



ETF ACTION MODEL BUILDER & MODEL UPDATE GUIDE

Model, & Blended Model

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Model Builder Guide

Please see below for a step-by-step guide on the Model Building process:

Once logged onto the ETF Action platform, click the Model Tools drop down on the left side panel to access the Model Builder and Model Manager tools.

The screenshot shows the ETF Action platform interface. On the left sidebar, the 'Model Tools' section is expanded, and 'Model Builder' is highlighted with a red arrow. The main content area displays a table of ETFs with the following columns: Ticker, Fund Name, Brand, Index, Category, Inception, Expense, AUM (SMM), TTM Yield, and YTD. The table lists various ETFs such as SPDR S&P 500 ETF Trust, iShares Core S&P 500 ETF, Vanguard S&P 500 ETF, and others. At the top of the main area, there are navigation tabs for 'Research', 'Compare', and 'Security Lookup'. Below these tabs, there are summary statistics for the selected funds, including Total Funds (3,033), Total AUM (\$6,232,462), Avg. Expense (0.55%), and various Net Flows (\$23,231, \$103,194, \$200,511, \$501,416, \$677,535).

To build a new model, click Model Builder. There are two types of models you can build:

- 1) **Model** is the most used type which can hold ETFs, mutual funds, stocks, or cash. This type of model can be backtested with custom baskets (historical positions, weights, and dates) or on a set frequency (daily, monthly, quarterly, annually). You can track daily performance, complete in-depth analysis (risk/return, composition, fundamentals), evaluate potential changes, and generate on-demand reports
- 2) **Blended Models** can hold individual models and cash and currently only supports constant rebalancing (daily)

How to Build a Model

After selecting the Model type, you need to populate the model settings. Model Name, Model Type (which is pre-populated), Rebalance Frequency, and Benchmark are the only required settings for a Model.

There are 5 different Back-Test Rebalance Frequency options for a Model:

- Daily (Continuous): holdings are rebalanced each day to desired weights
- Monthly: holdings are rebalanced each month to desired weights
- Quarterly: holdings are rebalanced each quarter to desired weights
- Annually: holdings are rebalanced each year to desired weights
- Custom: holdings are rebalanced on a specified dates to specified holdings/ weights (custom backtest)

Benchmarks can be ETFs, mutual funds, stocks, or other models. Click the Next button at the bottom of the page after filling in your desired settings. All other settings can be changed at any time on the Model Manager page using the Settings tab (see the Updating Settings Section).

Once the required fields are inputted, click the Next button at the bottom of the screen

The screenshot shows the 'Choose Model Parameters' form. The top section is highlighted with a red border and contains the following fields:

- Model Name*: ETF Action Model Test
- Rebalance Frequency*: Monthly
- Model Type*: Model
- Benchmark*: SPDR S&P 500 ETF Trust

Below this section are several other fields:

- Provider: [Empty]
- Security Type: [Dropdown]
- Category: [Empty]
- Strategy: [Dropdown]
- Asset Class: [Dropdown]
- Risk Category: [Dropdown]
- Implementation: [Dropdown]
- Min Investment (\$): [Empty]
- ESG: [Dropdown]
- Management Fees (%): [Empty]
- Tax Managed: [Dropdown]
- Objective: [Text Area]

At the bottom right, there are two buttons: 'Previous' and 'Model'. A red arrow points to the 'Model' button.

Next, you need to compile the Model data (Ticker and Weight of Security, and Date for Models with Custom Rebalance Frequency). There are two methods of inputting your data into the platform:

1) Manual Input

Users can manually input all desired holdings directly onto the platform.

For Models with Daily (Continuous), Monthly, Quarterly, and Annually Rebalance Frequencies, enter the ticker of the stock, ETF, or Mutual Fund into the Holding Column then enter the desired weight into the Weight column. For cash positions, please use CASH_X for the ticker.

****Make sure all weights add up to 100***

For holdings with a limited track record, you can also enter in the ticker of a proxy holding into the Proxy column that will hold the desired weight until inception of the original holding

****Please note that all Models with Daily (Continuous), Monthly, Quarterly, and Annually Rebalance Frequencies will have an inception date at the earliest common inception of all holdings***

Once the desired holdings and weights have been entered manually, click the Submit button at the bottom of the Page

Model Builder

Model Builder Guide Upload Template

Model Positions

Symbol	Holder	Name	Weight	Proxy	IPO Date	Errors/Warnings	Row
SPY		SPDR S&P 500 ETF Trust	25				
APPL		Apple Inc.	25				
LFEX		ALPS Real Assets Global Opportunity Fund	25				
FXAIX		Fidelity 500 Index Fund	25				
CASH_X		CASH	25				

Showing 5 of 5 Model Positions

Previous Next

Error Messages: Errors must be addressed before a model can be created successfully.
Warning Messages: Warnings are for issues that we were able to address and are informational only.

Previous Submit

For Models with a Custom Rebalance Frequency, enter the ticker of the stock, ETF, or Mutual Fund into the Holding Column, the desired weight into the Weight column, and the desired date in the Date column. For cash positions, please use CASH_X for the ticker.

