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REAL ESTATE JV PROMOTE CALCULATIONS: RECYCLING PROFITS

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REAL ESTATE JV PROMOTE CALCULATIONS: RECYCLING PROFITS

*By Stevens A. Carey**

This article supplements a previous article published in the Spring 2003 issue of The Real Estate Finance Journal entitled “Real Estate JV Promote Calculations: Basic Concepts and Issues”. As described in that article, it is relatively common for a service partner to receive a promote in the form of a greater share of profit distributions after an IRR hurdle is achieved. This article will discuss problems from the viewpoint of the capital partner associated with recycling profits, where a capital partner’s profits in excess of the IRR hurdle are taken into account in determining whether the IRR hurdle is met in the future.

Turn back the clock and imagine this: an investment fund forms a partnership with a local operator and provides all the equity capital to acquire a San Francisco office building just before the dot-com craze. Under the partnership agreement, the operator is entitled to half the distributions (a “**promote**”) after the investment fund has received a 10% IRR (basically, after it has received a 10% annual return and recouped its investment). The investment is a success. A year after the purchase, rents skyrocket and the operator is able to refinance for so much more than the original investment that there are \$8 million of refinancing distributions in excess of the 10% IRR hurdle. The investment fund then has a 50% IRR (including \$4 million of profits in excess of the 10% IRR hurdle) and the operator has a \$4 million promote! The investment fund distributes its share of the proceeds to its investors, who are ecstatic. A few years later, the tech-stock bubble bursts, the building loses its tenants and the investment fund is required to invest \$4 million of additional capital to re-lease the building. During the re-leasing process, it becomes clear that more capital will eventually be required to fund operating deficits. Rather than invest further capital (because the investors don’t want to spend any more money), the partnership sells the property and the sale generates (after reserves for liquidation) \$1 million of net sale proceeds. Even with the additional investment, the investment fund still has more than a 10% IRR before the final distribution, so the net sale proceeds are split 50/50. The operator walks away with an additional \$0.5 million promote (for a total of \$4.5 million). In the end, the investors are not happy, but the investment fund has significantly more than a 10% IRR for its entire investment in this building.

Both the investment fund and its investors had assumed that the investment fund would always get more than 1/2 of the “**whole dollar profits**” (i.e., the amount by which (x) total distributions exceed (y) total contributions) because they were getting a 10% return before any profits were split with the operator. Yet it did not work out that way. In the end, there were \$6 million of whole dollar profits, and the investment fund received only \$1.5 million, while the operator received three times as much, \$4.5 million. Basically, the investment fund recycled \$4 million of profits above the 10% IRR to fund the additional investment, most of which was lost. How did this happen? And what might have been done to avoid this result?

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This article will attempt to answer these questions and, more generally, discuss the problems associated with recycling profits.

Definition of Recycling Profits. In this article, “**recycling profits**” means that a capital partner’s “post-hurdle distributions” (i.e., distributions in excess of an IRR hurdle) are taken into account in determining whether the IRR hurdle is met in the future.

Assumptions. To simplify the discussion, this article assumes that, as in the above story, there is a partnership between a capital partner (“**Investor**”) and a service partner (“**Operator**”) in which:

- Investor is responsible for 100% of the capital contributions; and
- all distributions are made first 100% to Investor until it receives a 10% hurdle (i.e., all of its capital and a 10% annual return, compounded annually) and then the balance is distributed 50/50.

Definition of IRR. Unless otherwise indicated, references in this article to Investor’s “**IRR**” as of any moment in time will mean the annual rate which, when compounded annually, makes (A) the present value of all Investor’s contributions made at or before such moment equal (B) the present value of all Investor’s distributions made at or before such moment.^{1/} Here are two observations about the IRR, which are fairly easy to prove, but which this article will take for granted:

- The present values of the contributions and distributions in question may be the discounted values as of the commencement of the partnership or they may be calculated as of any other point in time as long as the same point in time is used for (A) and (B).
- If Investor has a certain IRR as of a particular moment, then it will have the same IRR until the next contribution or distribution. In other words, the IRR doesn’t change until there is another contribution or distribution.

EXAMPLE 1: To flesh out the facts of the above story, assume the following slightly simplified facts: (1) at the beginning of year 1, Investor makes a \$10 million contribution to provide the equity capital for a \$50 million purchase of an office building; (2) at the beginning of year 2, there is a \$19 million refinancing distribution; (3) at the beginning of year 3, Investor makes an additional \$4 million contribution; (4) at the beginning of year 4, the building is sold and there is a final distribution of \$1 million; and (5) there are no other contributions or distributions.

