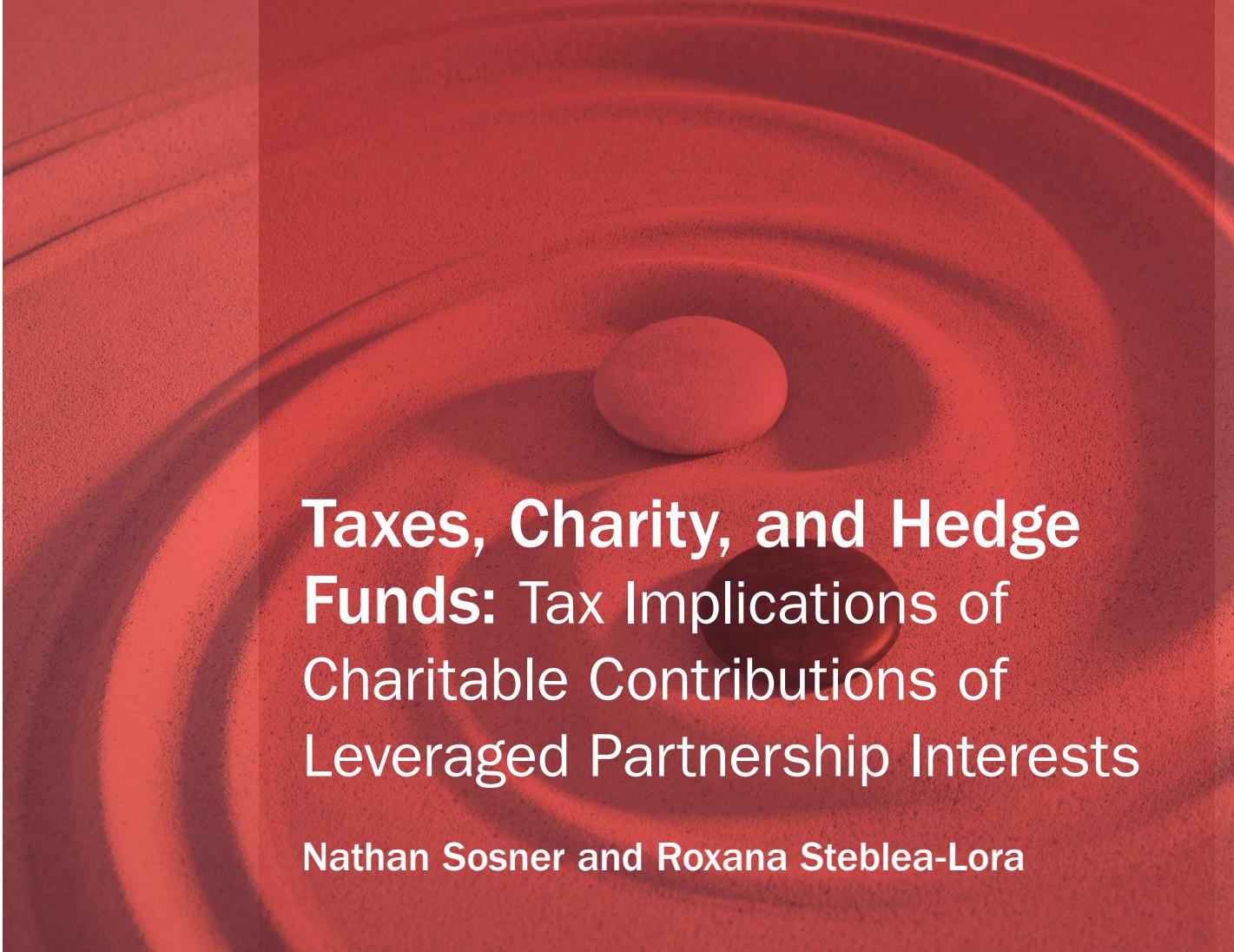


The Journal *of* Wealth Management



Taxes, Charity, and Hedge Funds: Tax Implications of Charitable Contributions of Leveraged Partnership Interests

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SUMMER 2022

JWM.pm-research.com



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KEY FINDINGS

- New regulations now require many investment partnerships, such as hedge funds, to allocate nonrecourse liabilities to their limited partners. For tax-efficient partnerships, this allocation of nonrecourse liabilities could result in recognition of capital gains by the limited partners when they contribute their partnership interests to charity.
- Although investors in tax-efficient leveraged partnerships might recognize capital gains upon charitable contribution, a charitably inclined investor still derives a high level of benefit from delaying the contribution, investing in a tax-efficient partnership, and later contributing the partnership interest to charity.
- For an investor in a tax-efficient leveraged partnership, it is better to contribute partnership interest to charity, rather than to liquidate it and contribute the after-tax proceeds. However, even when contribution of the partnership interest is not possible, and thus the investor must liquidate and contribute the proceeds, delaying the contribution in order to invest in a tax-efficient partnership is still beneficial despite the tax cost of liquidation.

ABSTRACT

As a result of recent Treasury regulations, investment partnerships, such as hedge funds, might be required to allocate nonrecourse liabilities to their limited partners (LPs). This allocation of nonrecourse liabilities could result in recognition of capital gains by LPs when they contribute their partnership interests to a charity. We explain how such taxable gains upon charitable contributions arise and quantify how punitive they might be. Although investors in tax-efficient leveraged funds organized as investment partnerships are likely to recognize capital gains upon charitable contributions, when these capital gains are evaluated in the context of tax benefit and pre-tax return opportunities, they do not present a hurdle for tax efficient investing. For charitably inclined leveraged fund investors, the benefits of a fund's tax efficiency greatly outweigh the capital gain tax liability they might incur upon contribution of their fund holdings to a charity.

As a result of recent Treasury regulations, investment partnerships, such as hedge funds, might be required to allocate nonrecourse liabilities to their limited partners (LPs). This allocation of nonrecourse liabilities could result in recognition of capital gains by LPs if they contribute their partnership interests to a charity.

Charitably inclined investors might view this capital gain recognition upon charitable contribution as puzzling and punitive.

In this article, we explain how recognition of capital gains upon contribution of leveraged partnership interest to a charity might occur and how to quantify the effects of such gains.¹ As a brief preview of our main result, these capital gains are not nearly as punitive as one might think: A charitably inclined investor in a leveraged tax-efficient partnership is more than compensated for these capital gains by a combination of tax-efficiency of the investment and charitable deduction. Therefore, our conclusion is that potential capital gains recognized by leveraged partnerships upon charitable contributions should not be a determining factor in decisions made either about investments or about charitable giving.

UNDERSTANDING CAPITAL GAINS RECOGNITION UPON CHARITABLE CONTRIBUTIONS

The New Regulations on Allocation of Partnership Liabilities

Treasury Regulations Section 1.752-2(k), effective as of October 9, 2019, states that an obligation of a partner is not recognized if there is “not a commercially reasonable expectation” that the partner will be able to satisfy the obligation. Generally, partnership liabilities (that are recourse pursuant to state law) have a recourse to the general partner (GP). However, in a typical investment fund organized as a partnership, the GP does not have sufficient capital outside of its interest in the fund to satisfy the obligations of the partnership.² As a result, under Treas. Reg. Section 1.752-2(k), only a small fraction of such partnership liabilities might be recognized as having a recourse to the GP for tax purposes, resulting in the rest being allocated as nonrecourse liabilities to all the partners, the GP and the LPs.

The mechanics of allocating nonrecourse liabilities are complex. At a high level and in the context of a hedge fund, the nonrecourse liabilities are allocated in two steps as follows.³ First, the liabilities are allocated to the partners in proportion to, and to the extent of, the partners’ built-in gains. Second, any remaining liabilities are allocated in proportion to partners’ partnership interests.

For example, assume that in a limited partnership XYZ, a GP owns 1% of XYZ and three LPs own 33% of XYZ each. Also assume that built-in gains of the partners in XYZ are \$0 for the GP, \$60 for LP1, and \$20 for each LP2 and LP3, and that XYZ has aggregate liabilities of \$200. These liabilities are allocated as nonrecourse liabilities as follows. In the first step, the liabilities are allocated in proportion and to the extent of built-in gains: \$0 to the GP, \$60 to LP1, and \$20 to each LP2 and LP3. The remaining liabilities of \$100 are then allocated based on partnership interests—\$1 to the GP and \$33 to each of the LPs. The ultimate liability allocations are, thus, \$1 to the GP, \$93 to LP1, and \$53 to each LP2 and LP3.