***Make sure the weights for each date add up to 100**

For holdings with a limited track record, you can also enter in the ticker of a proxy holding into the Proxy column that will hold the desired weight until inception of the original holding

***Please note that all Models with the Custom rebalance frequency will have the inception date of the earliest date included in the holdings data**

Once the desired holdings, weights, and dates have been entered manually, click the Submit button at the bottom of the Page

Model Positions

Symbol	Holder	Name	Weight	Proxy	IPO Date	Date	Errors/Warnings	Row
APPL		Apple Inc.	25			05/31/2021		
SPY		SPDR S&P 500 ETF Trust	25			07/31/2021		
MVIS		Amplify Thematic AI-Stars ETF	25			07/31/2021		
CASH_X		CASH	25			07/31/2021		
SPY		SPDR S&P 500 ETF Trust	25			06/30/2022		
MVIS		Amplify Thematic AI-Stars ETF	25			06/30/2022		
FXAIX		Fidelity 500 Index Fund	25			06/30/2022		
CASH_X		CASH	0			06/30/2022		
Search			0			mm/00/0000		
Search			0			mm/00/0000		

Showing 10 of 10 Model Positions

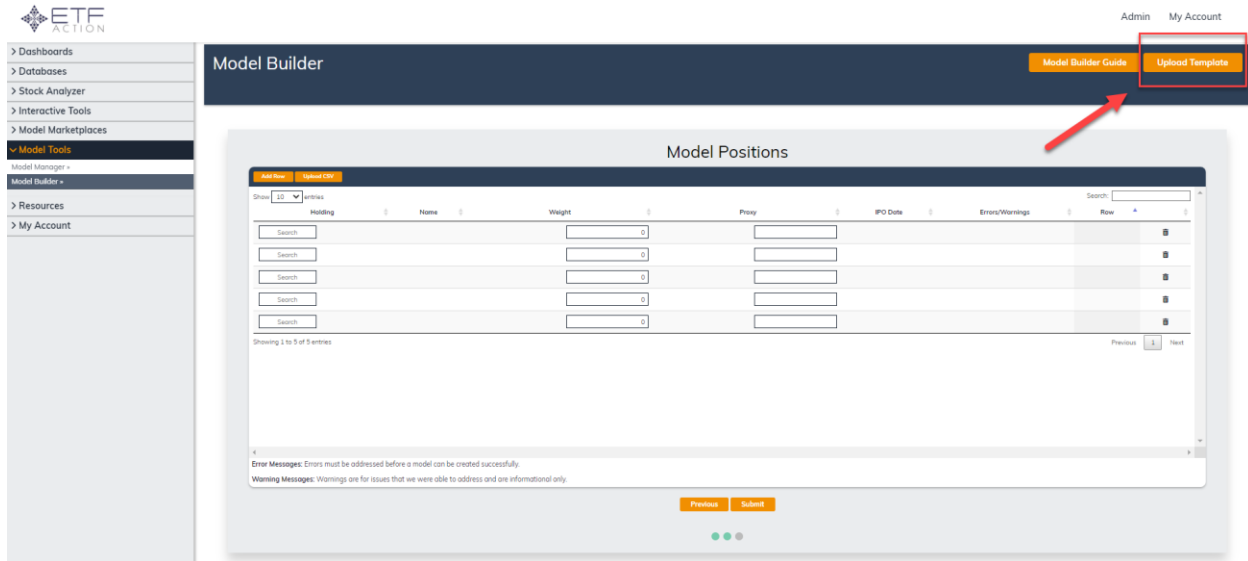
Previous Next

Error Messages: Errors must be addressed before a model can be created successfully.
Warning Messages: Warnings are for issues that we were able to address and are informational only.

Previous Submit

1) Upload CSV File

Users can also upload a CSV (Comma Delimited) file with the desired holdings data. Users can download a template upload file by clicking the Upload Template button on the top right of the screen.



For a Model with the Daily (Continuous), Monthly, Quarterly, and Annually Rebalance Frequencies, the format for the upload CSV file is as such:

	A	B	C	D	E	F
1	ticker	weight				
2	SPY	40				
3	FXAIX	20				
4	AAPL	20				
5	LPEIX	10				
6	CASH_X	10				
7						
8						
9						

****Make sure all weights add up to 100***

****Please note that all Models with Daily (Continuous), Monthly, Quarterly, and Annually Rebalance Frequencies will have an inception date at the earliest common inception of all holdings***

****Please do not overwrite an existing upload file and always create a new upload file with the correct format in order to avoid errors***

If users wish to include proxy holdings for a Model, the format for the upload CSV file is as such:

	A	B	C	D	E
1	ticker	weight	proxy_ticker		
2	SPY	40			
3	FXAIX	20			
4	AAPL	20			
5	LPEIX	10	VINIX		
6	CASH_X	10			
7					
8					

For a Model with the Custom Rebalance Frequency, the format for the upload CSV file is as such:

	A	B	C	D	E
1	as_date	ticker	weight		
2	7/31/2021	AAPL	25		
3	7/31/2021	SPY	25		
4	7/31/2021	MVPS	25		
5	7/31/2021	CASH_X	25		
6	9/30/2022	SPY	25		
7	9/30/2022	MVPS	25		
8	9/30/2022	FXAIX	25		
9	9/30/2022	CASH_X	25		
10					
11					