Under these facts, the contributions and distributions can be summarized as follows:

EXAMPLE 1			
DISTRIBUTIONS:		Investor	Operator
Refi Distribution:	\$11.0 million hurdle <u>\$ 8.0 million balance</u> \$19.0 million	\$11.0 million \$ 4.0 million	\$0.0 million \$4.0 million
Sale Distribution:	<u>\$ 1.0 million</u> \$20.0 million	<u>\$ 0.5 million</u> \$15.5 million	<u>\$0.5 million</u> \$4.5 million
CONTRIBUTIONS:			
Initial Contribution:	(\$10.0 million)	(\$10.0 million)	(\$0.0 million)
Subsequent Contribution:	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$0.0 million)</u> (\$0.0 million)
WHOLE DOLLAR PROFITS:	\$ 6.0 million	\$ 1.5 million	\$ 4.5 million

In Example 1, Investor has an approximate 15.31% IRR immediately after the additional contribution and continues to have the same IRR until immediately before the final distribution (as explained in the following calculation).

EXAMPLE 1

IRR CALCULATION

To calculate the IRR in Example 1 after the additional contribution and before the final distribution, we look for an annual rate which, when compounded annually, equalizes the present values of Investor's contributions and distributions immediately after the additional contribution. As noted earlier, it doesn't matter what day during that period we choose because there are no contributions or distributions during that period. The IRR turns out to be approximately 15.31%:

(A) Present Value (@ 15.31%) of
Contributions (after year 3 contribution):

$(\$10 \text{ million} \times [1.1531]^2) + \$4 \text{ million},$

which is approximately \$17.3 million.

(B) Present Value (@ 15.31%) of
Distributions (after year 3 contribution):

$\$15 \text{ million} \times [1.1531],$

which is approximately \$17.3 million.

When Investor contributed the additional \$4 million, it may have expected that this money would be treated like a new investment that Investor would recoup, together with a 10% annual return, before any further distributions would be shared with Operator. This would have happened if the \$4 million post-hurdle distribution had not been taken into account in the IRR calculation. Instead, Investor's \$4 million post-hurdle distribution (received a year earlier) was in effect recycled into the project and credited against the \$4 million of subsequent contributions (as explained in the following calculation).

EXAMPLE 1

IRR SURPLUS RESULTING FROM POST-HURDLE DISTRIBUTIONS

When post-hurdle distributions are taken into account in the IRR calculation, they create a surplus that can offset future contributions (so that Investor is treated as though it already recouped any subsequent contribution until the surplus is fully offset). Such a surplus occurred in Example 1. To see how this works, it helps to track how far off Investor is in achieving a 10% IRR.

At any given point in time, there may either be a deficiency or a surplus in achieving the 10% IRR hurdle^{2/}, if you compare the present value of Investor's contributions to the present value of Investor's distributions (using a 10% growth rate). At the time of a distribution, this comparison must be done anyway to determine how much to distribute to achieve the hurdle. For example, at the beginning of year 2 in Example 1, immediately prior to the refinancing distribution, the partners must determine how much of the refinancing distribution must be distributed to Investor to achieve the 10% IRR:

(A) <u>Present Value (@ 10%) of Contributions:</u>	(B) <u>Present Value (@ 10%) of Distributions:</u>
\$11 million (110% of \$10 million)	\$0

Thus, the 10% IRR deficiency (i.e., the amount that was required to be distributed to Investor to meet the 10% IRR hurdle) at that time was \$11 million. But there was \$8 million more than \$11 million to distribute, so Investor received \$4 million of additional (“**post-hurdle**”) distributions. Obviously, the 10% IRR surplus at that time equaled the \$4 million of post-hurdle distributions. Now, this surplus would grow (by 10% per annum) to \$4.4 million by the beginning of year 3, so that if the contribution by Investor at the beginning of year 3 were \$4.4 million, there would be an exact offset (credit) and Investor's IRR would then (immediately after such contribution) be 10%:

(A) <u>Present Value (@ 10%) of Contributions:</u>	(B) <u>Present Value (@ 10%) of Distributions:</u>
\$10 million initial contribution x [1.10] ²	([\$10 million x 1.10] hurdle distribution)
+ \$4.4 million additional contribution	x [1.10] + \$4 million post-hurdle distribution
= \$12.1 million + \$4.4 million	x [1.10]
	= \$12.1 million + \$4.4 million

Any lesser contribution would still result in a reduction of the IRR, but not enough to drop to 10% or below. In Example 1, the additional contribution was less than the then surplus (only \$4 million; not the full \$4.4 million), and as indicated above, the IRR dropped only to 15.31%. That IRR would hold until the time of the final distribution, so there would be nothing to distribute under the first level (because the 10% IRR hurdle had been achieved), and the final distribution would be distributed under the final (post-hurdle) level equally.

Practice and Custom

Distribution formulas that, *in theory*, recycle profits are relatively common. This is largely due to the fact that, in practice, regardless of the form of the distribution provisions, profits are usually not, *in fact*, recycled. With the exception of an ongoing portfolio venture (where properties may be acquired or developed after other properties are sold), in the vast majority of joint venture transactions, the hurdle is not reached until the final distribution on sale; consequently in most transactions (absent a creditor's post-liquidation claim in excess of liquidation reserves), no contributions are made after post-hurdle distributions, and there is no opportunity to recycle profits. It is not surprising then that, many, if not most, joint venture agreements do not address this issue.

