The real option’s perspective is making inroads into legal scholarship. This Essay will describe how that perspective can be used to understand the tax law, how parties respond to that law, and how that law evolves. The examples fall into three broad categories—schedular options, traditional real options and structural options—that we will take up in turn. This is a functional rather than party-based division. Accordingly, the categories include both options written by taxpayers to the government as well as options written by the government to taxpayers. However, before we get to the examples, we provide some background on options for readers who are not familiar with real options.

I. Background

In this Part, we describe conventional options, real options and real tax options.

A. Conventional Options

Puts, calls and other options are derivative instruments. A derivative does not exist independently, but only in relation to an underlying asset, and its payoff is generally related to the price of the underlying asset. In finance, it is common to use position or payoff diagrams to study derivatives. The vertical axis in the position diagram represents the value of the position at maturity, which is the amount in dollars the investor will receive (or pay) from liquidating the position. The horizontal axis gives the price of an underlying asset (usually common stock) at the same date. Thus, the position diagram represents the value of the position at maturity as a

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1 See John C. Hull, Options, Futures and Other Derivative Securities 1 (4th ed. 2000); Robert L. McDonald, Derivatives Markets 1 (2002)
function of the value of a given asset. In the example that follows, the underlying asset is one share of Google.

One of the simplest derivative instruments is a call option. A call option gives its holder the right to buy a fixed number of units of the underlying asset at a fixed price on or before a given date. The holder of a call option has the right to make the purchase, but is not obligated to do so.

Options have their own terminology. Purchasing the underlying asset through the call option is exercising the call. The fixed price is the exercise price or the strike price (the two terms are interchangeable), and the given date is the maturity or expiration date. The individual who issues the call is the seller or writer, and the individual who purchases it is the buyer or holder. The market price of the call is the premium or the call price.

The most familiar options are written on common stocks. Consider a call on Google that gives the holder the right to buy one share of Google from the writer for $100 on October 1, 2005. Since the holder is not obligated to make the purchase, the holder should permit the option to lapse unexercised if the price of Google on October 1, 2005, is less than $100. If the price of Google is less than $100, the holder can buy a share of Google for less on the open market than

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2 See Richard A. Brealey & Stewart C. Myers, Principles of Corporate Finance 586 (6th ed. 2000). If the diagram takes into account what the investor paid to obtain the position, it is called a profit diagram. See Zvi Bodie, Alex Kane & Alan Marcus, Investments 555-58 (1989). For general discussions of profit diagrams, see John Cox & Mark Rubinstein, Option Markets 5-23 (1985); Robert A. Jarrow & Andrew Rudd, Option Pricing 22-33 (1983).

3 See Cox & Rubinstein, supra note 1; Brealey & Myers, supra note 14, at 586; Stephen Ross et al., Corporate Finance 547 (5th ed. 1999). Exchange-traded calls give the holder the right to buy 100 shares of the underlying asset. To simplify the discussion, each option contract will be assumed to be written on only one share.

4 See Cox & Rubinstein, supra note 2, at 1; Ross et al., supra note 3, at 546.

5 See Cox & Rubinstein, supra note 2, at 1; Ross et al., supra note 3, at 546.

6 See Cox & Rubinstein, supra note 2, at 1; Ross et al., supra note 3, at 547 n.2.

7 See Cox & Rubinstein, supra note 2, at 1. Options can be divided into American and European options. An American option can be exercised anytime up to the expiration date; a European option can only be exercised on the expiration date. See Brealey & Myers, supra note 2, at 586; Ross et al., supra note 3, at 546.
by exercising the option. In this case, the option is said to expire out-of-the-money.\(^8\) Conversely, if the price of Google at maturity is above $100, the holder should exercise the option and the option is said to expire in-the-money.\(^9\) For example, if Google is selling at $120, the holder can make a $20 profit—the difference between the stock price and the exercise price—by exercising the option. Thus, the value of a call option at maturity is zero if the stock price is at or below the exercise price ($100) and it increases $1 for every dollar that the stock price increases.\(^10\) This is indicated in Figure 1.

\[\text{Figure 1 – Position Diagram for a Held Call Option}\]

The writer of the call option pays what the holder receives.\(^{11}\) Assuming that the holder follows the value-maximizing exercise strategy described above, the writer’s position value is zero for stock prices at maturity below the exercise price and it decreases $1 for every dollar that the stock price increases. This is described in Figure 2. The writer of a call option promises to deliver the underlying asset to the option holder if the holder exercises the call. Thus, in contrast to the holder, the writer does not have the option of performing, but is obligated to perform if the holder exercises the call.

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\(^8\) See Ross et al., supra note 3, at 547.

\(^9\) See id.

\(^10\) Mathematically, the payoff on the call option at maturity is \(\max(S-100,0)\), where \(S\) is the stock price at maturity.

\(^11\) This ignores transactions costs, which include brokerage fees.
Options can be settled by delivery or by cash payment. See WILLIAM A. KLEIN & JOHN C. COFFEE, BUSINESS ORGANIZATION AND FINANCE 286 (7th ed. 2000).

Mathematically, the payoff on the put option at maturity can be written as max (100 - S, 0).
The writer of the put option is out-of-pocket what the holder receives. Thus, assuming the holder follows the value-maximizing exercise policy, the value of the writer’s position is zero if the price of Google is at or above $100 at maturity and it falls by one dollar for each dollar that the price is below $100. The position diagram for the writer of such a put is drawn in Figure 4.

B. What are Real Options?

Options are widespread. In theory, an option can be written on any asset that can be bought or sold. In practice, there are limits, but not many. For example, options are commonly written on real estate and businesses. Options can also be implicit. For example, consider an oil company that owns a proven oil reserve or a film production company that owns the right to a
movie. The oil company has the option to develop the oil reserve. If the price of oil is high enough (the value of the underlying) and the cost of development is low enough (the strike price), the company will exercise the option by developing the reserve. Similarly, if the movie is a hit, the production company can exercise its option to produce a sequel. Such options are referred to as real options. Real options have recently become an important field of study.\textsuperscript{14}

Real options analysis developed out of the finance literature on discounted cash flow. Real options analysis recognizes the value that flexibility provides and seeks to quantify that value. Legal academics have picked up real options and have used that methodology to identify options. In contrast with its use in finance, which is to quantify the value of different strategies, its use in the law has generally not involved quantification. Instead, legal academics typically identify real options with a view towards making a normative judgment about some aspect of the legal regime and perhaps suggesting reforms.

