PERFORMANCE PERSPECTIVES
with David Spaulding

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Since 1990, The Spaulding Group has had an increasing presence in the money management industry. Unlike most consulting firms that support a variety of industries, our focus is on the money management industry.

Our involvement with the industry isn't limited to consulting. We're actively involved as members of the CFA Institute (formerly AIMR), the New York Society of Security Analysts (NYSSA), and other industry groups. Our president and founder regularly speaks at and/or chairs industry conferences and is a frequent author and source of information to various industry publications.

Our clients appreciate our industry focus. We understand their business, their needs, and the opportunities to make them more efficient and competitive.

For additional information about The Spaulding Group and our services, please visit our web site or contact Chris Spaulding at

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http://www.SpauldingGrp.com

IS INFORMATION RATIO A RISK-ADJUSTED RETURN? FOR THAT MATTER, WHAT IS MEANT BY A RISK-ADJUSTED RETURN?

In developing my forthcoming article on risk-adjusted attribution, I reread several articles, including Franco and Leah Modigliani's 1997 *Journal of Portfolio Management* piece, "Risk-Adjusted Performance."

I found that they aren't huge fans of the information ratio; well, actually, they're not fans of the other risk-adjusted measures, either, but especially not IR. In fact, they disclaim it as a true risk-adjusted measure. From the text:

> "The [information] ratio is essentially a measure of the probability that the performance of a portfolio will fall below that of the benchmark (assuming that the distribution of the differ-ence in returns is approximately normal). The information ratio is a useful concept, although its primary relevance is for money managers (portfolio managers or pension fund managers) who are likely to be judged by their 'tracking ability,' i.e., performance relative to the mar-ket.
>
> "Our preliminary analysis has led us to conclude that this measure can be quite misleading. The information ratio is similar in definition to the Sharpe ratio as it includes the standard deviation in its denominator. Yet, it is the standard deviation of the tracking error, and does not take into account the overall risk (dispersion in possible outcomes, or probability of loss) of the portfolio under evaluation. Therefore, the information ratio is *not* a risk-adjusted measure of performance." <emphasis in original>

As with many aspects of performance and risk, such conflicting positions are not unusual, and the Modiglianis' views are most likely rather unique, as most in our industry probably see information ratio as, in fact, a risk-adjusted measure. However, their questioning of its validity most likely has at least some merit. It is not the purpose of this paper to address this any further, however.

What do we actually mean by a risk-adjusted return? Well, I think the name itself pretty clearly describes it: a return that has been adjusted for risk. Why do this? Well, because managers take on risk in order to achieve performance; when evaluating them, there are advantages to strip away the contribution from risk, so we can focus solely on the skills they offer. My article will extend this idea to performance attribution. And, although I would like to claim this is the first such article, I would be, at best, mistaken or, at worst, guilty of prevaricating. There haven't been many, and those that have been penned haven't won over any, to my knowledge, advocates for the idea; I'm hopeful that my piece will.

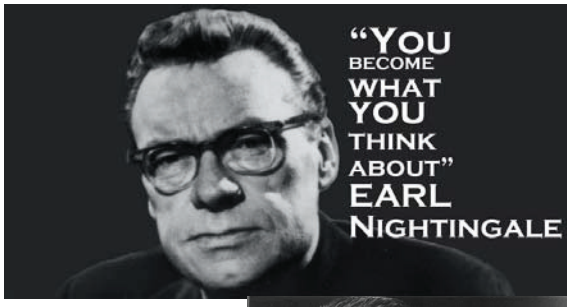
The Journal of Performance Measurement®

UPCOMING ARTICLES

ON ACHIEVEMENT: LESSONS FROM JIMMY CARTER & EARL NIGHTINGALE

I sent an email out to the folks at my firm that I want to share here; the subject is "On Achieve-ment." I also posted this on Facebook.

When I exercise, I listen to recorded books. Over the last few weeks I've been listening to Earl Nightingale. During today's session he spoke about achievement, and relayed a story about Jimmy Carter.



When he was in the Navy, he once interviewed with Admiral Rickover, who asked him to speak on any topic he wished. And so, Carter chose a variety of topics, but it seemed that with each, the Admiral actually knew much more.

The Admiral then asked him where he graduated in his class from Annapolis, and he responded 60 out of 860, expecting to be recognized for such an achievement, but that didn't come. The Admiral asked him, "did you always do your best?," to which Carter responded "yes." He then thought a moment and realized this wasn't true, and said that no, not always.