¹Note that the recognition of gain upon charitable contribution could also include ordinary gains under the “hot assets” provisions of Internal Revenue Code (IRC) Section 751(a). However, it is often the case that investment partnerships, like hedge funds, do not hold assets that would create such ordinary gains. Therefore, for the purposes of this article, we assume that all the recognized gains are capital and do not address nuances created by IRC Section 751(a).

²The “commercially reasonable” expectation of repayment standard may be satisfied by other sources of net worth of the general partner. However, most likely the capital account of a GP in a hedge fund is the sole source of its net worth.

³Treas. Reg. Section 1.752-3(a).

EXHIBIT 1

Capital Gain upon Charitable Contribution

Panel A: Partner Book and Tax Balance Sheet

Partner Book Balance Sheet

Book Value of Assets	\$300	Liabilities	\$200
		Capital	\$100

Partner Tax Balance Sheet

Tax Basis of Assets	\$240	Liabilities	\$200
		At-Risk Amount	\$40

Panel B: Allocation of Basis and Realized Gain upon Charitable Contribution

	Tax Basis Allocation, %	Basis Allocation	Book Value	Taxable Gain	Non-Taxable Gain
Sale (Liabilities)	67%	\$160	\$200	\$40	
Contribution (Capital)	33%	\$80	\$100		\$20

Panel C: Tax Benefit/(Liability) upon Charitable Contribution

	Gain/(Loss) Amount	Applicable Tax Rate	Tax Benefit/(Liability)
Charitable Deduction	(\$100)	40.8%	\$40.80
Taxable Capital Gain	\$40	23.8%	(\$9.52)
Net Tax Benefit/(Liability)			\$31.28

NOTE: Recall that we assume that there are no ordinary gains recognized upon charitable contribution under IRC Section 751(a), which is a plausible assumption for investment partnerships, like hedge funds.

The Source of Capital Gain upon Charitable Contribution

Consider a leveraged partnership XYZ, which under Treas. Reg. Section 1.752-2(k) allocates nonrecourse liabilities to its LPs. If an LP in XYZ has built-in gains in her partnership interests, she might recognize a capital gain upon charitable contribution of her interest in XYZ. We explain how such capital gain arises using an example in Exhibit 1.

Exhibit 1, Panel A, shows the book and the tax balance sheets of an LP—let's call her Mary. The book balance sheet shows that Mary's capital in XYZ is \$100—this amount is what an investor would consider as the value of her investment in XYZ. Mary also has \$200 of nonrecourse liabilities allocated to her by XYZ and, as a result, the value of Mary's allocable share of partnership assets, which include both liabilities and capital, is \$300.⁴ Right under the book balance sheet we show the tax balance sheet. Mary's tax basis in XYZ is \$240, her allocation of XYZ's liabilities is \$200, and her at-risk amount in XYZ is \$40.⁵

Suppose that Mary wants to contribute her entire interest in XYZ to charity. Importantly, the amount of Mary's charitable deduction upon the contribution will depend on whether her holding period in XYZ is long-term or short-term. If it is long-term (longer than 12 months), her deduction will be the fair market value of her XYZ interest. If it is short-term (12 months or less), her deduction will be the lesser of

⁴ Sometimes this amount is referred to as assets “grossed-up” by liabilities.

⁵ Generally, for partnership investments made with cash (as typically would be the case for comingled investment partnerships), the at-risk amount of a partner is her original cash contribution to the partnership increased by her taxable income and gain allocations and subsequent contributions to the partnership, and decreased by her deduction and loss allocations and subsequent distributions from the partnership. See Sosner, Balzafiore, and Du (2018) for a more detailed discussion of at-risk amount.

the tax basis and the fair market value of her XYZ interest.⁶ Throughout this article, we will make a plausible assumption that Mary's holding period in XYZ is long-term, and thus, her charitable deduction equals the value of her partnership interest in XYZ, that is, \$100.⁷ This deduction can be applied to Mary's ordinary income, which results in a tax benefit of \$40.80, as shown in Exhibit 1, Panel C.

When Mary contributes her interest in XYZ to a qualified charity (for example, a donor advised fund or a private operating foundation) she correctly expects to receive \$100 of charitable deduction, which is equal to the value of the donated partnership interest (see the Capital entry in Mary's Book Balance Sheet in Exhibit 1, Panel A). What Mary might not have anticipated is that her charitable contribution would also result in a capital gain. We explain the source of this capital gain recognized by Mary upon charitable contribution in Exhibit 1, Panel B.

At the same time as Mary donates her interest in XYZ,⁸ she is also released, or in the language of regulations, "discharged," from the \$200 of nonrecourse liabilities allocated to her by XYZ.⁹ Under Treas. Reg. Section 1.1001-2(a)(1), discharged liabilities are treated as "amount realized." More colloquially, getting rid of \$1 of liabilities is taxed the same as selling an asset valued at \$1. As a result, gifts of interest in leveraged partnerships result in so-called "bargain sale," or "part gift, part sale," transactions, the part sale, of course, being the discharge of liabilities.¹⁰

In our example, Mary's *amount realized* in part sale is \$200 (the discharged liabilities). But what is the tax basis allocated to such part sale? Under IRC Section 1011(b) and Treasury Regulations thereunder, the fraction of Mary's \$240 tax basis (shown in Mary's Tax Balance Sheet in Exhibit 1, Panel A) allocated to the sold portion (that is, to the liabilities of \$200) equals the ratio of the amount realized (the discharged liabilities of \$200) over the fair market value of the assets (assets grossed-up by liabilities, or \$300). The remainder of the tax basis is allocated to the gift portion (that is, to the charitable contribution of \$100). The tax basis is thus apportioned 2/3 to the sale and 1/3 to the charitable contribution, or \$160 and \$80, respectively (see Exhibit 1, Panel B). Based on this allocation of tax basis, the \$40 gain associated with the discharge of liabilities (\$200 amount realized minus \$160 tax basis) is recognized at the time of the charitable contribution. The remaining \$20 gain is associated with the gift of capital and is not taxable.

Exhibit 1, Panel C, shows that, with the highest federal marginal tax rates of 23.8% for long-term capital gains and 40.8% for ordinary income for tax year 2020, the charitable deduction of \$100 yields a \$40.80 tax benefit, while the \$40 capital

⁶Under Tres. Reg. Section 1.170A-1(c)(1), "if a charitable contribution is made in property other than money, the amount of the contribution is the fair market value of the property at the time of the contribution reduced as provided in section 170(e)(1) [...]." Under IRC Section 170(e)(1)(A) the fair market value of the contributed property is reduced by "the amount of gain which would not have been long-term capital gain if the property contributed had been sold by the taxpayer at its fair market value."

⁷Whereas there are other situations that might reduce the amount of charitable deduction, they are not very typical of investment partnerships, like hedge funds. For example, Mary might have ordinary income due to depreciation recapture, inventory, or other IRC Section 751 so called "hot assets" that would reduce the amount of charitable deduction. For an example of a bargain sale (part charitable gift, part sale) of property that would generate ordinary income upon sale see Treas. Reg. Section 1.170A-4(d), Example 10. In addition, Mary's contribution to a private non-operating foundation, rather than to a public charity or private operating foundation, would also reduce the amount of charitable deduction (see IRC Section 170(e)(1)(B)(ii)).

⁸For tax purposes, through her charitable contribution Mary *disposes* of her interest in XYZ: Under Treas. Reg. Section 1.1001-2(a)(4)(iii), "a disposition of property includes a gift of the property."

⁹Under Treas. Reg. Section 1.1001-2(a)(1), "the amount realized from a sale or other disposition of property includes the amount of liabilities from which the transferor is discharged as a result of the sale or disposition."

¹⁰Rev. Rul. 75-194 concluded that the amount of a limited partner's share of partnership liabilities at the time of her gift of partnership interest to charity constitutes an amount realized by the limited partner and results in a bargain sale within the meaning of IRC Sections 170 and 1011(b).