C. Real Options in the Tax Law

There are three classes of real options that are relevant to the tax law. The first arise when the tax laws create a situation where the taxpayer’s payoff from a course of action resembles the payoff from holding a call option. That can occur even though there is no action or decision that resembles the act of exercising an option. Nonetheless, the situation can be analogized to an option because the tax law, in effect, automatically provides for optimal exercise by the holder through the tax schedule. With these schedular options, the insight generated from a real options perspective is in explaining how the option element causes taxpayers to change their behavior. Almost all of these options are call options, and arise because of convexities in the tax law.

The second group of real options are traditional real options. These options specifically require the taxpayer to exercise. Such real options differ from financial options in that the taxpayer usually only has partial information.

The third group of real options arise because the tax collection process takes place in stages. Among the most important stages are the following: the writing of the relevant law, the structuring of transactions under that law, the reporting of a self-assessed liability and payment of same, and any challenge to that liability. These stages do not all occur at the same time. Typically, the actions take place in the order listed above. Because the actions occur in stages, the parties have options. Specifically, a party can often wait until the other party completes the prior stage before it must act.

D. Factors that Influence the Market Value of Options

In business school settings, real options involves formal modeling and valuation. This process, which can be computationally intensive, is intended to integrate real options into the capital budgeting process, which is itself informed by the bottom line. Because our goal is to make normative statements about the effects of various tax laws and only relative, not absolute, statements of magnitude, we do not need the full technical apparatus for option valuation. Nonetheless, we still need the basic determinants of option value so we can understand how real tax options influence behavior.

Basic textbooks in finance usually describe the value of (plain vanilla) call options as a function of both the option’s contractual features and market conditions. It is common to emphasize 5 variables.

*Market Value of Underlying:* The call option is more valuable, the more valuable is the underlying asset. This is obvious enough. The more valuable is the underlying today, the more valuable it is likely to be at expiration of the option. This translates into a bigger payoff for the option holder and thus a higher current market value for the option.\(^{15}\)

*Strike or Exercise Price:* The call option is more valuable, the lower is the exercise or strike price of the option. This is obvious too.

*Interest Rate:* The call option is more valuable, the lower the market interest rate. That is because the cost of acquiring the underlying asset, the present value of the exercise or strike price (a contingent liability), is less the lower the interest rate.\(^{16}\)

*Time To Maturity:* The call option is more valuable, the longer the time to maturity. There are several ways to understand this result. For American options, which can be exercised at any time, extending the maturity does not take anything away from the holder, but only adds the possibility of later exercise, which can only add value.\(^{17}\) More generally, the trend overtime (at least for stocks that do not pay dividends) is to increase in value, thus a longer lived option has

\(^{15}\) There are important differences between plain vanilla options and tax options that are worth noting. First, plain vanilla options are generally on a stock (the market price of the underlying asset), whereas tax options are generally written on a flow (income over the period). Second, the value of the underlying asset in a typical option is not affected by the activities of the holder and writer, whereas the taxpayer’s actions will affect its taxable income.

\(^{16}\) ROSS ET AL., supra note 3, at 582-4.

\(^{17}\) ROSS ET AL., supra note 3, at 582. A longer lived European call can be less valuable than a shorter lived one if the underlying stock pays dividends. *Id.*
For most tax options, they do not generally and simply increase with time to maturity. The difference between tax and simple options is that most tax options are backed by further options, whereas most plain vanilla options are not. If you hold an option on one share of Google that expires in a year, you usually do not also have another that starts in one year and expires in two years, but that is exactly how the tax system works. Thus, the timing issue is more complicated and we do not take it up further.

Volatility: The call option is more valuable, the more volatile is the underlying asset. This is often described as the principal relationship affecting value. Call options increase in value as the volatility of the underlying asset increases. That is because increases in value above the strike price increase the payoff dollar for dollar, but decreases below the strike price have no offsetting decrease because out of the money options are valueless at maturity whether they are $1 or $100 short. Thus, volatility increases the expected payoff from the option, and hence the market value.

E. Why Examine Real Options in the Tax Law

Because the value of a real tax option depends on several variables, some of which are within control of the taxpayer, the taxpayer has an incentive to influence those values. Thus, for example, the taxpayer has the incentive to reduce any call written to the government by reducing taxable income. This can occur by not working as hard and earning less or by reducing reportable income in several ways.

Most important, as a result of the call-like nature of the government’s tax revenue function, corporations and other taxpayers have an incentive to reduce their expected tax burdens by reducing the value of the calls they write to the government. As the discussion in the last section suggests, taxpayers can reduce their expected tax burdens by reducing the volatility of their incomes. One way to reduce income volatility is through hedging. Another way (that applies to corporations) is by combining firms whose incomes do not move in lock step into conglomerates so they can file a single or consolidated return. In addition, because the government’s interest resembles a call option, the tax system is not neutral across investments. Other things equal, the tax system imposes a higher burden on more volatile investments than on less volatile investments with the same expected return. Unchecked, that will tend to cause capital to flow away from riskier investments and towards less risky investments. Absent some reason for

18 ROSS ET AL., supra note 3, at 582-4.

19 [We could have a footnote that suggests that convexity in the tax function, in fact, explains hedging and arguably provides a better explanation than a desire to smooth out accounting income.]
discouraging investments, this reallocation of capital is inefficient.

Moreover, these option elements create inconsistencies across individuals and firms because they reduce the expected return on an investment for some taxpayers and not for others (and for different amounts for different taxpayers). The greatest impact is on those with the largest kinks. Such inconsistencies are also inefficient because the taxpayer that values an asset the most on an after-tax basis might not be the one that values it the most on a before-tax basis. It is these behavioral influences that we will highlight in this Essay.

II. Schedular Options

Schedular options are payoffs in the tax law that resemble the payoffs from real options. Such payoff functions can be described as the economic equivalent of options with optimal exercise. In this Part, we will generally reverse engineer tax provisions to describe them by their economically equivalent options.

A. Three Simple Types of Schedular Options

The simplest types of options to describe come directly from the tax schedule.

1. A "Flat" Tax with Exemption: The Government’s Call Option on a Share of the Taxpayer’s Income

The clearest example of an option-like payoff from an income tax can be seen by considering a confiscatory income tax with an exemption. For example, consider a tax with a zero rate on the first $50,000 of income and a 100 percent rate on income over $50,000. Taxes, as a function of income, under such a tax can be graphed as shown in Figure 5. Except for scale, Figure 5 is identical to Figure 1 [call option payoff]. In both cases, the payoff is zero until a given point (the strike price) and then increases one dollar for every dollar increase in the underlying. Thus, economically, such a tax schedule is equivalent to the government owning a call option on 100 percent of the taxpayers income with a strike price of $50,000. The taxpayer is in the position of the writer of the option. Like a "European" style call option, the option can be exercised at a single point in time, here the end of the taxable period. The fact that the option exercise is automatic is immaterial. As with any cash-settled European option, exercise is always optimal if it is in the money.
The exercise or strike price is defined as the amount of money that the holder of the call option must pay the writer in order to exercise the call option. Thus, in the example, the strike price is the amount the government must pay the taxpayer to exercise its option to receive 20 percent of the taxpayer’s salary. The strike price therefore is $10,000 [=20 percent of $50,000].