****Make sure all weights add up to 100***

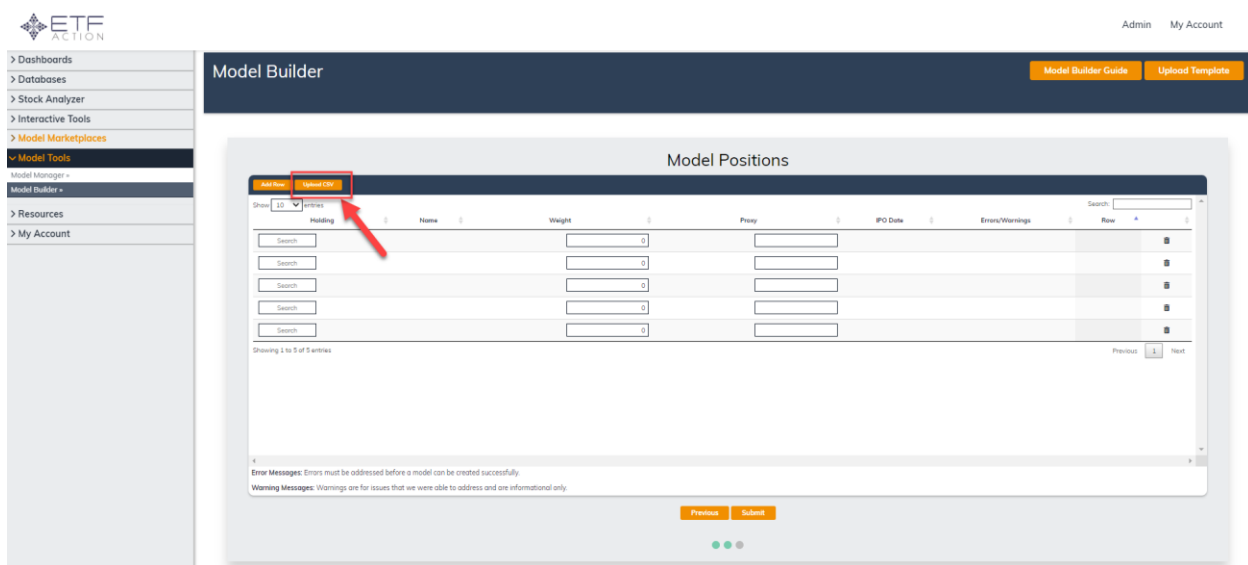
****Please note that all Models with the Custom rebalance frequency will have the inception date of the earliest date included in the holdings data***

****Please do not overwrite an existing upload file and always create a new upload file with the correct format in order to avoid errors***

If users wish to include proxy holdings for a Model, the format for the upload CSV file is as such:

	A	B	C	D	E
1	as_date	ticker	weight	proxy_ticker	
2	7/31/2021	AAPL	25		
3	7/31/2021	SPY	25		
4	7/31/2021	MVPS	25	VINIX	
5	7/31/2021	CASH_X	25		
6	9/30/2022	SPY	25		
7	9/30/2022	MVPS	25		
8	9/30/2022	FXAIX	25		
9	9/30/2022	CASH_X	25		
10					
11					

Once the CSV file has the correct format and contains the correct holdings data, save the file as a CSV. Return to the ETF Action Model Builder and press the Upload CSV button.



Next, click the Choose File button to select your CSV upload file then click the Upload button



***Please use the header and field formatting found in our [Sample Holdings Upload Template](#).**

****For additional help and troubleshooting, please reference our [Model Builder Guide](#).**

After clicking the Upload button, the holdings data from the CSV upload file will populate.

Submitting a Model

If there are errors in the holdings data, any warning or error messages will be displayed in the table for troubleshooting reference. Common errors include:

- Ticker is incorrect or does not exist
- For US domiciled individual equity securities, remove the “-US” from tickers. For example, use AAPL instead of AAPL-US
- Weight should be formatted as a general number format. For example, 25% of the portfolio would be 25. Ensure the weights for a specific date add up to 100
- File is not .csv format

Please note: Money Market mutual funds must be replaced with our cash security at this time (CASH_X)

Warnings that produce a yellow warning notification: These warnings have been corrected by the system and there is nothing needed from the user.

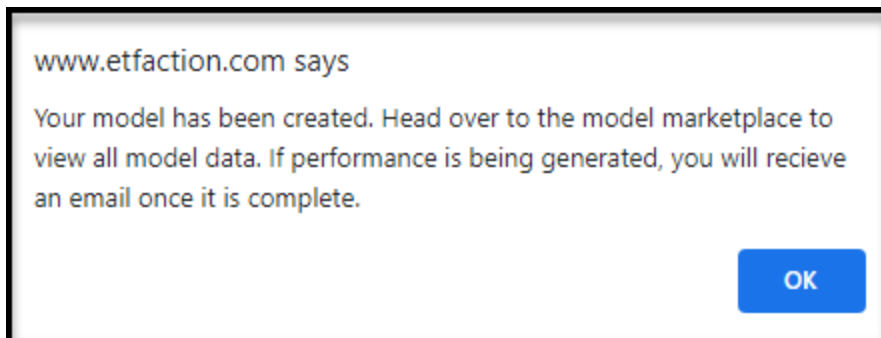
Errors that produce a red error notification: These errors will need to be corrected by the user in order to create the Model.

If there are no errors, click the Submit button to create your Model.

