



ZEPHYR

ASSOCIATES, INC.

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The **ADVISOR**

June 15, 1994

Style *FLASHES*

Index Constraints

You can now put constraints on the indices you use to build your benchmarks. Such constraints can also include "short sales" on one or more indices (in the past, it would have to be all or none). This has some interesting uses with regards to the detection of currency hedging in international portfolios. There are also several clever uses for developing an optimum mix of managers for benchmark tracking. I will cover these subjects in our next newsletter. In the meantime, the readme.txt file in your latest **StyleADVISOR** update disk will explain this addition.

Saving Scanned Universes

We've always had the ability to create a universe of managers in the scan mode by screening managers based on their style. Now we have the ability to save that universe and use it in our risk return analysis. I'll talk more about this in the future as well, but for now you can experiment with the readme.txt information you'll find in your Style directory.

Indexes in General

We are currently providing over 350 indexes monthly to our **StyleADVISOR** subscribers. I would like to rework this list with a greater emphasis on quality, as opposed to quantity, and would appreciate any feedback as to which indexes are important to you and which you would like to see added or eliminated.

User Conference

There seems to be a great deal of interest in our proposed user conference. I'm working on a date sometime in September for a conference in Lake Tahoe. Hopefully, I'll have a better idea by the time we publish the next newsletter.

New **StyleADVISOR** Users

We are happy to welcome the following new Style Advisor users.

For a Free Demo Disk and list of Clients call (800) StyleAD (789-5323)

Creating A Policy Benchmark

Most plan sponsors have adopted an asset allocation policy for their total fund. With **StyleADVISOR**, you can create a policy benchmark for your asset allocation. This is done by creating a "fund" whereby you select the indexes that represent the asset classes in your asset allocation with whatever weights you've selected for each asset class. As an example, the asset allocation for the (hypothetical) Zephyr Associates Pension Fund is:

50% Domestic Equity (divided among four styles, Lg Growth, SmGrowth, Lg Value, SmValue).

20% International equity (15% primary, 5% emerging)

15% Domestic fixed income

15% Global fixed income

To create my benchmark, I click **edit/fund**, name and describe my fund (Zephyr Associates Policy Benchmark), and select the following indexes and weights:

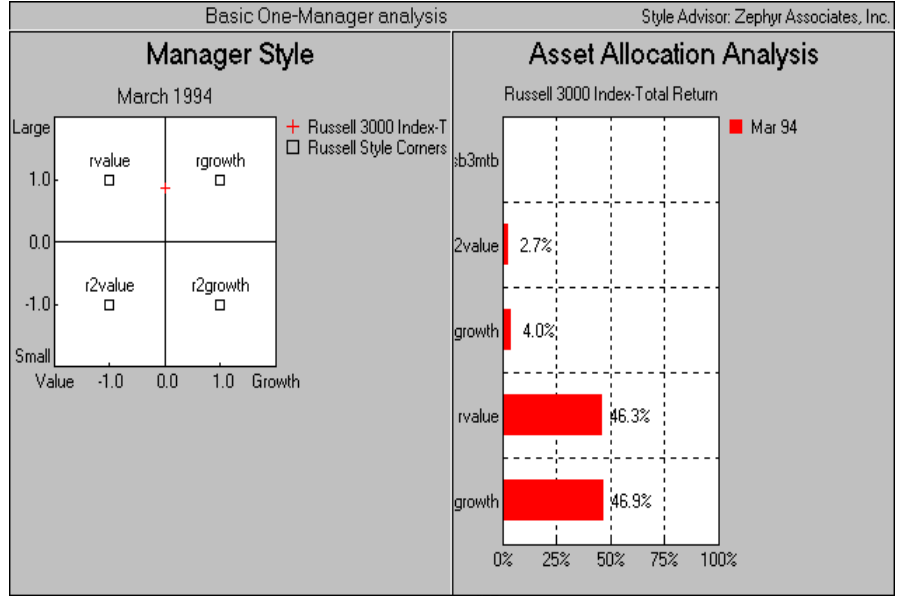
- 50%** **Russell 3000**
- 15%** **EAFE** (Mscieafe.ind)
- 05%** **Barring Emerging Market Index** (Bemi)
- 15%** **Lehman Government/ Corp. Bond Index** (lbgc)
- 15%** **Lehman Global Bond Index** (Liglobal)

This benchmark will be saved and stored in the fund file and will automatically be updated each month when the current returns for the indexes are updated. This fund can be selected as a manager, index,

benchmark or fund in either the style analysis or risk return analysis.