Preferred Return Formulation. However, a number of joint venture agreements have addressed, and do address, the issue. The author has encountered JV documents providing for no recycling of profits since the days when distribution provisions were routinely worded in terms of preferred returns and a return of capital (and IRRs were not yet in vogue). Thus, the distribution provisions in a joint venture agreement (reflecting the distribution waterfall assumed in this article) would often be worded in a manner similar to the following:

- “A. First Level. First, 100% to Investor until it has received *under this subsection A* an amount equal to a 10% annual return, compounded annually, on all of its capital contributions (to the extent such capital contributions have not been recouped under subsection B below);
- “B. Second Level. The balance, if any, 100% to Investor until it has received *under this subsection B* all of its contributions; and
- “C. Third Level. The balance, if any, 50% to Investor and 50% to Operator.”

Under the quoted provisions, the 10% hurdle is effectuated through the preferred return under the First Level and the return of capital under the Second Level. The italicized language assures that the post-hurdle distributions (under the Third Level) are not taken into account in determining whether the hurdle is met (so that profits are not recycled). Not all distribution provisions with a preferred return approach are crafted in this manner, but many are. A number of transactions in the 80's incorporated this approach.

IRR Formulation. In the 90's, IRR calculations became more prevalent and many distribution provisions were rewritten to reflect IRR thresholds rather than preferred returns and returns of capital. Because IRR calculations typically take into account all contributions and all distributions, these formulas potentially recycle profits unless they are fixed. Without addressing this problem, an IRR formulation of the economic splits assumed above might look as follows:

- “A. First Level. First, 100% to Investor until it has achieved a 10% IRR; and
- “B. Second Level. The balance, if any, 50% to Investor and 50% to Operator.

“For purposes of this Agreement, Investor shall be deemed to have achieved a 10% IRR if and only if (1) the present value of all distributions received by Investor equals or exceeds (2) the present value of all contributions made by Investor, where such present value is determined using a 10% growth rate, compounded annually.”

To avoid recycling profits, this provision is easily modified by defining the IRR so that it includes only the distributions under the First Level, but as we will see below, this may not completely protect Investor.

It is important to understand that the failure to modify the IRR calculations in many documents is not necessarily a conscious decision (and when it is, it is usually due to the fact that the investor does not think that recycling will be an issue). Often it is simply a result of the fact that the intricacies and potential complications of IRR and promote calculations are not fully understood.

In any case, there is a wide spectrum of possible documentation on this subject, and it may be a mistake to rely on what any particular group or groups have done routinely in the past. This issue should be evaluated on the merits.

The Problem

There may be nothing inherently wrong with IRR calculations that take into account all distributions and all contributions. (See prior article for some exceptions to this general rule.) However, when an IRR calculation is used to implement a distribution hurdle in a partnership agreement, there is an odd disparity that occurs in the allocation of distributions with respect to contributions made before and contributions made after the hurdle, with the result that Investor may be unfairly prejudiced (and Operator may get an unintended windfall) if a contribution happens to occur after (instead of before) the hurdle is reached. To illustrate the problem, consider a slight variation on Example 1:

EXAMPLE 2: Assume the same facts as in Example 1 except that the additional \$4 million contribution is made a year earlier at about the same time as the refinancing distribution.

Now, contrast what happens when the additional \$4 million contribution is made (x) immediately before the refinancing distribution, or (y) immediately after the refinancing distribution:

- Contribution Before Refi Distribution. If the contribution is made immediately before the refinancing distribution, then the hurdle immediately before the refinancing distribution would be \$15 million ([110% of \$10 million] plus \$4 million), in which event the contributions and distributions would be as follows (in whole dollars):

EXAMPLE 2			
2nd CONTRIBUTION BEFORE REFI DISTRIBUTION			
DISTRIBUTIONS:		Investor	Operator
Refi Distribution:	\$15.0 million hurdle <u>\$ 4.0 million balance</u> \$19.0 million	\$15.0 million \$ 2.0 million	\$0.0 million \$2.0 million
Sale Distribution:	<u>\$ 1.0 million</u> \$20.0 million	<u>\$ 0.5 million</u> \$17.5 million	<u>\$0.5 million</u> \$2.5 million
CONTRIBUTIONS:			
Initial Contribution:	(\$10.0 million)	(\$10.0 million)	(\$0.0 million)
Subsequent Contribution:	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$0.0 million)</u> (\$0.0 million)
WHOLE DOLLAR PROFITS:	\$ 6.0 million	\$ 3.5 million	\$2.5 million

- Contribution After Refi Distribution. If the contribution is made immediately after the refinancing distribution, then the hurdle immediately before the refinancing distribution would be \$11 million (110% of \$10 million), in which event the contributions and distributions would be as follows (in whole dollars):