The screenshot shows the 'Model Positions' interface. At the top right, there are links for 'Admin' and 'My Account'. On the left, a navigation menu includes 'Dashboards', 'Databases', 'Stock Analyzer', 'Interactive Tools', 'Model Marketplaces', 'Model Tools', 'Model Manager', 'Model Builder', 'Resources', and 'My Account'. The main content area is titled 'Model Positions' and features a 'Warning Summary' box at the top, which is highlighted in yellow. Below this is a table with columns for 'Holding', 'Name', 'Weight', 'Price', 'IPO Date', and 'Date'. The table contains 8 rows of data. A red box highlights the 'Date' column for rows 1, 2, 3, and 4, with a corresponding 'Error Message' box that reads: 'The previous date 2021-07-31 was not a tradeable date and 2021-07-30 is the closest one.' At the bottom of the interface, there are 'Previous' and 'Submit' buttons, with a red arrow pointing to the 'Submit' button.

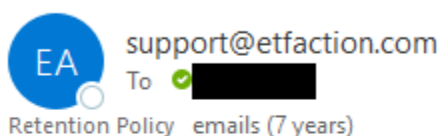
Holding	Name	Weight	Price	IPO Date	Date
AAPL	Apple Inc.	25		1980-11-05	07/30/2021
SPY	SPDR S&P 500 ETF Trust	25		1993-01-29	07/30/2021
MVPS	Amplify Thematic AI-Stars ETF	25		2021-07-21	07/30/2021
CASH_X	Cash	25		1980-1-31	07/30/2021
SPY	SPDR S&P 500 ETF Trust	25		1993-01-29	08/30/2022
MVPS	Amplify Thematic AI-Stars ETF	25		2021-07-21	08/30/2022
FUND	Fidelity 500 Index Fund	25		2011-05-10	08/30/2022
CASH_X	Cash	25		1980-1-31	08/30/2022

After clicking Submit, the user will receive a pop-up window notifying that the Model has been created:



You will also receive an email within 1 to 2 minutes notifying you that performance has been successfully run for your Model. Note that any model with a daily rebalance frequency should generate performance immediately and will not send a completion email.

ETF Action Model Test

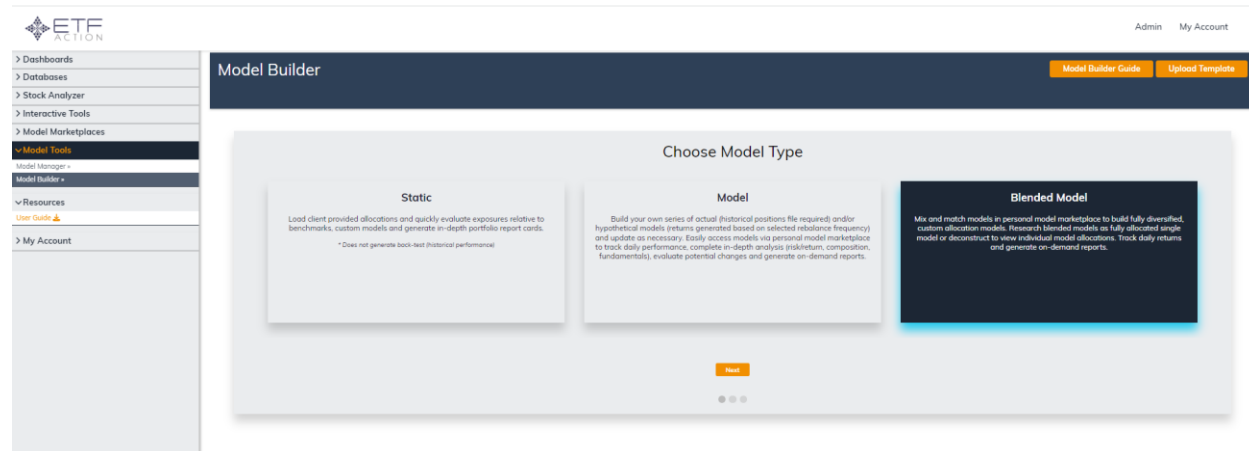


Backtest Completed.

Backtest Complete for model ETF Action Model Test

You will be able to view and analyze your Model by accessing My Marketplace under the Model Marketplaces dropdown.

How to Build a Blended Model



After selecting the Blended Model type, you need to populate the model settings. Model Name, Model Type (which is pre-populated), Rebalance Frequency, and Benchmark are the only required settings for a Blended Model. The Rebalance Frequency will always be Daily (Continuous) meaning that positions will rebalance each day to desired weights.

****Please note that Blended Models can only hold other models that have been previously created and cash. Blended Models cannot hold other ETFs, mutual funds, and stocks.***

Benchmarks can be ETFs, mutual funds, stocks, or other models. Click the Next button at the bottom of the page after filling in your desired settings. All other settings can be changed at any time on the Model Manager page using the Settings tab (see the Updating Settings Section).

Once the required fields are inputted, click the Next button at the bottom of the screen

The screenshot shows the 'Choose Model Parameters' interface. The top section, highlighted with a red box, contains:

- Model Name*: Blended Test
- Rebalance Frequency*: Daily (Continuous)
- Model Type*: Blended Model
- Benchmark*: ETFA Illustrative - Multi Issuer Core 60/40

 Below this are various dropdown menus for Provider, Security Type, Category, Strategy, Asset Class, Risk Category, Implementation, ESG, Tax Managed, and Management Fees (%). A large text area for 'Objective' is at the bottom. At the bottom right, there are 'Previous' and 'Next' buttons, with a red arrow pointing to the 'Next' button.

