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The Taxation of Private Equity Carried Interests: Estimating the Revenue Effects of Taxing Profit Interests as Ordinary Income

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I. Introduction

During the summer of 2007, the hot issue in tax circles has been the debate over the tax treatment of carried interests held by the managers of private equity funds. Private equity firms receive a share of the profits – typically 20 percent – earned by the funds they manage. Under current law, the owners of private equity firms are taxed at capital gains rates – generally 15 percent – on those profits. As a result, Warren Buffet and others have noted that the principals of some of the most successful private equity firms pay a smaller share of their income in taxes than do many middle income Americans. In the spring and summer of 2007, the newspapers were filled with editorials and opinion pieces on the tax treatment of carried interests. Most of these pieces argued that carried interests are compensation for services and should be taxed as ordinary income. Many of those pieces characterized the current tax treatment of carried interests as a massive give-away. In the summer of 2007, Congress held hearings on the tax treatment of private equity. Except for representatives from the private equity industry, most of the witnesses urged Congress to tax the managers of private equity funds more heavily. Even academics are writing about the tax treatment of private equity.[1] Most academics are urging Congress to tax carried interests as ordinary income.[2] As Victor Fleischer has noted, there appears to be an emerging consensus among all but the private equity industry itself that the tax treatment of carried interests is unjustifiably low.[3] Yet there are other voices emerging.

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[1] Much of the attention given to the tax treatment of private equity can be traced to the recent work of Victor Fleischer. Victor Fleischer, Two and Twenty: Taxing Partnership Profits in Private Equity Funds, University of Colorado Legal Studies Research Paper Series (March 2006, rev. March 11, 2007). Other earlier works that address the taxation of carried interests include Ronald Gilson & David Schizer, Understanding Venture Capital Structure: A Tax Explanation for Convertible Preferred Stock, 116 Harvard Law Review 874 (2003); Joseph Bankman, The Structure of Silicon Valley Start-Ups, 41 UCLA Law Review 1737 (1994); Leo Schmolka, Taxing Partnership Interests Exchanged for Services: Let Diamond/Campbell Die, 47 Tax Law Review 287 (1991); Laura Cunningham, Taxing Partnership Interests Exchanged for Services, 47 Tax Law Review 247 (1991); Henry Ordower, Taxing Service Partners to Achieve Horizontal Equity, 46 Tax Lawyer 19 (1992); Mark Gergen, Pooling or Exchange: The Taxation of Joint Ventures Between Labor and Capital, 44 Tax Law Review 519 (1989).

[2] E.g. Testimony of Mark Gergen, Carried Interest, Sen. Fin. Cmt., July 11, 2007; Testimony of Joseph Bankman, Carried Interest II, Sen. Fin. Cmt., July 31, 2007; Testimony of Darryl Jones, Carried Interest II, Sen. Fin. Cmt., July 31, 2007; Fleischer, supra note []; Schmolka, supra note []; Posting of Daniel Shaviro on Start Making Sense, May 15, 2007; Posting of Linda Beale on A Taxing Matter, June 21, 2007; Posting of Victor Fleischer on Conglomerate, July 31, 2007 (listing other names as well as supporters of reforming the taxation of carried interests).

[3] Posting of Victor Fleischer on Conglomerate, July 31, 2007 (listing supporters of reforming the taxation of carried interests and claiming a consensus among academics for reform).

Not just the private equity industry with its dire predictions if carried interests are taxed as ordinary income,[4] but more measured voices that see the tax and economic issues as more complex.[5] All of these parties have an interest in understanding how much additional revenue will be collected if the taxation of carried interests is changed. Accordingly, in this essay, I attempt to quantify the tax benefit to private equity managers of the current treatment of carried interests and the additional tax that the Treasury would collect if that treatment were reformed.

II. The Economics of Private Equity Funds

Private equity funds raise capital in order to purchase and invest in new and existing businesses. These funds are private in the sense that the ownership interests are not traded on the public stock exchanges. Instead, private equity funds raise capital outside of the public financial markets by going directly to large investors.

Private equity funds can be divided into two broad categories: buyout funds and venture capital funds. Buyout funds generally purchase established companies or divisions of established companies. They acquire these companies for cash, often increasing their debt level, and seek to restructure and improve the acquired businesses. In contrast, venture capital funds generally invest in start-up businesses. They seek to make early- and mid-stage investments in businesses that are trying to commercialize new and developing technologies. Venture capital funds, thus, invest in smaller, riskier businesses than do buyout funds and they tend to invest in more companies than do buyout funds.

Whether a venture capital or a buyout fund, the typical private equity fund is structured as a partnership or a limited liability company. The fund's investment capital comes from its limited partners. These investors are often wealthy individuals, charitable foundations with large endowments, pension funds, and some corporations, especially insurance companies and banks.[6] The private equity fund is managed by a private equity firm. The private equity firm is also the fund's general partner and it decides which investments the fund will make. Although the limited partners provide nearly all of the capital,[7] they do not contribute all of their capital when they enter into the partnership. Instead, they commit to invest a certain amount of capital over time. That period of time, called the investment period, might continue for 5 to 7 years. Over the investment period, the general partner calls upon these commitments as the partnership needs funds in order to make investments in portfolio companies.

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[4] E.g., Testimony of Bruce Rosenblum, Carried Interest, Part II, Sen. Fin. Cmt., July 31, 2007; Testimony of Kate Mitchell, Carried Interest, Sen. Fin. Cmt., July 11, 2007.

[5] Chris Sanchirico, The Tax Advantage to Paying Private Equity Fund Managers with Profit Shares, working paper, June 25, 2007; Howard Abrams, Taxation of Carried Interests, 116 Tax Notes 183 (2007); David Weisbach, Professor Says Carried Interest Legislation is Misguided, 116 Tax Notes 505 (2007).

[6] Private Equity Council, Public Value: A Primer on Private Equity 11 (2007).

[7] The general partner frequently provides some capital. There are both tax and non-tax reasons for doing so. See Andrew Needham & Anita Adams, Private Equity Funds, Tax Management Portfolio 735, at A-18.

Once they have satisfied a capital call, investors in private equity funds generally have little or no liquidity. Most private equity investments are made with an eye towards capital appreciation, not income, and the limited partners typically have no right to sell or transfer their interests or to redeem them. Instead, the limited partners are compensated as the fund disposes of its investments either by selling the companies and distributing the proceeds to the investors or by taking the companies public and distributing marketable securities to its investors.