EXAMPLE 2			
2nd CONTRIBUTION AFTER REFI DISTRIBUTION			
DISTRIBUTIONS:		Investor	Operator
Refi Distribution:	\$11.0 million hurdle <u>\$ 8.0 million balance</u> \$19.0 million	\$11.0 million \$ 4.0 million	\$0.0 million \$4.0 million
Sale Distribution:	<u>\$ 1.0 million</u> \$20.0 million	<u>\$ 0.5 million</u> \$15.5 million	<u>\$0.5 million</u> \$4.5 million
CONTRIBUTIONS:			
Initial Contribution:	(\$10.0 million)	(\$10.0 million)	(\$0.0 million)
Subsequent Contribution:	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$0.0 million)</u> (\$0.0 million)
WHOLE DOLLAR PROFITS:	\$ 6.0 million	\$ 1.5 million	\$4.5 million

Thus, the fact that the contribution happens to be made a moment later than sooner could result in the loss to Investor of \$2 million. Surely, this result could not be intended by Investor under any circumstances. Admittedly, in the real world, a contribution is not likely to be required moments after a distribution; instead, the partnership would typically use the distributable cash rather than first distribute it and then immediately require a contribution. However, this odd result may occur, and has in fact occurred, when more time elapses, resulting in a similar unfair consequence. For example, if Investor is a REIT it might want to make a large year-end distribution to satisfy the REIT requirement that it distribute 90% of its taxable income under IRC § 857, despite knowing that significant capital is required at the beginning of the following year. A more common possibility is that certain future capital requirements are simply not known at the time of a distribution.

Consider Example 1, where the additional \$4 million contribution is made a year later. Although the one year delay does change Investor's IRR, it doesn't affect the breakdown of contributions and distributions outlined above in Example 2 when the additional \$4 million contribution is made immediately after the refinancing distribution. In both cases, Investor receives only \$1.5 million in whole dollar profits, which is \$2 million less than it would have received had the contribution been made immediately before the refinancing distribution.

Analysis

So, what is happening here? When a new contribution is required to pay a partnership cost after a post-hurdle distribution, Investor's post-hurdle distributions (together with the imputed 10% return on those distributions) are, in effect, being refunded to fund the new contribution. Basically, to the extent Investor's post-hurdle distribution (and the imputed return) is sufficient to cover the new contribution, they cancel one another out in the IRR calculation. By contrast, if the contribution were made before the distribution, then not only Investor's share, but also Operator's share, of the distribution, would have been reduced to account for (and pay) the applicable partnership cost. Thus, the inequity here is that there is an effective refund of only a portion of the post-hurdle distributions, namely, the portion distributed to Investor.

In Example 1, the contribution that follows the financing distribution substantially reduces Investor's IRR and Investor's share of whole dollar profits, but it has no impact whatsoever on Operator; Operator gets the same promote it would have gotten had Investor never made that additional contribution. The end result is that Investor bears a disproportionate share of the burden of the additional contribution.

Solutions

This problem can be, and has been, addressed in a number of ways, including one or more of the following methods:

No Recycling of Profits. One can simply provide that post-hurdle distributions are not taken into account in the hurdle calculation. This eliminates the recycling of profits.

- In Example 1, if we don't recycle profits, the new \$4 million investment stands on its own (in the sense that the hurdle for this investment starts over and is not reduced by prior distributions), and Investor gets 100% of the final distribution for total whole dollar profits of \$2 million:

EXAMPLE 1			
NO RECYCLING OF PROFITS SOLUTION			
DISTRIBUTIONS:		Investor	Operator
Refi Distribution:	\$11.0 million hurdle <u>\$ 8.0 million balance</u> \$19.0 million	\$11.0 million \$ 4.0 million	\$0.0 million \$4.0 million
Sale Distribution:	<u>\$ 1.0 million</u> \$20.0 million	<u>\$ 1.0 million</u> \$16.0 million	<u>\$0.0 million</u> \$4.0 million
CONTRIBUTIONS:			
Initial Contribution:	(\$10.0 million)	(\$10.0 million)	(\$0.0 million)
Subsequent Contribution:	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$0.0 million)</u> (\$0.0 million)
WHOLE DOLLAR PROFITS:	\$ 6.0 million	\$ 2.0 million	\$ 4.0 million

The whole dollar profits here are still \$1.5 million short of the result if the contribution had been made before the first distribution, but that is because the final distribution is not sufficient to make Investor whole. Indeed, if the lender had taken the property back and there had been no final distribution, this potential solution would not help at all.

Reserves. Some capital partners require that all or a substantial portion of the distributable cash be reserved until the partners are confident that there will be no need for future capital calls. A related solution is to reserve only the promote distributions (so that a reverse waterfall, as described below, can be funded).