Next, you need to compile the Blended Model data (Ticker/ Model ID and Weight of Model). There are two methods of inputting your data into the platform:

1) Manual Input

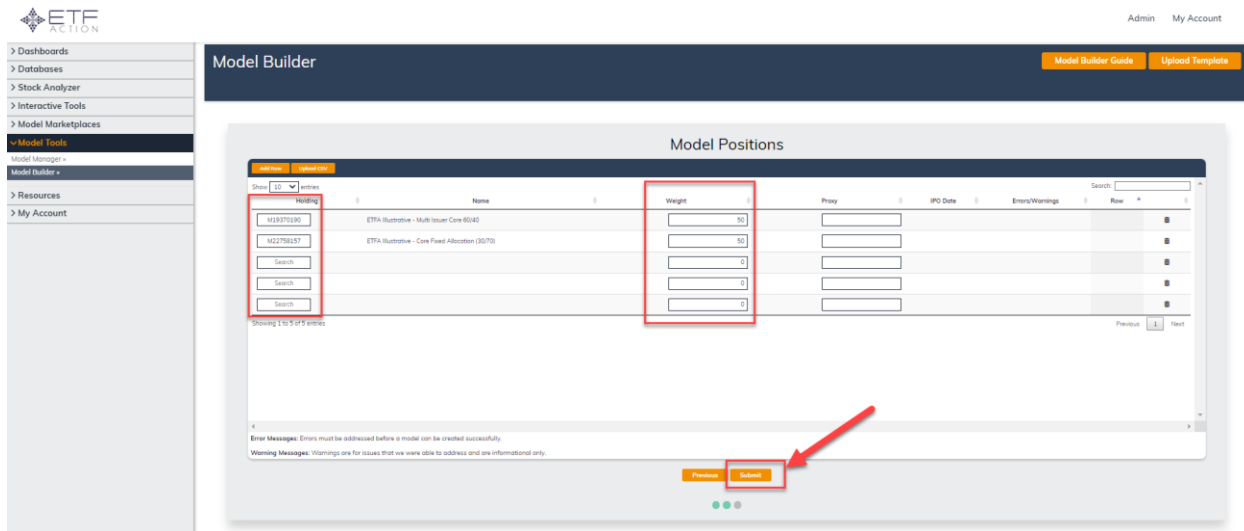
Users can manually input all desired models directly onto the platform. Enter the name or Model ID of the desired Model into the Holding Column then enter the desired weight into the Weight column. For cash positions, please use CASH_X for the ticker. Model IDs can be found on the far-left column of the Model Manager tool which is under the Model Tools dropdown

****Make sure all weights add up to 100***

For models with a limited track record, you can also enter in the Model ID of a proxy model into the Proxy column that will hold the desired weight until inception of the original model

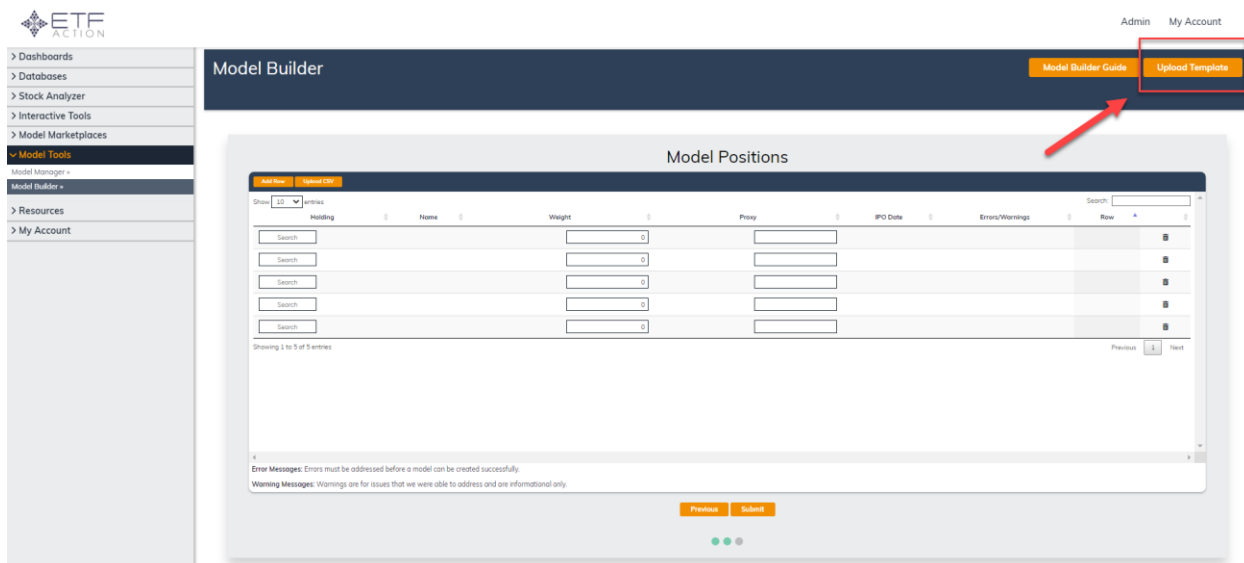
****Please note that all Blended Models will have an inception date at the earliest common inception of all underlying models***

Once the desired holdings and weights have been entered manually, click the Submit button at the bottom of the Page



2) Upload CSV File

Users can also upload a CSV (Comma Delimited) file with the desired holdings data. Users can download a template upload file by clicking the Upload Template button on the top right of the screen.



