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This paper presents the evolution in Tax Court thinking that has led to the misguided 2014 Estate of Richmond decision.

It then presents the correct economic method to provide a proper answer to the value of built-in gain based on a future exit date. The question at hand is whether a speculative approach is appropriate.

Because it is based in fact, accrual based valuation has the fairest basis for built-in gain valuation, but the Richmond ruling demands that taxpayers be ready to defend against the Tax Court's methodology with an economic rebuttal.

Built-in Gain Tax Liability: Defend Yourself!

Estate of *Richmond* v. Commissioner Rebutted

by

JAMES LISI, CVA MBA

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Santa Barbara Valuations, Inc.

Santa Barbara, California
805-797-1710

Prior to 1998, the IRS enjoyed a history of successful argument against value reduction for Built-In Capital Gain Tax Liability (BIGL) for estate tax matters involving asset holding companies. Recognition of BIGL reduces the value of the entity holding the asset, proportionally lowering estate tax. The tax code of the time allowed corporations to avoid double taxation on dividends with tax-free distributions of assets to shareholders. Only if the corporation was liquidated in its entirety would capital gain tax on long-held assets come into play. The IRS' victories were gained on the basis that because liquidation of the corporation was speculative, discounts were inappropriate.

With the Tax Reform Act of 1986, this tax advantage was eliminated, so now capital gain tax is paid by companies for gains on asset disposals. Appropriately, circuit courts overturned the precedent in 1998 when the *Eisenberg* and *Davis* cases were decided, allowing 100% of BIGL to reduce company value. The reversal decisions were based on the concept that a hypothetical willing buyer would consider the tax liability's effect on the company's Fair Market Value (FMV).

At this juncture, the credit for BIGL was applied within the subject interest's Discount for Lack of Marketability (DLOM). What followed next was a period where courts sorted through the option of recording the impact of BIGL on the balance sheet at the entity level, or incorporating the BIGL into a marketability discount applied at the subject interest level. Consensus appears to have developed with the Tax Court that the BIGL is an entity level liability, separate from the Discount for Lack of Marketability (DLOM).

Just as case law seemed to settle the issue, the IRS introduced a second methodology to quantify the BIGL; one based on future events. The original methodology employed by the Fifth and Eleventh Circuits applies a 100% credit to entity value for taxes due at the date of valuation. The new method, recently presented in Tax Court by the *Estates of Litchfield, Jensen* and *Richmond*, supports a value reduction of BIGL based upon an assumed future date of liquidation of the corporation's assets. These latest cases have involved underlying assets of real estate, a basket of public stocks, and a mixture of the two.

The core issue is about the considerations a hypothetical willing buyer and seller include in the fair market value assessment of the property. The hypothetical willing buyer and seller are rational, economic actors. As stated by the courts, common sense tells us the buyer would not pay the same price for identical assets, one purchased outright in the marketplace with no tax consequences, and one acquired through the purchase of shares in a closely-held corporation, having significant, built-in tax consequences. But, does that investor insist on a full 100% credit

for that liability? When is the seller able to bargain for a better price? The United States Supreme Court stated,

“Valuation of property, though admittedly complex, is at bottom just “an issue of fact about possible market prices,” Suitum v. Tahoe Regional Planning Agency, 520 U.S. 725, 741, 117 S. Ct. 1659, 137 L.Ed.2d 980 (1997)”

The Fifth and Eleventh Circuit Courts say that a buyer will demand full value for the tax liability based on current asset value. The Tax Court says that the current value of the tax liability should be reduced because it is not paid until a date far into the future.

Court Opinions

The Fifth Circuit applied the 100% of liability methodology in Estate of Dunn v. Commissioner, 301 F.3d 339, 353 (5th Cir. 2002), reversing and remanding T.C. Memo 2000-12, as did the Eleventh Circuit in Estate of Jelke v. Commissioner, 507 F.3d 1317 (11th Cir. 2010), vacating and remanding T.C. Memo 2005-131.

In contrast, the Tax Court has now held for the third time that a future liquidation date is a valid consideration in Estate of Litchfield v. Commissioner, T.C. Memo. 2009-21, Estate of Jensen v. Commissioner T.C. Memo. 2010-182 and Estate of Richmond v. Commissioner, T.C. Memo 2014-26. We can track the new line of thinking back to the year 2000.