- In Example 1, if the partnership could see into the future and \$4 million of the post-hurdle distributions were reserved from the refinancing, they could have been used to pay the \$4 million subsequent contribution. In that event, Investor would invest \$4 million less and would receive \$3.5 million of whole dollar profits as follows:

EXAMPLE 1			
RESERVE SOLUTION			
DISTRIBUTIONS:		Investor	Operator
Refi Distribution: (after \$4.0 million reserve)	\$11.0 million hurdle <u>\$ 4.0 million balance</u> \$15.0 million	\$11.0 million \$ 2.0 million	\$0.0 million \$2.0 million
Sale Distribution:	<u>\$ 1.0 million</u> \$16.0 million	<u>\$ 0.5 million</u> \$13.5 million	<u>\$0.5 million</u> \$2.5 million
CONTRIBUTIONS:			
Initial Contribution:	(\$10.0 million)	(\$10.0 million)	(\$0.0 million)
Subsequent Contribution:	<u>(\$ 0.0 million)</u> (\$10.0 million)	<u>(\$ 0.0 million)</u> (\$10.0 million)	<u>(\$0.0 million)</u> (\$0.0 million)
WHOLE DOLLAR PROFITS:		\$ 3.5 million	\$2.5 million

Note that the above reserve of \$4 million would put the partners in the same position they would have been in had the subsequent \$4 million contribution been made immediately before the refinancing. However, it is hard to predict exactly how much future additional capital may be needed at the time of a distribution.

Reverse Waterfall. It is also possible to require that contributions required after post-hurdle distributions be contributed by the partners receiving those distributions in the proportion received until, in effect, all such distributions have been refunded. By, in effect, going backwards up the distribution waterfall, there may be a more even-handed refund where both Operator and Investor participate proportionately. Basically, this “reverse waterfall” requires that both partners, rather than just Investor, recycle profits^{3/}. Many capital partners require this approach because it also protects against the possibility that there are inadequate future distributions to recoup new contributions. The reverse waterfall is a partial clawback and is often coupled with a final clawback at the end of the transaction and a guaranty.

- If we had a reverse waterfall in Example 1, then Operator would contribute \$2 million of the new \$4 million contribution. This contribution by Operator would reduce Investor’s investment, and increase Investor’s whole dollar profits, by \$2 million:

EXAMPLE 1			
REVERSE WATERFALL SOLUTION			
DISTRIBUTIONS:		Investor	Operator
Refi Distribution:	\$11.0 million hurdle <u>\$ 8.0 million balance</u> \$19.0 million	\$11.0 million \$ 4.0 million	\$0.0 million \$4.0 million
Sale Distribution:	<u>\$ 1.0 million</u> \$20.0 million	<u>\$ 0.5 million</u> \$15.5 million	<u>\$0.5 million</u> \$4.5 million
CONTRIBUTIONS:			
Initial Contribution:	(\$10.0 million)	(\$10.0 million)	(\$0.0 million)
Subsequent Contribution:	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$ 2.0 million)</u> (\$12.0 million)	<u>(\$2.0 million)</u> (\$2.0 million)
WHOLE DOLLAR PROFITS:	\$ 6.0 million	\$ 3.5 million	\$2.5 million

Clawback at End of Deal. At the end of the transaction, there may be a clawback or “true-up” to put the partners in the same position they would have been in had all the distributions been made at liquidation where:

- all actual distributions are grown out at the hurdle rate to determine the amount each of the partners would have received in a single final distribution; and
- then that amount is compared to the amounts that the partners actually received, grown out to the liquidation date using a growth rate equal to the hurdle rate.

Any amount determined to be owing by Operator to Investor is effectively “clawed back”. Many capital partners require that this “clawback” obligation be guaranteed. The amount of such a clawback would be calculated as follows:

EXAMPLE 1			
CALCULATION OF CLAWBACK (in millions)			
Hypothetical Single Distribution	$(\$19 \times 1.1^2) + \1 $= \$22.99 + \$1 = \$23.99$	Investor	Operator
Hypothetical Hurdle:	$(\$10 \times 1.1^3) + (\$4 \times 1.1)$ $= \$13.31 + \$4.4 = \$17.71$	\$17.71	\$ 0.00
Hypothetical Residual Profit:	$\$23.99 - \$17.71 = \underline{\$ 6.28}$	<u>\$ 3.14</u>	<u>\$ 3.14</u>
	\$23.99	\$20.85	\$ 3.14
Actual Distributions (Grown at 10%)			
Investor Distributions:	$(\$15 \times 1.1^2) + \0.5 $= \$18.15 + \$0.5 = \mathbf{\$18.65}$	<u>(\$18.65)</u>	
Operator Distributions:	$(\$4 \times 1.1^2) + \0.5 $= \$4.84 + \$0.5 = \mathbf{\$ 5.34}$		<u>(\$5.34)</u>
Investor's Shortfall/Operator Payment		<u>\$ 2.20</u>	<u>(\$ 2.20)</u>

This solution would lead to the following breakdown of whole dollar profits:

