

PERFORMANCE PERSPECTIVES

with David Spaulding



VOLUME 11 – ISSUE 7

MARCH 2014

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.

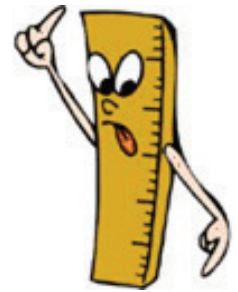
For additional information about The Spaulding Group and our services, please visit our web site or contact Chris Spaulding at CSpaulding@SpauldingGrp.com

BENCHMARK CHALLENGES

When you really think about it, some of the topics we deal with would, for many, be quite boring; but, for us, they're exciting, thrilling, captivating, enthralling, stimulating, challenging, rewarding, and, at times, fun! Okay, perhaps I got a bit carried away.

Benchmarks is one of those topics that we often find folks having lots of questions and issues about. And one area worthy of discussion is rebalancing. Let's say you have a benchmark that consists of the following:

- 20% Barclays' Aggregate
- 30% Russell 3000
- 10% NASDAQ-100
- 40% MSCI EAFE.



How often should you rebalance? The rebalancing should, in my view, be tied to the strategy's rebalancing scheme. If the strategy is to be rebalanced monthly, then the benchmark should, too. But what if you decide to allow the portfolio to drift a bit, and delay rebalancing the portfolio by a month or more, should the benchmark's rebalancing be delayed, as well?

I would say "no." The decision to allow the benchmark to drift is a *tactical* one, and the benchmark should not reflect tactical decisions.

A Frank Sortino Story

Dr. Frank Sortino used to tell a story about a pension fund that was looking for a Japanese manager; well, more correctly, a manager to invest in Japanese stock, I don't think they cared very much about the manager's ethnicity. Anyway, they found one that had superior performance relative to the TOPIX (TPX), but were concerned about their large tracking error.

When they met with the manager, they applauded performance but expressed their concerns about risk. The manager responded by saying that his strategy included complete avoidance of the Japanese banking sector. While this satisfied the inquirers as to the source of the performance, they once again voiced concern about the high tracking error; in response the manager asked "so, how many bad Japanese bank stocks would you want me to buy?" The idea being that in order to lower the tracking error, he would have to make the portfolio look more like the index.

And so, two questions arise. First, should the manager have altered his index to be TPX, ex Banks? I'll pause a moment so you can think about this. ...

<http://www.SpauldingGrp.com>

The Journal of Performance Measurement®

UPCOMING ARTICLES

**Operational and IT
Consequences of
Performance Reporting**
– Bruce Russell

**Measuring Performance
in the Presence of Deposits
and Withdrawals**
– Thomas Becker

The Journal Interview
– Richard Mitchell

**Cumulative Frongello-
Equivalent Attribution**
– Tim Svenson

**Milestone – Risk-Adjusted
Performance Attribution**
– Jose Menchero

**A Simplified Fixed Income
Attribution Model**
– Peter Simmons,
Anton Karadakov

Okay, moving on, the answer is “no.” And why not? Well, the decision to avoid this sector was a *tactical* one, not strategic. If the index was adjusted, there would be no way to know whether or not this was a good or bad strategy.

Second question, is there an alternative to buying banks in order to satisfy this prospects concerns? I’ll pause again. ...

My answer is “yes!” Since the prospect is satisfied with the idea of avoiding banks, why not run tracking error against the index ex banks, just to demonstrate how the rest of the portfolio conforms? This way, as long as the client agrees with the idea of avoiding banks, they’ll be okay with the rest of the balance of the risk taken. The true tracking error remains that which is against the TPX; I’m only suggesting running against TPX, ex banks to provide some additional insights, which may hopefully pacify the prospect.

What does GIPS say about rebalancing?

Let’s return briefly to the subject of rebalancing, especially in light of the GIPS standards. I recently blogged about this subject, and believe some additional commentary is warranted. Provision I.4.A.30¹ reads as follows:



Provision 4.A.30

If the FIRM changes the BENCHMARK, the FIRM MUST disclose the date of, description of, and the reason for the change.