The distribution of proceeds and the allocation of expenses over the life of the fund are governed by the partnership agreement. A typical private equity fund provides for an annual payment from the partnership to the general partner of a management fee. The typical fee is between 1 and 2 percent and it is intended to compensate the manager for its direct expenses in managing the fund, seeking out new investments, and providing consulting and other services to the portfolio companies.[8]

The partnership agreement will also provide the managers with a carried interest. The carried interest gives the fund's manager a right to receive a share of the profits generated by the fund without the obligation to provide capital or the risk of sharing losses.[9] Although there are variations, the typical private equity carry is set at 20 percent. Thus, the typical private equity firm will receive 20 percent of the net profits, but none of the losses, from the private equity funds that it manages.[10]

III. The Taxation of Private Equity Funds[11]

Private equity funds are structured as pass-through entities. That is to say, the fund pays no tax. Instead, all items of income, gain or loss, and expense earned or incurred by the fund are passed through to the fund's partners.

Consider the limited partners first. They do not receive a deduction when they contribute capital to the fund or the fund makes an investment. Instead, they receive basis in their interests. Because most funds invest for appreciation, there is often little income over the life of the investment. Instead, the investors are looking to make a profit when the fund sells its investments or takes its portfolio companies public.

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[8] See Needham & Adams, supra note [], at A-23.

[9] The term carried interest arises because the capital of the limited partners "carries" the general partner's interest. Needham & Adams, supra note [], at A-17.

[10] For discussion of some of the multitude of variations in the way private equity funds can structure the carry, see Needham & Adams, supra note [], at A-7 – A-12; Kate Litvak, Venture Capital Limited Partnership Agreements: Understanding Compensation Arrangements, working paper (2004)

[11] Although hedge funds share many characteristics in common with private equity funds, including the standard 20 percent carry, this essay deals only with private equity funds. Because the typical hedge fund trades regularly, it generates short term capital gain, which is taxed at the same rate as ordinary income. Thus, the tax issues raised by the carry with private equity funds are different from those raised with hedge funds.

Because investments made through private equity funds are almost always held for longer than one year, a limited partner's gain or loss from an investment in private equity is long-term capital gain or loss. Accordingly, if there is a gain, it is taxed at the reduced rate that applies to long-term capital gains, which is capped at 15 percent. Similarly, if there is a loss, it is a long-term capital loss. Such a loss can offset capital gains, but not other income. Thus, such losses are likely to provide a tax benefit of at most 15 percent.

Furthermore, the carry paid to the general partner reduces the gain allocated to the limited partners. Thus, the carry reduces the limited partners' long-term capital gain. It, thus, follows that the carry provides a tax benefit to the limited partners at 15 percent.

Under current law, the receipt of a carried interest by the general partner is not a taxable event. The general partner does not include the interest in income when it is received.[12] Furthermore, no tax is due on the carried interest until profits are realized. When a private equity fund sells an investment, any gain or loss on that investment is realized. The gain, which is presumably long-term capital gain, is passed through to the partners. A general partner with a 20 percent carry will receive a payment equal to 20 percent of the fund's profits, and will have a corresponding amount of gain allocated to it. Thus, the incomes of private equity managers are taxed at the reduced rate that applies to long-term capital gains and are deferred until sale.[13]

The discussion above describes the tax treatment of carried interests to both general partners and limited partners. Much of the debate over the current treatment of carried interests focuses on the tax benefit to the general partners of that treatment. Critics argue that general partners are performing services and being compensated for those services, but are being taxed at the reduced rate available for capital gains. That treatment is widely considered to be inconsistent with basic federal income tax principles. It is also viewed by some as a massive give away to some very wealthy individuals.

However, in order to understand the tax consequences of a tax policy it is often misleading to focus on only one party to a transaction or to look at only one piece of a larger transaction. As tax scholars have come to recognize, the tax advantage or disadvantage of a particular decision cannot be assessed by simply looking at one piece of a transaction in isolation. Rather such assessments must be made for all parties together, after stripping away extraneous matters, and upon a careful review of the economics.

The method for making such accurate tax comparisons was developed 25 years ago by Merton Miller and Myron Scholes.[14] In recent years, that method has been picked up by various legal scholars, and it is now starting to become part of the regular discourse.[15]

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[12] Needham & Adams, supra note [], at A-17.

[13] Charles Kingson, however, suggests that under current law carried interests are ordinary income. See Statement of Charles Kingson, Carried Interest II, Sen. Fin. Cmt., July 31, 2007.

[14] Merton H. Miller & Myron S. Scholes, Executive Compensation, Taxes and Incentives, in Financial Economics Essays in Honor of Paul Cootner 190-201 (1982).

[15] That method was introduced into the legal literature by Michael Knoll and David Walker. Michael S. Knoll, the Tax Efficiency of Stock-Based Compensation, 103 Tax Notes 203 (2004); David I. Walker, Is

The essence of that method is to compare two otherwise identical compensation and investment packages that differ only in terms of their tax consequences. As that comparative technique is currently employed in the tax literature, its exercise involves two principal steps:

First, because the tax consequences of a transaction cannot be understood by just looking at how one party to a transaction is taxed, it is important to employ an all-parties perspective. If a tax benefit to one party is offset by a tax determent to another party, then there is no net benefit to the parties from using the structure. In such cases, no party is likely to be helped or hurt by the transaction's tax treatment. Instead, the parties are likely to undo the effect of the transaction's noneconomic tax consequences through the terms of the transaction. Thus, the tax consequences of a transactional structure should be evaluated globally, for all parties to a transaction, not just for one party in isolation.

Second, because it is easy to confuse the tax and non-tax consequences of equity compensation, it is also important to hold the non-tax consequences of the compensation method constant across alternative transactions. Most simply, paying fund managers in immediate cash will put cash into their hands currently, but it will tie their compensation to the performance of their fund. In contrast, providing managers with a carried interest will not generate any current cash, but they will be exposed to the performance of their fund. Accordingly, in order to match the non-tax consequences of using equity compensation, a fund manager who is paid in cash upfront should be assumed to invest in the fund in order to match the cash flow over the life of the fund of a manager who receives a carried interest.[16] More generally, in order to understand the consequences of a particular compensation decision, the non-tax consequences of that decision must be held constant.[17]

Equity Compensation Tax Advantaged? 84 Boston University Law Review 695 (2004). Since that time, it has been used by other scholars and applied to a range of issues. See, e.g., Eric Chason, Deferred Compensation Reform: Taxing the Fruit of the Tree in its Proper Season, 67 Ohio State Law Journal 347 (2006); Michael Knoll, The Section 83(b) Election for Restricted Stock: A Joint Tax Perspective, 59 SMU Law Review 721 (2006); Ethan Yale, Investment Risk is Important When Assessing the Tax Benefit of Deferred Compensation, working paper (2007); Sanchirico, supra note [].

[16] Such a comparison often entails borrowing or lending to match both cash flow and economic exposure.