For a Blended Model, the format for the upload CSV file is as such:

	A	B	C	D	E
1	ticker	weight			
2	M92161763	34			
3	M56977099	33			
4	M72248235	33			
5					
6					
7					
8					
9					
10					
11					

Model IDs can be found on the far-left column of the Model Manager tool which is under the Model Tools dropdown

****Make sure all weights add up to 100***

****Please do not overwrite an existing upload file and always create a new upload file with the correct format in order to avoid errors***

Once the CSV file has the correct format and contains the correct holdings data, save the file as a CSV. Return to the ETF Action Model Builder and press the Upload CSV button.

Next, click the Choose File button to select your CSV upload file then click the Upload button



*Please use the header and field formatting found in our [Sample Holdings Upload Template](#).
 **For additional help and troubleshooting, please reference our [Model Builder Guide](#).

After clicking the Upload button, the holdings data from the CSV upload file will populate.

Submitting a Blended Model

If there are errors in the holdings data, any warning or error messages will be displayed in the table for troubleshooting reference. Common errors include:

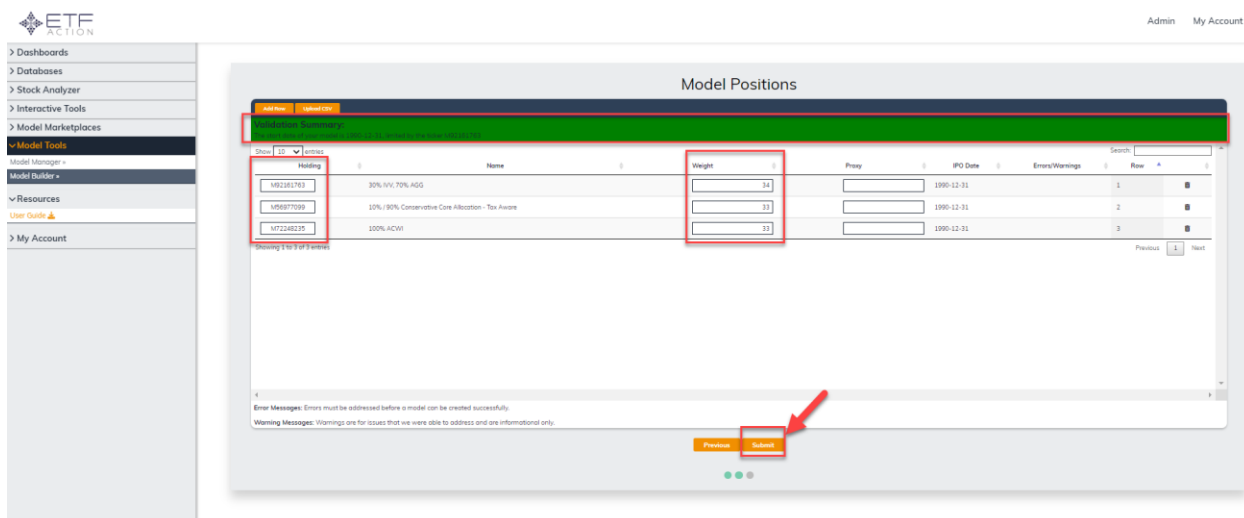
- Model ID is incorrect or does not exist
- Weight should be formatted as a general number format. For example, 25% of the portfolio would be 25. Ensure the weights for a specific date add up to 100
- File is not .csv format

Please note: Money Market mutual funds must be replaced with our cash security at this time (CASH_X)

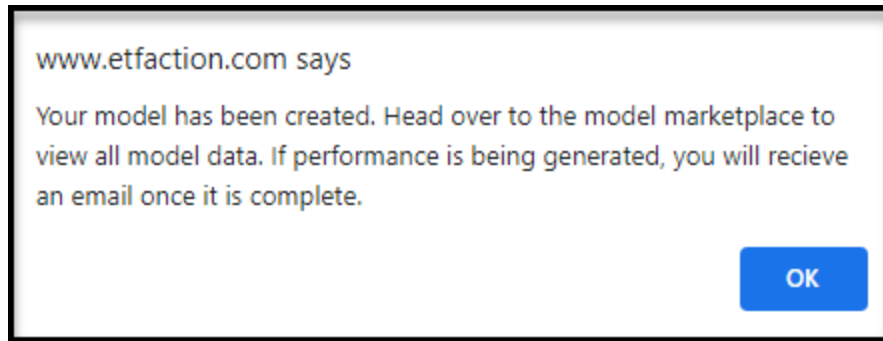
Warnings that produce a yellow warning notification: These warnings have been corrected by the system and there is nothing needed from the user.

Errors that produce a red error notification: These errors will need to be corrected by the user in order to create the Blended Model.

If there are no errors, click the Submit button to create your Static model.



After clicking Submit, the user will receive a pop-up window notifying that the Static model has been created:



You will be able to view and analyze your Model by accessing My Marketplace under the Model Marketplaces dropdown.