Of course, tax rates of 100 percent are uncommon. Option payoffs, however, exist regardless of the rate. Consider, for example, the same tax structure, but with a more realistic rate of 20 percent. In that case, the government's economically owns a call option on 20 percent of the taxpayer's income with a strike price of $10,000. As can be seen in Figure 5, the payoff to the government is again kinked at $50,000 dollars. The differences is that following the kink, the payoff line has a slope of 0.2 rather than a slope of 1.0. The essential convexity, however, remains.

Figure 5--A Flat Tax with a $50,000 exemption

Typical financial call options have the property that a $1 increase in the value of the underlying will increase the payoff from the option by $1. For real tax options this is often not the case. More typically, a $1 increase will increase the payoff by the product of $1 and the tax rate. Thus, in the example, because the tax rate is 20 percent, the increase is only 20 cents. As a result, there is less convexity (less kink) in the tax schedule than with a typical option.

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20 The exercise or strike price is defined as the amount of money that the holder of the call option must pay the writer in order to exercise the call option. Thus, in the example, the strike price is the amount the government must pay the taxpayer to exercise its option to receive 20 percent of the taxpayer’s salary. The strike price therefore is $10,000 [=20 percent of $50,000].
Accordingly, the behavioral risk reducing effects will be larger, the higher the tax rate.\textsuperscript{21}

As the above discussion suggests, a simple tax schedule with an exemption amount, is similar to a call written by the taxpayer to the government. Such a call will encourage taxpayers to reduce risk. That incentive is greater, the higher the tax rate. It is also greater for taxpayers with incomes close to the exemption amount. Thus, the risk discouraging effects are not likely to be uniform across taxpayers.

2. Options Created by Increasing Marginal Tax Rates: The Government’s Second Call Option on the Incremental Share of Income

The government’s portfolio of call options grows when tax rates increase with income. Consider, for example, modifying the prior tax to include a 35 percent bracket beginning at $80,000. The government's payoff from such a tax can be shown in Figure 6. For incomes close to the kink at $50,000, the tax schedule can still be described as a call option on 20 percent of income with a strike price of $10,000. There is, however, now a second kink at $80,000 dollars. At that point, the government receives an additional 15 percent of the taxpayer's income. Economically, that can be seen as the government owning a second call option on fifteen percent of the taxpayer's income. The second option has a strike price of $12,000.\textsuperscript{22} Taken together, the government’s portfolio consists of two call options: the first on 20% of income with a $10,000 strike price and the second on an additional 15% of income with a $12,000 strike price. Thus, multiple increasing tax rates are economically equivalent to the government owning, and the taxpayer writing, multiple call options with different strike prices.

Once again, the behavioral effects will differ across taxpayers. Taxpayers closest to the point where the new rate comes into play ($80,000 income) will experience the greatest disincentive to avoid risk from the second option. For taxpayers who see no possibility of reaching this level (either because their incomes will be lower or higher than this amount), there is no incentive effect.

\textsuperscript{21} With tax rates below 100%, the strike price is not the price of the underlying at which exercise is optimal (as is the case for plain vanilla options). With real tax options, the strike price is the product of the tax rate and the price of the underlying at which exercise is optimal.

\textsuperscript{22} The exercise price is $12,000 [= 15\% \times 80,000].
3. Options Created by Declining Marginal Tax Rates:: The Taxpayer’s Call Option on a Share of its Income

While generally we think of tax systems having increasing rates, there are many examples -- some of which are discussed below -- where marginal rates decline. Consider, for example, the tax system in the prior example, but assume that the tax rate on incomes over $100,000 declines from 35 to 30 percent. Relative to the 35 percent rate, the taxpayer retains an additional five percent of income in excess of $80,000. Thus, the tax is economically equivalent to the government writing an option to the taxpayer on five percent of the taxpayer's income with a strike price of $5000. As a result, the tax schedule resembles a call option written by the government to the taxpayer.

There are now three call options: the government’s call on 20% of taxpayer income with a $10,000 strike price; the government’s call on an additional 15% of taxpayer income with a $12,000 strike price; and the taxpayer’s call on 5% of his income with a strike price of $5000.

Because the taxpayer holds the last call, the taxpayer’s incentive around $100,000 income is now to reduce, but to increase, risk. Thus, both increasing and declining marginal tax rates can be understood as creating call options. The difference is which party is the holder and the writer. Note further that the risk effects are not offsetting. A taxpayer with an income around $100,000, without any chance of falling below $80,000, has only the incentive to increase risk.

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23 The exercise price is $5,000 dollars [= 5% of $100,000].
B. Examples of Schedular Options in the U.S. Federal Income Tax

As should be clear from the discussion above, the progressive rate structure in the United States federal income tax creates options at each point that marginal tax rates increase. There are, however, many other features of the tax law that create, in effect, schedular options. Some of those features are discussed below.

1. Options Arising from the Lack of Loss Offsets

It is sometimes said that the government is your partner in business, but that it receives its interest without paying for it. The government’s position however is even more attractive than a partner without an investment. That is because the government shares in your income, but not in your losses. That last statement is something of an exaggeration: the tax code provides for loss carryforwards and carrybacks. Nonetheless, those relief provisions are imperfect (e.g., non-interest bearing and subject to expiration). As a result, even taking into account the relief provisions, there is still some convexity to the tax function. Expressed in other words, the failure to permit full refundability of losses creates a schedular option.

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24 Generally, references to the "income tax" refer to the United States federal income tax.

25 Internal Revenue Code (IRC) Section —.
This is easiest to see if there are no loss carryforwards and carrybacks and a flat tax at say 20 percent. In that case, the government holds a call on 20 percent of each taxpayer’s income with a strike price of zero. If the tax system also contains a zero bracket amount of say $50,000, then the government’s option would have a strike price of $10,000 [=20% of $50,000]. In either case, there is a very sharp kink at the price where it is just worth exercising the option. [This is the price of the underlying that equals the strike price divided by the tax rate.]

