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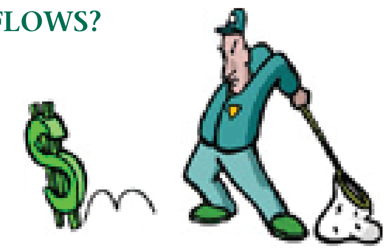
IS IT ACCEPTABLE TO NET SAME-DAY FLOWS?



Earlier this month I blogged[1] about this topic, but only very briefly, as it requires a fair amount of space to really give the subject justice.

If a client adds money to their account, and immediately removes it, then netting makes sense, does it not? But beyond that, some thought is required, as you will see.

Let's say that you have an account that adds money at the start of the day, and then withdrawals the same amount later that day; can the flows be netted? We'll consider three scenarios to discover the answer. For each the portfolio behaves in the exact same fashion:

- From the first until the 14th there is no change (i.e., the return is 0.00%).
- On the 15th the portfolio moves up 5%.
- From the 16th to the end of the month, the portfolio's value doesn't change (and so again, the return is 0.00%).

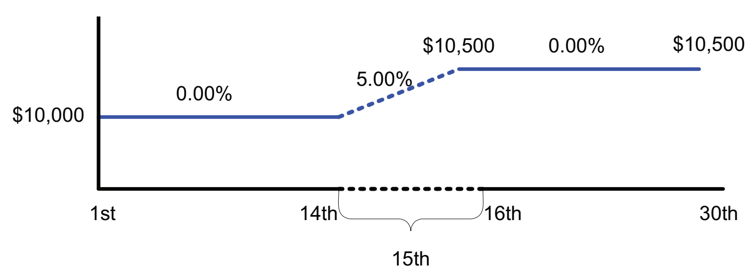


Figure 1: No cash flows

Scenario #1

The account begins with $10,000. There are no cash flows.

As we can see from Figure 1, we earned $500 on the 15th, as a result of the 5% return. And since the rest of the month had a zero percent return, the return for the full period is 5.00 percent. This can be validated by simply linking returns of 0.00%, 5.00%, and 0.00 percent. We'll leave it to the reader to do this.

In this scenario, there are no cash flows to net. Our return, therefore, can also be achieved by simply comparing our ending value ($10,500) with our beginning ($10,000) to see that the return is 5.00 percent.

1 See http://tinyurl.com/44zojhn.

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Scenario #2

In the second scenario (please refer to Figure 2), on the 15th the client adds \$90,000 at the start of the day. At the end of the day they withdraw this same amount.

Because the account had \$100,000 at the beginning of the day when the 5% return occurs, we see a gain of \$5,000 on that day. The ending market value (after the withdrawal) is \$15,000.

If we net the flows what will our return be? Well, if there are no flows, then we have no reason to worry about what happens on day 15, meaning we simply take the month's ending market value and compare it to the beginning. When we do this we find that our return is 50%, as we can see from the following:

$$R = \frac{V_E}{V_B} - 1 = \frac{\$15{,}000}{\$10{,}000} - 1 = 50\%$$

Hopefully you can see that this is an exaggeration, brought about by our failure to take the flows into consideration. The 5% return was based on the large amount that was in the account on the 15th; our decision to net makes it appear that the gain came from only \$10,000, which isn't the case.

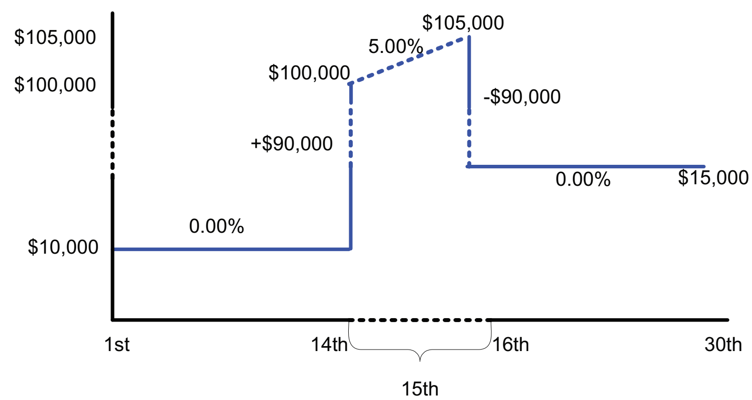

Figure 2: \$90,000 inflow and outflow

And so, we should not net the flows, but rather take them into consideration. And how might we do this; can we simply calculate a return for day 15? Yes, we could, treating the inflow as a start-of-day event, and the outflow as an end-of-day event, as follows:

$$R = \frac{V_E - V_B - \sum_{i=1}^{n} CF_i}{V_B + \sum_{i=1}^{n} W_i CF_i} = \frac{\$15{,}000 - \$10{,}000 - (+\$90{,}000 - \$90{,}000)}{\$10{,}000 + (1.0 \times \$90{,}000 + 0.0 \times (-\$90{,}000))} = 5.00\%$$

This is, of course, the Modified Dietz formula. If we were to net using this formula, our denominator would treat the two flows as if they both occurred at the same time, which results in:

$$R = \frac{\$15{,}000 - \$10{,}000}{\$10{,}000} = 50\%$$

which we know to be incorrect. This again affirms the need to avoid netting these flows.