[17] There is sometimes a third element to the comparative technique. See Yale, supra note []. As Evsey Domar and Richard Musgrave showed more than 60 years ago, the income tax does not tax the return to risk-bearing as long as the tax system taxes above and below average returns symmetrically. A taxpayer can eliminate the tax on risk by increasing his investment in the risky asset by 1/(1-t), where t is the tax rate on incremental gains and losses. Evsey D. Domar and Richard A. Musgrave, Proportional Income Taxation and Risk Taking, 58 Quarterly Journal of Economics 388 (1944). Although there are some questions how well the result holds in the economy at large, there is a broad consensus that sophisticated and wealthy taxpayers can and do eliminate the tax on the risk premium. Lawrence Zelanek, The Sometimes Taxation of the Returns to Risk-Bearing Under a Progressive Income Tax, 59 SMU Law Rev. 879, 895 (2006). As applied to the managers of private equity funds, many of whom are wealthy and sophisticated, that result implies that investors in private equity funds are unlikely to pay tax on the return to risk bearing. Instead, they will pay tax only on the risk-free return.

Chris Sanchirico was the first scholar to apply the comparative method to compensating private equity fund managers with a carried interest.[18] As Sanchirico shows, the tax benefit to the general partner of being paid with a carried interest instead of cash consists of two pieces. First, characterizing the tax payment as capital gain instead of ordinary income saves the general partner the capital gain preference on the carry.[19] Second, deferring taxation from the grant date until realization defers tax on the present value of the carry until realization.[20] Moreover, as Sanchirico shows, the first benefit is proportional to the general partner's capital gain preference and the second benefit is proportional to the general partner's tax rate on capital gains.[21]

Sanchirico also shows that the general partner's tax benefit from being paid with equity (as opposed to immediate cash) is offset by the detriment to the limited partners of not paying the general partner in cash. If instead of receiving a carried interest, the general partner was paid its fee in cash upfront, the limited partners would deduct that fee.[22] In that case, the payment of the fee would generate a tax benefit to the limited partners at ordinary income rates. Thus, the benefit to the general partner of paying it with a carried interest instead of cash – conversion from ordinary income into capital gain and deferral of tax from grant until realization – is offset by the detriment to the limited partner – conversion and deferral.[23]

Accordingly, if the tax rates (both for ordinary income and capital gain) are the same for the general partner as for the limited partners, then there is neither a net benefit nor a net loss from the current tax treatment of carried interests. In such circumstances, reforming the taxation of carried interests – by treating receipt as current ordinary income and payment as current ordinary deduction – will not increase net tax collections. The additional tax collected from general partners will offset the reduced tax collections from limited partners.[24] In such circumstances, we would expect the economic terms of the deal between general partners and limited partners to change to reflect the new tax rule. A shift of the tax burden away from limited partners and towards general partners will likely lead limited partners to pay more (before tax) to general partners to compensate for the shift in tax burden.[25]

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[18] Sanchirico, supra note [], at 10-18, 21-35.
[19] Sanchirico, supra note [], at 13-16.
[20] Sanchirico, supra note [], at 13-16.
[21] Sanchirico, supra note [], at 16-18, 31.
[22] Sanchirico assumes that the fee would not be capitalized and amortized over time, but deducted immediately. The law on whether a payment is to be deducted or capitalized and amortized is deeply confused. I assume throughout most of this essay that the fee would be immediately deducted. If it is capitalized and amortized over time, then the benefit to the limited partners is smaller. See discussion infra.
[23] Following Sanchirico, I assume that a limited partner would receive an immediate deduction if the general partner was paid its fee in cash upfront. I consider the possibility that this expense must be capitalized and amortized later. See discussion infra.
[24] Sanchirico, supra note [], at 24-30. Fleischer also recognizes this. Fleischer, supra note [].
[25] For investments already made, however, there will be no such offsets. The limited partners will not agree to them. Thus, changing the tax rule will transfer wealth from general partners to limited partners.

Of course, the conclusion that there is no net change in tax collections from treating carried interests as current ordinary income assumes that the limited partners together pay tax at the same rate as the general partners.[26] That is likely to be true for limited partners that are wealthy individuals – the source of less than 20 percent of the capital raised from limited partners.[27] Where that is not true, there can be a net increase in tax revenue from changing the tax treatment of carried interests. Most simply, for untaxed limited partners, such as pension funds and endowments, which provide at least 50 percent of capital,[28] changing the tax treatment of carried interests has no direct tax consequences. In such circumstances, assuming no restructuring of transactions, the proposed change would increase taxes on private equity investments. The amount of the increase would be the increased tax paid by general partners because there is no direct effect on untaxed limited partners.[29] After such a change, the economic terms of the deal might change to share the burden between general partners and limited partners.[30]

Another example involves corporate limited partners – the source of less than 20 percent of the capital for private equity funds.[31] Corporations do not have a capital gains preference; they pay tax at the same rate on ordinary income and capital gain. Corporate limited partners would, thus, get no benefit from treating the payment of carried interests as an ordinary deduction. They are generally indifferent between offsets of capital gain and ordinary deductions. For such investors, the only consequence of reforming the taxation of carried interests would be to accelerate the tax from realization to grant. Because the benefit of acceleration depends on tax rates, for corporations in the 35 percent tax bracket, the benefit from accelerating tax exactly offsets the detriment to the general partners. However, the detriment to the general partners of recharacterizing ordinary income to capital gain is not offset by any benefit to corporate limited partners. Thus, in such circumstances, the net effect of reform is to increase tax collections.[32]

IV. Estimating the Tax Benefits from Carried Interests

That brings us to the heart of this essay, estimating the tax consequences of treating carried interests as deferred capital gains versus current ordinary income. Carried interests are currently taxed to the general partners who receive them as long-term capital gain when realized. Commentators have proposed taxing general partners on their carried interests as ordinary income. Under some proposals, such income would continue to be taxed when it is realized. Under other proposals, it would be taxed when granted and any subsequent gain or loss would be treated as long-term capital gain or loss when realized. In this Part, I consider the revenue effects of reforming the tax treatment of

[26] As shown by Sanchirico, the key is to the equality is that the capital gain preference is the same for both groups. Sanchirico, supra note [], at 16-18, 31.
[27] Public Value, supra note [], at 11 (Exhibit 6). The data given in Public Value do not separate out domestic and foreign investors. Foreign investors generally escape tax even if they are wealthy individuals.
[28] Public Value, supra note [], at 11 (Exhibit 6).
[29] Sanchirico, supra note [], at 26-27.
[30] Once again, existing deals will not change.
[31] Public Value, supra note [], at 11 (Exhibit 6).
[32] Sanchirico, supra note [], at 26.

carried interests assuming that private equity funds continue to use the same transactional structure. In the next Part, I speculate on how the structure of private equity funds might change in response to a change in the taxation of carried interests and what impact that change might have on revenue collections.