The *GIPS Handbook* provides some clarity (?) which includes the following:

If a firm uses a custom benchmark that is a blend of one of more benchmarks, a change in the weights of the constituent benchmarks is not considered a benchmark change within the scope of this provision. For example, the benchmark may change every quarter as part of the normal procedure. In this instance, it is appropriate to disclose that the benchmark is rebalanced quarterly using the weights of the asset classes in the model portfolio. A firm is not required to disclose how the asset class weights have changed each quarter but may do so. If a firm uses a custom benchmark or combination of multiple benchmarks, the firm must disclose the benchmark components, weights, and rebalancing process.

“A change in the weights of the constituent benchmarks is not considered a benchmark change.”

What is meant by this? I believe it has to do with the weight changes that go along with the rebalancing. That is, if the weights change during the month (which of course they will), there is no need to keep informing us of that; rather, by indicating that the benchmark is rebalanced monthly or quarterly is all one needs to do.

To me, any change to the benchmark as a result of strategy changes (e.g., if in the above benchmark, the strategy shifts such that the weights are adjusted) is a benchmark change and needs to be reported.

It’s unfortunate that the provision doesn’t offer commentary on strategic versus tactical changes, as that would help educate the readers.

¹ I cannot explain the avoidance of the leading Roman numeral for the way provisions are often cited. GIPS uses Roman numerals (I, II, III) at the highest level for sections, but provisions from the first are often referenced without the “I.” My habit is to cite the paragraph in its entirety, to avoid confusion.

DST ARTICLE: FIXED INCOME ATTRIBUTION – EXPERT ROUND UP

Global demand for fixed income products has grown precipitously due to the diversification benefits that this asset class provides. Yet, many asset managers, wealth managers and service providers lack a clear understanding of the factors influencing portfolio performance due to a lack of uniform industry standards and methodologies for measuring attribution. In this article, key industry experts convene to offer their thoughts on fixed income attribution models and solutions and offer suggestions for how to better measure these instruments.

Click [here](#) for the article.

PUZZLE TIME

February Puzzle

This was probably one of the more challenging puzzles we've offered. I suspect that some thought the answer that came to mind was just a bit too obvious, and so probably wrong (and they would have been correct).



A taxi cab hits a pedestrian at a busy intersection during evening rush hour. The cab flees the scene. A witness says the cab is one of the blue cabs that operate in the city. Of the taxis in this city, 15% are blue, and 85% are green. The witness has good vision, and tests establish that in evening light she can identify the color of the taxicab correctly 80% of the time. If she testifies that the cab was blue, what's the probability that she is correct?

We know that our witness "can identify the color of the taxicab correctly 80% of the time." One might think that this is applied only to the blue cabs, and so might be tempted to multiply 80% times 15% and be done (i.e., to say that the answer must be 12%). However, we must consider the potential that she'd claim that a green cab is blue, not just that a blue cab is, in fact, blue. The following table might help.

		What witness would see	
Actual Taxi Color	Actual	Green	Blue
Green	85%	68.00%	17.00%
Blue	15%	3.00%	12.00%

We know that 85% of the cabs are, in fact, green. We know that if the cab is green, the witness would properly identify it as such 80% of the time, meaning that 20% of the time she'd think it was blue; and so, $20\% \times 85\% = 17\%$. If the cab was actually green, there's a 17% chance she'd report it was blue.

As for the blue cabs, we know they make up 15% of the total, and there is an 80% chance that she would correctly identify the cab as being blue.

Regardless of the color, 29% of the time she will see a blue cab ($17\% + 12\%$); that is, the probability that she will see a blue cab is 29 percent.

However, as we can see from the table, sometimes she'll be right and sometimes she'll be wrong. We're interested in the likelihood of her being correct. That is, given that she saw a blue cab, what is the probability that she is correct? We find the solution by dividing 12% by 29%; our answer is 41.38 percent.

