

Named Substitutes

The Named Substitutes feature allows model managers to designate an unlimited number of substitutes for each ETF or mutual fund in a model. The feature is primarily intended for use in taxable accounts, where the designated substitutes are used to facilitate loss harvesting. When Smartleaf recommends selling a primary security below its target weight, it will attempt to produce a corresponding recommendation to purchase one of the designated substitutes (within the limits of any applied constraints, the wash sale rule, etc.). Any securities in the target that do not have a named substitute will be treated normally, and Smartleaf will look elsewhere in the target for acceptable replacements or simply hold funds in cash. To automate legacy fund handling, substitutes may also be marked as No-Buy securities. Smartleaf will hold onto these substitutes until deemed advantageous to sell, but will not recommend purchasing more of the position.

Using named substitutes has the advantage of providing:

- ▶ More predictable trade recommendations in all-ETF or all-mutual-fund portfolios
- ▶ Additional opportunities for loss harvesting
- ▶ Lower levels of asset-class drift
- ▶ Automated legacy fund handling

Sample Use Case

The Named Substitutes feature was developed to support tax-managed ETF and mutual fund portfolios, where substitution across asset classes is undesirable.

How It Works

The Named Substitutes feature extends Smartleaf's model grammar by allowing you to designate, for any ETF or mutual fund in a model, an unlimited number of substitute securities.

When you assign a security as a substitute for one of the primary positions in a model:

- ▶ The substitute security, unless marked as a no-buy, is deemed acceptable for purchase and is added to the target buy list of any account that follows the model.
- ▶ The characteristics of the substitute securities are declared to be identical to those of its primary for analysis purposes.
- ▶ Any rankings applied to the primary security through the Client Profile or Firm Master Settings replace those applied to the substitutes' tickers (e.g., Rankings for Securities in Target, individual Security Rankings, Rankings

Lists). Any rankings previously applied to the substitutes' tickers are ignored.

Hurdle Rates

Hurdles function in the same way as negative rankings, by artificially decreasing the annualized expected return of the security to which they are applied, in this case, the substitute. A 100 bps hurdle, for example, would decrease the expected return of a substitute by 1% relative to that of its primary security. As a result, when you set a non-zero hurdle for a substitute security, you are indicating to Smartleaf that it is less desirable to hold the substitute than it is to hold its corresponding primary security.

In practical terms, the size of the hurdle determines how soon after the end of the primary security's wash-sale period Smartleaf is likely to recommend selling a substitute and repurchasing the primary security:

- ▶ When the hurdle is set to 0 bps, both the primary and substitute securities are treated identically. The substitute will be held until Smartleaf determines that it is advantageous to loss harvest it.
- ▶ When the hurdle is set above 0 bps, the substitute is considered to be less desirable than its primary. At higher hurdle values, Smartleaf will be more likely to return to the primary security, and will recommend higher levels of realized gains in order to do so.
- ▶ When the hurdle is set at or near the max of 999.99 bps, Smartleaf will recommend selling the substitute security immediately after the end of the primary's wash-sale period (except in the presence of extraordinarily large gains on the substitute that would be sold).

The hurdle can be set to any value from 0 bps to 999.99 bps (inclusive); note that two decimal points are allowed. In the presence of multiple named substitutes, the hurdle rates serve to prioritize the substitute securities for purchase. When loss harvesting, Smartleaf's recommendation to buy a substitute will start with the substitute that has the lowest hurdle rate.

Note: Smartleaf strongly recommends that firms considering using the Named Substitutes feature thoroughly test their hurdle rates using what-if portfolios to ensure that the system recommends appropriate trades.

Effects on Analysis Metrics

Since the Named Substitutes feature changes the way that Smartleaf analyzes accounts, you should make note of how those changes impact the analysis metrics of accounts following targets that include primary/substitute sets.

If two accounts follow the same target, but one is invested 100% in primary securities and the other is invested 100% in substitute securities, both will have the same tracking error of 0%. This is true regardless of the applied hurdle rate for any primary/substitute sets in the target, because:

- ▶ A primary security and its designated substitutes appear identical to Smartleaf's analysis engine.
- ▶ No rankings in Smartleaf, including hurdles, have any effect on an account's calculated tracking error.

The hurdle rate does affect opportunity score. In the scenario described above, the opportunity score of the two accounts would be equal only if every set of primary and substitute securities had a hurdle rate of 0 bps. If one or more substitute pairs had a non-zero hurdle, the account holding only substitutes would have a higher opportunity score. This is because any hurdle above 0 bps indicates that the substitute to which it is applied is less preferable than its corresponding primary security, and switching back to the primary security might improve the account.