Estate of Borgatello v. Commissioner T.C. Memo 2000-264 was the first to speculate on BIGL with financial modeling based on exit value. The estate brought a Time Value of Money (TVM) argument for a calculated BIGL with a 2% asset appreciation rate, an 8.3% investor rate of return and an exit date projected ten years into the future. These assumptions resulted in a \$3.3 million BIGL versus the accrual value of \$5.1 million. The difference of \$1.8 million was then subject to estate tax. It was a deliberate value reduction of the estate in favor of the IRS.

In all of the post 1998 cases, an estate's argument for 100% BIGL held, until *Litchfield*, when the IRS emulated *Borgatello* to introduce the tactic of discounting BIGL based on a future asset liquidation date. However, the IRS introduced one significant difference. They did not appreciate the assets to the projected exit value, but simply attempted to discount BIGL from its present value. Although the IRS' TVM argument was disregarded by the court, *Litchfield* did result in a decision for 90.5% of BIGL based on the subjective opinion that the future nature of the tax payment would compel the FMV buyer and seller to negotiate a reduction.

Then in *Jensen*, a TVM argument resulted in no change to BIGL. It applied an equal appreciation rate (on the present value) and discount rate (on the future value). This resulted in the future value being equal to the present value and 100% BIGL. Economically, the practice of

compounding and then discounting a value by the same rate is a circular argument that returns you to the place where you started. The IRS lost ground here.

So, at this point, TVM analysis had been argued in Tax Court several times, and was conceptually defeated – until its resurrection in Estate of Richmond v. Commissioner, T.C. Memo 2014-26.

In *Richmond*, the IRS had changed tactics and attempted to show correlation of transaction data to prove BIGL value reduction. This effort also failed as the Tax Court found no evidence to support their position. However, in its decision, the Tax Court imposed the defeated IRS TVM of *Litchfield*. The court asserted that the BIGL does not have the same character as debt because tax payment can be indefinitely postponed, and looked for a method to discount BIGL. The decision was for a 57% BIGL reduction using a seventeen-year time horizon, but economically it simply transported the present value seventeen years into the past. Because, the Tax Court ignored the properties of the investment as a whole, the arbitrary formula simply imposed a reduction. No defense for the Tax Court's argument was possible, as it was levied in the decision.

The *Richmond* tactic doesn't fool cost engineers and economists. The method fails to meet economic principles. Not only is the conclusion economically infeasible, it amounts to the hypothetical buyer accepting a large double tax on the purchase, a discount to the seller now and payment of the full tax at liquidation - an unusual line of thinking for a prudent buyer that is not explained by the Tax Court.

Accrual Accounting Approach

Courts have described valuation as a vague and shadowy undertaking. In the case of BIGL, we can eliminate this ambiguity by adhering to fundamental accounting principles.

The 1998 cases comply with accrual accounting practice. In accrual systems, revenue is recognized when it is earned. Because expenses are matched in time, not when cash is paid, the result is an accurate measure of the performance during a specific time period. This practice is used to avoid misrepresentation to investors and taxing authorities. For this reason, generally accepted accounting principles (GAAP) require accrual basis accounting for most corporations and partnerships with annual revenue over \$5 million.

Under accrual accounting, tax may be incurred without actually having received payment for work performed. Applied here, the liquidation date for the BIGL asset is not material because recognition is based on the date earned. When the valuation date is selected, the asset value

and its tax obligation to government are earned together. Said another way, fixing the appreciated market value at a specific date, fixes the tax on the same date.

The alternative to accrual accounting is cash accounting. Here, revenue and expenses are recognized when paid. Cash accounting hides certain assets and liabilities from view of authorities, such as accounts receivable and accounts payable, such that audiences would not know if the subject is in related financial distress. Small businesses are typical users of cash accounting, and the main reason for its use is to align tax obligations with cash receipts. This ensures that cash is available to pay taxes.

Under cash accounting, the liquidation date is material because recognition is based on the date paid. When the exit date is selected, the asset value *and* its tax obligation to government are earned then. Under either accounting method, never does the asset appreciation lock at the accrual date, while the tax obligation floats to the liquidation date. Both accounting systems require cash flows to be certain, factual, and directly related in time.

In contrast, the methods in *Borgatello* and *Richmond* do not meet accounting standards. These cases introduce a defective criterion – a future value, an *unearned* value, as the basis for a tax assessment. Then *Richmond* separates the values so they are unmatched in time and accrual accounting is applied to the asset appreciation and cash accounting is applied to the tax liability. The one asset cannot be divided into these two derivatives for the purpose of treating them differently. Any set of financial statements prepared using present value of assets and discounted values of liabilities based on their pay-off dates would be quickly discarded as a misrepresentation of the business.