Allocating Assets

I decided to select four domestic equity managers (One for each style) and a single manager for each of the other asset classes. After I selected my managers (I did a search using the Mobius data base), my next step was to determine the weights for each of the domestic equity styles. To do this, I used the Basic one manager analysis file in **StyleADVISOR**. I selected the four Russell Indexes. I selected the Russell 3000 as a manager. Graph 1 shows that the combination of Russell style indexes that gives me the highest R² to the Russell 3000. Notice what small weights the small cap indexes get. I am sure this is much smaller than what most plan sponsors choose for their small cap managers, but these are the approximate weights that should be used if you want your total domestic equity portfolio to track a large cap index such as the Russell 3000. Since the managers I selected were all active, and did not perfectly replicate their respective benchmarks, it was necessary to find the optimal weights for each of the managers. To do this for the domestic equity managers, I used the **StyleADVISOR** optimizer to find the optimum weights for each of my managers given certain constraints that would give me the highest tracking to my domestic equity benchmark (Russell 3000). You will be able to do this optimization of managers using constraints with the new version of **StyleADVISOR** which will be out this month. I will explain how to do this in the next Newsletter. For all the other managers that would manage a whole asset class, I initially assigned them a percentage equal to the amount designated for that asset class. The following are those percentages:



- 19.5% Domestic Lg Growth Equity
- 28.0% Domestic Lg Value Equity
- 01.5% Domestic Sm Growth Equity
- 01.0% Domestic Sm Value Equity
- 15% International/Primary
- 05% International/Emerging
- 15% Domestic Fixed Income
- 15% Global Fixed Income

my policy benchmark as closely as possible. In other words, I didn't want to make a bet that would purposely over or under weight any asset class. This way, any expected value added over the policy benchmark would have to come from the managers through their ability to beat their respective benchmarks.

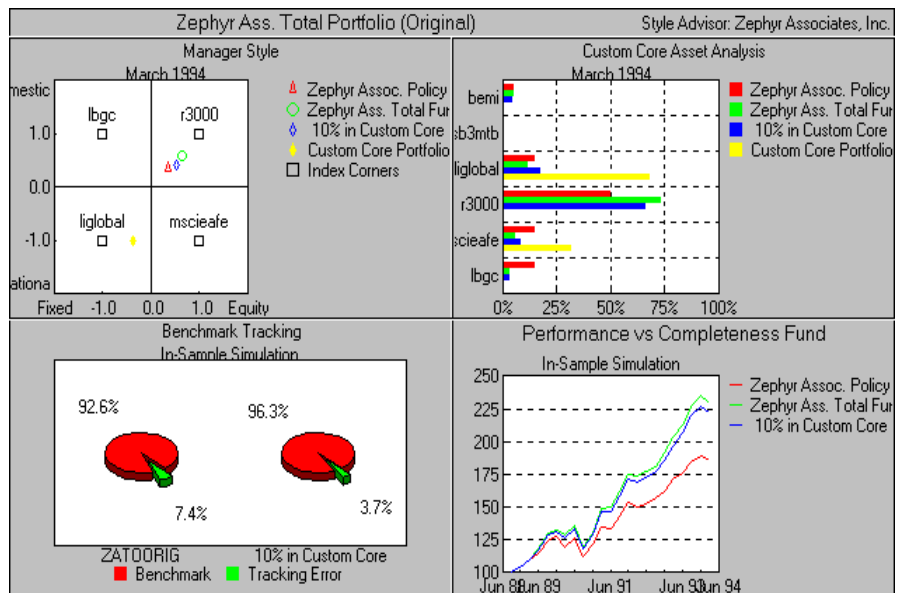
By selecting the specific managers and assigning them the above weights, I created another fund called Zephyr Associate's Total Portfolio. My goal was to get my actual portfolio to track

Realigning The Weights

Except for the domestic equity managers, where I actually found the optimum mix to track my domestic equity benchmark (Russell 3000), the rest of the managers