**EXAMPLE 1
CLAWBACK SOLUTION**

DISTRIBUTIONS:		Investor	Operator
Refi Distribution:	\$11.0 million hurdle <u>\$ 8.0 million balance</u> \$19.0 million	\$11.0 million \$ 4.0 million	\$0.0 million \$4.0 million
Normal Sale Distribution:	<u>\$ 1.0 million</u> \$20.0 million	<u>\$ 0.5 million</u> \$15.5 million	<u>\$0.5 million</u> \$4.5 million
CLAWBACK AMOUNT:		\$ 2.2 million	(\$2.2 million)
Total Receipts:	\$20.0 million	\$17.7 million	\$2.3 million
CONTRIBUTIONS:			
Initial Contribution:	(\$10.0 million)	(\$10.0 million)	(\$0.0 million)
Subsequent Contribution:	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$ 4.0 million)</u> (\$14.0 million)	<u>(\$0.0 million)</u> (\$0.0 million)
WHOLE DOLLAR PROFITS:	\$ 6.0 million	\$ 3.7 million	\$ 2.3 million

These solutions for Example 1 are summarized in the following chart.

EXAMPLE 1					
SUMMARY (in millions)					
	Recycling of Profits	No Recycling of Profits	Reserves	Reverse Waterfall	Final Clawback
Investor Distributions	\$15.5	\$16.0	\$13.5	\$15.5	\$15.5
Operator Out-of-Pocket Payment	\$ 0.0	\$ 0.0	\$ 0.0	\$ 2.0 to Company	\$ 2.2 to Investor
Gross Amount to Investor	\$15.5	\$16.0	\$13.5	\$15.5	\$17.7
Investor Contributions	<u>(\$14.0)</u>	<u>(\$14.0)</u>	<u>(\$10.0)</u>	<u>(\$12.0)</u>	<u>(\$14.0)</u>
Whole Dollar Profits to Investor	\$ 1.5	\$ 2.0	\$ 3.5	\$ 3.5	\$ 3.7

The difference between the reverse waterfall (\$3.5) and the final clawback (\$3.7) is timing. In the reverse waterfall, Investor gets a \$2 million savings at the beginning of year 3; in the final clawback, Investor gets a \$2.2 surplus a year later at the beginning of year 4. \$2 million grows to \$2.2 million in a year at the rate of 10% per annum. Thus, if both a reverse waterfall and a final clawback were used in Example 1 and Operator received appropriate credit^{4/} in the final clawback calculation, then there would be no final clawback payment in Example 1.

The reverse waterfall and the final clawback will not always be equivalent. Even when there is a reverse waterfall, the final clawback is sometimes necessary to effectuate a complete true-up because a reverse waterfall (as described in this article) accounts only for the original amount of the post-hurdle distributions but not the imputed return on those distributions. The imputed return on Investor's post-hurdle distributions may also, in effect, be recycled and credited against future Investor contributions.

CONCLUSION

When an IRR hurdle is exceeded, it may be a time for celebration, but the joy may be long forgotten if an additional investment is required in the future. Investors may expect that they will get the additional investment back plus a return before any further promote distributions are made. However, as illustrated in Example 1, things may not work out that way. The profit distributions beyond the hurdle may create a surplus that continues to grow at the hurdle rate as a potential offset of future contributions within the IRR calculation. Subsequent (“post-hurdle”) contributions may, in effect, be treated as refunds of these surplus profit distributions (and the imputed return on these profit distributions) rather than new money to be recouped, together with a return, from future distributions. In this way, profits (namely, post-hurdle distributions and the imputed return on those distributions) may be refunded or “recycled” into the partnership.

The problem with such recycling of profits is that, without a corresponding refund of the promote (and the imputed return on the promote), Investor may bear a disproportionate share of the reduction^{5/} in the partnership’s “whole dollar profits” (i.e., distributions less contributions). This imbalance occurred in Example 1 when Investor anticipated that it would get more than 1/2 of the \$6 million whole dollar profits, but ended up with only 25% (\$1.5 million). Indeed, Investor anticipated that, of the \$6 million whole dollar profits, it would get 100% of the \$1 million hurdle return component and then 50% of the \$5 million balance; yet it received \$0.5 million of the \$5 million balance, which is only 10%!

Simply eliminating the recycling of profits, by treating post-hurdle contributions as a new investment, does not completely protect investors, because subsequent distributions may not be sufficient to recoup the new contributions and pay a return on those contributions. Generally, the partnership agreement should provide for corresponding payments from the recipient of the promote to ensure that the partnership’s whole dollar profits are equitably allocated between the partners.

* * *

APPENDIX

MULTIPLE INTERNAL RATES OF RETURN

As noted in endnote 1, there are a number of intricacies associated with the internal rate of return calculation that are beyond the scope of this article. In particular, the possibility of multiple IRRs (at the same time) may wreak havoc with the assumption of many real estate professionals that a particular IRR hurdle should be exceeded only if all smaller IRR hurdles are then exceeded. This Appendix will give an example of multiple IRRs, explain why multiple IRRs rarely occur, and discuss some potential solutions (and ask whether one solution might simply be not recycling profits).