There are three categories of limited partners to consider. First, there are wealthy individuals – less than 20 percent of capital. For them, the tax benefit of the proposed change exactly offsets the detriment to the general partners. Thus, for 20 percent of the capital, there are no net tax consequences from changing the tax treatment of carried interests. Second, there are tax-exempt and foreign investors, neither of which pay any U.S. income tax on their earnings from investments in private equity – more than 50 percent of capital. Such limited partners are not affected directly by the change in tax treatment because they do not pay taxes. Thus, for transactions with tax-exempt limited partners, the consequences of changing how the carry is taxed depends solely on the consequences to the general partners. For such investors, the change has two adverse consequences: it converts what would have been capital gain into ordinary income and accelerates taxation from realization to grant. Third, there are corporations that are limited partners – less than 20 percent of capital. As for them, the switch is costly because of the recharacterization, but not because of the timing.[33]

One of the arguments against taxing carried interests at the time they are granted is that they are too speculative to value for tax purposes.[34] Yet it is possible to estimate their value. Although twenty percent is the standard carry, there are variations.[35] Moreover, not only does the carry percentage vary across funds, but the way the carry is calculated also varies across funds.[36] That variation suggests that general partners and limited partners enter into these contracts in competitive markets. Firms that provide more valuable services charge more and those that provide less valuable services charge less. That, in turn, suggests that private equity firms are not leaving money on the table, but rather they are entering into contracts that pay them what they are worth. Those contracts are also probably close to the maximum amounts that the limited partners would be willing to pay them.[37] Thus, the carry can be valued as the present value of the future stream of payments.[38]

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[33] About 10 percent of the capital comes from funds of funds, which aggregate investors' capital and invest in multiple funds. Public Value, supra note [], at 11 (Exhibit 6). In the calculations, I treat these investors as tax exempt to compensate for the failure of the data to separate foreign and domestic wealthy investors (only the latter pay tax).

[34] See Statement of Peter Orszag, Carried Interest, Sen. Fin. Cmt., July 11, 2007.

[35] See Litvak, supra note []; Ludovic Phalippou, Investing in Private Equity Funds: A Survey (2007); Andrew Metrick & Ayako Yasuda, The Economics of Private Equity Funds (July 1, 2007).

[36] See Litvak, supra note []; Phalippou, supra note []; Metrick & Yasuda, supra note [].

[37] Representatives of the private equity industry often say that many of their members regularly turn down capital and that they are undercompensated given the value that they produce for clients. Economists, however, are skeptical. See, e.g., Phalippou, supra note []. Nonetheless, if the limited partners' interests are worth more than they pay, then the carried interests of general partners are also worth more than my calculations imply. In that case, the additional revenue from reforming the tax burden on carried interests would be greater than implied below.

[38] Consider a simple example. Assume a single one-year investment with a 20 percent carry. Assume the market interest rate is 10 percent and that the investment is completely riskless. The investment costs

As others have noted, a carried interest is effectively a call option.[39] A call option gives the holder the right but not the obligation to purchase an asset at a specified price, called the exercise or strike price. The carried interest is an option on the performance of the fund. In the usual case, it is the right to acquire twenty percent of the fund for twenty percent of the capital. The value of an option is a function of a series of variables, including strike price (S), asset price (P), volatility (V) and time to expiration (T). Thus, we can write C = C (S, P, V, T). Moreover, if the fund acquires the asset for P_0 and the general partner receives a carried interest that is worth C, then in order for the limited partners to be as well off with the fund as investing on their own, then the underlying asset must be worth $P = P_0 + C$ when it is acquired. Accordingly, by solving for C, we can solve for the value of the carried interest.[40]

The best known method for valuing a call option is the Black-Scholes option pricing equation. I arbitrarily set the strike price, S, at $100. In most but not all private equity funds, the strike price is set at the cost of acquisition without a hurdle rate or preferred return to the limited partners.[41] Thus, P_0 is also $100, which means that P = $100 + C.

The key parameter in the Black-Scholes equation is volatility. The more volatile the underlying asset, the more valuable is a call on that asset. The reason why the call increases with volatility is because very large returns lead to large profits, but losses – whether small or large – lead the option to expire unexercised. Accordingly, because volatility increases payoff when the option expires in the money and has no impact on payoff when the option expires out-of-the-money, the value of a call option increases with volatility.

Data for V come from several sources. The Black-Scholes equation is often expressed in a way that uses the annual standard deviation of the price of the underlying asset. For the typical NASDAQ stock, V is 60 percent a year. For the typical NYSE stock, it is 30 percent a year. Private equity funds usually invest in smaller and riskier companies; they also use more leverage than most public companies. Most funds invest in more than one company and the carry is calculated based on the performance of the portfolio, not for each portfolio company separately.[42] The risk of a portfolio of assets, as measured by standard deviation decreases as the square root of the number of assets. Thus, if a typical

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$1000. In order for the limited partners to be willing to pay $1000 to participate in the private equity fund that owns the investment, the investment must pay $1125 in one year. In that case, $25 or twenty percent of the $125 gain will be paid to the general partners. That will leave the limited partners with $100 gain and $1000 return of capital. Thus, if the investment earns 11.25 percent, the limited partners will earn 10 percent on their capital. The problem with simply grossing up the return by one minus the carried interest is that investments in private equity are risky and the carried interest does not participate in the downside, only the upside.

[39] E.g., Josh Lerner & Antoinette Schoar, The Illiquidity Puzzle: Theory and Evidence from Private Equity, 72 Journal of Financial Economics 3 (2004); Metrick & Yasuda, supra note [].

[40] The approach below follows that of Metrick & Yasuda, supra note [], who use option pricing techniques to value private equity contracts.

[41] For a discussion of the different ways that such payments are structured, see Needham & Adams, supra note [], at A-7 – A-11.

[42] Thus, the carry represents an option on a portfolio and not a portfolio of options (one on each company).

fund would invest in 9 portfolio companies, the risk of the portfolio, measured by its standard deviation, would be one third of the risk of a single company in the portfolio. The typical, private equity fund, makes about 12 investments.[43] However, venture capital funds usually invest in riskier companies. They also make more investments, closer to 25 than to 12 investments.[44] These effects are likely to offset one another. In the text, I have assumed a volatility of 20 percent for the typical fund.