These effects should be considered in your daily rebalancing workflow. If you typically rebalance your accounts based on a tracking error threshold, for instance, you may overlook accounts that have trades you would like to execute.

Things to Keep in Mind

Keep the following in mind when taking advantage of the Named Substitutes feature:

- ▶ Any given ETF or mutual fund can only appear in a model and account target once, either as a primary security or a substitute. If an account target includes the same ETF or mutual fund more than once, the analysis will fail.
- ▶ In order to successfully analyze an account, a given ETF or mutual fund that has a substitute, or is itself a substitute, can only appear once in the account target. If a target includes the same paired ETF or mutual fund more than once, the analysis will fail.
- ▶ Hurdles are not the only factor used when Smartleaf considers whether or not to switch from the substitute security back to its primary. The tax impact of the sale, time to long-term status, and several other factors contribute to every recommendation.
- ▶ At this time, concurrent requests to buy both a primary security and its corresponding substitute will result in an analysis error.
- ▶ Requested trades and trade modifications of a secondary security may still result in further purchases of other securities in the class if there are mandates.
- ▶ As with all model updates, users can only add substitutes to models they have permission to edit.

Filtering for Named Substitutes

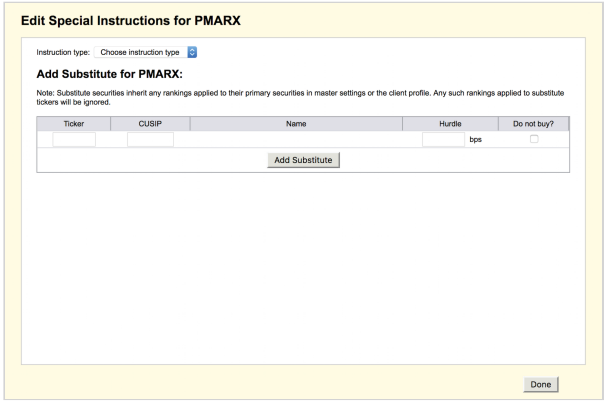
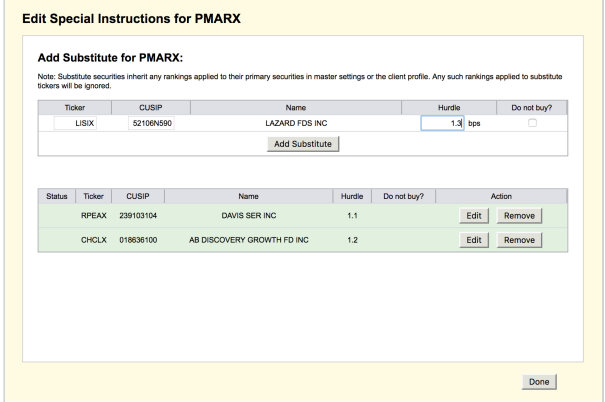
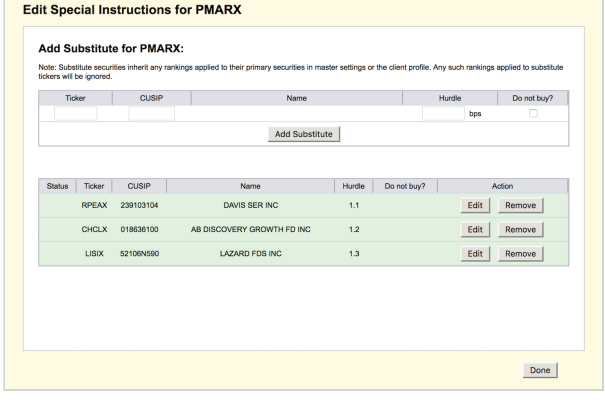
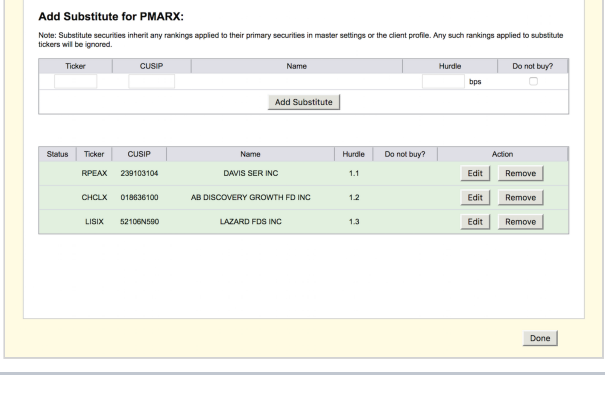
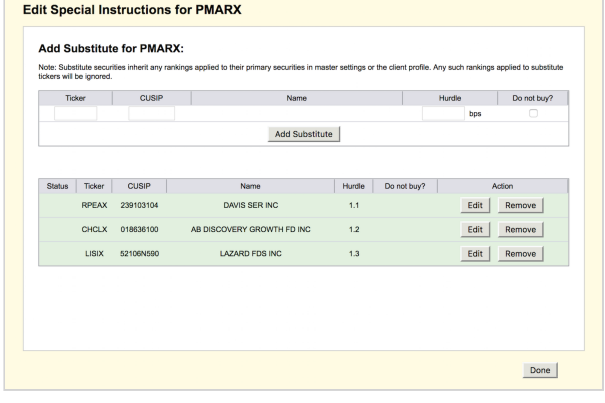
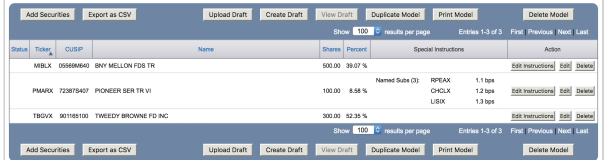
Users can filter for accounts that follow targets using named substitutes with the new Has Named Substitute In Target filter, located in the Portfolio Settings section of the Edit Filter page.