The Admiral then asked, "why not?"

I know that in my life I haven't always done my best. I look back in high school and college with regret, for not trying harder.

If you can do a job better, you're not doing your best.

Something for us to ponder, yes? When we do our tasks, do we always strive to do our best? How much greater success might we have if we did. I know I could have been much more successful in many of my endeavors if I had only tried harder to do my best.

During the day, it's not the number of acts you perform, but rather the quality of those that you do perform.

RESIDUALS AND GEOMETRIC ATTRIBUTION

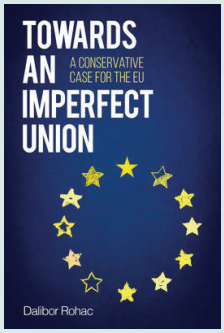
Since most of our readers deal with arithmetic attribution, this piece will serve primarily as an educational exercise, to, offer some clarity on the presence of residuals in geometric attribution.

I'll begin by saying that I was guilty of pointing out that geometric attribution is, in a sense, "residual free." But this is only true from a linking or multi-period attribution perspective. As you may know,

BOOK REVIEW

"Towards an Imperfect Union,"

by Dalibor Rohac



Most of the books I read I learn of through book reviews in the *Wall Street Journal*. This book was reviewed fairly recently, and even the reviewer mentioned how its timing, relative to the then pending vote on BREXIT, was ideal.

The author did not favor the UK's departure from the European Union; nor does he favor the dissolution of that union. Despite his position, he provides a very unbiased view of the reasons for both occurring.

While the book is relatively short, it includes a detailed background on the creation of the EU, along with all the unpleasantries.

As I was reading the reasons why it would be justified for the UK to depart, and for perhaps the EU to dissolve, as well as learning more about the EU's history, I was almost convinced that this was, in fact, the path that one should go down. However, the author then lays out, quite well, his reasons for the EU to continue.

The book is one that should appeal to anyone who has a stake in Europe's continued stability, which essentially means us all. Very well written; an excellent and timely book.

arithmetic attribution is "linking challenged." That is, when linking two or more period effects together, you'll get a residual (i.e., the sum of your attribution effects won't tie to the excess return for the linked period). To overcome this, several folks, including David Cariño, Jose Menchero, and Andrew Frongello[1] have created models to "smooth out" the residual across the effects.

And while it was "staring me in the face" for some time, I didn't pick up on the fact that geometric has residuals, too: they just occur within the single period, not when you link. That is, when you calculate your effects for any single period, be it a day or month, you'll get a residual! And the *crafters* of geometric models know this, as it was necessary for them to introduce a factor (or two) to "smooth out the residual."

Jose Menchero, in his article "A Fully Geometric Approach to Performance Attribution" (*The Journal of Performance Measurement*, Winter, 2000/2001) makes it evident that smoothing is needed, and he provides a way to do that. Carl Bacon, however, in his book *Practical Portfolio Performance Measurement and Attribution*, (Wiley, 2008), does not.

And while I've addressed this before, I thought it worth doing again.

To begin, it's helpful to explain what the word "geometric" means, in the context of attribution. It doesn't mean geometric linking; rather, it has to do with the way excess return is expressed. Here are the differences:

$$ExcessROR_A = R_P - R_B$$

$$=$$

$$ExcessROR_G = \left(\frac{R_P + 1}{R_G + 1}\right) - 1$$

When employing a geometric model, we reconcile to this differently formed value.

As a rule, Carl uses fractions to represent return differences, which arithmetic shows a subtrac-tions. This doesn't hold for weight differences, however, which he shows in the same manner as arithmetic (i.e., as subtraction). Jose he uses fractions for both weights and returns.

Any arithmetic model can be expressed geometrically. Carl's approach is a geometric attribution representation of the Brinson, Fachler model. Let's look at the three effects and how they differ. But first, we'll look at how they should, in theory, work, if we could construct our geometric model directly from arithmetic. With each effect, I will provide the arithmetic approach, as well as what we would expect, so you can see how the factors align.