Another way to understand the issue from a buyer view is that reducing the BIGL essentially re-prices the asset to a higher level. Is that acceptable to an economically rational buyer? The BIGL is little different to a prospective stock buyer than a company note payable with a variable rate of interest. The tax liability grows with the appreciation of the underlying asset and is paid in the future. Therein lies the justification for 100% credit for BIGL. Debt to the government will always be paid in full and a prudent buyer would not pay any portion of this tax twice. Best practice is to account for tax liability in the same manner as all other third-party obligations on the balance sheet. Compliance with accrual principles results in 100% BIGL and remains the most defensible value.

Supporting Transaction Data

We can look to markets for a pattern of reduction of BIGL value. This approach applies the behavior of a similar security and substitutes it as a proxy for the illiquid security being valued. Unfortunately, the presence of discounting behavior on BIGL in private or public markets is not

uniquely identifiable. Transaction data only shows overall Discounts for Lack of Marketability (DLOM) and we cannot isolate the effect of tax liability.

The inability to isolate the effect of BIGL within a share transfer makes it impossible to formulate a transaction-based justification. *Richmond* affirms this finding. Without transaction data, the behavior of the knowledgeable buyer requires economic justification for essentially gifting away valid economic value.

Economic Justification – Modeling Cash Flows

Assuming that speculation is appropriate for these matters, we can model the value of the BIGL based on a distant future exit event, but it takes more assumptions on future performance than have been considered in past cases. In addition, it requires the correct modeling. The Tax Court and *Borgatello* both erroneously apply the wrong tool to solve the problem. It is not a Time Value of Money (TVM) model which is required, but a Net Present Value (NPV) model.

TVM is a building block for NPV. Its theory is based on the concept that a dollar a today is worth more than a dollar tomorrow because tomorrow you could receive the principle amount plus a return on lending the money. When an amount is lent today, it compounds into the future at a rate of interest. The reverse of this process is for a future value to be discounted by a rate of return to find its present value.

An underlying truth demonstrated in *Jensen* is that with TVM, when 1) the cash flows are purely linear and 2) there is no real growth (above market rate), then the capitalization rate will equal the discount rate. Under this set of assumptions, the present value will equal the discounted future value. This is related to the premise of business valuation where a capitalization of cash flows equals a discounted cash flow when growth is linear.

Key Point: If the analyst intends to apply neutral assumptions to a single string of cash flows, the circular nature of TVM model says the discounted future value equals present value, matching accrual accounting principles. The only possible difference between accrual value and NPV in this case lies in application error.

TVM models are unbounded, and previous analysts have tried to force its use where the behavior of TVM does not match the problem. It's the proverbial square peg being forced into a round hole. If a TVM model has cash flows that appreciate faster than the investor's required rate of return, the model will decrease estate value by growing BIGL into the future, potentially wiping out all estate tax. The reverse is also true, BIGL can be rapidly reduced close to zero when investor rate of return is greater than the investment's appreciation.

The IRS' attempt to use zero appreciation rate in *Litchfield* shows the potential for manipulation of the TVM model. In this regard, TVM is a simulation that can be used to justify any opinion, or pick any discount desired by manipulating the appreciation rate, discount rate and time horizon. Because its output is uncontrolled, TVM is subject to immense assumption bias and errors of both commission and omission. The method is extremely difficult to apply and get a reliable result. To date, no court analysis has performed this investment analysis correctly. TVM cannot be used to model the problem directly.

NPV Overview

Net Present Value (NPV) builds on the TVM concept by assembling multiple relevant cash flows together, projecting them into the future and then discounting the cash flow stream to present value to capture the full nature of an investment over a period of time. Used properly, we can frame the potential for a BIGL discount with this method.

TVM and NPV trace their roots to actuarial science and the financial investment markets of the 1800s. In 1930, Eugene Grant, a Stanford University engineering professor, published the first edition of his classic textbook Principles of Engineering Economy, presenting applications of the present value, the rate of return, and the equivalent annual cost methods for making capital budgeting decisions. In the 1950s, the use of NPV accelerated when economists began adopting the model.

NPV is best used to compare competing investment proposals in order to determine which provides the best benefit, which is the exact situation we have with BIGL. A key element of NPV is that its decision criteria is not relative like the internal rate of return (IRR), but absolute. If the NPV is about maximizing profit, the highest profit NPV is the best choice to implement. If the NPV is evaluating cost reduction, the lowest cost NPV is selected for action. NPV is widely acclaimed as the 'gold standard' decision-making framework because it incorporates the size and timing of cash flows, the time value of money and time horizon for the project. One of the alternatives can be 'no project'. Doing nothing has an NPV of zero.