KEEP THOSE CARDS & LETTERS COMING

We appreciate the occasional e-mail we get regarding our newsletter. Occasionally, we hear positive feedback while at other times, we hear opposition to what we suggest. That's fine. We can take it. And more important, we encourage the dialogue. We see this newsletter as one way to communicate ideas and want to hear your thoughts.

Scenario #3

Is it appropriate to always treat inflows as start-of-day events, and outflows as end-of-day events? Not necessarily. Let's consider the following (see Figure 3).

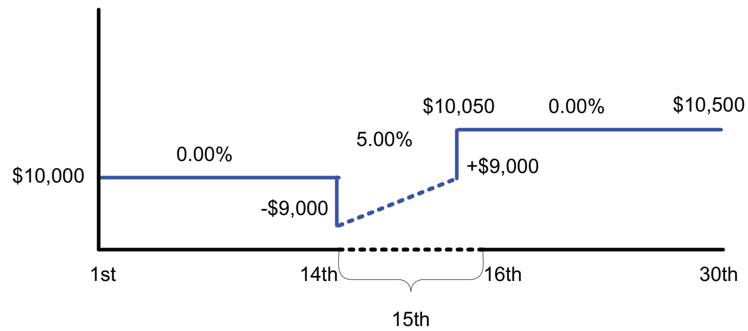

Figure 3: $9,000 outflow and inflow

Here we again begin with $10,000, but at the start of the 15th the client directs us to transfer out $9,000, leaving $1,000. And so, with a market value of $1,000 and a return of 5% we gain $50. At the end of the day the client turns around and redeposits $9,000.

If we weight the flows on the 15th as we did in scenario #2 (inflows at the start, outflows at the end) our return would be as follows:

$$R = \frac{\$10{,}050 - \$10{,}000 - (-\$9{,}000 + \$9{,}000)}{\$10{,}000 + (1.0 \times \$9{,}000 + 0.00 \times -\$9{,}000))} = 0.26\%$$

In this case, our return is understated because the $50 is based on a larger starting value ($19,000) than is actually present at the start of the month.

We know that the outflow took place at the start of the day, and that the inflow occurred at the end of the day. If we adjust our weights accordingly, we obtain the following:

$$R = \frac{\$10{,}050 - \$10{,}000 - (-\$9{,}000 + \$9{,}000)}{\$10{,}000 + (1.0 \times (-\$9{,}000) + 0.0 \times \$9{,}000)} = 5.00\%$$

This affirms the need to be sensitive to what is occurring. To have a "default" as suggested (inflows at the start; outflows at the end), most returns should be fine. However, there are times when adjustments are needed.

You might ask, "does this create a problem with the GIPS® (Global Investment Performance Standards), as it introduces inconsistency into our methodology? No! You are being consistent in that you are being sensitive to the actual timing. The fact that at times you may alter your default only reflects this sensitivity.

If, however, you had a routine which pre-tested the weightings and always chose the one that yielded the higher return, we'd have a problem. And while an argument could be made that you're being consistent (i.e., always taking the higher return), clearly this method would be problematic, and one to avoid and not even consider.

Firms that encounter cash flows (and who doesn't?) need a policy. And most firms adopt a default. But regardless of what that default policy is, you should be prepared to adjust, when necessary. And on those days when a client both adds and removes money, before deciding to net, take a look at the timing and the impact of the flows.

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DATE	EVENT	LOCATION
September 13-14, 2011	Fundamentals of Performance Measurement Training	San Francisco, CA (USA)
September 15-16, 2011	Performance Measurement Attribution Training	San Francisco, CA (USA)
October 11-12, 2011	Fundamentals of Performance Measurement Training	Chicago, IL (USA)
October 13-14, 2011	Performance Measurement Attribution Training	Chicago, IL (USA)
November 14-18, 2011	Attribution Webinar Week	Online Webinar
December 6-7, 2011	Fundamentals of Performance Measurement Training	New Brunswick, NJ (USA)
December 8-9, 2011	Performance Measurement Attribution Training	New Brunswick, NJ (USA)

For additional information on any of our 2011 events, please contact Christopher Spaulding at 732-873-5700

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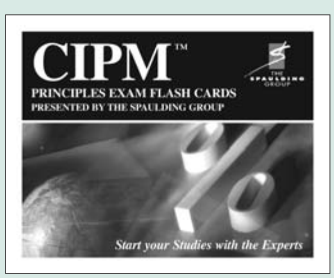

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