Model Update Guide

Once a Model, or Blended Model has been successfully created, users can update holdings and settings to models they are permitted to through the Model Manager tool under the Model Tools dropdown

The screenshot shows the 'Model Manager' interface. The left sidebar contains a navigation menu with the following items: Dashboards, Databases, Stock Analyzer, Interactive Tools, Model Marketplaces, Model Tools (expanded), Model Manager (highlighted with a red arrow), Model Builder, Resources, and My Account. The main content area displays a table of models. The table has the following columns: Name, Benchmark, Model Type, Wt. Schema, and Upload ID. The 'Wt. Schema' column is highlighted in red in the second screenshot.

Name	Benchmark	Model Type	Wt. Schema	Upload ID
ETFA Illustrative - Core Fixed Allocation (0100)	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M41462340
ETFA Illustrative - Core Fixed Allocation (0100)	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M79309209
ETFA Illustrative - Core Fixed Allocation (0100)	iShares Core Aggressive Allocation ETF	Separately Managed Account	Dynamic	M40504959
ETFA Illustrative - Core Fixed Allocation (0100)	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M81398118
ETFA Illustrative - Core Fixed Allocation (0100)	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M12798197
ETFA Illustrative - Core Fixed Allocation (0100)	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M105048124
ETFA Illustrative - Core Fixed Allocation (0100)	iShares Core Moderate Allocation ETF	Separately Managed Account	Dynamic	M81796022
ETFA Illustrative - Core Fixed Allocation (0100)	iShares Core Growth Allocation ETF	Separately Managed Account	Dynamic	M48308009
ETFA Illustrative - Core Fixed Allocation (0100)	iShares Core Growth Allocation ETF	Separately Managed Account	Dynamic	M49349579
ETFA Illustrative - Core Fixed Allocation (0100)	iShares Core Aggressive Allocation ETF	Separately Managed Account	Dynamic	M71248997
ETFA Illustrative - Core Fixed Allocation (0100)	SPDR S&P 500 ETF Trust	Separately Managed Account	Dynamic	M27758424
ETFA Illustrative - Multi Issuer Core 100%	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M27445419
ETFA Illustrative - Multi Issuer Core 100% Equity	iShares MSCI ACWI ETF	Separately Managed Account	Dynamic	M44174828
ETFA Illustrative - Multi Issuer Core 100% Fixed Income	iShares U.S. Aggregate Bond ETF	Separately Managed Account	Dynamic	M78948131
ETFA Illustrative - Multi Issuer Core 25/80	iShares Core Moderate Allocation ETF	Separately Managed Account	Dynamic	M34244501
ETFA Illustrative - Multi Issuer Core 30/70	iShares Core Moderate Allocation ETF	Separately Managed Account	Dynamic	M33151358
ETFA Illustrative - Multi Issuer Core 40/60	iShares Core Moderate Allocation ETF	Separately Managed Account	Dynamic	M18828017
ETFA Illustrative - Multi Issuer Core 50/50	iShares Core Growth Allocation ETF	Separately Managed Account	Dynamic	M66162236
ETFA Illustrative - Multi Issuer Core 60/40	iShares Core Growth Allocation ETF	Separately Managed Account	Dynamic	M19375190
ETFA Illustrative - Multi Issuer Core 70/30	iShares Core Growth Allocation ETF	Separately Managed Account	Dynamic	M15728208
ETFA Illustrative - Multi Issuer Core 80/20	iShares Core Aggressive Allocation ETF	Separately Managed Account	Dynamic	M80228239
ETFA Illustrative - Multi Issuer Core 90/10	iShares Core Aggressive Allocation ETF	Separately Managed Account	Dynamic	M12647796

Update or Change Model Holdings

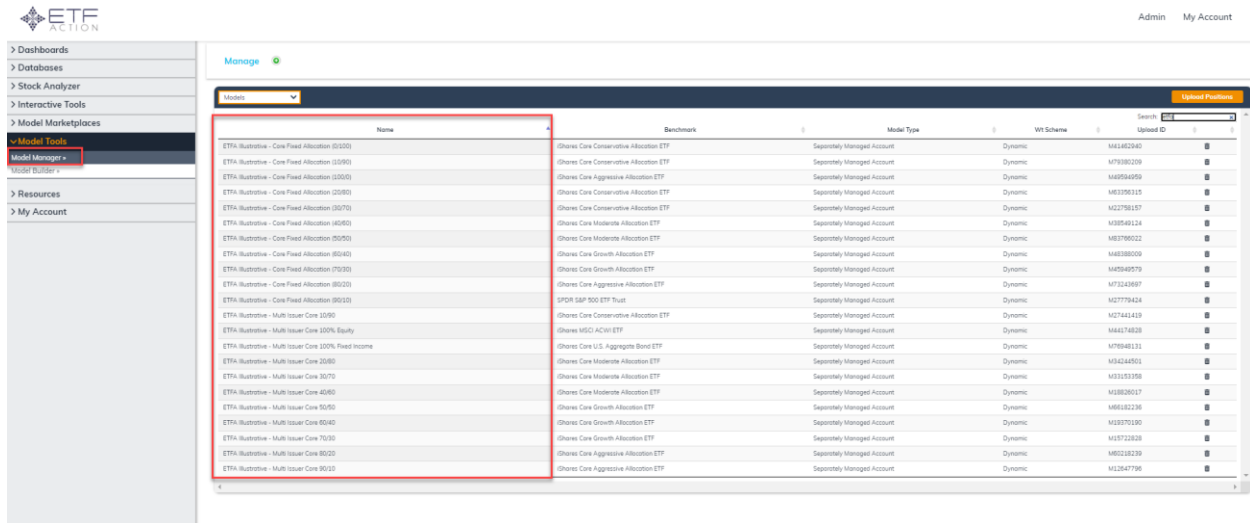
The first step in updating or changing the holdings of any Model in My Marketplace is to determine whether the model is Static or Dynamic. Static models have the Daily (Continuous) rebalance frequency. Dynamic models are models with Monthly, Quarterly, Annually, or Custom rebalance frequencies.