EXHIBIT 2

Capital Gain upon Charitable Contribution in the Presence of Suspended Loss

Panel A: Partner Book and Tax Balance Sheet

Partner Book Balance Sheet

Book Value of Assets	\$300	Liabilities	\$200
		Capital	\$100

Partner Tax Balance Sheet

Tax Basis of Assets	\$120	Liabilities	\$200
		At-Risk Amount	\$0
		Suspended ST Capital Loss	(\$80)

Panel B: Allocation of Basis and Realized Gain upon Charitable Contribution

	Tax Basis Allocation, %	Basis Allocation	Book Value	Taxable Gain	Non-Taxable Gain
Sale (Liabilities)	67%	\$80	\$200	\$120	
Contribution (Capital)	33%	\$40	\$100		\$60

Panel C: Suspended Loss Unlocked upon Charitable Contribution

Pre-Contribution Suspended ST Capital Loss	(\$80)
Gain Recognized upon Contribution	\$120
Unlocked Suspended ST Capital Loss	(\$80)

Panel D: Net Capital Gain and Tax Benefit/(Liability) upon Charitable Contribution

Efficient Use of Unlocked Suspended Loss (It Offsets ST Gains from Other Investments)

	Gain/(Loss) Amount	Applicable Tax Rate	Tax Benefit/(Liability)
Charitable Deduction	(\$100)	40.80%	\$40.80
Unlocked Suspended ST Capital Loss	(\$80)	40.80%	\$32.64
Taxable LT Capital Gain	\$120	23.80%	<u>(\$28.56)</u>
Net Capital Gains Tax Benefit/(Liability)			\$4.08
Net Tax Benefit/(Liability)			<u>\$44.88</u>

Inefficient Use of Unlocked Suspended Loss (It Offsets LT Gains Only)

	Gain/(Loss) Amount	Applicable Tax Rate	Tax Benefit/(Liability)
Charitable Deduction	(\$100)	40.80%	\$40.80
Unlocked Suspended ST Capital Loss	(\$80)	23.80%	\$19.04
Taxable LT Capital Gain	\$120	23.80%	<u>(\$28.56)</u>
Net Capital Gains Tax Benefit/(Liability)			<u>(\$9.52)</u>
Net Tax Benefit/(Liability)			\$31.28

gain recognized upon charitable contribution results in a \$9.52 tax liability. Thus, the tax cost of capital gain reduces the tax benefit of charitable deduction by about a quarter, to a net benefit of \$31.28.

An Unexpected Effect of Suspended Loss

It might seem that if Mary's built-in gain in XYZ continued to increase, the tax cost of capital gain associated with the discharge of liabilities might also increase indefinitely. However, this is not the case. We demonstrate this in the example in Exhibit 2.

Mary's tax balance sheet in Exhibit 2, Panel A, shows that her tax basis in XYZ is \$120. Compared to the first example in Exhibit 1, where her tax basis was \$240, Mary's built-in gain in XYZ is now three times greater—\$180 now vs. \$60 before.

This low tax basis means that Mary's at-risk amount is now \$0 and that she also has a suspended loss of \$80.¹¹ In Exhibit 2, Panel B, we perform the same calculations as in Exhibit 1, Panel B, leading to \$120 of taxable gain and \$60 non-taxable gain upon Mary's contribution of her XYZ interest to a charity.

Under Prop. Treas. Reg. Section 1.465-66, the taxable gain recognized upon charitable contribution increases the at-risk amount,¹² in our example from \$0 to \$120. This increase in the at-risk amount is greater than the suspended loss and, thus, unlocks the entire amount of the \$80 suspended loss that Mary had in her XYZ interest. Exhibit 2, Panel C, shows this calculation.

Let's assume that the \$80 unlocked suspended loss is a short-term capital loss. Exhibit 2, Panel D, summarizes Mary's tax results under two alternative assumptions. First, Mary has more than \$80 of realized short-term capital gains from other investments such that the unlocked short-term capital loss is used efficiently to offset those short-term gains. Second, Mary does not have any realized short-term capital gains and, as a result, the unlocked suspended loss is used inefficiently to offset her long-term capital gains, which include the \$120 gain recognized on the part sale of the charitable contribution shown in Panel B.

Let's review the first scenario. As before, we assume that Mary contributes a long-term capital asset to a qualified charity and, therefore, her charitable deduction is equal to the value of her partnership interest, that is \$100. This deduction can be applied to Mary's ordinary income and create a tax benefit of \$40.80, as shown in Panel D.

The unlocked suspended loss of \$80 is a short-term capital loss, and the taxable gain of \$120 triggered by the discharge of liabilities is a long-term capital gain due to Mary's long-term holding period in XYZ. Multiplying these capital gains and losses by their respective tax rates, as shown in the top section of Panel D, we obtain a total of \$4.08 net tax benefit. Recall that this value was a \$9.52 tax *liability* in Exhibit 1, where we assumed Mary's built-in gain to be just \$60.

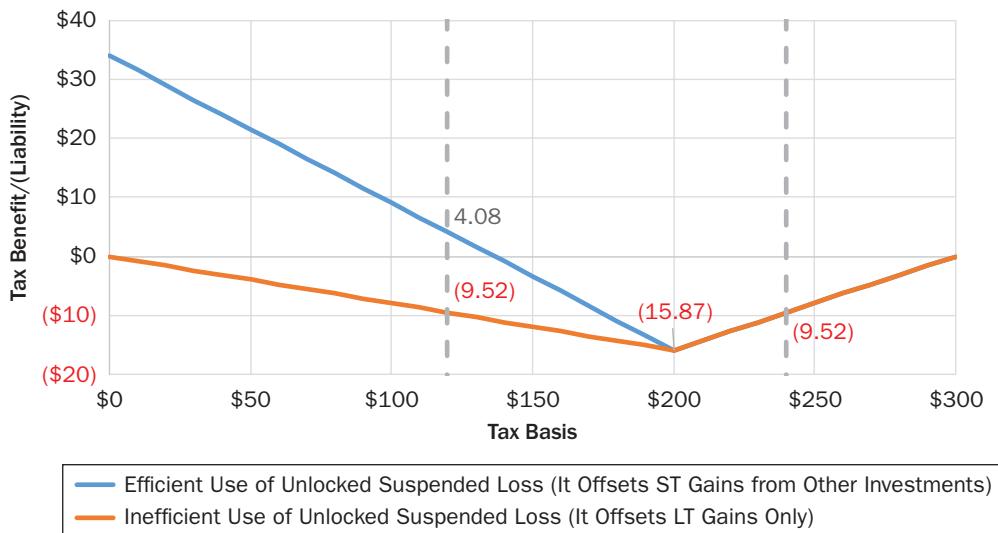
Clearly, the difference in tax rates applicable to gains and losses is an important contributor to the net tax benefit from capital gains and losses in Exhibit 2. If Mary did not have any realized short-term capital gains in the year of charitable contribution, she might have to use the unlocked suspended short-term capital loss inefficiently to offset long-term capital gains.¹³ We show this result in the bottom section of Panel D. When the unlocked suspended loss offsets long-term capital gains, its benefit is valued at the 23.8% tax rate rather than at the 40.8% rate. As a result, its benefit is reduced to \$19.04. The net result of capital gains and losses is a liability of \$9.52. Therefore, even under the inefficient offset scenario, Mary is no worse than in the example shown in Exhibit 1 where Mary's capital gain was just a third of the one considered in the example in Exhibit 2.

In Exhibit 3, we generalize the examples shown in Exhibits 1 and 2. We continue to assume that Mary's book balance sheet is the same as in Exhibits 1 and 2: \$300

¹¹ Once the at-risk amount reaches zero, losses allocated to a partner in excess of gains become suspended—the partner is not allowed to use them as deductions unless and until her at-risk amount in the partnership becomes positive. See Sosner, Balzafore, and Du (2018) for a more detailed discussion of suspended losses.

¹² Prop. Treas. Reg. Section 1.465-66(a) states that “in the case of a transfer or other disposition of all or part of either an activity or an interest in an activity during a taxable year, any gain recognized on the transfer or disposition shall be treated as income from the activity [...]. In general, this section will cause amounts disallowed by section 465 in previous taxable years to be allowed for the taxable year of transfer or disposition.”

¹³ Note that the long-term capital gain recognized upon charitable contribution is greater than the unlocked suspended short-term capital loss. As a result, even if Mary had no capital gains from other investments (long-term or short-term), she would still have to offset the long-term gain triggered by the discharge of liabilities with the unlocked suspended loss. This would result in the inefficient offset of a short-term capital loss against a long-term capital gain.