Geometric Attribution: Allocation Effect

We begin with the allocation effect:

$$Allocation_A = (w_{P_i} - w_{B_i})(r_{B_i} - R_B)$$

$$Allocation_G = (w_{P_i} - w_{B_i}) \times \left(\frac{1 + r_{B_i}}{1 + R_B} - 1\right)$$

1 No, your name does not have to add with an "o" in order to develop linking models (though it doesn't hurt).

We see how the weight factors are identical; and, as promised, the subtraction of returns from the arithmetic model is represented as division in geometric.

Geometric Attribution: Selection Effect

We of course have an option with selection: whether to use the benchmark weight, and also represent the interaction effect, or use portfolio weight, which eliminates an interaction term (selection then becomes selection plus interaction). Since I'm a fan of interaction, I'll use benchmark weight:

$$Selection_A = w_{B_i} \times (r_{P_i} - r_{B_i})$$

$$Selection = w_{B_i} \times \left(\frac{(1 + r_{P_i})}{(1 + r_{B_i})} - 1 \right)$$

Again, we see how our return differences in the original model are switched to a fraction in geometric.

Geometric Attribution: Interaction Effect

Because we used benchmark weight in selection, we're obligated to have an interaction effect:

$$Interaction_A = (w_{P_i} - w_{B_i}) \times (r_{P_i} - r_{B_i})$$

$$Interaction_G = (w_{P_i} - w_{B_i}) \times \left(\frac{(1 + r_{P_i})}{(1 + r_{B_i})} - 1 \right)$$

Because interaction is simply the difference in weights times the difference in returns, we can clearly see how Carl's approach handles differences differently (great choice of wording on my part)! That is, weight differences are shown with subtraction, while return differences are a ratio.

This is all wonderful, except for one small detail: the math doesn't work. If you simply do as I've shown above, we won't tie back to the overall geometrically derived excess return, which, of course, is our objective.

In order to make the math work, we need a smoothing factor. While Menchero's are applied to all effects, Bacon only does so to selection (or, in the case where benchmark weight is used, interaction, too); i.e., he doesn't make any adjustment to allocation.

Here is the adjusted selection effect formula:

$$Selection = w_{B_i} \times \left(\frac{(1 + r_{P_i})}{(1 + r_{B_i})} - 1 \right) \times \left(\frac{1 + r_{B_i}}{1 + R_S} \right)$$

And here is the factor that has been incorporated so the math works properly:

$$\left(\frac{1 + r_{B_i}}{1 + R_S} \right)$$

R_S is Carl's "semi-notional return."

CIPM Program Survey

CFA Institute regularly engages investment professionals to provide guidance as to the skills required to effectively evaluate portfolio performance. This guidance helps ensure that the CIPM Program remains relevant to practitioners and that the Candidate Body of Knowledge (CBOK) develops at the same pace as changes occur in the marketplace. In order to receive input from a wide spectrum of global performance experts, CFA Institute is partnering with the Spaulding Group. As a member of their mailing list, we greatly value your opinions regarding the current state of practice and trends that will impact the portfolio performance evaluation industry in the future.

The majority of the survey will ask you to rate the importance and extent of knowledge needed for the knowledge items within each of the six topic areas. While you may not be an expert (or up-to-date) on every knowledge item included in the survey, we still value your feedback on all topic areas as an experienced participant in the portfolio performance evaluation industry. Your responses will shape the future of the CIPM Program.

Please visit the following link and complete the CIPM Program survey. https://cfainstitute.qualtrics.com/SE/?SID=SV_034GgHr4Q5mtCct.