The loss carryforwards and carrybacks reduce the kink. If unused losses could be carried forward indefinitely and if the government paid market interest, there would be no kink: a one dollar loss would generate a tax saving with a present value of 20 cents. That would exactly equal the cost from a one dollar increase. When the marginal benefit and loss are equal, the payoff schedule is a straight-line, there is 180 degrees between any two points on the line, and no option like effect. 26

Since there is some chance the losses will expire unused and because the government does not pay interest, the expected value of a one dollar loss is less than 20 cents. Because the loss is worth somewhere between 0 and 20 cents, there is a kink but not as sharp of one. This is illustrated in Figure 7.

As Figure 7 suggests, the tax system is not similar to an option when the system provides for

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26 [This suggests that we need a measure of convexity and that it is this convexity that tells us how strong is the incentive to increase (or reduce) volatility.]
full loss offsets (dashed line). If losses cannot be used at all (dotted line), it is equivalent to a standard call option on 20 percent of the firm’s income with a strike price of zero. With incomplete loss offsets (dashed and dotted line), it falls somewhere in the middle and it more closely resemble the standard call the less valuable are the losses.

As described above, the option feature discourages firms from undertaking risky investment. It also introduces biases across firms. Firms that experience the sharpest kinks will be discouraged the most. This is likely to produce several undesirable consequences. It will discourage waste through conglomerations and hedging; it also implies that the firm that undertakes an investment might not be the most efficient at it, but merely the one for whom the tax cost is the least.

2. The Alternative Minimum Tax (AMT)

The alternative minimum tax (AMT) is another source of convexity. The income tax contains both a personal and a corporate AMT. Both AMTs generally require taxpayers to make a second calculation of their tax liability. The taxpayer's final liability is the greater of the regular tax and the AMT. The general approach of the AMT is to provide lower tax rates and a broader base (through fewer deductions and slower depreciation) than the regular tax. In the case of individuals, the AMT provides for statutory rates of 26 percent and 28 percent and a significant exemption. In the case of corporations, the AMT provides for a small exemption.

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27 The exemption is $45,000 for married filing jointly ($33,750 for unmarried individuals). The exemption level is not indexed, but was increased for 2003 and 2004 to $58,000 ($40,250 unmarried). The exemption is phased out beginning at incomes of $150,000 ($112,500 unmarried). The tax rate is 26 percent on net income up to $175,000 and 28 percent on income over that level. Due to the phaseout, the marginal rates are more complex. For example, for a married couple filing a joint return in 2005, the tax rate as a function of alternative minimum taxable income (essentially gross income minus deductions permitted for the AMT other than the exemption) is as follows:

<table>
<thead>
<tr>
<th>Starting Income</th>
<th>Ending Income</th>
<th>Marginal Tax Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$45,000</td>
<td>0%</td>
</tr>
<tr>
<td>$45,000</td>
<td>$150,000</td>
<td>26%</td>
</tr>
<tr>
<td>$150,000</td>
<td>$206,000</td>
<td>32.5%</td>
</tr>
<tr>
<td>$206,000</td>
<td>$330,000</td>
<td>35%</td>
</tr>
<tr>
<td>over $330,000</td>
<td></td>
<td>28%</td>
</tr>
</tbody>
</table>
The exemption level is $40,000, insignificant for a corporation of any size.\textsuperscript{28}

The AMT creates options in a variety of ways. To begin with, for a taxpayer who will be subject to the AMT in all events, the AMT acts like any other multiple rate income tax.\textsuperscript{29} Secondly, since the top marginal rate on the regular tax is greater than the top marginal rate on the AMT, at sufficiently high income (the "crossover point") the regular tax will always exceed the AMT. At the crossover point the marginal rate will change from the AMT rate to the higher regular rate. The effect of doing so is to create an additional call option written by the taxpayer to the government. The option would be on a percent of income equal to the difference between the two rates. Assuming this point occurs in the top bracket for individuals, the government’s call is an incremental 7 percent of income (at current rates). The strike price is equal to the product of the incremental tax rate and the crossover point.

Finally, consider the relationship between the regular tax and the AMT as disallowed deductions increase. Assume that a taxpayer is subject to the regular tax. As deductions increase, the taxpayer's liability decreases. Assuming, however, that the deductions are of a type

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure8.png}
\caption{AMT and regular tax as "income" increases}
\end{figure}

\textsuperscript{28} The exemption level is $40,000, insignificant for a corporation of any size.

\textsuperscript{29} For example, an individual taxpayer with a large amount of deductions permitted under the regular tax, but not under the AMT, would be subject to the AMT in essentially all events and could ignore the regular tax. Such a taxpayer would, in effect, have written a series of call options to the government with strike prices at: the exemption amount; the start of the exemption phaseout; and the beginning of the 28 percent bracket. See note [x] for a description of the AMT. In addition, the government would have, in effect, written a call option to the taxpayer at the end of the phaseout. See [discussion below] for a fuller discussion of phaseouts.
that are disallowed under the AMT, the increase in deductions will not lead to a decrease in the AMT liability. Thus, after a certain point, the AMT liability will exceed the regular liability. At that point, the taxpayer will switch to the AMT and there will be no further decrease in tax liability despite an increase in the disallowed deductions. See Figure 9.

As can be seen from Figure 9, the government's payoff function (i.e., tax revenues) is essentially the same as the payoff to the holder of the underlying and a put. In particular, the government can be viewed as holding a put measured by reference to the amount of the taxpayer's deduction. From put-call parity, we know that this can be expressed two ways, either treating the government as holding a claim on the AMT amount (B) with a call on the ordinary tax (C) or equivalently as holding a claim on the ordinary tax (S) with a put at the AMT amount (P). Either way, the government holds an option and so the AMT provides taxpayers with an incentive to reduce their volatility.

In addition, the AMT is likely to create inconsistencies across individuals. Those who expect either to be within or outside of the AMT will not be affected in the same way as taxpayers who are on the edge of the tax. The latter are more likely to be discouraged from undertaking risky investments by the AMT.

3. Baskets

Less obvious, but still examples of call options held by the government, are many of the baskets into which taxpayers are required to divide their income, gain, loss and expense. The best known such baskets are created by the distinction between ordinary and capital assets. Gains from ordinary assets are taxed at ordinary rates and losses are generally deductible (subject to incomplete loss offsets) at ordinary rates. Ordinary losses can also be used to offset capital
gains. Capital gains are taxed at reduced rates. Capital losses can offset capital gains, but they cannot be used to offset ordinary income. By dividing assets into baskets and limiting the ability of taxpayers to use one kind of loss to offset another kind of income, the tax law effectively gives the government a call over the income for which the loss is limited. Accordingly, because capital losses cannot be used to offset ordinary income, the government holds a call option on 15 percent of each taxpayer’s net capital gains.