EXHIBIT 3**Tax Benefit/(Liability) from Capital Gains and Losses Recognized upon Charitable Contribution**

in assets, \$200 in liabilities, and \$100 in capital. The liabilities in the tax balance sheet also remain at \$200. We vary the tax basis of Mary's assets in XYZ (shown on the left-hand side of the tax balance sheet in Exhibits 1 and 2) from \$0 to \$300. When there is no built-in gain in XYZ (the tax basis is \$300), Mary does not recognize a capital gain. However, as the built-in gain increases from \$0 to \$100 (reducing the tax basis from \$300 to \$200), Mary recognizes a progressively larger capital gain resulting in a larger tax liability. The maximum tax liability of \$15.87 occurs when the tax basis is equal to liabilities and the at-risk amount is \$0. The dotted vertical line at the tax basis of \$240 marks the level of the tax liability we saw in Exhibit 1, Panel C—\$9.52.

However, when Mary's tax basis is below \$200, she has a suspended loss, which increases from \$0 to \$200 as the tax basis decreases from \$200 to \$0. Assuming that this suspended loss is short-term, it can be used efficiently to offset short-term gains from other investments or inefficiently to effectively reduce the long-term gain recognized upon charitable contribution. The amount of tax liability begins to decline as a progressively greater amount of suspended loss is being unlocked, and, in the efficient offset scenario, becomes a tax benefit when the tax basis is approximately \$135 or below, corresponding to a suspended loss of approximately \$65 or greater. The dotted vertical line at the tax basis of \$120 marks the level of the tax outcomes we saw in Exhibit 2, Panel D—a \$4.08 tax benefit when unlocked suspended loss is used efficiently to offset short-term capital gains and a \$9.52 tax liability when it is used inefficiently to offset long-term capital gains.

To summarize: In our example, the maximum amount of capital gain tax liability upon charitable contribution is \$15.87, which is approximately 40% of the benefit of charitable deduction of \$40.80. However, there is still a substantial net benefit of charitable contribution of \$24.23, or approximately 25% of the contributed capital. Moreover, if Mary has substantial suspended short-term capital losses, and can use them efficiently to offset short-term capital gains from other investments, she might even recognize a tax benefit in addition to the benefit of charitable deduction.¹⁴

¹⁴ In this article, we do not analyze the effect of leverage on a charitable organization that receives a leveraged partnership interest. Contribution of leveraged investment with a built-in gain might result in a certain amount of UBTI for the charity.

Effect of Liabilities and Built-In Gain

How large can a cost of taxable capital gain upon charitable contributions get? We have seen in the previous subsection that the maximum tax liability arising from taxable gains upon charitable contribution occurs when tax basis equal liabilities, which is equivalent to the partner's at-risk amount being \$0, or, alternatively, to the partner's built-in gain being equal to the partner's capital. But how does this tax liability change with leverage?

In Appendix A, we show that, when a partner does not have a suspended loss, the partner's taxable capital gain as a fraction of partnership interest can be described by the following equation¹⁵

$$\frac{TG}{C} = \frac{BIG/C}{1+1/DE} \quad (1)$$

where TG is the partner's taxable gain upon charitable contribution, C is the partner's capital in the partnership, BIG is the partner's built-in gain in the partnership interest, and DE is the partner's debt-to-equity ratio, that is, the ratio of liabilities to capital.

Equation 1 shows that the taxable gain as a fraction of the partner's capital increases with partner's built-in-gain-to-capital ratio and with the partner's debt-to-equity ratio. As the debt-to equity ratio increases to infinity, the taxable gain increases to the level of built-in gain. Maximum built-in gain (net of suspended losses) is equal to partner's capital. If built-in gain is at its maximum and debt-to-equity ratio is infinitely high, according to Equation 1, taxable gain equals partner's capital.

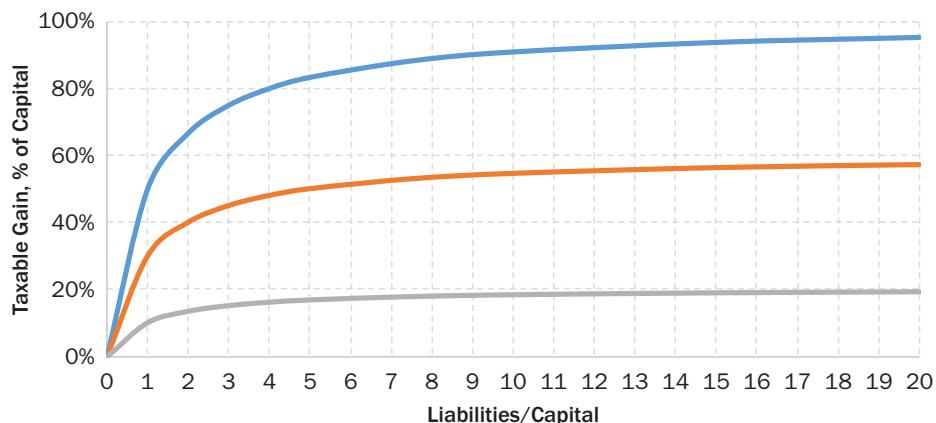
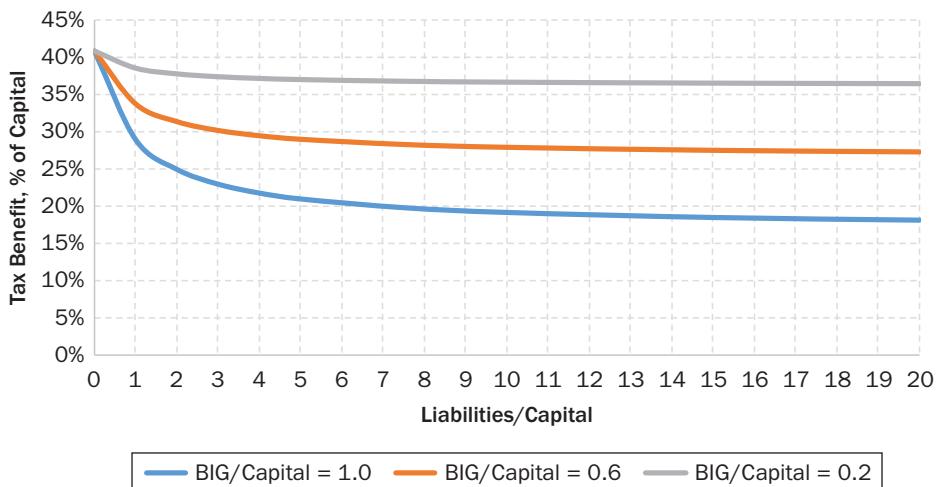
This answers our question as to how large the cost of taxable gain upon charitable contribution can get: In theory, maximum taxable gain equals partner's capital, and the cost of recognizing this gain is the value of partner's capital times the long-term capital gains tax rate. Note that in this extreme case, the tax benefit of charitable contribution is at its minimum and equals the value of charitably contributed capital times the difference between the ordinary income and long-term capital gains tax rates.

Exhibit 4, Panel A, uses the formula in Equation 1 to show the effects of liabilities and built-in gains on taxable gain. Debt-to-equity, or liabilities-to-capital, ratio changes along the horizontal axis. As we just discussed, the largest taxable gain occurs when the built-in gain equals capital, that is, built-in-gain-to-capital ratio is 1.0. In this case, for reasonably high, but not extreme, levels of liabilities-to-capital ratio of 4 to 5, taxable gain as a fraction of capital is around 80% to 85%. The other two lines in Exhibit 4 show the effect of liabilities-to-capital ratio on taxable gains for more muted levels of built-in gains.

Exhibit 4, Panel B, translates the taxable gain shown in Panel A into the net tax benefit to the partner as a fraction of charitably contributed capital. We continue to use the tax rates of 40.8% and 23.8% for ordinary income and long-term capital gains, respectively. Whilst the net benefit of charitable contributions declines with leverage, at reasonable levels of liabilities, the net tax benefit of charitable contribution remains high even when built-in gains are high.

The discussion in this section only considers tax outcomes at the time of charitable contribution. However, there is a reason why a partner would have a built-in gain

¹⁵For the sake of simplicity, we only focus on the scenario where there is no suspended loss. This scenario is sufficient to answer the question: "How large can a cost of taxable gain can get?" This is because taxable gain, net of released suspended loss, is the greatest when at-risk amount is exactly zero and there is no suspended loss. Adding suspended losses complicates the derivation without changing the conclusion about the maximum tax cost of capital gains recognized upon charitable contribution.