As my colleague Jed Schneider, CIPM, FRM pointed out, this is an ideal application for Bayes Theorem.

Only a few of our readers tried this one. In addition to Jed, Anthony Howland got it correct (though he rounded to 41% ... we allowed that to pass).

In his wonderful book, *Thinking, Fast and Slow*, Nobel Laureate Daniel Kahneman posed this very puzzle, and uses it as a way to address how the "slow" thinking (which we use when we do analysis) is sometimes done too quickly. Of course, it helps if one has already been introduced to Bayes.

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.

March Puzzle

You have three bags, each containing two marbles. Bag #1 contains two white marbles, bag #2 contains two black marbles, and bag #3 contains one white marble and one black marble.



You pick a random bag and take out one marble. Given that this is a white marble, what is the probability that the remaining marble from the same bag is also white?

FROM OUR READERS

In our February issue I touched on the challenges firms face when they value a portfolio in one time zone, while their benchmark does so in a different one, which results in both FX and pricing differences. It engendered five comments, which we want to share with you. We greatly appreciate our colleagues sharing their thoughts.

From Andrew Peakman:

Hi David,

The question you raise in this month's newsletter around timing differences between fund and benchmark pricing is something that has occupied a lot of my time recently and so I wanted to share some of my thoughts on the matter.

The piece in your newsletter speaks, I think, purely from the client perspective. Here I would agree with your current thinking in that 'option 1' of reporting fund returns based on official unit prices against official benchmark returns is the way forward when reporting fund performance to the client.

From the manager perspective, however, both in terms of analysing and understanding the fund's performance and as a basis of appropriately rewarding the manager, we must adjust for any timing differences on pricing/FX. For the multi-asset portfolios which are my main focus, 'option 3' i.e. revaluing the funds is more practical than trying to do the equivalent for the benchmark. For our internal reporting, we report both sets of numbers and explicitly show the timing differences that reconcile the two (whilst fund managers need to see the more accurate representation of their performance, it's important not to lose sight of the picture that the client is seeing).

In performing the above exercise to establish the true performance of the manager, we also adjust for the cost of gaining passive exposure to the benchmark. Published index returns are not representative of the alternative available to the client as there will be some cost associated with gaining exposure to the asset classes in question (which are quite small for an equity ETF for example, but more significant for other asset classes such as physical real estate). I raised this idea of adjusting for the cost of gaining passive exposure to benchmarks at the Forum meeting in Lisbon last year, which generated a modest response from other attendees.

The whole question of tracking errors is an interesting one. I agree that any timing difference from pricing/FX can have a meaningful impact and needs to be eliminated in order to calculate an accurate tracking error. This is definitely something that could benefit from establishment of a 'best practice' within the industry as currently it seems to be quite 'common practice' to see (inflated) tracking errors calculated between fund unit price returns and published benchmark returns. Tracking errors are mainly used



YOUR MISSION: Attend PMAR 2014



**Will you accept this mission?
Do you have what it takes
to be a Special Agent of
Performance Measurement?**



CONFIDENTIAL

comparatively, against other funds or against a target range and so it is key that there is consistency in calculation of the numbers in the industry.

Regards
Andy

From Russ Glisker:

Hi David --

First, congratulations on your doctorate! What I admire most about your accomplishment is that at this stage in your life, you undertook something that you knew would take a long time to finish. I'm very interested in reading your dissertation, so please let me know how to obtain it.

I'll also weigh-in on the fund pricing issue you raise in Performance Perspectives. I agree with you, although reluctantly; not because I don't want to share your view, but because it diverges from very useful performance practices of benchmark comparison, as you acknowledge. Nonetheless, it seems the only satisfactory choice despite it's shortcomings. If the fund is a U.S.-based publicly-traded mutual fund, it seems necessary to take the NAV at the 4 PM NY prices. If the NAV uses London close, it enables trading based on the subsequent changes in NY. Therefore, I agree with you that option #1 is the necessary choice, assuming that we're talking about the fund return that will tie out to the NAV. (I would likely answer differently if the fund is not traded.)