NPV Results

NPV analysis is sound for comparing alternatives under the same premises of value, however it lacks the ability to reliably set a specific value because it is subjective – it is based on unearned values and other speculations. When not used comparatively, as when examining a single cash flow model, long time horizons multiply the analyst's assumptions into exorbitant values.

Key Point: NPV analysis used comparatively as the originators intended, best accounts for changes within long time periods. Comparative analysis has the effect of canceling out some of the error potential.

Since TVM and NPV both allow an overly broad set of inputs for valuers, it means that the range of possible solutions can be manipulated to support the logical premises of the analyst. So, these models can become a mathematical argument for presenting the case of each side in a dispute. This frames a negotiation, but doesn't provide a factual answer.

Key Point: TVM application has a strong tendency to be used to reinforce existing biases, giving apparent legitimacy to conclusions that are only advocacy of the analyst.

NPV is often misapplied.

Key Point: NPV analysis is easily corrupted when the model is improperly set up. When key elements of the valuation problem are omitted, the model may simply presume the conclusion.

Proper Application of NPV

Thesis

Since company value is based on future performance, not past performance, a buyer may be willing to pay a premium for an equity interest in relation to the built-in gain if they stand to benefit by buying the stock of the corporation. Similarly, they may want a discount on the stock if they do not benefit. This would be based on the premise that the leverage represented by the capital gain liability would drive a different value over buying the same assets on the open market without the leverage. Under this condition, the attractiveness of the investment would change the relative negotiating strength of the buyer and seller.

In our case, the competing projects are 1) value based on buying the asset outside the company, 2) value based on buying the company stock (asset inside the company) and 3) not investing (an NPV of zero). If the inside basis has a high, positive NPV, then BIGL could be discounted. If inside basis has negative NPV, the investor will not invest and no discount is available.

Problem formulation is key, so here we include the cash flows pertaining to the initial investment, interim distributions and the exit proceeds that were omitted in previous court cases. The comparison of alternatives is modeled from beginning to end, not only just a single element of the project.

Let's start with an example of how a *Jensen* style view, with equal appreciation and discount rates, would work because it is key to understanding the premises of NPV. A Five-Year Projection is shown below. We assume an inside basis of zero, so capital gain tax will be due on the entire exit amount. The appreciation is equal to the discount rate at 5%. The net investment of \$4439 required to buy the stock appreciates until exit, which is then discounted

to the present and provides cash benefit of \$4439 in present dollars. The investment exactly meets the return expectations of the investor, so NPV is zero.

The model example is shown next.

ASSET CORP CASH FLOW PROJECTION EQUAL APPRECIATION AND DISCOUNT RATE							
FISCAL YEAR	Present Value	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Asset Value	5,918	6,214	6,525	6,851	7,193	7,553	
Tax Basis	0						
Appreciation Rate	5.0%						
Capital Gains Tax Rate	25.0%						
Discount Rate	5.0%						
Investment Analysis							
Cash Flows	(4,439)					7,553	
Capital Gains Tax		0	0	0	0	(1,888)	
Net Distributions	(4,439)	0	0	0	0	5,665	
Present Value of Cash Flows							
Future Value of Projected Cash Flow	(4,439)	0	0	0	0	5,665	
Discount		5%	9%	14%	18%	22%	
Present Value of Projected Cash Flow	(4,439)	0	0	0	0	4,439	0

Now let's look at the valuation based upon inside basis, but with discount rate (investor required rate of return to buy the investment) of 8% and see what difference arises.

ASSET CORP							
CASH FLOW PROJECTION PURCHASE ASSET INSIDE CORP							
FISCAL YEAR	Present Value	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Asset Value	5,918	6,214	6,525	6,851	7,193	7,553	
Tax Basis	0						
Appreciation Rate	5.0%						
Capital Gains Tax Rate	25.0%						
Discount Rate	8.0%						
Investment Analysis							
Cash Flows	(4,439)					7,553	
Capital Gains Tax		0	0	0	0	(1,888)	
Net Distributions	(4,439)	0	0	0	0	5,665	
Present Value of Cash Flows							
Future Value of Projected Cash Flow	(4,439)	0	0	0	0	5,665	
Discount		7%	14%	21%	26%	32%	
Present Value of Projected Cash Flow	(4,439)	0	0	0	0	3,855	(583)

Since the investor requires an 8% return to invest, and the investment only grows at 5%, the NPV is negative, so the investor will choose to stay in cash. It becomes clear that the first element creating value (or not) is the differential between the investment appreciation and the required rate of return for the investor.