EXHIBIT 4**Effect of Liabilities and Built-In Gain (BIG) on Taxable Gain and Net Tax Benefit****Panel A: Taxable Gain upon Charitable Contribution as a Fraction of Contributed Capital****Panel B: Net Tax Benefit of Charitable Contribution as a Fraction of Contributed Capital**

in her partnership interest at the time of charitable contribution: It must be the case that over the course of her investment in the partnership she has enjoyed economic profits in excess of taxable income. On one hand, tax efficiency of the investment has created tax benefits over the life of the investment, on the other, it reduced the tax benefit of charitable contribution. How should we evaluate this tradeoff? In the next section, we develop a simple metric that incorporates the full path of tax outcomes of gain and loss realizations, including recognizing a portion of built-in gain at the time of charitable contribution. This metric will allow us to compare attractiveness of investment strategies with different tax characteristics to charitably inclined investors.

IRR OF TAX BENEFITS OF CHARITABLE CONTRIBUTIONS

To summarize all the tax benefits and liabilities experienced by a charitably inclined investor we use *internal rate of return* (IRR). In this section, we develop an application of the IRR metric to charitable contributions.

Let X_0 be the dollar tax benefit of a charitable contribution made immediately and X_T be the dollar tax benefit of a charitable contribution made in a future year T .

The amount X_T is inclusive of the capital gain liability discussed in the previous section. Along the way, for every year $t = \{1, 2, \dots, T\}$, the investor experiences a dollar tax result x_t unrelated to the charitable contribution, which can be either positive—a tax benefit, or negative—a tax liability. To put all these amounts on equal footing, we derive an IRR denoted by p from the following equation:

$$X_0 = \sum_{t=1}^T \frac{x_t}{(1+p)^t} + \frac{X_T}{(1+p)^T} \quad (2)$$

A positive (negative) IRR would mean that the investor is better off (worse off) delaying the charitable contribution by T years, and the higher the IRR, the more benefit the investor obtains from delaying the contribution.¹⁶

Examples in Exhibit 5 illustrate the workings of the methodology summarized by Equation 2. We assume that the tax rate on short-term capital gains and ordinary income is 40.8% and the tax rate on long-term capital gains is 23.8%, that is, 2020 federal tax rates for the top bracket. We also assume that the taxpayer can delay a \$10,000 charitable contribution by five years and invest in a fund (organized as a partnership) with an 8% annual pre-tax return and a 200% leverage. In Panel A, we assume that the fund realizes all its pre-tax return as a short-term capital gain—a tax-inefficient fund. In Panel B, we assume that the fund does not realize any income, gains, or losses—a tax-efficient fund. In Panel C, we assume that each year the fund realizes and allocates to our taxpayer an 8% short-term capital loss, which the taxpayer can use to offset short-term capital gains from other investments—a tax-beneficial fund.

The first set of columns in every panel in Exhibit 5 shows the evolution of partner's capital, which we call net asset value (NAV) to stay closer to the terminology of investment partnerships, partner's at-risk amount, which we defined in the previous section, partner's allocated liabilities, pre-tax profit and loss (P&L), and taxable gains and losses. The middle set of columns shows tax benefits and liabilities. The last set of columns shows the cashflows used in the IRR calculation and the derived IRR.

In year 0, the taxpayer gives up a benefit of charitable deduction valued at \$4,080 (\$10,000 times the 40.8% tax rate). We assume that the tax liabilities are paid outside of the fund and that tax benefits are not reinvested into the fund. As a result, in all three scenarios, the NAV of the investment compounds with pre-tax return from \$10,000 to \$14,693, and the tax benefit of charitable deduction in year 5 is, thus, \$14,693 times the 40.8% tax rate, or \$5,995.

The tax-inefficient fund (Panel A) realizes all its capital gains every year; therefore, its NAV and the at-risk amounts are always equal. As a result, the taxpayer has \$0 built-in gain in year 5 and, according to the rules described in the previous section, does not recognize any capital gain upon charitable contribution in year 5. The IRR of delaying the contribution from year 0 to year 5 in this case is 0% due to the ongoing tax liabilities. In other words, the investor obtains no benefit from delaying the charitable contribution and investing in the tax-inefficient fund.

If, on the other hand, the investor delays the charitable contribution to invest in a tax-efficient fund, the result is markedly different. The tax-efficient fund (Panel B) does not realize any ongoing tax liabilities, and the \$5,995 tax benefit of charitable contribution in year 5 is the \$4,080 benefit in year 0 grown at annual 8% rate. The IRR excluding the capital gain liability is, thus, 8%. If the capital gain liability upon charitable contribution is accounted for using the rules described in the previous

¹⁶Note that the derivation of the IRR implicitly assumes that cashflows are reinvested at a rate of return equal to the IRR until the end of the investment horizon.

EXHIBIT 5**IRR under Different Assumptions about Gain and Loss Realization Rates****Assumptions**

ST Capital Gains/Ordinary Tax Rate	40.8%
LT Capital Gains Tax Rate	23.8%
Pre-Tax Return	8.0%
Liabilities, % of NAV	200%

Year	NAV	Fund Statistics			Tax Benefit/(Liability)			Cash Flows	
		At-Risk Amount	Allocated Liabilities	Pre-Tax P&L	Taxable Gain/(Loss)	Ongoing	Charitable Deduction	Capital Gain	Excl. Capital Gain
Panel A: Tax-Inefficient Fund: Each Year Fund Allocates Short-Term Capital Gain Equal 8% of the NAV									
0	10,000	10,000	20,000				4,080		-4,080
1	10,800	10,800	21,600	800	800	-326			-326
2	11,664	11,664	23,328	864	864	-353			-353
3	12,597	12,597	25,194	933	933	-381			-381
4	13,605	13,605	27,210	1,008	1,008	-411			-411
5	14,693	14,693	29,387	1,088	1,088	-444	5,995	0	5,551
IRR									
0.0%									
Panel B: Tax-Efficient Fund: Each Year Fund Allocates Zero Taxable Income									
0	10,000	10,000	20,000				4,080		-4,080
1	10,800	10,000	21,600	800	0	0			0
2	11,664	10,000	23,328	864	0	0			0
3	12,597	10,000	25,194	933	0	0			0
4	13,605	10,000	27,210	1,008	0	0			0
5	14,693	10,000	29,387	1,088	0	0	5,995	-745	5,995
IRR									
8.0%									
Panel C: Tax-Beneficial Fund: Each Year Fund Allocates Short-Term Capital Loss Equal 8% of the NAV									
0	10,000	10,000	20,000				4,080		-4,080
1	10,800	9,200	21,600	800	-800	326			326
2	11,664	8,336	23,328	864	-864	353			353
3	12,597	7,403	25,194	933	-933	381			381
4	13,605	6,395	27,210	1,008	-1,008	411			411
5	14,693	5,307	29,387	1,088	-1,088	444	5,995	-1,489	6,439
IRR									
16.0%									

section (as is the case under the new regulations), the IRR is reduced to 5.2%. Nonetheless, despite this capital gain liability, the IRR of investing in the tax-efficient fund is substantially higher than the 0% IRR of investing in the tax-inefficient fund shown in Panel A.

Finally, investing in the tax-beneficial fund (Panel C), which allocates a tax loss every year, results in an even larger capital gain tax liability in year 5 than investing in the tax-efficient fund shown in Panel B. However, ongoing annual tax benefits of this investment more than compensate the taxpayer for the increase in capital gain upon contribution—the IRR that accounts for the tax liability of gain is as high as 10.9%.

IRRs UNDER DIFFERENT SCENARIOS

Base Case Assumptions

We consider as the base case an investment in a fund (organized as a partnership) that allocates 200% liabilities to its LP investor, realizes an 8% annual pre-tax return, and each year allocates to the investor a long-term capital gain equal to 10% of her NAV in the fund and a short-term capital loss equal to 20% of her NAV.¹⁷ Due to positive pre-tax return and negative taxable income, a fund investment like this will accumulate a large built-in gain relatively quickly. For the investor, the outside basis—and the at-risk amount—declines at a rate of 10% of her NAV per year and the built-in gain grows at a rate of 18% of her NAV per year.¹⁸ This fast accumulation of built-in gain in the partnership interest, combined with a significant amount of allocated liabilities, provides us with a good test case for the impact of capital gain recognized by the investor upon charitable contribution on the IRR of her investment in the fund.