Although the capital loss limitation is likely to be the best known basket, there are other baskets that also produce this kind of effect. These include baskets produced by the passive activity loss rules, the limitation on investment interest, and the limitations on foreign tax credits.

One consequence of these baskets is likely to be the introduction of substantial differences in effective marginal tax rates across individuals and corporations.

A result in finance that is often cited is that a portfolio of options is more valuable than an option on the underlying portfolio. An application of this result is that baskets create value to the government.

4. Section 1231 assets

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30 IRC Section 1(h)(1)(C) (15 percent maximum for individuals).

31 IRC Sections 1211(a) (corporations), 1211(b) (individuals).

32 For corporations, the government holds an option on 35 percent on the net income from the sale or exchange of capital assets ("capital income") with a strike price of zero. With individuals the situation is more complex. Individuals are permitted to use capital losses to offset up to $3,000 of ordinary income each year. Thus, for a top bracket individual (without any capital loss carryforwards), the marginal tax rate on capital income is 15 percent for capital income in excess of zero, 35 percent for capital income between minus $3,000 and zero, and zero percent for capital income under minus $3,000. Thus, the government owns an option on 15 percent of capital income with a strike price of minus $1050 [= 35% of $3,000]. The taxpayer owns an offsetting call option on 20 percent of capital income with a strike price of zero.

33 IRC Section 469.

34 IRC Section 163(d).

35 IRC Section 901 [confirm] (The FTC baskets used to be by country, but now are by type of income.)

36 CITE
Real or depreciable property used in a trade or business (and held by the taxpayer for more than one year) receives special tax treatment. Such property is characterized as Section 1231 property and is neither an ordinary asset nor a capital asset. Instead, each year each taxpayer calculates its net Section 1231 gain or loss. If there is a net gain, the net gain is treated as capital. If however there is a net loss, the net loss is ordinary. This has been described as “a heads you win, tails the government loses” type of rule. For individual taxpayers, the tax benefit can be substantial. Net gains are taxed at a maximum rate of 15 percent, whereas losses can be used to offset ordinary income and so can be worth as much as 35 percent.

With a 15 percent tax rate on gains and a 35 percent rate on losses, taxpayers have a strong tax-induced incentive to invest in Section 1231 assets. Thus, Section 1231 encourages individuals to invest in risky Section 1231 assets.37 Moreover, note that the discrimination effect across individual taxpayers is not as strong with Section 1231 as with other provisions. If the taxpayer has no other Section 1231 assets, then the tax payoff is a simple 35 percent on losses and 15 percent expense on gains. In addition, this payoff will be the same for any investor (at the maximum tax rate) and so will not depend on individual circumstances. To the extent then that this hypothetical is an accurate description of most investors, Section 1231 would not introduce any bias across individuals similar to that most schedular options do. Instead, the option would have the same incentive effect for all potential purchasers.

The situation however is more complicated once we introduce additional Section 1231 assets. For a taxpayer who expects to have a lot of Section 1231 assets sold at a gain, then the incremental tax saving from a loss is only 15 percent, not 35 percent, because Section 1231 gains and losses are netted.38 In this case, there is no option-like payoff only a flat payoff. The situation however is more complicated still because the taxpayer might be able to control when gain or loss is recognized and so can try to avoid soaking up Section 1231 losses with gains.39

5. Phase outs

In recent years, Congress has made extensive use of targeted tax benefits. In order to control costs and focus benefits on needy beneficiaries, Congress has also made extensive use of phaseouts. Provisions that employ phaseouts, among many others, include: itemized

37 Note that this incentive is nowhere near as strong for corporate investors because corporations do not have a preferential tax rate for capital gains.

38 If the taxpayer expects to have many Section 1231 losses, then the expected tax rate on a gain is 35 percent (the same as the saving on a loss) because the gain will offset losses that would have generated 35 percent savings.

39 See later discussion.
deductions; the earned income tax credit; and tuition benefits. Although the specific mechanics of each phaseout differ, the general effect of a phaseout is to raise the marginal rate once the phaseout begins and to reduce the marginal rate once the phaseout ends. Thus, in general, phaseouts create two kinks and thus two options. At the start of the phaseout the government holds a call option on a fraction of income equal to the increase in the marginal rate. The taxpayer holds an offsetting call option where then phaseout ends. Thus, taxpayers at the bottom of the range are discouraged from taking on risk, whereas those at the top are encouraged to do so.

6. Estate Tax Exemption

Although we have primarily focused on the income tax, examples of options can be found in other taxes, as well. The estate tax contains a large exemption (currently $1.5 million) and high tax rates (close to 50 percent). Thus, assuming a 50 percent estate tax with a $1.5 million exemption, the government’s interest is equivalent to a call option on 50 percent of the decedent’s estate at a strike price of $750,000. For taxpayers likely to have estates that are close to the exemption amount, the effective tax rate is much higher on accretions to wealth than on decreases.

Consider a taxpayer with one year to live and with an estate that would otherwise total $1.5 million. Assume this taxpayer who has a costless opportunity that has a 50 percent chance of making $300,000 and a 50 percent chance of losing $200,000. Taxes aside, the gamble is a good one, with an expected positive payoff of $50,000. Nonetheless, unless the taxpayer can spend the money or otherwise reduce the tax bite, the transaction yields an expected loss after taxes. Since the taxpayer faces a 50 percent estate tax on success and a 0 percent estate tax on failure, the after-tax value of the opportunity is a loss of $50,000, even though the before-tax value is a gain of $50,000. The estate tax can thus put a very strong kink into the tax functions of taxpayers who expect to die shortly and expect to have estates close to the exemption.

7. Social Security Maximum

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IRC Section 68.

IRC Section 151(d). [confirm]

IRC Section 38??

IRC Section xxx.

For 2004, the top marginal estate tax rate is 48 percent. See IRC Section 2001(c)(2). [confirm]. Exemption levels are provided in section 2003. [confirm]
A final example of a schedular option comes from the social security tax. Putting aside the question of social security benefits and including both the employer and employee portion of the tax, the social security tax is imposed at a rate of 12.4 percent on wage income up to a cap.\textsuperscript{45} The effect of the cap is to create an option written by the government and held by the taxpayer on 12.4 percent of wage income with a strike price of the cap. Since the option is held by the taxpayer, the social security cap encourages taxpayers with incomes near the cap to increase the volatility of their incomes.\textsuperscript{46}

III. Traditional Real Options

The Tax Code also contains within it traditional real options. Schedular options have payoffs that resemble the payoffs from options without formally requiring a party to actually exercise the option. Traditional real options differ from schedular options in that they are opportunities in the tax law that parties can either take or not. This creates more of a sense with traditional real options of exercising an option.