Instructions for Adding and Removing Named Substitutes

Adding Named Substitutes to a Model

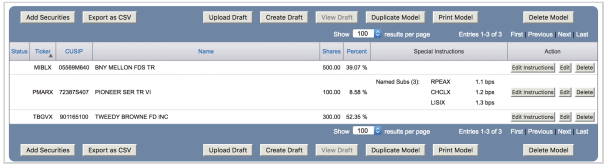
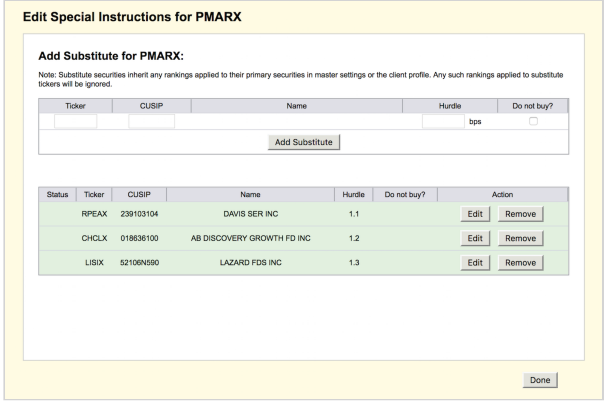
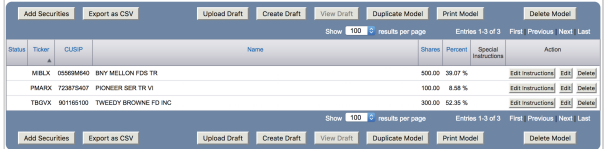
From the Edit Model page:

<p>1.</p>	<p>Check to see whether the model has special instructions enabled.</p>	
<p>2.</p>	<p>If the model does not have special instructions enabled, press the Change button to open the Edit Model dialog box, select Enabled from the Special Instructions drop-down menu, and press the Update Model button at the bottom of the dialog box. This updates the model's settings and refreshes the Edit Model page.</p>	
<p>3.</p>	<p>Press the Edit Instructions button next to the appropriate security. This will open the Edit Special Instructions dialog box.</p>	
<p>4.</p>	<p>Select Substitute Security from the Add a Special Instruction drop-down menu.</p>	

<p>5.</p>	<p>In the Add Substitute table, begin entering the substitute's ticker in the Ticker entry field. As you type, Smartleaf will display suggestions for matching securities in a yellow box below the field. Click on the desired security and Smartleaf will fill in the security's name and CUSIP automatically.</p>	
<p>6.</p>	<p>Enter the desired hurdle rate between 0 and 999.99 bps.</p>	
<p>7.</p>	<p>Press the Add Substitute button. The dialog box will update to confirm the addition of the substitute.</p>	
<p>8.</p>	<p>Repeat steps 5 though 7 for any additional substitutes you wish to add.</p>	
<p>9.</p>	<p>Press the Done button at the bottom of the dialog box to exit to return to the Edit Model page.</p>	
<p>10.</p>	<p>The number of associated substitutes as well as their tickers and and hurdle rates will be displayed in the Special Instructions column.</p>	