The disclosures you suggest seem essential to me in any "best practice", although they create their own challenges. Repricing the index to match the fund is (a) difficult, as it requires prices for securities (possibly a large number) not held in the fund, and (b) NY trading may be thin and unrepresentative (or unavailable) of "true" prices for some securities. As a result, the benchmark value obtained may be unreliable. Repricing the fund to the index may be more straightforward, but what about transactions? Moreover, just presenting multiple results highlights what, as performance professionals, we don't like to call attention to -- where the idealized domain of valuations and returns meets up with the messiness of the real world.

You raise a challenging issue, as you always do, and there's much more to be said, but I don't want to go on and on, at least not any more than I already have.

Congratulations again, and please do let me know how I can get your dissertation.

Very best regards,
Russ

From Drew Pearson:

In a former position, I supported a manager with a global base of operations managing strategies in multiple time zones, which led to a number of interesting conversation about the impact of market hours on measuring performance. At the time, we all came by necessity to the first conclusion -be aware of it but move on, as no good workaround was available and extended period returns were less badly impacted than daily returns (as longer observation windows became largely identical, with only a couple hours of difference at each end). However, to help the portfolio managers gain comfort with the

The Journal of Performance Measurement has begun a series on performance measurement professionals, and we need your help to identify the folks we should include. We focus on one or two people in each issue, with the list driven by input from other PMPs.

And so, please contact our editor, [Doug Spaulding](#) (732-873-5700) with your suggestions.

differences (and as a good internal “sanity check” for our own purposes), we would often use passive ETFs tracking the strategy benchmark trading on an exchange in the manager’s time zone as a way of validating large differences between a portfolio and a benchmark priced in a different time zone.

Of course, if you ARE a low cost passive ETF manager, benchmarking against one of your competitors is both a little circular and also probably not a wise business decision. So, I’ve always wondered if it were possible for benchmark vendors to offer market-specific versions of their indices; for MSCI (as an example) to publish the “official” Emerging Markets benchmark, but also offer London 4PM and NYSE 4pm versions as well for use in those respective markets. It would pose some logistical challenges, but I would imagine it could be done.

From Andre Mirabelli:

Dave,

Re: Crossing Time Zones, I believe that a robust performance attribution system should have the ability to use both benchmark pricing for the benchmark and alternatively to use fund pricing for the benchmark. Thus, it should be able to explain that a (and evaluate the precise impact of the) portion of the active return and the portion of the tracking error (and all other risk-measures) that comes from the difference between fund and benchmark pricing or FX rates when, for instance, it comes from different closing times or any other reason.

And, of course, I would love a copy of your dissertation when it is available.
Andre

And finally from an old friend (he’s quite old, especially in comparison to me, and no, it’s not Steve Campisi, although that would be a good guess, given his advanced age, but it’s someone who asked to remain “anonymous”)

Hi Dave,

I hope all is well, and you are keeping warm during this interesting winter !

A few comments for you on your open question of performance on “Crossing Time Zones”.

I will divide my comments into two sections, pricing and exchange rates.

On the exchange rates, at our firm, we attempt minimize differences by using the same source for benchmark and client account (separate securities). The 4PM GMT (WM rates) strike is what we use for client valuations and is the same as MSCI. Sometimes this cannot happen, as with the case of US 40 Act Funds, so you are naturally left with exchange rate differences that cannot be avoided. I certainly would not see any broadly available index customized to use client exchange rates, as that would bring about a separate set of challenges, such as cost and confusion, ie two different EAFE numbers.

On the pricing of portfolio’s and indices, I also will separate my comments into two areas, accounts with individual securities, and US 40 Act Mutual Fund. For accounts with individual securities, I think there is total consistency, irrespective of time zone, as

BEHIND THE SCENES AT TSG

We decided that we would like to introduce you to our team, and so each month we will profile a different member. This month it's Jessica Laffey.