Background - IRR Calculation

For a given set of cash flows, $a_0, a_1, a_2, \dots, a_n$, the possible IRRs are usually defined as solutions to the following equation (where $IRR = k$):

$$a_0 + a_1 (1+k)^{-1} + a_2 (1+k)^{-2} + \dots + a_n (1+k)^{-n} = 0$$

Some of these solutions may be negative and some may be complex numbers, but for IRR purposes, the relevant solutions are generally those that are positive real numbers. Let's see how this works for Example 1 in determining Investor's IRR after the second contribution. The first three cash flows in Example 1 are as follows:

EXAMPLE 1	1st	2nd	3rd
Project Cash Flows	-10	19	-4
Investor Cash Flows	-10	15	-4

Thus, the formula for determining Investor's IRR for these three cash flows is as follows:

$$-10 + 15(1+k)^{-1} - 4(1+k)^{-2} = 0 \Leftrightarrow$$

$$-10(1+k)^2 + 15(1+k) - 4 = 0 \Leftrightarrow$$

$$-10(k^2 + 2k + 1) + 15(k + 1) - 4 = 0 \Leftrightarrow$$

$$(-10k^2 - 20k - 10) + (15k + 15) - 4 = 0 \Leftrightarrow$$

$$-10k^2 - 5k + 1 = 0 \Leftrightarrow$$

$$k^2 + 5k - .1 = 0 \Leftrightarrow$$

$$(k + 65.31\%)(k - 15.31\%) = 0 \Leftrightarrow$$

$$k = -65.31\% \text{ or } k = 15.31\%$$

Thus, in Example 1, we have two solutions for Investor's IRR after the second contribution, but only one is a positive real number, namely 15.31%.

Example of Multiple (Positive, Real) IRRs

It is possible to have multiple positive real IRRs, as illustrated by the following example:

EXAMPLE 3: Assume the same facts as in Example 1 except that (1) the distribution in the beginning of Year 2 is \$34.55 million, (2) the additional contribution in the beginning of year 3 is \$13.2 million, (3) there are three annual IRR hurdles of 8%, 10% and 20% and all distributions are made (a) first 100% to Investor until it receives an 8% annual IRR hurdle, (b) then 80% to Investor and 20% to Operator until Investor receives a 10% annual IRR hurdle, (c) then 66-2/3% to Investor and 33-1/3% to Operator until Investor receives a 20% annual IRR hurdle, and (d) then 50/50.

In this Example, the \$34.55 million distribution would be allocated as follows:

Example 3 - First Distribution Allocation			
Distribution Level	Operator	Investor	Total
(a)	0.00	10.80	10.80
(b)	0.05	00.20	00.25
(c)	0.50	01.00	01.50
(d)	11.00	11.00	22.00
Total	11.55	23.00	34.55

Thus, the cash flows under this Example would be as follows:

EXAMPLE 3	1st	2 nd	3rd
Project Cash Flows	-10	34.55	-13.2
Investor Cash Flows	-10	23.00	-13.2

Under these facts (which, although unlikely, are not beyond the realm of possibility), Investor's internal rates of return after the additional contribution would be 10% and 20%:

$$-10 + 23(1+k)^{-1} - 13.2(1+k)^{-2} = 0 \Leftrightarrow$$

$$-10(1+k)^2 + 23(1+k) - 13.2 = 0 \Leftrightarrow$$

$$-10(k^2 + 2k + 1) + 23(k + 1) - 13.2 = 0 \Leftrightarrow$$

$$(-10k^2 - 20k - 10) + (23k + 23) - 13.2 = 0 \Leftrightarrow$$

$$-10k^2 + 3k - .2 = 0 \Leftrightarrow$$

$$k^2 - .3k + .02 = 0 \Leftrightarrow$$

$$(k - 10\%)(k - 20\%) = 0 \Leftrightarrow$$

$$k = 10\% \text{ or } k = 20\%$$

It is relatively easy to show that the NPV of Investor's cash flows in Example 3 is positive between the annual discount rates of 10% and 20%, but negative for all other annual discount rates (including 8%)!^{6/} Under these circumstances, should both, one or neither IRR apply and if one, which one? Immediately before the second distribution, there is a \$25,920^{7/} deficiency in the 8% annual IRR hurdle (and there would be a deficiency for any other positive annual rate less than 10%), but no deficiency in the 10% or 20% annual IRR hurdle. So should there be a distribution under the first level to make up the 8% IRR deficiency and then the balance be distributed under the final level? What if there were no 8% annual IRR hurdle? Would the partners go immediately to the final level of distribution even though Investor had not then achieved any positive real IRR less than 10%? Surely, that could not be what Investor had in mind.