Removing Named Substitutes from a Model

From the Edit Model page:

<p>1.</p>	<p>Press the Edit Instructions button next to the substitute that you wish to remove. This will open up the Edit Special Instructions dialog box.</p>	
<p>2.</p>	<p>In the Edit Special Instructions dialog box press the Remove button next to the substitute you wish to delete. Once all the substitutes have been deleted, the dialog box will update to show the Add a Special Instruction drop-down menu.</p>	
<p>3.</p>	<p>Once you are finished editing the security's special instructions, press the Done button to return to the Edit Model page.</p>	

Updating Models with Named Substitute Lists

Refer to the [Uploading a Model from a File](#) for detailed information on how to upload and prepare CSV files with models that contain named substitutes.

Viewing Named Substitutes in Smartleaf

Named Substitutes in the Position Summary

Named substitutes are listed in the Position Summary in the Analysis Overview in the Purchasable Named Substitutes and No-Buy Named Substitutes rows.

Position Summary	Current	Recommended	Target
Number of Positions	5	4	4
In Target	3	3	4
Purchasable Named Substitutes	1	1	0
No-Buy Named Substitutes	1	0	0
Not In Target	0	0	0
Transaction Summary			
New Positions	--	1	1
Changed Positions	--	3	3
Liquidated Positions	--	2	2

Named Substitutes in Analysis Reports

In the By-Ticker report, substitutes are indicated in the same way that they are in the Recommendations table. In the By-Model and By-Target-Template reports, the substitute’s name, ticker, and CUSIP are indicated directly below the primary.

Equity		0.73 %	14.76 %	14.77 %	50.00 %
<ul style="list-style-type: none"> LARGE CAP EQUITY ISHARES MSCI KLD 400 SOCIAL GUGGENHEIM S&P 500 TP 50 ETF (1.0 tps sub for DSI) ALERIAN MLP ETF (23.0 tps sub for DSI) AMERICAN CENTY CALIF TX FR M (24.0 tps sub for DSI) 	<ul style="list-style-type: none"> DSI 464288570 XLG 78359V205 AMLFP 00162Q866 CAYCX 025075805 	<ul style="list-style-type: none"> 0.73 % 0.02 % 0.38 % 0.02 % <0.01 % 	<ul style="list-style-type: none"> 14.76 % 2.55 % 0.38 % 0.02 % <0.01 % 	<ul style="list-style-type: none"> 14.77 % 2.95 % 0.02 % 2.95 % 	<ul style="list-style-type: none"> 50.00 % 9.69 % 0.02 % 9.69 %
Total for Position:		0.42 %	2.95 %	2.95 %	9.69 %

Named Substitutes displayed in the By-Model Report.

Named Substitutes in Recommendations and Holdings

When a security and its substitutes appear in an account’s recommendations, its substitutes are listed by ascending hurdle rate in parentheses next to the primary’s ticker. If there are more than five substitutes associated, the first five are shown in the parentheses, and you can hover over them to see the full list. If the substitute appears in the account’s recommendations, its hurdle rate, associated primary, and no-buy designation (if applicable) will be indicated in the same way. Security/substitute(s) sets are displayed in the same way on an account’s Holdings page.

<ul style="list-style-type: none"> PMARX OTC Funds (primary for RPEAX, CHCLX, LISIX, PSPAX, BMGAX...) 72387S407 PIONEER SER TR VI 	<ul style="list-style-type: none"> RPEAX, CHCLX, LISIX, PSPAX, BMGAX, AVEGX 	<ul style="list-style-type: none"> \$ 1,988.95 Buy 32
<ul style="list-style-type: none"> TBGVX OTC Funds 901165100 TWEEEDY BROWNE FD INC 		<ul style="list-style-type: none"> \$ -85.03 Buy 1,39

Named Substitutes displayed in the Recommendations table.

Named Substitutes in Model Change Reports

Changes to Named Substitutes are indicated on the View Model History and Model History Report pages in the Previous Instruction and New Instruction columns. The hurdle is indicated in parenthesis. Note that only changes made to model drafts that have been reviewed and committed will show up in these reports.

Date Changed	Changed By	Securities Changed	Turnover
10/09/18 at 12:24 PM	Jane Doe	1	0.00%

Ticker	CUSIP	Previous Weight	New Weight	Difference	Instructions Removed	Instructions Added
ALARK	015070401	100.00%	100.00%	0.00%		Sub: CHCX (1 tps)

The View Model History page.

Related Videos

- ▶ [Navigating the Smartleaf User Interface](#)
- ▶ [Understanding and Using Models](#)

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