*, T.C. Memo. 1977-197; *Poison Logging Co. v. Commissioner*, a Memorandum Opinion of this Court dated June 11, 1953.

15 *Buse v. Commissioner*, 71 T.C. 1129, 1136-1 137 0979); *Willamette Industries, Inc. v.*

Commissioner, T.C. Memo. 1980-577; *Ellingson Timber Co. v. Commissioner*, T.C. Memo, 1977-197.

16 *Miami Valley Broadcasting Corp. v. Commissioner*, T.C. Memo. 1979-509, affd. in part and revd. and remanded in part 661 F.2d 582 (6th Cir. 1981); Garrison, *Managerial Accounting Concepts for Planning, Control, Decision Making* (1976), pp. 458-459.

17 The application of the formula for applying the determined discount to future cash flows is illustrated in *Managerial Finance*, by Professors J. Fred Weston and Eugene Brigham (7th ed. 1981), pp. 403-406. That treatise provides the following illustration of the use of the formula where a firm is ranking two projects: Assume that a firm is considering two projects. Each requires an investment of \$1,000. The firm's marginal cost of capital is 10 percent. The net cash flows (net operating income after taxes plus depreciation) from Investment A and B are shown in Table 13.3.

Table 13.3 Net Cash Flows

Year	A	B
1	\$500	\$100
2	400	200
3	300	300
4	100	400
5	10	500
6	10	600

* * * people began to search for methods of evaluating projects that would recognize that a dollar received immediately is preferable to a dollar received at some future date. This * * * led to the development of *Discounted cash flow (DCF) techniques* to take account of the time value of money. One such discounted cash flow technique is called the net present value method, or sometimes simply the present value method. *To implement this approach, find the present value of the expected net cash flows of an investment, discounted at the cost of capital, and subtract from it the initial cost outlay of the project.* If the net present value is positive, the project should be accepted; if negative, it should be rejected. If the two projects are mutually exclusive, the one with the highest net present value should be chosen.

The equation for the net present value (NPV) is

$$NPV = \left[\frac{F_1}{(1+k)^1} + \frac{F_2}{(1+k)^2} + \dots + \frac{F_N}{(1+k)^N} \right] - 1 = \sum_{i=1}^N \frac{F_i}{(1+k)^i} - I$$

Here F_1 , F_2 , and so forth, represent the net cash flows; k is the marginal cost of capital, I is the initial cost of the project; and N is the project's expected life.

The net present values of Projects A and B are calculated in Table 13.4. Project A has an NPV of \$91, while B's NPV is \$403. On this basis, both should be accepted if they are independent, but B

should be the one chosen if they are mutually exclusive.

Table 13.4 Calculating the Net Present Value (NPV) of Projects with \$1,000 Cost.

Project A				Project B		
Year	Net Cash Flow	PVIF** (10%)	PV of Cash Flow	Net Cash Flow	PVIF (10%)	PV of Cash Flow
1	\$500	0.9091	\$455	\$100	0.9091	\$91
2	400	0.8264	331	200	0.8264	165
3	300	0.7513	225	300	0.7513	225
4	100	0.6830	68	400	0.6830	273
5	10	0.6209	6	500	0.6209	310
6	10	0.5645	6	600	0.5645	339
PV of Inflows			\$1,091			\$1,403
Less Cost			-1,000			-1,000
NPV			\$ 91			\$ 403

The second equation is simply a shorthand expression in which sigma (Σ : signifies "sum up" or add the present values of N profit terms. If $t = 1$, then $F_t = F_1$ and $1/(1+k)^t = 1/(1+k)^1$; if $t = 2$, then $F_t = F_2$ and $1/(1+k)^2$, and so on until $t = N$, the last year the project provides any profits.

The symbol $\sum_{i=1}^N$ simply says "Go through the following process: Let $t = 1$ and find the PV of F_1 , then let $t = 2$ and find the PV of F_2 . Continue until the PV of each individual profit has been found; then add the PVs of these individual profits to find the PV of the asset." [other fns. in excerpt omitted]

Table A.2 of Appendix A to the treatise, which is entitled "Present Value of \$1: $PVIF = (1+r)^{-N}$," comprises a series of present value interest factors (PVIF), which may be used to compute the present value of money payable in the future, discounted at specified percents.

18 The interest rate that results in the discounted expected cash flows from an investment being equal to the initial cost of the investment is known as the "internal rate of return." Weston and Brigham, *Managerial Finance*, p. 407 (7th ed. 1981).