For a fund investment with characteristics we just described, the at-risk amount is reduced to zero after approximately six years and eight months.¹⁹ Before then, the investment yields a tax benefit of 5.78% per year. After the at-risk amount reaches zero, the tax benefit is reduced to 1.70%. Appendix B shows the derivation of time it takes to reduce the at-risk amount to zero and the calculation of tax benefit before and after that point in time.

Impact of Capital Gain Recognized upon Charitable Contribution

First, we evaluate the impact of capital gain recognized upon charitable contribution under the base-case assumptions outlined in the previous subsection. Exhibit 6 summarizes the impact of capital gain recognition at different years of contribution (which effectively translates to different investment horizons in the strategy). The solid and dashed blue lines show, alternatively, the IRRs when capital gain upon charitable contribution is included in the calculation (as would be the case under the new regulations) and when it is excluded (as would be the case before the new regulations). The orange line in the chart shows the adverse impact of capital gain recognition on the IRR under the new regulations.

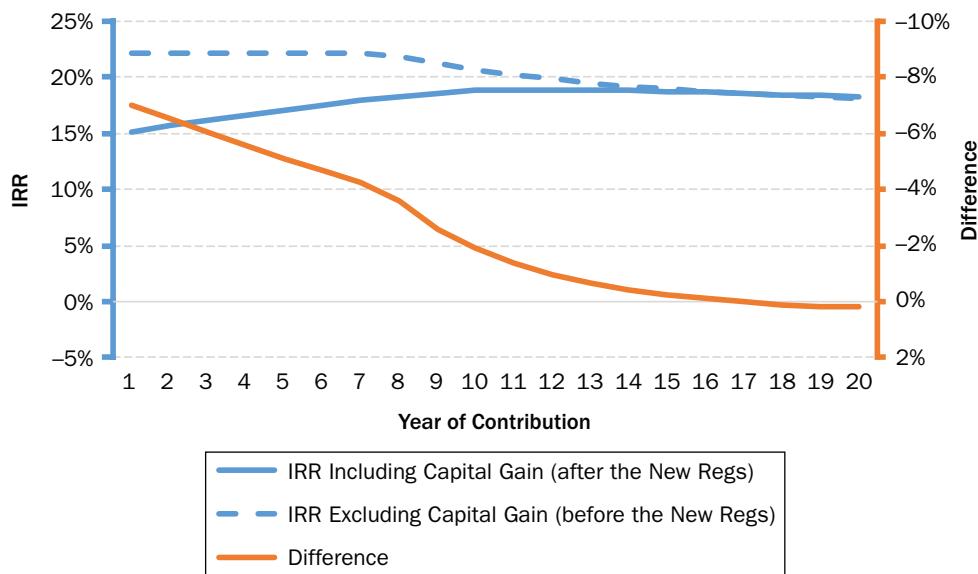
Exhibit 6 shows that the IRRs are high for all years of contribution whether the capital gain is included (under the new regulations) in the calculation of the IRR or not (before the new regulations). This is because the ongoing tax benefits from the fund investment more than compensate the investor for delaying the contribution. Even delaying the contribution by one year (the one-year bar) results in a capital-gain-adjusted IRR of 15%. As the year of contribution increases, the IRR computed including capital gain liability upon charitable contribution continues to increase until years 11 to 13, and after that declines, but only slightly.

Note that the IRR reaches maximum at the horizon which is almost double the time it takes for the amount at-risk to be reduced to zero, which in our case (using the formulas derived in Appendix B) is approximately six years and eight months. Moreover, the impact of recognition of capital gains upon charitable contribution,

¹⁷ Examples of strategies with such a pattern of liabilities and realization of gains and losses would be tax-aware long-short strategies described, for example, in Salm and Sosner (2018) and Sosner, Krasner, and Pyne (2019).

¹⁸ The outside basis and the at-risk amount are increased by the 10% long-term gain and decreased by the 20% short-term loss, which results in a net decrease of 10%.

¹⁹ This assumes that there are no additional contributions to the fund, redemptions from the fund, or any fund transfers.

EXHIBIT 6**The Impact of Capital Gain on the IRR for Different Years of Charitable Contribution**

while substantial at short horizons, decreases with year of contribution, and even becomes slightly positive at years 18 and later. The net positive effect of the gain upon charitable contribution is not all that surprising given the results we have shown in Exhibit 3: Recognition of low-taxed long-term gain upon contribution allows the investor to unlock her suspended short-term loss that offsets highly taxed short-term gains from her other investments.

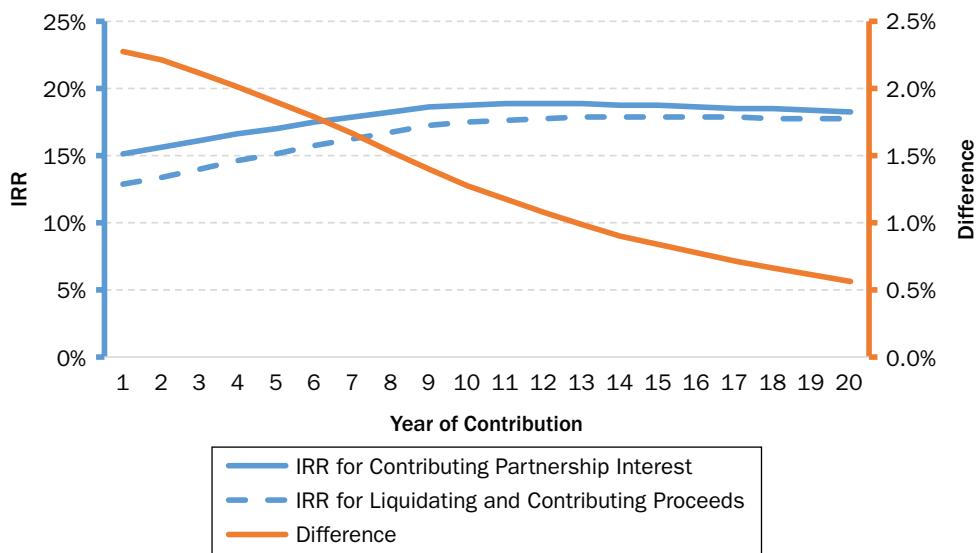
Contribution of Proceeds of Liquidation vs. Contribution of Partnership Interests

Given the capital gain recognized upon contribution, does it make sense for an investor to liquidate a partnership interest and contribute the proceeds reduced by tax liabilities incurred upon liquidation? Exhibit 7 compares the IRRs for the “liquidate and contribute the proceeds” scenario to those for the contribution of partnership interest scenario under the base-case assumptions outlined earlier in this section. The IRRs in the contribution of partnership interest scenario account for capital gain recognized upon charitable contribution under the new regulations.

Exhibit 7 shows that the IRR remains high in both cases. At every horizon, the IRR of contributing the partnership interest is higher than liquidating it and contributing the after-tax proceeds, however, this difference declines over time. The results in Exhibit 7 demonstrate that contribution of partnership interest, while beneficial, is not critical for obtaining high return on investment from tax-efficient partnerships. If a specific charity does not accept partnership interest, at a small loss to the IRR, an investor can liquidate her partnership interest and contribute the proceeds. Moreover, this loss of the IRR declines with investment horizon.

IRRs under Different Assumptions about Parameter Values

Exhibit 8 shows the IRRs under different assumptions about the rates of gain and loss allocation to the fund investor, liabilities allocation, pre-tax return, and tax rates. Panel A shows the assumptions and highlights those assumptions that change

EXHIBIT 7**Contributing After-Tax Liquidation Proceeds vs. Contributing Partnership Interest**

relative to the base case. Panel B shows the number of years it takes to reduce the at-risk amount to zero (which only happens when the fund allocates a net tax loss) and the levels of tax benefits and liabilities as a percent of the NAV before and after the at-risk amount reaches zero. The calculation of time when at-risk amount reaches zero and of the tax benefits is explained in Appendix B. Panels C and D show the main results. Panel C shows the IRRs for different years of contribution and Panel D shows the impact of capital gain recognized upon charitable contribution on the IRR.

As a benchmark for comparison, Column 1 in the exhibit shows the results under the base-case assumptions that we have seen in Exhibit 6.