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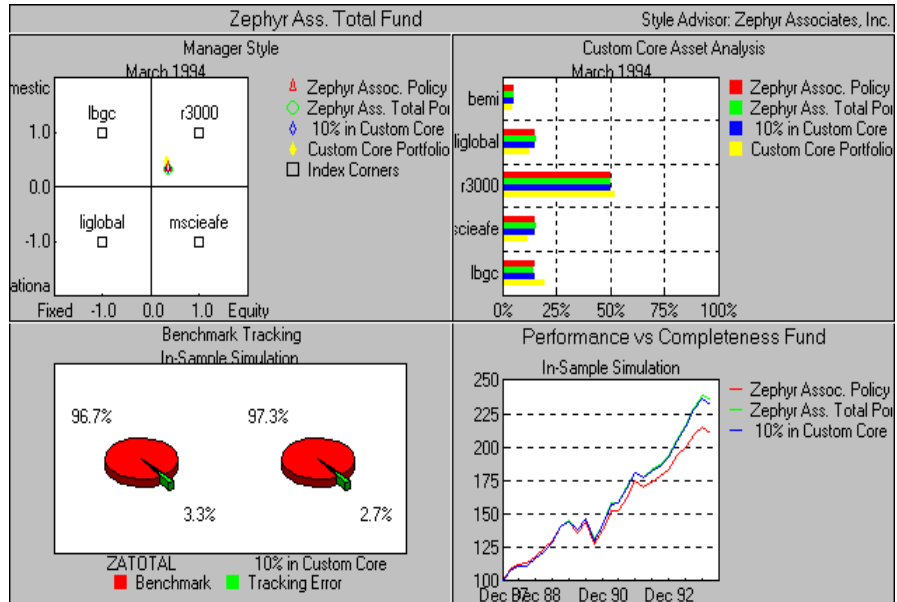
Graph 2



Graph 3

weights were selected naively, since I just used the same percentage as I had in my policy benchmark for their asset classes. This seemed like a good place to start. Using these managers and these weights, I created a new fund titled Zephyr Associates Total Portfolio. With the Custom Core analysis, I can see how closely my Total portfolio (with the real managers) would have tracked my Policy Benchmark and then make adjustments accordingly. I set up a new custom core file titled Zephyr Associates Total Portfolio (Original). The indexes I selected were the same indexes I have in my Policy Benchmark. For "manager" I selected my Zephyr Associates Total Portfolio fund. For the benchmark, I selected the Zephyr Associates Policy Benchmark. I indicated 10% for the custom core portfolio. Even though I did not intend to create a custom core portfolio, this would help me in realigning my weights as I will soon explain. I also created a new style chart or Basis by putting my four primary indexes in the four corners. I have fixed/equity on one axis and domestic/international on the other axis. Graph 2 shows that the Total Portfolio had an R² to the Policy benchmark of 92.62%. The custom core (Yellow bar) indicated that I needed to increase my weights in global bond and international equity and decrease my weights in domestic equities and fixed income to improve my tracking. By playing around with manager weights in my ZA total fund, I was able to get the R² up to 96.7 as shown in chart 3. With a little more work I could have gotten it even closer, but I figured this was close enough. The final weights that I ended up with for my managers were:

- 41.0% Domestic Equity:
 - 15.5% LrgGrowth
 - 23.0% LrgValue
 - 01.5% SmGrowth
 - 01.0% SmValue
- 27.0% International Equity (eafe)
- 03.0% IntlEquity (Emerging Market)
- 06.0% Global Fixed Income
- 23.0% Domestic Fixed Income



Risk Return Analysis

Once the Policy Benchmark and the Total fund Portfolio are created and stored in the fund file, they can be used anytime in a style analysis or a risk return analysis. Chart 4 is an example of how I used this in the risk return. For the manager I selected the ZA Total Portfolio and for the benchmark I selected the ZA Policy benchmark. All my regression statistics on the bottom table are based on the policy benchmark (rather than the S&P 500).

Now I can show my investment committee members how well we would have done and how well we would have tracked our policy benchmark had we had these managers, in these weights, over this period of time. Let's see how we do in the future, that will be the "real out-of-sample" test. I'll keep you apprised.

- Steve Hardy

Graph 4