19 Respondent's appraiser incorrectly sought to estimate fair market values for the subject species of timber that would have permitted a timber operator to make a profit by cutting and selling the timber as of the date of valuation. He testified:

"Now the statistical high bids, adjusted for all the reasons of comparability, quality, logging costs, time frame, to the date of valuations, reflect prices, these Forest Service [sic] sales reflect prices that if the timber was to be cut, paid for immediately on that date of valuation, you could not make a profit unless the bid premium was either minimum--none or minimum. Bid premium meaning that amount of money paid over the appraised value of the Forest Service.

Now our appraisal concept considers all of these sales adjusted to the date of valuation as f_i , and

so to be cut at cost, which would allow the buyer to make a profit. And the manner in which we did this was to discount the sale values by an interest rate of money."

20 Professors McKillop and Dowdle are in virtual agreement concerning the risks associated with owning a USFS timber contract and, thus, the appropriate interest rate for determining present value factors. Professor Dowdle used an interest rate of 8 percent.

21 See *Willamette Industries, Inc. v. Commissioner*, T.C. Memo. 1980-577.

22 Petitioner argues that respondent, having filed an amended answer claiming an increased deficiency, has the burden of proof under Rule 142(a), Tax Court rules of Practice and Procedure. The original deficiencies were computed primarily based upon timber values determined by respondent's engineer agent. After receiving the values arrived at by respondent's engineer agent, petitioner submitted a protest in which she listed her objections to the engineer agent's selection of the PG&E transaction as a comparable. Subsequent to mailing the notice of deficiency, respondent retained MacDougall to prepare the appraisal report relied upon by him at trial. The amended answer alleged that the fair market value per species are the same as the fair market value per species estimated by MacDougall. Thus, the amended answer did not raise a new issue respecting the includability of the PG&E transaction as a comparable. We have duly considered where the burden of proof is located. Petitioner has the burden of proving a value greater than \$10,282,793; respondent, however, has the burden of proving that the value was less than \$10,282,793 in order to support the increase in deficiency claimed by him. See *Estate of Cordeiro v. Commissioner*, 51 T.C. 195,203 (1968).

23 An appraisal report prepared by Myron Wall indicates that the estimated fair market value of the PG&E property as of September 1, 1973, was \$14,300,000. Yuba was expected to use the report to assist it in obtaining additional financing from a lending institution. The appraisal report offers no rationale for the large disparity between the amount of the recent exchange price for the PG&E property (\$6,758,000) and the amount estimated as the property's fair market value. Nor does it even mention the exchange. "Evidence of what property sold for within a reasonable time before the material date upon which its fair value is to be determined is universally considered, competent, substantial, and persuasive evidence of its fair value on the material date." *Douglas Hotel Co. v. Commissioner*, 190 F.2d 766, 772 (8th Cir. 1951), affg. 14 T.C. 1126, 1141 (1950). For these reasons, we decline to give any weight to the conclusion reached in Wall's report.

24 Cf. Macdonald, "The Valuation of Standing Timber," 7 *Appraisal and Valuation Manual* 127, 132 (1962-1963).

25 The Rubicon, a little stream dividing the province of Cisalpine Gaul over which Caesar had dominion from the province of Italy which Pompey ruled, was crossed over by Caesar in open defiance of Pompey in B.C. 49. Rodale, *The Phrase Finder*, pp. 762-763 (1953).

26 John A. Cameron, who has been employed as supervising forester by PG&E since at least 1973, agreed, at the trial of this case, that most of the 91 MBF was capable of being harvested by cat-logging, that is, by using a Caterpillar tractor.

27 The appraisal report indicates that in considering the PG&E transaction a valid sale, MacDougall relied, among other things, on the fact that a contract provision provided that notwithstanding the exchange aspects of the transaction, a 3-year full payment schedule provides dates certain upon which "the transaction shall be completed unless an extension of time is provided for by mutual agreement to the parties." (Exhibit AO, pp. 5-6).

28 Cal. Pub. Res. Code Secs. 45214618 (West 1972).

29 The appraisal reports submitted for both parties' appraisers indicate that they each treated Incense Cedar in precisely the same manner as the other species at issue herein. It is therefore apparent that they either failed to recognize or considered without significance the fact that, unlike the prices bid for other species, the price bid for Incense Cedar is not subject to adjustment pursuant to USFS contracts, as indicated in footnote 6, *supra*. Although MacDougall's failure to make any forecast of, and adjustment for, post-June 1, 1973, escalation on USFS contracts results in unacceptable valuations of the other timber species, we are of the opinion that his method is appropriate for estimating the fair market value of Incense Cedar.