I am a desktop publisher for the company and spend a majority of my work on our publications, from transcribing, to lay out, to editing. I have been with TSG since May 2010. My favorite thing about working for the company is the fact that we are a small but tight group that can work together to reach our goals. And for me personally, it's not bad getting to work part time so, I can spend some time at home with my son! I currently live in Branchburg, NJ with my boyfriend Chris, 3 year old Michael, and our Chihuahua Chi-Chi. I graduated from Caldwell College with a bachelor's degree in criminal justice and will receive my master's in human resources from Seton Hall University in May 2015. Upon graduation, I plan to do one more year at Seton Hall to receive my Ed.S. (education specialist) which would allow me to teach at a college level. When not working or in school, I like to spend most of my time with my family. I enjoy the beach, traveling, and watching my son grow up.

end of day valuation pricing of the index and portfolio is normally based on the close the local stock exchange for ordinary shares. On the latter, US 40 Act Funds, there is an inconsistency, not due to time zone trading, but SEC regulatory. In essence, under certain triggers, we fair value non-US securities, not based on the exchanges to which they trade; i.e. we do not use last trade/market closing price, but take into account US market volatility and its inherent implication to "stale" non-US market close prices.

Various US vendor services such as ITG and IDC can fulfill this independent approach to fair value pricing. I therefore agree with you that this regulatory requirement has the potential to cause deviation versus index vendor market close pricing. To solve this for GIPS reporting, I have instituted a policy when using NAV based returns within GIPS composite construction, to back out the fair value effects of non-US markets, so we are left with traditional market close fix approach within the rate of return. This returns us back to like, consistent results vs non mutual fund constituents within the composite and like correct benchmark comparison.

I hope this helps. Pls let me know if you have any additional follow ups.

*Best Regards,
Your much older friend*

(MINI) SURVEY TIME

We are launching a VERY short survey, to gain the industry's thoughts on two things:

- the need for guidance on when disclosures can be removed from GIPS presentations
- the use of Q&As to introduce new GIPS rules.

Please join in! <https://www.surveymonkey.com/s/TYVSK93>

Note that we'll have a drawing for a \$25 American Express gift card, so please participate. It'll take you less than a minute to fill out, but will help us greatly. Please submit your answers by April 21. We'll summarize the results in our next edition.

Kristina Fitzhugh

Bio:

Kristina Fitzhugh is a program manager at CFA Institute. Kristina earned the Claritas™ Investment Certificate and holds a BS in Applied Mathematics and a BS in Environmental Science from the College of William and Mary.



CLIENT'S CORNER

1. How long have you been involved in performance?

I have been a part of the CIPM Program team at CFA Institute for 3.5 years.

2. What do you enjoy most about it?

I thoroughly enjoy my continued interaction with investment performance professionals from whom we gain invaluable insight and information about the industry, which is instrumental in developing the CIPM Program curriculum. I also enjoy working with individuals to help educate the general investment community about the importance of performance evaluation and investment performance standards.

3. What role does The Spaulding Group play at your firm?

CFA Institute interacts with The Spaulding Group through many different avenues. For numerous years we have been sponsors of their performance conferences, PMAR North America and PMAR Europe, and we have used articles from *The Journal of Performance Measurement* in our CIPM Program curriculum. The Spaulding Group is a producer of quality educational content that is relevant to the investment industry and to CFA Institute. The Spaulding Group has also been, and continues to be, a huge supporter of the CIPM Program; they are one of our approved prep providers offering courses to individuals looking for exam preparation guidance and help to educate the industry about the benefits of the CIPM Program.