The value of the call option also depends on the time until maturity. The call option is an increasing function of the time to maturity. Although there is no express time limit to the carry, limited partners have expectations about how long their funds will be invested before they are repaid. Most funds have a life expectancy for any individual investment of between 4 and 7 years.[45]

There is one more parameter that is needed to calculate the value of the carry as a call option. That parameter is the risk-free interest rate. I used an interest rate of 5 percent, which is in line with recent short-term taxable government interest rates.

The above information is sufficient to calculate the value of the carry as a call option using the Black-Scholes formula. Using Excel's numerical methods, I calculated the value of the carry for terms ranging from 4 to 7 years. These results are provided below.[46]

Table 1
Value of Carried Interest
(as a percentage of invested capital)

Term (years)	4	5	6	7
Value of carried interest	5.91%	6.87%	7.76%	8.6%

As Table 1 shows, the value (at grant) of the carried interest for a typical private equity fund, assumed to have a volatility of 20 percent and a term for each investment between 4 and 7 years, ranges from about 6 percent to about 8.5 percent of the capital managed by the fund.[47]

That range can be translated from a percentage of investment capital into dollars by multiplying it by the amount of capital invested in private equity funds. There is substantial volatility in the amount of capital private equity funds raise each year. Prior to the current year, private equity funds raised more than $200 billion in 2000 and 2006, but less than that in all other years.[48] Thus, an estimate of $200 billion invested

[43] Metrick & Yasuda supra note [].
[44] Metrick & Yasuda, supra note [].
[45] Joy Ferguson, Sponsor-to-sponsor Deals Raise Investor Eyebrows, Bank Loan Report (Aug. 9, 2004) (5 to 7 years); Iain McMurdo, Cayman Islands: Private Equity Funds—An Overview of the Market, Trends and Opportunities, Monday Business Briefing (Sept. 27, 2006) (4 to 7 years).
[46] In the appendix, I provide results for other assumptions.
[47] These results are in line with those reported by Metrick & Yasuda, supra note [] (Table V).
[48] See Orszag, supra note [], at 6 (figure 1).

each year is well above historical averages, but below the current rate of investment. Thus, using the $200 billion figure, the aggregate value of carried interests granted each year is between $12 and $17 billion.[49]

The next step is to go from the value of the carried interest to the revenue consequences of different possible tax treatments for the carry. I consider three alternative tax treatments:[50]

1) The current tax treatment – the carry is long-term capital gain to the general partner and an offset to long-term capital gain to the limited partners at realization.

2) Character change only – the carry is ordinary income to the general partner and an offset to ordinary income to the limited partners at realization.[51]

3) Character and timing change – the carry is ordinary income to the general partner and an offset to ordinary income to the limited partners at grant and subsequent changes in value are taxed as long-term capital gain to the general partner and as an offset to long-term capital gain by the limited partners.

For each of the three different possible tax treatments for the carried interest, I calculated the present value of the taxes paid by the general partners at the grant date. Under current law, the general partner's carry is taxed upon realization as long-term capital gain. Thus, the general partner will pay the federal government 15 percent of the realized value of its carry when it is paid. That is equivalent to taxing the general partner upfront at 15 percent on the present value of its carry and exempting the general partner from taxation on any gain or loss on the remaining 85 percent of its carry. Thus, the present value of the tax paid by the general partner is 15 percent of the present value of its carried interest.

I apply that same logic to the possibility of taxing the carry as ordinary income upon realization. Using the top ordinary income tax rate of 35 percent, the present value of the general partner's tax is 35 percent of the present value of the carried interest. Thus, the tax cost of the carry to the general partners and the additional tax revenue collected by the government is 1-1/3 times as much as the amount collected under current law.

The last possibility is subject to two interpretations. First, it can be thought of as taxing the carry at ordinary income tax rates when received and treating any subsequent gain or loss as long-term capital. Alternatively, it can be thought of as paying the general partner in cash and having the general partner purchase a twenty percent capital interest in the partnership. In either event, the general partner will include the value of the carry in income immediately and pay tax at the 35 percent rate. The general partner will then

[49] Because the total amount of capital invested in private equity might be as much as $1 trillion (see Orszag, supra note [], at 5) that suggests that the aggregate value of all carried interests as of the grant date is between $60 and $85 billion.
[50] For a discussion of these alternatives, see Orszag, supra note [], at 11-17.
[51] H.R. 2834, introduced by Rep. Levin and others would tax carried interests in this manner.

have a basis in the carry equal to the amount taken into income. Upon realization, the general partner will take the value of the carry into income and offset that value with basis. These amounts are taxed at the 15 percent long-term capital gains rate. The present value of the former is 15 percent of the value of the carry; the present value of the latter is that value at vesting discounted (at the risk-free interest rate) to the grant date.[52]

The results are presented in the following table: [53]

Table 2
Tax Collections from General Partners Under
Alternative Tax Regimes for Carried Interests
(as a percentage of invested capital)

Term (years)	4	5	6	7
Current Treatment	0.89	1.03	1.16	1.29
Character Change Only	2.07	2.4	2.72	3.01
Character and Timing Change	2.23	2.63	3.01	3.38

Table 2 gives the present value of tax collections from general partners as a function of total capital invested under different assumptions.[54] Accordingly, the tax consequences of changing the law are given by the differences between rows. Thus, the additional tax revenue that the government would collect from the general partners if the carry were taxed as ordinary income is the difference between the last row (character and timing change) and the second row (current treatment). That difference is about 1.3 percent of invested capital for a 4-year holding period and about 2.1 percent for a 7-year holding period. Assuming $200 billion is invested each year in private equity funds, the additional tax collected would amount to between $2.6 billion and $4.2 billion a year. If, however, only the character is changed, the additional tax collections would be between $2.4 billion and $3.4 billion.

Table 2 also suggests that for the general partners the larger item is whether the carry is taxed as ordinary income or capital gain. The additional revenue that the government will collect (compared with the current situation) if the carry is taxed as ordinary income is substantially larger than the additional revenue that it will collected if the carry is also taxed upon grant. According to Table 2, the character change accounts for about 70-85 percent of additional tax revenue, whereas the timing change accounts for only about 15-30 percent. As a share of capital invested in private equity funds, accelerating taxation increases tax collections between 0.16 and 0.37 percent of invested capital. That translates into $320 million to $740 million a year.

[52] This calculation, thus, relies on the Domar-Musgrave result. See note [], supra.
[53] All tax revenue calculations in this essay are the present value of tax collections as of the date of grant.
[54] Because the capital invested by the general partner is often a small portion of the capital invested by the limited partners, I have ignored it in making my collections. Instead, I assume that 100 percent of the capital comes from the limited partners.