Now, let's add some distributions to the model and see if it becomes a viable investment.

ASSET CORP							
CASH FLOW PROJECTION PURCHASE ASSET INSIDE CORP							
FISCAL YEAR	Present Value	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Asset Value	5,918	6,214	6,525	6,851	7,193	7,553	
Tax Basis	0						
Appreciation Rate	5.0%						
Capital Gains Tax Rate	25.0%						
Discount Rate	8.0%						
Investment Analysis							
Cash Flows	(4,439)	500	500	500	500	8,103	
Capital Gains Tax		(125)	(125)	(125)	(125)	(2,026)	
Net Distributions	(4,439)	375	375	375	375	6,077	
Present Value of Cash Flows							
Future Value of Projected Cash Flow	(4,439)	375	375	375	375	6,077	
Discount		7%	14%	21%	26%	32%	
Present Value of Projected Cash Flow	(4,439)	347	322	298	276	4,136	940

With improved returns, the investment is above the investor required rate of return, so it becomes a viable option for investment.

Now, in order to choose between the inside basis investment and outside basis investment, we must model the second alternative - buying the assets outside the company under the same conditions. Note that the acquisition cost increases because we don't have a BIGL. Since the entry cost increases, the capital gain tax at exit is reduced, and the exit cash flow increases.

ASSET CORP							
CASH FLOW PROJECTION PURCHASE EQUIVALENT ASSET OUTSIDE CORP							
FISCAL YEAR	Present Value	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Asset Value	5,918	6,214	6,525	6,851	7,193	7,553	
Basis	5,918						
Appreciation Rate	5.0%						
Capital Gains Tax Rate	25.0%						
Discount Rate	8.0%						
Investment Analysis							
Cash Flows	(5,918)	500	500	500	500	8,103	
Capital Gains Tax		(125)	(125)	(125)	(125)	(546)	
Net Distributions	(5,918)	375	375	375	375	7,557	
PRESENT VALUE OF CASH FLOWS							
Future Value of Projected Cash Flow	(5,918)	375	375	375	375	7,557	
Discount		7%	14%	21%	26%	32%	
Present Value of Projected Cash Flow	(5,918)	347	322	298	276	5,143	467

Here you can see that the NPV for buying outside the corporation, at \$467, is less than the inside basis of \$940, so the buyer would buy company stock. We can then define the range of possible discounts by calculating the maximum discount available based on the difference in value between the two alternatives. The buyer would be willing to pay up to \$473 in this case.

ASSET CORP	
DISCOUNT POTENTIAL	
Inside Basis NPV	940
Outside Basis NPV	467
Advantage for Inside Basis	473
Accrual Value of Capital Gain Tax	1,480
Maximum Discount Available	32%

This analysis offers an economic settlement range of 0% to 32% for the knowledgeable buyer and seller, as we have two legitimate negotiating positions. The buyer would want the accrual value so that they don't pay 'double tax' and because the nature of the benefit is intangible and speculative. Realizing the benefit depends on future performance. On the other hand, the seller would argue for the leveraged value. Experience in M&A indicates that the buyer will get most of the advantage for taking on the risk of the investment, while the seller moves to an off-risk position. So, the likely BIGL discount here is about 10%.

Next, we look at the effect of the inside basis. Note that the previous example is the best-case scenario for reducing BIGL because we have assumed an original basis of zero for the assets under a stock purchase. This represents the maximum benefit found in leveraging a capital gain. In a real scenario, some basis will exist. As the inside basis increases, the benefit of the tax savings at exit decreases. We set the basis at \$1000 for the next chart, and NPV falls to \$349, below the outside basis return of \$467. This indicates that the buyer will require an 8% BIGL premium to enter the investment.

ASSET CORP							
CASH FLOW PROJECTION PURCHASE ASSET INSIDE CORP							
FISCAL YEAR	Present Value	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Asset Value	5,918	6,214	6,525	6,851	7,193	7,553	
Tax Basis	1,000						
Appreciation Rate	5.0%						
Capital Gains Tax Rate	25.0%						
Discount Rate	8.0%						
Investment Analysis							
Cash Flows	(4,689)	500	500	500	500	7,103	
Capital Gains Tax		(125)	(125)	(125)	(125)	(1,526)	
Net Distributions	(4,689)	375	375	375	375	5,577	
Present Value of Cash Flows							
Future Value of Projected Cash Flow	(4,689)	375	375	375	375	5,577	
Discount		7%	14%	21%	26%	32%	
Present Value of Projected Cash Flow	(4,689)	347	322	298	276	3,796	349

These interactions are driven by the interplay between the *initial investment*, *distribution rate*, and *return of principle at a minimum profit*. With the \$1000 basis, the initial investment rises, and the exit return falls, so that NPV drops below the outside basis option.