THE SPAULDING GROUP'S 2014 INVESTMENT PERFORMANCE MEASUREMENT CALENDAR OF EVENTS

DATE	EVENT	LOCATION
April 24-25	Performance Measurement Forum – North American Forum	Montreal, QE (Canada)
May 19-20	Fundamentals of Performance Measurement	New Brunswick, NJ (USA)
May 20	Fundamentals of GIPS Workshop	Philadelphia, PA (USA)
May 21-22	PMAR XII North America Westin Philadelphia	Philadelphia, PA (USA)
June 10-11	PMAR V Europe America Square Conference Centre	London, England
June 17-18	Fundamentals of Performance Measurement	Chicago, IL (USA)
June 19-20	Performance Measurement Attribution	Chicago, IL (USA)
June 19-20	Performance Measurement Forum – EMEA Forum	Berlin, Germany
July 15-16	Fundamentals of Performance Measurement	San Francisco, CA (USA)
July 15-16	Fundamentals of Performance Measurement	Sydney, Australia
July 17-18	Performance Measurement Attribution	San Francisco, CA (USA)
July 17-18	Performance Measurement Attribution	Sydney, Australia
July 22-23	Fundamentals of Performance Measurement	New York, NY (USA)
July 22-23	Fundamentals of Performance Measurement	Hong Kong
July 24-25	Performance Measurement Attribution	New York, NY (USA)
July 24-25	Performance Measurement Attribution	Hong Kong
August 18-19	CIPM Principles Prep Class	Chicago, IL (USA)
August 20-22	CIPM Expert Prep Class	Chicago, IL (USA)
September 17	Portfolio Risk Class	Boston, MA (USA)
September 23-24	Fundamentals of Performance Measurement	Los Angeles, CA (USA)
September 25-26	Performance Measurement Attribution	Los Angeles, CA (USA)
October 14-15	Fundamentals of Performance Measurement	Chicago, IL (USA)
October 16-17	Performance Measurement Attribution	Chicago, IL (USA)
November 11-12	Fundamentals of Performance Measurement	Dallas, TX (USA)
November 13-14	Performance Measurement Attribution	Dallas, TX (USA)
December 9-10	Fundamentals of Performance Measurement	New Brunswick, NJ (USA)
December 11-12	Performance Measurement Attribution	New Brunswick, NJ (USA)

For additional information on any of our 2014 events, please contact Christopher Spaulding at 732-873-5700

TRAINING...

Gain the Critical Knowledge Needed for Performance Measurement and Performance Attribution

TO REGISTER:

Phone: 1-732-873-5700

Fax: 1-732-873-3997

E-mail: info@SpauldingGrp.com



The Spaulding Group, Inc. is registered with the National Association of State Boards of Accountancy (NASBA) as a sponsor of continuing professional education on the National Registry of CPE Sponsors. State boards of accountancy have final authority on the acceptance of individual courses for CPE credit. Complaints regarding registered sponsors may be addressed to the National Registry of CPE Sponsors, 150 Fourth Avenue North, Suite 700, Nashville, TN 37219-2417. **www.nasba.org**

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:

May 19-20, 2014 – New Brunswick, NJ

June 17-18, 2014 – Chicago, IL

July 15-16, 2014 – San Francisco, CA

July 15-16, 2014 – Sydney, Australia

July 22-23, 2014 – New York, NY

July 22-23, 2014 – Hong Kong

September 23-24, 2014 – Los Angeles, CA

October 14-15, 2014 – Chicago, IL

November 11-12, 2014 – Dallas, TX

December 9-10, 2014 – New Brunswick, NJ

15 CPE & 12 PD Credits upon course completion

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:

June 19-20, 2014 – Chicago, IL

July 17-18, 2014 – San Francisco, CA

July 17-18, 2014 – Sydney, Australia

July 24-25, 2014 – New York, NY

July 24-25, 2014 – Hong Kong

September 25-26, 2014 – Los Angeles, CA

October 16-17, 2014 – Chicago, IL

November 13-14, 2014 – Dallas, TX

December 11-12, 2014 – New Brunswick, NJ

15 CPE & 12 PD Credits upon course completion

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.

CIPM PREP TRAINING: August 18-19, 2014 – Principles Level–Chicago, IL
August 20-22, 2014 – Expert Level–Chicago, IL

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
- Strengthen and reinforce core CIPM principles

These cards are a **must have** for anyone preparing to take the CIPM Exams.