The calculations in Table 2 looked only at the cost to the general partners of reforming the tax law. Table 2 did not take into account the value to the limited partners of changing the character and timing of the carry. Under current law, the tax carry offsets the limited partners' long-term capital gain. If the carry is treated as ordinary income, it will generate an ordinary deduction to the limited partner. Unless it is deferred, the carry will generate a deduction for the limited partners at the same time as it is included by the general partners.[55]

Assuming that (federal income tax paying) wealthy investors account for 20 percent of the capital in private equity funds, then the value of their deductions is 20 percent of the value of the tax collections from the general partners. It, thus, follows that the additional tax collections from changing the character of carried interests from capital gain to ordinary income would fall (from between $2.4 billion and $3.4 billion) to between $1.9 billion and $2.8 billion.[56] As a fraction of invested capital, the additional tax revenue is about 1 to 1.5 percent of that capital. Assuming that tax paying corporations account for another 20 percent of capital, then the value of their increased deductions from accelerating the taxation of carried interests is 20 percent of the value of additional tax collections from general partners if both character and timing are changed over just a change in timing. Accordingly, the additional tax from changing both the character and timing of carried interests would fall (from between $2.6 billion and $4.2 billion) to between $2 billion and $3.2 billion.[57] That is about 1 to 1.6 percent of invested capital.

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[55] For a discussion of some of the ways that the limited partners' deductions might get suspended, see Sanchirico, supra note [], at 30-35.

[56] These values are calculated as follows: for a 4-year holding period, the present value of the tax collected from general partners is 0.89 percent of capital under the current treatment and 2.07 percent if carried interests are taxed as ordinary income. That difference is 1.18 percent of capital. Assuming 20 percent of limited partners are tax paying individuals, the more valuable deductions will save them 20 percent of that difference or 0.24 percent of capital in taxes. Thus, the incremental tax revenue is 0.94 percent of capital. Assuming $200 billion in capital invested yearly, the additional tax comes to $1.9 billion. For the 7-year holding period, the tax collected currently is 1.29 percent and it rises to 3.01 percent if the character is ordinary. The difference is 1.72 percent and 20 percent of that difference is .34 percent. Thus, the additional tax is 1.38 percent of capital. That implies an annual increase in taxes of $2.8 billion.

[57] These values are calculated as follows: for a 4-year holding period, the present value of the tax collected from general partners is 0.89 percent of capital under the current treatment, 2.07 percent if carried interests are taxed as ordinary income when realized, and 2.23 percent if the carry is taxed currently as ordinary income. The first difference (between current treatment and changing character only) is 1.18 percent of capital. And the second difference (between current treatment and changing both character and timing) is 1.34 percent. Assuming 20 percent of limited partners are tax paying individuals, the more valuable deductions will save them 20 percent of the second difference or 0.27 percent of capital in taxes. Assuming another 20 percent are tax paying corporations, the accelerated deductions will save them 20 percent of the difference between the first and second differences (the incremental tax from accelerating taxation) or 0.03 percent of capital. Thus, the additional tax revenue from general partners is 1.34 percent of capital and the reduction in tax revenue from limited partners is 0.3 percent of capital. Thus, the incremental tax revenue is 1.04 percent of capital. Assuming $200 billion in capital invested yearly, the additional tax comes to $2 billion. For the 7-year holding period, the tax collected currently is 1.29 percent and it rises to 3.01 percent if the character is ordinary and it is increased further to 3.38 percent if the timing is also accelerated. The first difference is 1.72 and the second difference is 2.09. The difference between the differences, the incremental tax on general partners from accelerating tax, is 0.37 percent of capital. Thus, the additional deductions of wealthy investors reduces tax collections by 0.42 percent of capital and the additional

The above analysis assumed no change in structure and no change in the composition of the limited partners. If the structure of private equity funds does not change in response to tax reform, the composition of the limited partners likely will change. Wealthy individuals will probably invest more and tax-exempt parties will probably invest less.[58] Those changes can be expected to erode further the additional tax collections from reform.

V. Structuring Deals After a Change in the Tax Law

The discussion above assumes that private equity transactions will continue to be structured after any change in the tax treatment of carried interests as they have been structured to date. That is unlikely. Transactional structures are likely to change in response as tax rules change. Those changes are likely to reduce additional tax revenues still further.

Howard Abrams has argued that the current tax treatment of private equity transactions could be achieved even if the carry was taxed as current ordinary income to the general partner upon grant through a simple change in the structure of private equity funds with no change in the underlying economics.[59] Instead of paying a carry, Abrams suggests that limited partners pay 80 percent of the acquisition cost for an 80 percent share of capital and profits and lend the general partners 20 percent of the acquisition cost, which the general partners would contribute to the partnership in exchange for their 20 percent interest. The limited partners' loan to the general partner would be nonrecourse and secured by the general partner's partnership interest. In order to be respected, the loan must pay interest at the market interest rate. Abrams hypothesizes an interest rate of 6 percent. In order to match the current transactional structure, the partnership would pay the general partners a fee equal to their interest payments to the limited partners. The expense for that fee would be allocated to the limited partners and so would offset their interest income from the loan. The result is the economic equivalent of the current arrangement and the tax consequences, if respected, would match the current tax treatment. Thus, if courts respected Abrams' loan transaction, there would be no tax consequences from a change in law. The only effect is that the lawyers would draft private equity fund agreements differently to support a different legal form for the same economic deal.[60]

Abrams proposal is intriguing, but the transaction he describes is problematic. As devised by Abrams, the purpose for the transaction is to allow the general partners to achieve the same economics and tax treatment of a carried interest – the right to receive

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deductions of corporations reduces taxes by 0.07 percent of capital. Thus, the additional tax collected is 1.6 percent of capital. That implies an annual increase in taxes of $3.2 billion.

[58] Wealthy and taxable individuals are likely to shift some of their investment capital from hedge funds into private equity funds and foreign individuals and tax-exempt entities are likely to shift some of their capital in the opposite direction.

[59] Abrams, supra note [], at 186.

[60] Abrams, supra note [].

20 percent of the profits with the tax on that income deferred and imposed at the reduced rate for long-term capital gains. The reason why the transaction is problematic is that the loan is not at market. In fact, it is not possible for the limited partners simultaneously to provide the general partners with an upside profit potential, no obligation to share in the losses, and loan them the money to make that investment on market terms.

With Abrams proposed structure, the general partner is investing in the partnership on the same terms as the limited partners. The general partner contributes 20 percent of the capital and receives 20 percent of the sale proceeds. Similarly, the limited partners' contributions and interests are proportionate. They contribute 80 percent of the capital and receive 80 percent of the sale proceeds. However, for the 20 percent of the capital that the limited partners lend (nonrecourse) to the general partners, the limited partners bear all of the losses. Their gain, however, is capped – in Abrams' example – at 6 percent a year. Thus, the loan is a less attractive investment than a direct investment in the private equity fund. Accordingly, each limited partner would rather the other limited partners made the loan and that it did not. Thus, the loan cannot be said to bear a market interest rate.