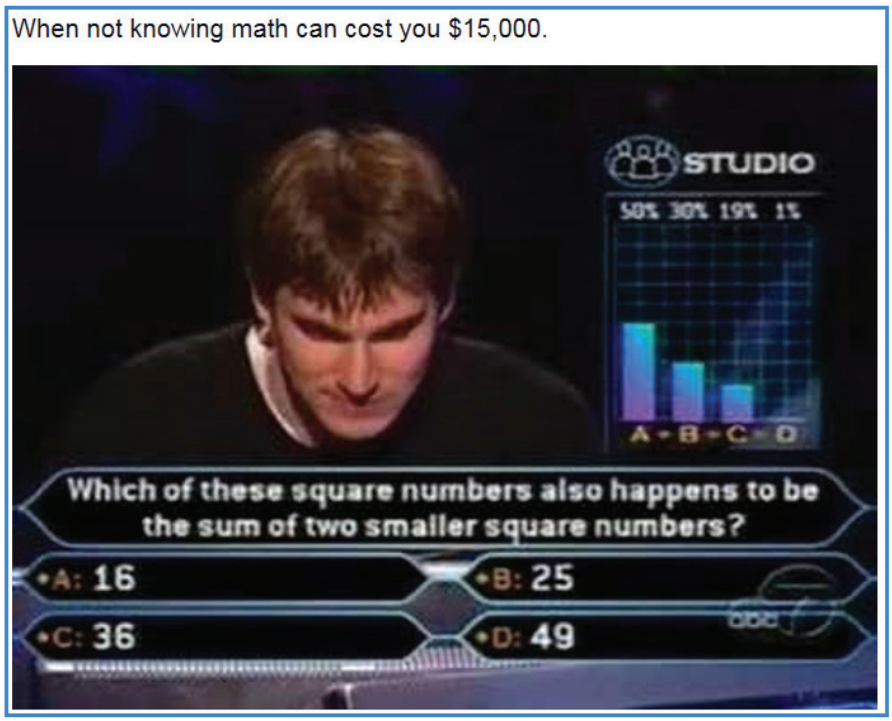
This factor has no equivalent in the arithmetic model; it's unique to this implementation of geometric.

This topic is covered at length in our firm's Attribution Class, in case you'd like to learn more!

PUZZLE TIME

June Puzzle

I can't recall where I found this, but it's apparently some game show:



And, I'm guessing that this gentleman didn't solve it; can you?

Quickly we should know the following:

- $16 = 4^2$
- $25 = 5^2$
- $36 = 6^2$
- $49 = 7^2$

But we want to find two smaller numbers whose squares will sum to one of these four numbers.

I'll confess I just did it with trial and error, but fortunately found the solution pretty quickly:

- $25 = 3^2 + 4^2 = 9 + 16$.

That being said, there are those who can deduce the answer through a more sophisticated manner, such as our friend, Anthony Howland: "Every builder knows how to create a

KEEP THOSE CARDS & LETTERS COMING

We appreciate the emails we receive regarding our newsletter. Mostly, 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.

right angle using the 3-4-5 triangle, and I can't imagine there are any people in the world of performance that can't get to the right result of 25. The show is called "Who wants to be a millionaire," and was quite popular over here - hosted by Chris Tarrant."

Gregg Weintraub	USA
James Neill	UK
Hans Braker	The Netherlands
Neil Riddles	USA
Carl Bacon	UK
Tom Runmore	USA
Charles Sloyer	USA
Anthony Howland	UK

July Puzzle

I'm taking this month's puzzle from the *Wall Street Journal*[2]; it's titled "The Old Coin Game."

In the Palace of Mystery, a barker announces "Step right up," calls one of the performers. "I have here 14 authentic gold doubloons. Ah, well, I cannot tell a lie – one of the doubloons might not be authentic, but for sure the leftmost one is. If there's a fake doubloon, it's either heavier or lighter than a real doubloon, but I can't remember which. Here's a two-pan balance scale. You can put any coins you like on either side, and it will show you whether the left group of coins is heavier, lighter, or the same weight as the right group of coins. I'll bet you I can determine whether there is a counterfeit coin, and if iso, which one it is and whether it is heavier or lighter, using the scale fewer times than you do."

How many times must they use the scale to be guaranteed to identify the possible counterfeit?

ANNOUNCEMENT: PERFORMANCE MEASUREMENT BOOT CAMP

Almost ten years ago, 25 investment professionals gathered in New Brunswick, NJ for an intensive week of performance measurement training at the first ever Performance Measurement Boot Camp. And while demand for this class has never gone away, we just didn't have the time in our schedules to run it again...

...Until now!

Back by popular demand, we are pleased to announce the return of Performance Measurement Boot Camp, the week of October 17 in New Brunswick, NJ.

This week-long program, ideal for investment professionals with less than three years' experience who need a solid foundation, grounding, and deep understanding

2 "Varsity Math." *The Wall Street Journal*. July 2-3, 2016. Page C13.

of performance measure-ment, risk, attribution, and GIPS as well as fundamental investment topics, is unlike any other performance measurement training or conference.

Performance Measurement Boot Camp Has Very Limited Availability

So everyone gets the attention they need, and to maintain the right instructor-to-student mix, we limit the Boot Camp to only 25 people. As it did last time, we expect it to sell out.