Frequency of Problem

Fortunately, it seems that multiple IRRs do not often occur, although one might reach a different conclusion based on the literature on the subject. The frequency with which multiple IRRs occur is often overestimated. Some writers apparently believe that there are as many IRRs as there are changes in the signs of the cash flows: one article states that "the number of sign changes from negative to positive in the income stream equals the number of internal rates of return," Beckhart, "No Intrinsic Value: The Failure of Traditional Real Estate Appraisal Methods to Value Income-Producing Property", 66 S. Cal. L. Rev. 2251, 2289 (July 1993); and one textbook states that "every time the cash flows change signs there will be a new root to the problem solution". Copeland & Weston, "Financial Theory and Corporate Policy", Ch. 2 at p. 31 (1980)^{8/}. However, as explained below, the number of times the cash flows change sign merely establishes a maximum number of IRRs. Unfortunately, even writers who acknowledge that this number is only a maximum sometimes create the impression that multiple IRRs occur more frequently than they actually do. One of the more popular text books states that "[t]here can be as many internal interest rates of return for a payment as there are changes in the sign of the cash flows... Whenever the cash-flow stream is expected to change sign more than once, the company typically sees more than one IRR." Brealey, Meyers & Allen, "Principles of Corporate Finance", §5.3 at p. 94 (2006).

In fact, "sign reversals are a common characteristic of cash flow streams from real estate projects." Greer & Kolbe, "Investment Analysis for Real Estate Decisions", Ch. 13 at p. 226 (2003). Yet, it seems that in many, if not most, real estate projects where this occurs, including Example 1 in this article, there is only one IRR. Why?

Descartes' Rule of Signs

Descartes' Rule of Signs states that the number of positive real roots of a polynomial with real co-efficients is either equal to the number of changes of sign in its non-zero coefficients or is less by an equal number. McCune, McCune and Turner, "Algebra", at p. 314 (Barron's 1997).

Common Application of Rule. Using this rule, one can easily establish that the number of times the cash flows change sign establishes a maximum number of positive real IRRs:

Given a set of cash flows $a_0, a_1, a_2, \dots, a_n$, the formula (given at the beginning of this Appendix) to determine all possible IRRs may be rewritten as follows (where $x = (1+k)^{-1}$):

$$a_0 + a_1x + a_2x^2 + \dots + a_nx^n = 0$$

The solutions to this equation are referred to as the “roots” of the polynomial (“P”) $a_0 + a_1x + a_2x^2 + \dots + a_nx^n$. Descartes’ Rule of Signs establishes a maximum number of positive real roots based on the number of sign changes in the co-efficients (i.e., the cash flows). Keep in mind, however, that this equation is solving for $x = (1+k)^{-1}$. If k is a positive real IRR for these cash flows, then obviously there is a corresponding positive real root of P , namely $(1+k)^{-1}$. Thus:

$$\begin{aligned} \text{number of positive real IRRs} &\leq \text{number of positive real roots of } P \\ &\leq \text{number of changes of sign in } P\text{'s co-efficients} \\ &= \text{number of changes of sign in the cash flows} \end{aligned}$$

However, that number may be too large a maximum to be useful^{9/}. For example, in Example 1 of this article, the first three cash flows for Investor (i.e., -10, 15, and -4) change sign twice, thereby indicating that there are at most two positive real IRRs, which is not particularly helpful.

Better Application of Rule. Descartes’ Rule of Signs may be used to find a better maximum (of positive, real IRRs), by writing the IRR formula so that the variable of the polynomial is k (i.e., the IRR) rather than $(1+k)^{-1}$. To take the very simple case of three annual cash flows of a_0, a_1 and a_2 , the polynomial equation for the IRR calculation would be as follows (where we are solving for $k = \text{IRR}$):

$$\begin{aligned} a_0 + a_1(1+k)^{-1} + a_2(1+k)^{-2} &= 0 \Leftrightarrow \\ a_0(1+k)^2 + a_1(1+k) + a_2 &= 0 \Leftrightarrow \\ a_0(k^2 + 2k + 1) + a_1(k + 1) + a_2 &= 0 \Leftrightarrow \\ a_0k^2 + (2a_0 + a_1)k + (a_0 + a_1 + a_2) &= 0. \end{aligned}$$

Thus, the co-efficients^{10/} would be $a_0, (2a_0 + a_1)$, and $(a_0 + a_1 + a_2)$. Using Descartes’ Rule of Signs for this simple case (in the context of a venture with contributions and distributions starting with an initial contribution), one sees that there cannot be two positive real IRRs for Investor unless there is a distribution to Investor in the second year that is twice as large as Investor’s initial contribution, which is a fairly tough test. Based on this test, we see that there is only one IRR for the first three cash flows of Investor in Example 1 (even though they change sign twice).^{11/}

MIRR Solution

The most commonly stated solution of the multiple IRR problem is a modified IRR (a so-called “MIRR”). One textbook notes that the problem of multiple IRRs is sometimes circumvented using a modified internal rate of return "by discounting the later cash flows back at the cost of