Moreover, that problem cannot be cured simply by raising the interest rate to 8 or 10 or even 20 percent. In order to provide the limited partners/lenders with a market return – the same return that they earn on their capital contributions – the general partner/borrower must pay any and all profits on its 20 percent interest over to the limited partners/lenders. (In other words, what makes Abrams proposed transaction appear to work is an artificially low interest payment that disguises the fee paid to the general partners as the purchase of a capital share.) That would leave the general partners without any profits interest. Presumably, such a profits interest would have to be provided directly and so would be taxed immediately and at ordinary income tax rates.[61]

Although Abrams' proposed structure is unlikely to be respected, because it, in effect, disguises the service payment through an artificially low interest rate, Abrams is certainly right that transactional structures will change in response to a change in the tax law. However, before discussing potential changes in private equity fund structures, note that for an existing fund, the structure cannot change unless both the limited partners and the general partner agree. If the law changes to make the carry ordinary income to the general partner and an ordinary expense to the limited partner, and there is not adequate transition relief, then the law is changing the tax treatment and hence the economic agreement embodied in previously negotiated deals. When the general partners and limited partners are all wealthy individuals, then the government's increased collections from the general partners will be offset dollar for dollar by decreased collections from the limited partners. In such circumstances, there is no change in net tax collections, but

[61] The analysis in the text suggests that the proposals by Leo Schmolka and Victor Fleischer to treat a carried interest as an interest free loan from the limited partners that the general partner invests in the partnership (what Fleischer calls the cost-of-capital approach) should produce ordinary income only, not a mix of ordinary income and long-term capital gain, as its proponents suggest. That is because the market interest rate for such a loan (which is the ordinary income component) would be the general partner/borrower's entire return from the investment.

there are transfers from general partners to limited partners. Of course, not all limited partners are wealthy individuals: many private equity investors are tax indifferent – pension funds, foreign investors, and nonprofits. In such circumstances, the tax change will raise revenue from the government, but it also will likely extract more revenue from general partners in the short run than in the long run. Because the economic incidence of a tax does not depend upon whom it is assessed, but rather on the elasticity of supply and demand between the transacting parties, it is unlikely that all of the tax will be borne by the general partners in the future. However, for existing funds, that will be the case.

Furthermore, there are some changes in structure that are likely to occur if the carry is treated as ordinary income. First, where the limited partners are taxable, the simplest solution is to have the limited partners make an additional, tax deductible payment to the general partner that covers the latter's tax. For example, if the carry were taxed at 35 percent when realized, then increasing the carry from 20 percent to 30.8 percent would leave the economic arrangement unchanged for limited partners who were wealthy U.S. individuals.[62]

Second, treating the carry as service income might allow general partners to defer tax on a portion of their income by reinvesting their carried interests. That is, in effect, what happens with hedge funds and it lowers the effective tax rate of hedge fund managers below 35 percent. Moreover, the reduction in effective tax rate increases with the length of time the funds are invested. Given the nature of private equity funds as separate entities from the private equity firm that manages them and because each fund has a finite life of 10 years or so, it might be feasible for private equity fund managers to defer tax on their carried interests until realization (if the government were to seek to tax them immediately), but it might not be possible for them to defer tax beyond the life of the fund.[63]

Third, because most limited partners would get no benefit from deducting the carry against their ordinary income,[64] private equity firms might look to transfer those deductions to their portfolio companies. Although most of the limited partners are not subject to tax, the portfolio companies in which private equity funds invest almost always are. For such companies, the payment of a contingent fee to a private equity firm in exchange for its assistance in selecting the directors, hiring the managers, and helping to restructure and operate the business would likely qualify as an ordinary and necessary business expense. That expense might be immediately deductible, or at least deductible

[62] The adjustment is somewhat more complicated when the timing is also accelerated. In that case, the limited partners would make a cash payment to the general partners at grant equal to the general partners' tax (and the limited partners' tax saving) at the ordinary income tax rate grossed up by one minus that tax rate. There also would be a payment in the opposite direction at realization equal to the general partners' tax saving from basis (and limited partners' tax increase because of the lost offset) at the capital gains tax rate grossed up by that tax rate. See Sanchirico, supra note [], at 23.

[63] One possibility for extending deferral beyond realization is to extend the life of private equity funds, to allow the limited partners to cash out at certain points, and to then raise new capital for old funds.

[64] Tax-exempt and foreign limited partners are indifferent to taxes and domestic corporations are indifferent between an offset to capital gain, as under current law, or a deduction, under various proposals.

when paid, as are salaries and other forms of compensation.[65] Alternatively, the company might have to capitalize that expense and amortize it over time. If such expenses were capitalized, they would most likely be recovered using straight-line amortization over a 10-year period.[66] Using a 5 percent discount rate, the present value of the tax savings with such an amortization schedule are 77 percent of their face value. For a corporation that is otherwise taxable at 35 percent, the value of that expenditure is the same as an immediate deduction at 27 percent.

The key question raised by the structure described above is what value, if any, would the deduction from paying the carry – whether taken immediately or allowed over time – have to the portfolio company? That depends upon various features of the portfolio company, including its capital structure, its future performance, and its available sources of tax shelter. If the managers of private equity funds are confident that their successful portfolio companies can avoid the corporate income tax, then the deduction will have little or no value.[67] In such circumstances, the structure will not be utilized because it does not create any value for the parties and the additional tax collections are as described in Part IV.

Alternatively, if successful portfolio companies are likely to pay the corporate income tax at full marginal rates (35 percent), then the benefit from such a structure can be substantial. Not only is the deduction for the payment of the carry utilized, but because it is utilized by a portfolio company, as opposed to a limited partner, the recapture of that deduction is deferred indefinitely. That is because few free-standing Subchapter C corporations are sold in taxable asset deals – the only circumstance where corporate level tax is paid by the acquired corporation.[68] The only additional tax paid upon realization that is a result of the company deducting the cost of the carry is the additional tax paid by the partners when the fund sells the portfolio company. I estimate the present value of that tax to be about 5 percent of the deduction.[69] It, thus, follows that the present value of the tax saving for a portfolio corporation that pays the carry and is taxed at 35 percent is

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[65] Such an expense would then be allowable as a deduction under Section 162.

[66] Section 197.

[67] For example, if off-the-shelf tax shelters were readily available, the companies would be effectively untaxed and the deductions would have no value. Similarly, if the capital structure and operations of such firms were such that they would not have taxable income for many years even if they were successful, the deductions would have little value. Alternatively, if the company if successful would be generating large amounts of taxable income while it paid down its debt, the structure would effectively shelter the income used to pay down debt and would be very valuable.