A. Some, but not Complete Information

An important difference between real and financial options is the information the option holder has when exercising the option. The producers of Shrek had an option to produce a sequel, Shrek II, if the original was successful, which it was. Under the traditional discounted cash flow method, the producers should have compared the expected cost of producing and marketing both movies with their total expected return before deciding to make the first movie. With a financial option, the holder does not have to decide whether to purchase the underlying asset, say Shrek II, until after the holder knows what it is worth. Most real options fall somewhere in the middle. The producers of Shrek did not have to decide on Shrek II until after Shrek finished its theater run and started selling in stores. At this point, before Shrek II is made, the option holder has a lot of information from Shrek, but it still does not know how much Shrek

\textsuperscript{45} For 2004, the social security cap is $87,900.

\textsuperscript{46} One way to increase volatility of income is to take a second job in a year where the taxpayer is likely to be over the cap. Due to the structure of the tax, however, the cap on the employer portion of the tax is imposed on a per employer basis. Thus, the taxpayer actually holds on option on 6.2 percent of income on overall wage income with a strike price at the cap and separate options on 6.2 percent of income from each employer with separate strike prices based on income from that employer only.

By using the full 12.4 percent rate we are adopting the common assumption that the incidence of both the employee and employer portion of the tax is on the employee. Even if that assumption is generally true, it is unclear that the employee, in fact, receives the benefit of the employer cap, particularly for incomes near the cap.
II will cost and how much it will earn at the box office. It is this intermediate level of information that characterizes most real options.

B. Examples of traditional real options

This section provides several examples from the tax law of traditional real options.

1. Individual Retirement Account (IRA) Rollovers

The tax law allows for two basic types of retirement accounts: individual retirement accounts (IRAs) and Roth or reverse (IRAs). With an IRA, a taxpayer can immediately deduct the money she contributes to her retirement account. When the taxpayer withdraws funds, she will pay taxes at full ordinary rates on the amount withdrawn. In contrast, with a Roth IRA, there is no deduction for funds contributed and no inclusion of amounts withdrawn. Under certain circumstances, most notably comparable sizes for the two accounts and constant tax rates, the two regimes are equivalent.

Several years ago, when the Roth IRA was introduced, Congress permitted taxpayers to roll over their traditional IRAs into the new Roth IRA. The tax cost of switching was that the taxpayer would have to pay tax at the time at her then current tax rate on the amount rolled over. In effect, the law gave taxpayers call options on the taxes they would owe with their IRAs. The strike price is the tax a taxpayer would pay upon roll over. As with other traditional real options, the taxpayer cannot wait until she withdraws the funds to consume and then go back and pay her earlier tax (possibly with interest). However, the taxpayer, even if she does not have valuable information on the future market value of her retirement account, might well have good information about her likely future tax rates. It is this information that she can exploit with the roll over.

2. Corporate Inversions

The corporate equivalent of the IRA rollover is the inversion. The U.S. tax system subjects domestic corporations to tax on their worldwide income. A company is a domestic U.S. corporation if it is incorporated in the United States. If it is not incorporated in the United States, the company is foreign, and it is taxed only on its U.S. source income. For companies that earn a substantial portion of their income abroad in low-tax jurisdictions, there can be a substantial tax benefit from being a foreign corporation.

Under U.S. tax law, domestic firms can reincorporate abroad in a transaction known as an inversion. Depending upon how the inversion is conducted, the inverting company or its shareholders or both will have to pay tax. In the most common transaction, the tax is paid by the
shareholders on their gains at long-term capital gains rates. This tax is a toll charge and it is in effect the strike price of the company’s call option to avoid paying U.S. taxes on its foreign source income that would escape tax after an inversion.

Once again, the option cannot be exercised after the income is earned and so all information is available. Instead, the option must be exercised with incomplete information. However, the inverting corporation is likely to have substantial information about the taxes its shareholders will pay (the strike price) and its future tax savings from inverting. There is some evidence to suggest that conversions are more common when stock prices have recently declined and so the strike price of the option is likely low.

3. Disqualifying Incentive Stock Options (ISOs)

An example of a traditional real option that allows for ex-post exercise after almost all information has been revealed is the disqualification of incentive stock options (ISOs). An employer who issues an ISO cannot take a deduction, and an employee who receives and exercises an ISO is not taxed until he sells the stock. At this time, he is taxed on the difference between the sale price and the strike price at capital gains rates. A nonqualified option (NQO) is an employee stock option that is not an ISO. Employers deduct and employees include the bargain amount (as ordinary expense and income) when the option is exercised. When the stock is sold, the difference between the sales price and the strike price is capital gain (or loss). For firms with high effective marginal tax rates, employer and employees will jointly prefer NQOs; for firms with effective marginal tax rates at or near zero, the parties will jointly prefer ISOs. A firm that is unsure what its tax status will be can ISOs and if it is later in a high bracket, it can pay its option holders to disqualify their ISOs.47

4. Real options generally

Interestingly, the tax law does not explicitly deal with real options. In many circumstances, the matter is addressed through the realization requirement. For example, the producers of Shrek did not have to recognize any income from the sequel while the first movie was raking in money, even though it was soon apparent that there would be a (very likely profitable) sequel. On the other hand, someone who sells a small, run down building for investment in a booming area might receive a lot of money for the option to tear the building down and build a larger one. The seller will be taxed on the option when she sells it and the buyer will receive basis for it. The basis rules do not explicitly address the option value, which will likely be allocated to the land.

47 This is usually done by having the employees sell the stock shortly after exercising their options. Because stock acquired through an ISO cannot be sold within a year, the sale will disqualify the ISO and cause it to be taxed as a NQO.
IV. Structural Options

This Part describes structural options. Structural options arise because the tax collection process takes place in stages, which allows one party to wait until the other party acts before acting.

Although structural options create more of a sense of exercising an option than do schedular options (the second party acting is akin to exercising an option), both kinds of options raise similar normative issues. Options create incentives for parties to influence the value of the options they write and hold. Specifically, there is an incentive to increase risk with held options and to reduce risk with written options. These actions are likely to reduce welfare by misallocating capital and creating inconsistencies across taxpayers.

A. Even-handed, but Noneconomic Rules Create Structural Options

Taxpayers have a structural option because they can plan in response to the tax laws as written by the government. As Learned Hand famously remarked,

Over and over again courts have said that there is nothing sinister in so arranging one’s affairs as to keep taxes as low as possible. Everybody does so, rich or poor, and all do right for nobody owes any public duty to pay more than the law demands: taxes are enforced exactions, not voluntary contributions. To demand more in the name of morals is mere cant.48

The value taxpayers get by structuring their transactions in response to the tax law arises because the government produces inconsistent and economically inaccurate rules. If the tax rules accurately and consistently measured income, taxpayers could not reduce their liabilities by crafting their transactions in response to the tax law. Under these circumstances, there would be little, if any, room for tax planning.