Summary

We can see that - for an overperforming asset - a range exists within which to negotiate a discount to BIGL. We can also see that for underperforming assets, a premium maybe be necessary to induce a buyer to accept the inside basis. And we can also see, with two different negotiating positions, that the investment analysis sets up a negotiation between buyer and seller where the likely magnitude of a discount pales in comparison to what was decided in *Richmond*.

We have three value drivers occurring simultaneously in the NPV analysis. The first is whether appreciation and distributions from the inside basis investment are sufficient to provide a positive NPV to the investor. If NPV is negative, then no BIGL discount is available. This is basically a 'Go' or 'No-Go' test.

The second is the effect of time. We did not show this behavior graphically, but the longer the time horizon, the more valuable the initial savings become when we have a positive discount rate. However, unlike TVM analysis, the end result with NPV never wipes out all estate value or rapidly reduces BIGL to zero. The discount or premium is bounded by the size of the original savings.

The third driver is tied to the basis in the assets. It tests whether the savings on initial investment for buying the inside basis is more or less valuable than the exit capital gains savings when buying the outside basis.

Since early cash flows are more valuable than later ones, the 'inside basis' security will become more valuable with a longer time to liquidation. However, some investments may start with negative NPV and need a certain period of time to cross the zero NPV threshold and result in a discount to BIGL being available. The cross-over points are based on all variables employed, so that a BIGL discount cannot be presumed. The set of assumptions used is critical to finding a fair result.

Technical Notes

The effect of the intermediate cash flows on the magnitude of NPV differential is zero because they cancel each other out when comparing alternatives. However, they are key to determining whether the investment meets buyer minimum return expectations. So, they remain important in regard whether the investment has a positive or negative NPV.

We used an 8% appreciation rate in the example. When the appreciation rate changes, each set of cash flows change proportionally, but the NPV differential remains the same in the same way that distributions vary. So, the critical rate for finding the size of the possible BIGL discount is the discount rate – the required rate of investor return.

In the example, when the basis hits \$800, the advantage for the inside investment disappears. Over \$800, buying outside the corporation is the better alternative, and a price reduction beyond BIGL is required to equalize the tax benefit and induce the buyer to acquire the interest at the required rate of investment return.

Thus, we need all the variables; time to exit, appreciation, discount rate, investment basis and distributions, to determine the availability of any discount or premium for the investment. And each needs to be thoughtfully considered in order to provide a fair result. Simple linear extrapolations are inadequate.

Borgatello

Instead of using accrual value or an investment analysis, the analyst in *Borgatello* attempted direct calculation of the present value of BIGL from its projected future value with TVM. The intent was to model the effect of the holding period to liquidation, this is clear, but the result goes awry based on the performance of the actual markets afterward.

The *Borgatello* model differs from the *Richmond* decision in that the method includes an appreciation to a future value with a chosen appreciation rate before discounting is applied. But, we can now look back at the result and argue for one of two biases in the analysis. Either the analyst was attempting to discount the effect of BIGL, or he was biased by the recent economic conditions immediately before the report. In the period of 1994 to 1996 directly after the decedent's death, California was in the midst of an economic recession, and real estate prices were basically flat after a period of decline. With a 2% appreciation rate, the analyst was forecasting a ten-year period of underperformance for the assets in question when compared to the long-term return on the S&P 500, for example. By projecting underperformance, the present value of the BIGL was reduced.

No matter the reasoning, in fact, southern California real estate appreciation accelerated from 0% in 1995 to well over 20% annually by 2004. Back-testing on *Borgatello* with 10% average real estate appreciation for the ten-year projection, shows that the settled estate value of \$9 million would have been reduced to a taxable value of \$3 million if the correct appreciation rate had been used. Extending the time horizon a few years, let's say to a seventeen-year time horizon, would have made the BIGL so large in comparison to its accrual value, it would wipe out all estate value.

This is not to argue that the estate should have used TVM to lower its basis to \$3 million or zero, but it is an argument that TVM is not a suitable tool due to its speculative nature and the multiplicative effect that time has on its conclusion. The estate's accrual value of \$7 million would have been a fair result. A range of value from \$3 million to \$9 million for the same estate under assumptions that include the actual market appreciation is a problem.