Running this class requires us to reserve hotel space for a week, and block off a certain number of rooms, which is a significant commitment.

To encourage you to register quickly, and to help cover some of our up front costs, we are offering a significant discount to the first ten who register.

Register Now and Save $1,500

Spots for this program will be sold for as high as $4,500 per attendee, reserve your spot now, and your investment will be only $3,000 (a $1,500 savings).

Many of our graduates from the original "boot camp" said that the training allowed them to immediately provide value through a deeper understanding of the investment process and performance's role in it, as well as give them a competitive edge and help fast-track their careers.

Don't miss out on this great opportunity to "fast track" your staff on the road to understanding, so they can contribute and enhance your performance and risk processes at your firm.

Hurry!

Time is a factor. The spaces will fill-up soon (we've already begun to get registrants). Register now (**http://tinyurl.com/zdwr7f3**) and save $1,500/student.

Please contact Patrick Fowler (**PFowler@SpauldingGrp.com**) to learn more.

THE SPAULDING GROUP'S 2016 INVESTMENT PERFORMANCE MEASUREMENT CALENDAR OF EVENTS

DATE	EVENT	LOCATION
August 15-16	CIPM Prep Classes – Principles Level	Chicago, IL (USA)
August 17-19	CIPM Prep Classes – Expert Level	Chicago, IL (USA)
October 18-19	Fundamentals of Performance Measurement	San Francisco, CA (USA)
October 20-21	Performance Measurement Attribution	San Francisco, CA (USA)
November 3-4	Performance Measurement Forum	Barcelona, Spain
November 16	Asset Owner Roundtable Meeting	Austin, TX (USA)
November 17-18	Performance Measurement Forum	Austin, TX (USA)
December 6-7	Fundamentals of Performance Measurement	New Brunswick, NJ (USA)
December 8-9	Performance Measurement Attribution	New Brunswick, NJ (USA)

For additional information on any of our 2016 events, please contact Christopher Spaulding at 732-873-5700

TRAINING...

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FUNDAMENTALS OF PERFORMANCE MEASUREMENT

A unique introduction to Performance Measurement specially designed for those individuals who require a solid grounding in all aspects of performance measurement. The Spaulding Group, Inc. invites you to attend Fundamentals of Performance Measurement on these dates:

October 18-19, 2016 – San Francisco, CA

December 6-7, 2016 – New Brunswick, NJ

15 CPE & 12 PD Credits upon course completion

CE Qualified Activity CFA Institute

CFA Institute has approved this program, offered by The Spaulding Group, for 12 CE credit hours. If you are a CFA Institute member, CE credit for your participation in this program will be automatically recorded in your CE tracking tool.

PERFORMANCE MEASUREMENT ATTRIBUTION

Two full days devoted to this increasingly important topic. The Spaulding Group, Inc. invites you to attend Performance Measurement Attribution on these dates:

October 20-21, 2016 – San Francisco, CA

December 8-9, 2016 – New Brunswick, NJ

15 CPE & 12 PD Credits upon course completion

CE Qualified Activity CFA Institute

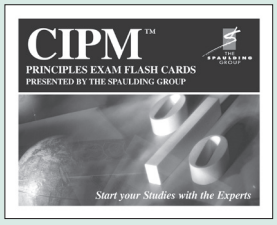
CFA Institute has approved this program, offered by The Spaulding Group, for 12 CE credit hours. If you are a CFA Institute member, CE credit for your participation in this program will be automatically recorded in your CE tracking tool.

IN-HOUSE TRAINING

The Spaulding Group has offered in-house training to our clients since 1995. Beginning in 1998, we formalized our training, first with our Introduction to Performance Measurement class and later with our Performance Measurement Attribution class. We now also offer training for the CIPM program. To date, close to 3,000 individuals have participated in our training programs, with numbers increasing monthly.

UPDATED CIPM Principles and Expert Flash cards are now available on our web store. Please visit www.SpgShop.com today to order your set.

Our performance experts have created a study aid which can't be beat: ***flash cards!*** These handy cards will help you and your associates prepare for the upcoming CIPM Principles Exam. Unlike a computer-based study aid, you can take them anywhere to help you test your knowledge.



Benefits of Flash Cards:

- Work at your own pace
- Immediate feedback
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These cards are a ***must have*** for anyone preparing to take the CIPM Exams.