Columns 2 to 7 vary the rates of realization of gains and losses. Column 2 shows a tax-efficient fund that allocates no net long-term or short-term gains. As such, the fund investor realizes no ongoing tax benefits or liabilities but accumulates a built-in gain due to the pre-tax appreciation of her investment. Note that Column 2 also fits the scenario where the allocations are the same as in Column 1, but investor has no use for the capital losses allocated by the fund.

Columns 3 and 4 show a fund that allocates a total net gain of zero comprised of matching long-term gains and short-term losses. An investor in such a fund accumulates the same built-in gain as in Column 2 but realizes a character tax benefit every year. Sosner, Krasner, and Pyne (2019) define “character tax benefit” as the benefit that arises from realizing losses in highly taxed characters—short-term capital and ordinary losses—and realizing gains and income in low-taxed characters—long-term capital gains and qualified dividend income.) The gain and loss allocations in Column 4 are twice as high as in Column 3 leading to a twice-as-high character tax benefit.

Columns 5 and 6 show scenarios where the fund allocates a net taxable gain of 5% each year but still realizes a tax benefit because it allocates gains as long-term and losses as short-term. A charitable investor in such funds experiences a lower IRR than in the base case because of lower ongoing tax benefits. However, as Panel D indicates, the impact of capital gain upon charitable contribution is also smaller.

Finally, Column 7 shows a fund where all the pre-tax return is realized and allocated to the investor as a short-term gain. While such a fund has no gain upon charitable contribution, the IRR of an investment in such a fund is 0% at every horizon.

EXHIBIT 8
IRRs under Different Assumptions about Parameter Values

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Vary Realized Gains/(Losses)												
Assumptions												
Vary Liabilities												
Vary Pre-Tax Return												
Vary Tax Rate												
Leverage												
Net Loss	200%	200%	200%	200%	200%	200%	200%	200%	100%	300%	200%	200%
Pre-Tax Return	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	6%	10%
LTCG/(L)	10%	0%	10%	20%	15%	25%	0%	10%	10%	10%	10%	10%
STCG/(L)	(20%)	0%	(10%)	(20%)	(10%)	(20%)	8%	(20%)	(20%)	(20%)	(20%)	(20%)
Net CG/(L)	(10%)	0%	0%	0%	5%	5%	8%	(10%)	(10%)	(10%)	(10%)	(10%)
LT Tax Rate	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%
ST Tax Rate	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%
Years until At-Risk Amount Reaches Zero and Annual Tax Benefits before and after That Time												
Years until ARA = 0	6.64	N/A	6.64	6.64	7.07	6.27						
Tax Benefit before ARA = 0	5.8%	0.0%	1.7%	3.4%	0.5%	2.2%	-3.3%	5.8%	5.8%	5.8%	5.8%	4.3%
Tax Benefit after ARA = 0	1.7%	N/A	N/A	N/A	N/A	N/A	N/A	1.7%	1.7%	1.7%	1.7%	0.0%
IRR under Different Assumptions												
Year of Contribution												
5	17.1%	5.2%	9.6%	13.9%	8.2%	12.5%	0.0%	18.4%	16.3%	15.5%	18.6%	7.6%
10	18.8%	5.5%	10.1%	14.6%	8.4%	12.7%	0.0%	19.7%	18.3%	15.9%	19.1%	8.0%
15	18.7%	5.8%	10.5%	15.2%	8.6%	12.9%	0.0%	19.3%	18.4%	16.2%	19.6%	8.5%
20	18.3%	6.0%	10.9%	15.5%	8.7%	13.0%	0.0%	18.7%	18.1%	16.6%	20.0%	9.0%
Impact of Capital Gains upon Charitable Contributions on the IRR												
5	-5.1%	-2.8%	-2.6%	-2.4%	-1.0%	-0.9%	0.0%	-3.7%	-5.8%	-4.6%	-5.5%	-10.4%
10	-1.9%	-2.5%	-2.1%	-1.7%	-0.8%	-0.7%	0.0%	-1.0%	-2.4%	-1.9%	-1.9%	-6.5%
15	-0.2%	-2.2%	-1.6%	-1.2%	-0.7%	-0.5%	0.0%	0.3%	-0.5%	-0.2%	-0.3%	-3.5%
20	0.2%	-2.0%	-1.3%	-0.8%	-0.6%	-0.4%	0.0%	0.6%	0.0%	0.3%	0.1%	-2.2%

Columns 2 to 7 show that decrease in tax efficiency of the fund's underlying investment, on one hand, mitigates the impact of the capital gains recognized upon charitable contribution on the IRR, but on the other hand, comes at the cost of a lower IRR.

Another factor affecting the amount of capital gain upon charitable contribution is liabilities. In Columns 8 and 9, we increase and decrease, respectively, the allocation of liabilities to the LP investor by 100% compared to the base case in Column 1. A lower (higher) allocation of liabilities leads to a lower (higher) capital gain upon charitable contribution and thereby increases (decreases) the IRR of the investment.

However, it is important to emphasize that in Exhibit 8 we show a purely hypothetical example of varying liabilities. In practice, higher leverage, which leads to greater allocated liabilities, also contributes to higher tax efficiency and higher tax benefits as is shown in Salm and Sosner (2018) and Sosner, Krasner, and Pyne (2019). In fact, achieving high levels of tax benefits, and thereby high IRRs, without high levels of allocated liabilities might not be feasible.

Pre-tax return affects the built-in gain, which in turn affects the capital gain recognized upon charitable contribution. Consider Columns 10 and 11. There we increase and decrease, respectively, the level of pre-tax return by 2% compared to the base case. Other things being equal, a higher pre-tax return leads to a faster decline in the at-risk amount: The at-risk amount is reduced to zero after 7.07, 6.64, and 6.27 years for the pre-tax return of 6%, 8%, and 10%, respectively. This is because the net loss as a percentage of the NAV is now realized on a larger NAV, leading to larger net dollar losses that reduce the at-risk amount more rapidly. In addition to a faster reduction in the at-risk amount, a higher pre-tax return also leads to a greater value of the partnership interest. All this results in a larger built-in gain and, thus, a greater impact of capital gain recognition upon charitable contribution. However, despite the greater negative impact of this capital gain, the IRR increases with pre-tax return.

Finally, we consider the effect of changes in tax rates on the IRR. For example, the American Families Plan announced by President Biden on April 28, 2021, in addition to proposing an increase in the highest bracket federal tax rate from 37% to 39.6%, includes proposals to tax long-term capital gains and qualified dividend income at the same rate as ordinary income for households earning over \$1 million. With the inclusion of net investment income tax of 3.8%, this results in an identical federal tax rate of 43.4% on all capital gains, long-term and short-term, for high-income taxpayers.

In Appendix C, we prove that, when all the gains and income are taxed at the same rate, the *level* of tax rate does not affect the IRR. Column 12 shows that under identical tax rates on long-term and short-term gains, the IRRs remain high despite the large impact of the capital gain recognized upon charitable contribution. In fact, the impact of capital gain upon contribution is by far the highest under identical tax rates than under all the other scenarios we considered.

In calculations not reported here for the sake of brevity, we find that in this scenario, the drop in IRR from liquidating partnership interest and contributing the proceeds compared to contributing partnership interest is also quite high—6.3% drop in the IRR on average across the horizons from 1 to 20 years. As a result, despite the lower IRR than under differential tax rates, the best policy for the investor to pursue under identical tax rates is still to defer the donation, invest in a tax-efficient fund, and donate the partnership interest. Moreover, the punitive effect on the IRR of the capital gain recognized upon contribution decreases with investment horizon. In addition, our earlier conclusion still holds: If a charity does not accept partnership interests, liquidation and contribution of after-tax proceeds still results in a positive IRR for an investor in a tax-efficient fund. However, an investor who can contribute her partnership interest, instead of liquidating it and then contributing the after-tax proceeds, can achieve an even higher level of IRR.

CONCLUSION

New regulations now require many partnerships to allocate nonrecourse liabilities to their LPs. As a result of allocation of liabilities, LPs may need to recognize gains on charitable contributions of their partnership interests. Recognition of capital gain upon charitable contribution might look like an unexpected result. Therefore, first we explain the rules that lead to such capital gain recognition. We then evaluate the punitive effects of capital gain recognized upon charitable contribution.