Key point: No matter how good assumptions are, predictive models will always be wrong.

Key Point: Models that can yield a wide range of results are not sufficiently reliable on which to draw a conclusion.

Borgatello marks an important shift in focus from what a buyer would pay for the interest to a method of calculating BIGL value. By establishing a framework for separating the BIGL value from the underlying asset for analysis, it set in motion an evolution in non-economic thinking, which now has become precedent.

Richmond

The *Richmond* opinion states:

“It stands to reason that a potential buyer would be willing to pay more for a company with a contingent liability of \$18.1 million than he would pay for a company otherwise equivalent but that had an unconditional liability of \$18.1 million payable now. Likewise, the seller of the company with the contingent future liability would demand a higher price than the seller of a company with the unconditional current liability.”

The *Richmond* opinion does not support this statement with fact. It is a bias. “It stands to reason...” does not offer an answer to the question of ‘why’ a buyer would be willing to pay more. In many companies, debt is never paid down, but continually increases. BIGL fits the same rubric as this kind of debt. Now, as we have shown, the Court may be correct when looking solely at the element of time, but not always, as we look at the broader economics of the investment. A buyer may be willing to pay more, but the ‘reasoning’ offered in the opinion is a prejudiced argument that reveals the Court’s predisposition.

The disembodied tax liability examined by the *Richmond* court does not discretely exist, and cannot be studied separate from other investment elements. The model construction presumes a discount because it modifies present value without consideration of future value. Comparing a present value to a future value is the kind of mistake we expect from an amateur, not from experts in the field. Economically, we compare present values to present values, and future values to future values. As *Jensen* showed, the passage of time alone does not affect intrinsic economic value.

Richmond also suffers the same error problems as in *Borgatello*, where the model calculates exponentially high values for long time horizons. Using a 17-year time horizon, *Richmond* found for a 57% discount. A two percent change in the assumption for the discount rate for *Richmond* would raise the discount from 57% to 68%, a 19% change. If they had used the 70-year turnover rate from the actual subject interest, the model would have found a 97% reduction.

The *Richmond* TVM model also fails under the scenario of an asset declining in value. In this context, the future capital gain tax liability is shrinking and transferring the present value to the future would transfer liability that won’t exist at exit. If the Tax Court model doesn’t work for a 70-year horizon, or for declining value, can its underlying premises be correct at all? We know economically, that they are not.

A properly formulated model does not need intervention to make it function. Tax Court trust in the TVM theory is so firm that no corroborating data is offered to confirm the feasibility of the

conclusion. The blindness is obvious. But by shortening the actual time horizon from seventy to seventeen years, the court effectively acknowledges that their analytical model is invalid.

Key Point: If the theory must be altered to fit the facts, any such model result should be viewed with skepticism.

The elements of the initial investment, appreciation, discount rate and exit value are intrinsically linked in an investment analysis. This broader focus is necessary to find proper economic results. The Tax Court takes shortcuts. At best, it is not a thoughtful position, and at worst, it is legislating from the bench.

Application Bias, Sensitivity & Risks, Common Sense

Error, analyst bias, manipulation of the NPV model and sensitivity of the formula are important issues to evaluate when using theoretical models. The author's example above remains a simplified explanation, and one that relies upon speculation. NPV concepts are deceptively simple to understand, and that level of understanding does not translate to output reliability, nor to buyer behavior. Audiences of these analyses must recognize the applicability, general error, judgement and bias issues:

- Speculative Projections of appreciation and distributions
- Speculative Time Horizon to Exit
- Speculative Future Economic Conditions, including monetary inflation or deflation
- Subjective Investment Risk Analysis (which goes up with holding period)
- Hypothetical Buyer Rate of Return (opportunity cost)

Thoughtful consideration of the exit cash flow is required to simulate the hypothetical buyer's decision to purchase. Simple linear projections at a fixed appreciation rate are superficial examinations of conditions unlikely to give a fair result. Within a fifteen-year time horizon we would expect that at least two recessions to occur affecting long term value. The impact of predictable events will be key factors in cash flow projections and something a hypothetical buyer would want to understand. Will the investment be less profitable or more profitable, or even exist in fifteen years at the rate of today's technological change, for example?

Key Point: Using a point value or linear appreciation rate fails professional standards to obtain sufficient relevant data on which to base the conclusion. It will not supply a fair and reasonable result, except by chance.