The government however writes many economically inaccurate tax rules. In many circumstances, the government intends to write even handed (if not economically accurate) laws. Such rules generate volatility inasmuch as they will sometimes generate more revenue and sometimes less revenue than an economically accurate tax. These rules also create options for taxpayers because the government first writes the law after which taxpayers engage in transactions and report their results. Because taxpayers respond to the rules, they can attempt to arrange their transactions by complying with a particular non-economic rule when it produces a favorable tax result and avoiding it when it does not. As a result, even-handed, but non-economic rules create options for taxpayers.

B. Examples of Schedular Options

This section describes various structural options in the tax law. The examples are mostly options that belong to the taxpayer, but also include options that are held by the government.

1. Hedging

One of the simplest examples of a structural option involves hedging. Many taxpayers who use raw materials in their business are subject to substantial risks of price changes. Such taxpayers can reduce their exposure to adverse price changes by entering into offsetting transactions in commodity futures markets. Suppose for example that Emeril uses sugar to produce syrup that he sells at a predetermined price. Emeril is obviously at risk of a sharp increase in the price of sugar, which would squeeze his profits by increasing his costs. To guard against this possibility, Emeril might enter into futures contracts to purchase a given amount of sugar at a predetermined price. If the price of sugar rises, Emeril’s gains on his commodity contracts will offset his business losses and conversely.

Gains and losses on assets used as hedges are generally treated as capital unless they are parts of a hedge, in which case they are ordinary. As an individual taxpayer, Emeril has a strong incentive to treat any gains from his commodity transactions as hedges in order to take advantage of the preferential tax rate for long-term capital gains (currently 15%). Emeril also has a strong incentive to treat any loss as not part of a hedge, so he can use the loss to offset ordinary income (currently taxed at 35%).

For many years, taxpayers had wide latitude to select how to categorize a transaction after it was completed. This led to the predictable result that most gains were long-term capital gains and most losses were ordinary. In effect, using current tax rates, an individual would face a 15 percent tax on gains and a 35 percent tax on losses. This is equivalent to owing tax at 35 percent, but also holding a call option on 20 percent of the gain with a strike price of zero. Such a situation obviously created a strong incentive for individual taxpayers to enter into commodity transactions that they could credibly claim either were or were not hedges as desired. That incentive arguably existed not only where the transactions reduced risk, but also where they increased it.

Under regulations that now apply to hedges, taxpayers are required to identify hedges the day

49 See Section 1221(a)(7), which removes hedges from the definition of capital assets.

50 This was largely the case under Corn Products Refining Co. v. Comm., 350 U.S. 46 (1955).
they enter into them. If the transaction is identified as a hedge, the taxpayer will receive ordinary income or loss; otherwise, it will receive capital gain or loss. That rule, in effect, takes away the option element by requiring the taxpayer to commit in advance to one or other tax regime (15 percent or 35 percent).

2. Realization and Timing

The best known source of structural options in the tax law is the realization requirement. In many circumstances, taxation requires a realization event (most commonly, a sale or exchange). Unrealized appreciation or depreciation is generally not taxable. The failure to tax appreciation and depreciation is a departure from the ideal of an income tax. If, however, sales were independent of whether an asset appreciated or depreciated, then the realization requirement would not substantially increase or decrease tax revenues relative to the economic ideal.

Of course, the realization requirement creates an incentive for taxpayers to hold onto appreciated assets and to sell depreciated assets. That incentive arises because the government does not charge interest on deferred taxes nor does it pay interest on deferred refunds. Accordingly, the effective tax falls with the holding period. This in effect creates an option for taxpayers who must choose whether to sell an asset and realize tax currently or hold onto the asset and defer tax. In effect, continuing to hold an appreciated asset is exercising the option to reduce the tax liability. The strike price is the cost of holding onto the asset.

That failure to pay interest is the source of the common advice to hold onto your winners and sell your losers. That advice is easiest to apply to publicly traded stocks and securities. Moreover, such securities are more valuable to taxable investors the more volatile they are in value. The advice to sell your losers and hold your winners also applies to investments in bonds, real estate and equipment and likely influences their values and investments in them.

The most extreme form of this timing option is the tax straddle. The taxpayer makes two

\[ 51 \text{ CITE.} \]

\[ 52 \text{ See IRC Section 1001.} \]

\[ 53 \text{ In fact, it would likely cause some decrease relative to the ideal because asset prices tend to increase over time, so on average the delay would defer tax.} \]

\[ 54 \text{ Constantinidies} \]

\[ 55 \text{ Strnad} \]
nearly perfect offsetting investments confident that one will go up and the other down. At year’s end, the winner is held, the loser is sold and replaced with a similar investment. This strategy produces a current loss that is offset by an equal gain sometime in the indefinite future. Such straddles were widely used in the 1970’s and early 1980’s. The idea behind the tax straddle is the creation of false volatility. The taxpayer is not exposed to any economic volatility, but the tax system perceived volatility.

The government has responded to straddles by deferring realized losses on straddles until the offsetting gains are realized. That approach eliminates the value of the option to the taxpayer by offsetting the benefit from the non-economic rule that the taxpayer is using (i.e., deferral of unrealized gain) with another noneconomic rule (i.e. deferral of realized loss) that is detrimental to the taxpayer. This is thus another example of creating and using non-economic rules to offset the taxpayer’s second mover advantage.

The government also responded to straddles by requiring taxpayers mark-to-market transactions in many assets that were used for straddles. Such a mark-to-market system eliminates the false volatility taxpayers created through selective realization.

Commentators have taken a more general approach. They seek to eliminate the benefit form the timing option by designing tax systems where there is no benefit from deferring tax. The best known example is the cash flow consumption tax. Another example is the Auerbach-Bradford retrospective tax. The first works by giving up on the taxation of capital; the second works by making sure that the safe return to capital is taxed in all events. Both approaches seek to eliminate the value of the taxpayer’s planning option by creating tax systems where it is possible to have economically accurate rules without the need to value nontraded property regularly. Thus, both approaches would remove the advantage taxpayers have from moving second.

3. Investment versus Owner Occupied Real Estate

Silver was often used because it was highly volatile and because the cost of carry was low. The latter quality implied that prices for delivery in different months moved in near lock step, which kept economic risk to a minimum.

IRC Section 1092.

IRC Section 1256.