We draw three main conclusions from this analysis. First, although tax efficiency and leverage indeed lead to capital gain upon charitable contribution, a charitably inclined investor still derives a high level of benefit from delaying the contribution, investing in a tax-efficient partnership, and then either contributing partnership interest or liquidating it and contributing the after-tax proceeds.

Second, more tax-efficient partnerships realize higher tax benefits for their investors but might also create a higher capital gain liability upon charitable contribution. Despite this liability, tax efficiency is highly valuable for a charitably inclined investor. Moreover, tax benefits that arise from character differences (that is, matching amounts of low-taxed gains and income and highly taxed losses and deductions), rather than from deferral of gains increase the value for the investor without an associated increase in capital gain liability upon contribution.

Finally, we find that an investor in a tax-efficient partnership achieves a higher value from contribution of partnership interest than from liquidating partnership interest and donating after-tax proceeds. This is because the liability resulting from liquidation is higher than the one arising from capital gain recognized upon charitable contribution. Nonetheless, while contribution of partnership interest, when possible, is preferred, the tax cost of liquidating and donating the proceeds does not invalidate the attractiveness of the approach of delaying the contribution and investing in a tax-efficient partnership.

More generally, although investors in tax-efficient leveraged funds organized as partnerships are likely to recognize capital gains upon charitable contributions, when these capital gains are evaluated in the context of tax benefit and pre-tax return opportunities, they do not present a hurdle for tax-efficient investing. The benefits of tax efficiency more than compensate charitably inclined investors in leveraged funds for the capital gain tax liability they might incur upon contribution to a charity.

APPENDIX A

TAXABLE GAIN RECOGNIZED UPON CHARITABLE CONTRIBUTION AS A FUNCTION OF PARTNER'S BUILT-IN GAIN AND LIABILITIES

For the sake of simplicity, we only focus on the scenario where there is no suspended loss. This scenario is sufficient to answer the question: "How large can a cost of taxable gain can get?" This is because taxable gain, net of released suspended loss, is greatest when at-risk amount is exactly zero and there is no suspended loss. Adding suspended losses complicates the derivation without changing the conclusion about the maximum tax cost of capital gains recognized upon charitable contribution.

Let L be the partner's allocated liabilities, C be the partner's capital, and ARA be the partner's at-risk amount. Using the balance sheet approach described in the main text, we can derive the partner's assets and tax basis as follows

$$A = L + C \quad (A1)$$

and

$$B = L + ARA \quad (A2)$$

Tax basis apportioned to the part sale arising from the discharge of liabilities, as we explain in the main text, is $B \frac{L}{A}$. As the result, taxable capital gain on the part sale, TG , as a fraction of the partner's capital is given by

$$\frac{TG}{C} = \frac{1}{C} \left(L - B \frac{L}{A} \right) \quad (A3)$$

Equation A3 can be rewritten as

$$\frac{TG}{C} = \frac{L}{C} \left(1 - \frac{B}{A} \right) \quad (A4)$$

Substituting Equations A1 and A2 into A4 and simplifying we obtain

$$\frac{TG}{C} = \frac{L}{C} \left(\frac{C - ARA}{L + C} \right) \quad (A5)$$

As we said, we assume that the partner does not have suspended losses, then $C - ARA$ is equal to the partner's built-in gain:

$$BIG = C - ARA \quad (A6)$$

Let's also define debt-to-equity ratio as

$$DE = L/C \quad (A7)$$

Substituting in Equations A6 and A7 into Equation A5, we obtain

$$\frac{TG}{C} = \frac{BIG/C}{1 + 1/DE} \quad (A8)$$

APPENDIX B

AT-RISK AMOUNT AND TAX BENEFIT CALCULATION

Time until Zero At-Risk Amount

Let X be the annual net tax loss allocated by the fund expressed as a percent of the NAV and let r be the fund's annual pre-tax return. Assuming that the investor does not make any contributions to or redemptions from the fund, her at-risk amount will reach 0 at time T , where T is defined by the equation

$$1 - \sum_{t=0}^T (1+r)^t X = 0 \quad (B1)$$

Rearranging Equation B1, we obtain

$$\sum_{t=0}^T (1+r)^t X = 1 \quad (B2)$$

If $r = 0$, then

$$(T + 1)X = 1 \quad (\text{B3})$$

If $r > 0$, then, solving for the sum in Equation B2, we obtain

$$\frac{(1+r)^{T+1} - 1}{r} X = 1 \quad (\text{B4})$$

Rearranging Equation B4, we obtain

$$(1+r)^{T+1} = 1 + \frac{r}{X} \quad (\text{B5})$$

Taking a natural logarithm of Equation B5, we obtain

$$(T + 1)\ln(1 + r) = \ln(X + r) - \ln(X) \quad (\text{B6})$$

Rearranging Equations A3 and A6, we obtain a solution for T

$$T = \begin{cases} \frac{1}{X} - 1 & \text{if } r = 0 \\ \frac{\ln(X + r) - \ln(X)}{\ln(1 + r)} - 1 & \text{if } r > 0 \end{cases} \quad (\text{B7})$$

Under our base-case assumptions, $r = 8\%$ and $X = 10\%$. Substituting these values in Equation B7, we find that $T = 6.64$. In other words, a fund investor with an annual pre-tax return of 8%, and an annual net tax loss allocation of 10%, will see her at-risk amount decline to zero after about six years and eight months.

Tax Benefit Calculation

Let's assume 2020 tax rates applicable to the highest federal tax bracket—23.8% on long-term capital gains and 40.8% on short-term capital gains. Under our base case assumptions, the fund allocates to an average investor 10% in long-term capital gain and 20% in short-term capital loss.

As long as the at-risk amount is positive, the investor can fully utilize the 20% short-term loss allocated by the fund to offset short-term capital gains from other investments. The tax benefit of the 20% short-term capital loss is, thus, 8.16% ($= 20\% \times 40.8\%$). The tax liability of the 10% long-term capital gain is 2.38% ($= 10\% \times 23.8\%$). The net tax benefit is, thus, 5.78% ($= 8.16\% - 2.38\%$).

Once the at-risk amount reaches zero, the investor can only deduct losses allocated to her by the fund to the extent of the gains allocated to her by the fund. Any loss in excess of the gain is suspended under the rules described in Sosner, Balzafiore, and Du (2018). Note that this suspended loss is unlocked upon charitable contribution of the partnership interest as described in the example in Exhibit 2 in the main text.

Due to the suspension of short-term capital loss in excess of long-term capital gain, from the time the investor's at-risk amount reaches zero, her tax benefit is reduced to only character benefit of 1.70%. Sosner, Krasner, and Pyne (2019) define the character benefit as the matching amount of low-taxed gains and income and highly taxed losses and deductions, in our example 10%, multiplied by the difference in their applicable tax rates, in our example 17%.

APPENDIX C

IRR UNDER IDENTICAL TAX RATES ON ALL GAINS AND INCOME

In this appendix, we show that under identical tax rates on all gains and income, the level of the tax rate does not affect the IRR. Equation 2 in the main text defines the IRR as follows:

$$X_0 = \sum_{t=1}^T \frac{x_t}{(1+p)^t} + \frac{X_T}{(1+p)^T} \quad (\text{C1})$$

Let's consider the terms in Equation C1.

$$X_0 \equiv \tau C_0 \quad (\text{C2})$$

where t is the tax rate and C_0 is the amount set aside for charitable purposes on the initial date $t = 0$.

$$x_t \equiv -\tau N_t \quad (\text{C3})$$

where N_t is the net taxable gain (if positive) or the net deductible loss (if negative) from the investment in year t —a net gain (loss) results in a tax liability (benefit) and, thus, a negative (positive) value of x_t . The net deductible loss is the entire net loss as long as the at-risk amount is positive and zero after the at-risk amount is reduced to zero.

$$X_T \equiv \tau(C_T - G_T + S_T) \quad (\text{C4})$$

where C_T is the amount of charitable contribution, G_T is the capital gain recognized upon contribution, and S_T is the suspended loss unlocked upon contribution, all on date T .

Substituting the definitions in Equations C2 to C4 into Equation C1 yields

$$\tau C_0 = -\sum_{t=1}^T \frac{\tau N_t}{(1+p)^t} + \frac{\tau(C_T - G_T + S_T)}{(1+p)^T} \quad (\text{C5})$$

The tax rate τ multiplies all the terms in Equation C5. Therefore, it can be cancelled out leaving no tax rate in the equation determining the IRR denoted by p .

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