Not only the cash flows require speculation, we also have to settle on a type of discount rate within a wide range of possible judgements of investment risk. Investors consider their

opportunity cost of capital when determining the viability of investment. The opportunity cost of capital is the rate of return the investor could earn in the marketplace on an investment of comparable size and risk. It's the opportunity the buyer gives up to invest in the property or investment in question, thus the term "opportunity cost." Understanding the character of the discount rate is critical and it drives to the core of the question of how valuable the BIGL is to the buyer. But which opportunity cost is to be represented in discount rate?

- Cost of Capital (new money invested, also hurdle rate)
- The market return on similar equity only investments
- The market return on similar leveraged investments
- Interest rates on debt

The discount rate also is often misapplied by novices, as it was by the Tax Court in *Richmond*. Most do not understand the difference between an appreciation rate, capitalization rate and a discount rate, and the effect of growth and monetary inflation in their development.

Key Point: The discount rate can validly be estimated in a range from about 2% to 40% depending on the assumptions for the cash flows, type of investor returns and the investment risk undertaken.

Conclusions

The dumbing down, over-simplification and misapplication of economic essentials in *Richmond* is frightening - speculation masquerading as scientific analysis. The mixing of accrual and cash accounting methods misrepresented the character of the asset, and no transaction data is available to show that this discounting behavior exists in reality. TVM analysis used in these cases can present any logical opinion, for higher or lower value based on the spread between appreciation rate and discount rate. Significantly, when their TVM models do not operate to expectation, the model is simply changed to produce the desired outcome. It clearly is the wrong tool to value BIGL. It can be used to say anything.

Based on NPV investment analysis, we see that a negotiated value reduction is not likely to ever approach 57% as found by the *Richmond* court. And we see that investment analysis will not be a one-way incentive for discounting. A range from a 25% discount to 15% premium appears to be where the economics lead for many cases.

Although they set up an interesting debate, NPV models are also speculative. The only provable fact is the starting value of the investment. As a simulation of conditions, output can vary widely. Use of NPV requires us to accept these bases:

- Unearned Values / Cash Accounting

- Investment analysis from buyer entry to exit
- Economic projections of expected exit value
- Speculative assumptions on discount rate

On the other hand, we have three bases for support of the 100% BIG:

- Accrual Accounting
- Effective Double Taxation on the buyer of an interest with a discount to BIGL
- Investment analysis with equal appreciation and discount rates

In the end, using future expectations is a valuation project in and of itself that incorporates more subjective opinion than fact. Is it fair to use such an unpredictable process for such a serious matter? This kind of conjecture appears to be contrary to good policy, but taxpayers are now placed in position of having to defend against the Tax Court tactic. If the IRS continues litigating, the issue will end up before the Supreme Court, so it is critical that proper approach reveal that the fallacy of Richmond's decision.

Accrual accounting and 100% BIGL provides the most defensible value for initial asset-holding company valuation reports. Until clarity forms around whether future expectations are a lawful basis for valuation in the Circuit courts, any negotiated reduction should be for convenience. If 100% BIGL is opposed by the IRS, investment analysis can be used to contest an IRS challenge.

For more information contact:

James Lisi

jim@sbvaluations.com

805.797.1710

James Lisi, CVA, MBA

Owner, Santa Barbara Valuations Inc.

Partner, American ValueMetrics



James A. Lisi is owner of Santa Barbara Valuations and a partner at American ValueMetrics with fourteen years valuation experience and twenty years in executive and strategic positions at Fortune 100, Private Equity and his own personally held businesses.

His valuations focus on closely-held companies for tax and financial reporting, while his advisory services support start-up growth companies, transactions and other projects for company owners. He has worked with clients in technology, internet, aerospace, industrial distribution, consumer goods and services, franchises, food and beverage, and financial services. He has extensive operating experience in manufacturing, distribution, rental and youth services.

Jim is a member of the National Association of Certified Valuators and Analysts (NACVA), holding the Certified Valuation Analyst (CVA) designation. He is a California state-appointed member of the California Coastal Loan Committee, and a member of Tech Coast Angels, Rotary International and Provisors. Mr. Lisi also taught finance in Antioch University's MBA program.

Rooted in industrial engineering and acquisitions, Jim brings the structured approach of an engineering economic analysis together with the proper application of finance and market principles in his valuations. Where required, the reports satisfy regulatory requirements for the IRS, ERISA and DOL.

Mr. Lisi has an MBA from UC Irvine and BSIE from the University of Michigan.