Andrews

Auerbach, Bradford, Auerbach & Bradford.
Still another example that allows taxpayers to select their tax treatment after they have seen the results of their transactions applies to real estate. Gains and losses on investment real estate are capital from the first dollar. However, the first $500,000 of gain on a primary residence is excludable from income (and is thereafter capital) and losses are not allowed.  

Obviously, a taxpayer with highly appreciated property that she intends to sell shortly would want it to be taxed as an owner occupied home. Conversely, if the property depreciated sharply in value, she would want it taxed as investment property (or better still Section 1231 property). Depending on the nature of the property, it might be easy or difficult to change its character after substantial appreciation or depreciation has occurred. For example, if a taxpayer owns highly appreciated investment property that is suitable for her home, she can (by using that property as her home before she sells it) convert up to $500,000 of gain from taxable investment gain into untaxed gain. Conversely, if her home sharply depreciates, she can convert the loss from a nondeductible loss on her personal residence to a deductible capital loss (by moving out and renting the property). Obviously, the option here is more expensive and harder to exercise than with hedging transactions because it requires the taxpayer to change her behavior, not simply change how she characterizes a transactions.

4. The Tax Advantages of Successful Businesses

It is a common complaint that taxpayers who work for a living and invest in the public securities markets have to pay taxes often at very high rates on all of their earnings, but taxpayers who succeed in their own businesses have many opportunities for tax mitigation. Successful business people can deduct many of their costs of earning income, even though these expenses contain large personal elements and many would have been incurred anyway without a deduction. Such deductible expenses include home offices, automobiles, travel, entertainment and food and lodging. Successful business people can also more easily defer income, pass wealth to their children at substantially lower effective estate tax rates, and take advantage of larger qualified account limits. Very successful business people can sell their businesses at substantially reduced long-term capital gains rates. The above are all examples of call options that independent business people hold.

61 IRC Section 1221(b)(2)(A).

62 The cost of exercising this option is the incremental cost of living in the appreciated dwelling unit for at least two years to qualify for the exclusion. See IRC Section 121(a), which permits an exclusion of gain from tax only if the taxpayer has used the property as her principal place of residence for 2 out of the last 5 years.

63 But see Gentry & Hubbard arguing that there are higher taxes on successful businesses.
5. Interest Rate Timing

Not all planning options involve ex-post characterizations. Many tax planning options are exercised by entering into one transaction rather than another. For example, for many years (cash method) individual bondholders were taxed on the realization method. This produced a substantial deferral of tax when an (accrual) corporation issued zero-coupon bonds to individual taxpayers. (The reverse rarely happened because it produced a substantial acceleration of tax.)

The government responded to the revenue loss from this option by requiring pro-rata accrual. This method, which is akin to simple interest, reduced but did not eliminate the option. (It also reversed the tax reducing strategy because it accelerated deductions relative to an economically accurate tax.) Because the option was still valuable, the cost to the government was still substantial, and so the government soon responded again. This time the government required constant yield, which is akin to compound interest.\textsuperscript{64} Compound interest is closer to economic reality than pro-rata accrual, but it is still not entirely economically accurate. As a result, there is some exploitation of the option, but not so much that the authorities consider it to be a problem.

The history of the interest rules is an example of the government moving from a highly inaccurate set of rules to much more accurate rules. More accurate rules reduce the value of the taxpayer’s option from going second by reducing volatility in the tax treatment of transactions.

Moreover, the government’s failure to adopt a more accurate set of rules can be understood as the decision (so far) not to exercise an option that it holds. It is costly to draft, administer and comply with a more accurate set of interest rules. These costs are the strike price of a call option on the additional revenue stream. And it does not make sense for the government to exercise the option now if the dividend stream (the current tax saving) is small.

6. Tax Shelters

Tax shelters often aggressively exploit economically inaccurate rules. For example, in ACM, the promoter used a noneconomic basis rule for contingent installment sales to accelerate large amounts of taxable income that it could direct to a tax indifferent party. This phantom income was offset by a large tax loss for ACM. Such a tax shelter is an extreme use of false volatility.

In fact, many tax shelters can be thought of as options. Taxpayers often entered into aggressive transactions uncertain how their transactions would fare if challenged, but confident that they could resolve the dispute by agreeing to pay any contested liability plus interest, but without having to pay penalties. Such transactions were options. The premium was the fees and expenses the taxpayer incurred in connection with the transaction. The government’s recent get-tough approach to corporate tax shelters seeks to make the payoff function look less like an option by giving taxpayers more to lose.

\textsuperscript{64} IRC Sections 1271 – 1275 and accompanying regulations.
The government has responded to the option elements of tax planning in many ways. It has written many non-economic rules that are biased against taxpayers, such as the capital loss rules and the contingent installment sales rules in ACM. Many of these attempts backfire because taxpayers turn the noneconomic rules against the government. It has also introduced and expanded a series of broad doctrines, such as anti-abuse rules, the step-transaction doctrine, the economic substance doctrine, anti-marketing rules, etc. In effect, these rules seek to eliminate the option element by responding not to the abuse, but to the option element of its exploitation.

For example, the step-transaction links together two or more steps into fewer steps that produce the same result. When applicable, the step-transaction doctrine effectively eliminates the alternative and less direct route for tax purposes. In other words, the step-transaction doctrine takes away the value of the option to pursue the same result through a more circuitous route by taxing the indirect route identically with the more direct route.65

The economic substance doctrine works in a similar way. The economic substance doctrine eliminates the tax saving (option value) of a piece of a transaction if the taxpayer’s economic exposure from a tax advantaged piece of the transaction is minimal.

The above doctrines are judicially created. In recent years, the government has been making increasing use of statutory provisions. For example, the anti-abuse rules work by saying if the option value is too great, the taxpayer cannot get the benefit of the more attractive treatment. In the last few years, Congress has also enacted anti-marketing provisions. If a promoter tries to sell the option value to a taxpayer, the purchaser cannot get it.

7. The Audit Process

After taxpayers file their returns, the government then selects returns to audit and from that group it chooses which cases to pursue. The ability to challenge returns is an option in the government’s hands. The decision to examine a return is the purchase of a real option. The cost of the option is the out-of-pocket cost of the examination and the expected foregone revenue from not selecting another return. The exercise price is the cost of pursuing the claim to collection once there is reason to believe that more tax is due.

The audit option—allows government to concentrate its funds where they will do the greatest job. An interesting question is whether the government uses its position as a real option and values it accordingly.

65 The government has explicitly done this in the mergers and acquisitions area by issuing guidance which form of nontaxable reorganization would apply to transactions that could take place in several ways.
V. Conclusion

[To Be Written]