[68] See Myron Scholes et al., Taxes and Business Strategy chap. 14 (3d ed. 2005).

[69] This is calculated as follows. The general partner's receive 20 percent of the profits and the remaining 80 percent is split according to the capital contribution. Thus, wealthy individuals receive 16 percent of the profits as do corporations. The 20 percent share received by general partners is taxed at 35 percent and so contributes 7 percent to the tax rate. The 16 percent share received by wealthy individuals is taxed at 15 percent and so contributes 2.4 percent. And the 16 percent share received by corporations is taxed at 35 percent and so contributes 5.6 percent. Adding up all of the pieces, gives a tax rate of 15 percent. That 15 percent tax rate is not applied to the deduction, but only to the after-tax savings from the deduction. Thus, because the deduction generates a tax saving at 35 percent, the additional tax is 35 percent of 15 percent or about 5 percent.

30 percent of that carry.[70] If instead of being deducted immediately the expenditure is capitalized and amortized over time, then the value of the tax saving to the portfolio corporation is 77 percent of the tax paid by the general partners. The present value of the tax is then about 4 percent and so the tax saving is 23 percent of the carry. In either case, the tax savings of portfolio companies from the structure will exceed the additional tax collected from general partners on their carried interests – 20 percent of the carry.[71] That difference provides leeway for those companies that cannot use all of their deductions as they are allowable.

If the structure described above is viable and valuable, it would offset a substantial portion – possibly more than the full amount – of the additional tax that would be raised from general partners if carried interests were taxed as ordinary income (whether or not their taxation was also accelerated). Thus, it is unclear whether reforming the taxation of carried interests will produce the increased revenues described in Part IV, have no impact on net tax collections, or increase taxes somewhat, but by an amount less than that described in Part IV. The answer to that question depends upon the value to portfolio companies of the deduction from paying carried interests.[72]

VI. Conclusion

This essay is the first academic attempt to estimate the revenue consequences of changing the tax treatment of private equity fund managers' carried interests.[73] It, thus, seeks to answer the question how much additional tax revenue will the government collect if carried interests were taxed as ordinary income and accelerated to the date of grant. Assuming annual investments by limited partners of $200 billion, no change in the composition of limited partners, and that the structure of private equity funds does not change, I estimate that taxing carried interests at ordinary income rates and accelerating taxation to grant will raise an additional $2 billion to $3 billion a year – between 1 and 1.5 percent of invested capital. Of that amount, accelerating taxation accounts for 10 to 30 percent of the increase; the rest comes from changing the character.

It is, however, likely that the structure of private equity funds will change if the tax treatment of carried interests is reformed.[74] One possibility is that private equity funds will shift the obligation to pay the carry from the limited partners to the portfolio companies themselves. Assuming that successful companies can use the deduction – an important assumption that is not free from doubt – the tax saved by the portfolio companies will approximate the additional tax paid by the general partners. It is, thus, possible that there will be little or no net increase in tax collections from taxing carried

[70] The calculations in this paragraph assume that carried interests are treated as ordinary income and expense when they are paid.
[71] The additional tax paid by the general partners is a multiple of the capital gains preference [20 percent]; the additional tax saving is a multiple of the corporate tax rate [35 percent].
[72] That empirical question deserves attention.
[73] As of August 2007, the government has not released a revenue estimate for H.R. 2834.
[74] If the structure does not change, it is likely that the composition of the limited partners will change and private equity funds will raise less capital.

interests as ordinary income and accelerating taxation to the grant date once the structure of private equity funds adjusts in response.

Appendix

The revenue consequences of changing the tax treatment of carried interests from long-term capital gain taxed upon realization into ordinary income taxed upon receipt depends upon several variables. One of the most important of those variables is the volatility of the underlying private equity fund. That, in turn, depends upon several variables, including the volatility of the underlying companies, the correlation of returns across those companies, the number of companies in the portfolio, and the manner in which the carry is calculated. Because volatility will differ substantially from fund to fund, I have recalculated the cost to the general partners of changing the tax treatment using different volatilities. This appendix gives the present value of the additional taxes paid by the general partners as a percentage of total capital contributed by the limited partners for volatilities of 10 percent, 20 percent, 30 percent, and 40 percent. As can be seen below, the value of the carry and the additional tax paid by the general partners increases with volatility.

Table A – 1
Tax Collections from General Partners Under
Alternative Tax Regimes for Carried Interests
(Assuming Volatility of 10 percent)
(As a Percentage of Total Capital Contributed by Limited Partners)

Term (years)	3	4	5	6	7	8
Value of Carry	3.71	4.69	5.63	6.52	7.38	8.20
Current Treatment	0.56	0.7	0.84	0.98	1.11	1.23
Character Change Only	1.30	1.64	1.97	2.28	2.58	2.87
Character and Timing Change	1.37	1.77	2.15	2.53	2.90	3.27

Table A – 2
Tax Collections from General Partners Under
Alternative Tax Regimes for Carried Interests
(Assuming Volatility of 20 percent)
(As a Percentage of Total Capital Contributed by Limited Partners)

Term (years)	3	4	5	6	7	8
Value of Carry	4.88	5.91	6.87	7.76	8.60	9.38
Current Treatment	0.73	0.89	1.03	1.16	1.29	1.41
Character Change Only	1.71	2.07	2.40	2.72	3.01	3.29
Character and Timing Change	1.81	2.23	2.63	3.01	3.38	3.74

Table A – 3
Tax Collections from General Partners Under
Alternative Tax Regimes for Carried Interests

(Assuming Volatility of 30 percent)
(As a Percentage of Total Capital Contributed by Limited Partners)

Term (years)	3	4	5	6	7	8
Value of Carry	6.23	7.40	8.46	9.41	10.30	11.11
Current Treatment	0.94	1.11	1.27	1.41	1.1.54	1.67
Character Change Only	2.18	2.59	2.96	3.30	3.60	3.89
Character and Timing Change	2.31	2.79	3.23	3.6	4.05	4.43

Table A – 4
Tax Collections from General Partners Under
Alternative Tax Regimes for Carried Interests
(Assuming Volatility of 40 percent)
(As a Percentage of Total Capital Contributed by Limited Partners)

Term (years)	3	4	5	6	7	8
Value of Carry	7.63	8.95	10.11	11.15	12.09	12.95
Current Treatment	1.14	1.34	1.52	1.67	1.81	1.94
Character Change Only	2.67	3.13	3.54	3.90	4.23	4.53
Character and Timing Change	2.83	3.37	3.87	4.33	4.76	5.16