Users can determine whether a model is Static or Dynamic on the Wt. Schema column of the Model Manager page:

This screenshot is identical to the first one, but with a red rectangular box highlighting the 'Wt. Schema' column in the table. This column contains the values 'Dynamic' for all models shown.

To update or change the holdings of a Dynamic Model (a model with Monthly, Quarterly, Annually, Custom Rebalance Frequency), you must upload a CSV (comma delimited) file with new holdings for the desired date.

First, click the name of the desired model to update from the Model Manager tool under the Model Tools dropdown.



Next, create a new CSV (comma delimited) file with the desired holdings. The CSV (comma delimited) file format for is as such:

	A	B	C	D	E
1	model_id	as_date	ticker	weight	
2	M79380209	6/30/2022	AAPL	25	
3	M79380209	6/30/2022	FXAIX	25	
4	M79380209	6/30/2022	QQQ	20	
5	M79380209	6/30/2022	MVPS	20	
6	M79380209	6/30/2022	CASH_X	10	
7	M79380209	9/30/2022	MVPS	20	
8	M79380209	9/30/2022	TIP	30	
9	M79380209	9/30/2022	IVV	30	
10	M79380209	9/30/2022	FSLR	10	
11	M79380209	9/30/2022	CASH_X	10	
12					
13					

****Make sure all weights add up to 100 for every date included***

****Please do not overwrite an existing upload file and always create a new upload file with the correct format in order to avoid errors***

It is important to note that users can update the holdings for a Dynamic Model for several different dates. Additionally, users can change the holdings for a date that is previously populated, just ensure that the date is the same.

The Model ID for any model can be found in the Upload ID column of the Model Manager tool:

Name	Benchmark	Model Type	Wt Scheme	Upload ID
ETFA Illustrative - Core Fixed Allocation (10/20)	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M41482240
ETFA Illustrative - Core Fixed Allocation (10/80)	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M79380209
ETFA Illustrative - Core Fixed Allocation (10/50)	iShares Core Aggressive Allocation ETF	Separately Managed Account	Dynamic	M8954959
ETFA Illustrative - Core Fixed Allocation (10/80)	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M83798315
ETFA Illustrative - Core Fixed Allocation (10/70)	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M2778187
ETFA Illustrative - Core Fixed Allocation (10/60)	iShares Core Moderate Allocation ETF	Separately Managed Account	Dynamic	M39549124
ETFA Illustrative - Core Fixed Allocation (10/50)	iShares Core Moderate Allocation ETF	Separately Managed Account	Dynamic	M8179022
ETFA Illustrative - Core Fixed Allocation (10/40)	iShares Core Growth Allocation ETF	Separately Managed Account	Dynamic	M48880108
ETFA Illustrative - Core Fixed Allocation (10/30)	iShares Core Growth Allocation ETF	Separately Managed Account	Dynamic	M4954979
ETFA Illustrative - Core Fixed Allocation (10/20)	iShares Core Aggressive Allocation ETF	Separately Managed Account	Dynamic	M73248807
ETFA Illustrative - Core Fixed Allocation (10/10)	SPDR S&P 500 ETF Trust	Separately Managed Account	Dynamic	M27779424
ETFA Illustrative - Multi Issue Core 10/80	iShares Core Conservative Allocation ETF	Separately Managed Account	Dynamic	M7441418
ETFA Illustrative - Multi Issue Core 100% Fixed Income	iShares ESG ACWI ETF	Separately Managed Account	Dynamic	M46174828
ETFA Illustrative - Multi Issue Core 100% Equity	iShares Core U.S. Aggregate Bond ETF	Separately Managed Account	Dynamic	M79448131
ETFA Illustrative - Multi Issue Core 20/80	iShares Core Moderate Allocation ETF	Separately Managed Account	Dynamic	M34248501
ETFA Illustrative - Multi Issue Core 30/70	iShares Core Moderate Allocation ETF	Separately Managed Account	Dynamic	M32533358
ETFA Illustrative - Multi Issue Core 40/60	iShares Core Moderate Allocation ETF	Separately Managed Account	Dynamic	M38828017
ETFA Illustrative - Multi Issue Core 50/50	iShares Core Growth Allocation ETF	Separately Managed Account	Dynamic	M66182236
ETFA Illustrative - Multi Issue Core 60/40	iShares Core Growth Allocation ETF	Separately Managed Account	Dynamic	M39701300
ETFA Illustrative - Multi Issue Core 70/30	iShares Core Growth Allocation ETF	Separately Managed Account	Dynamic	M39723828
ETFA Illustrative - Multi Issue Core 80/20	iShares Core Aggressive Allocation ETF	Separately Managed Account	Dynamic	M60288239
ETFA Illustrative - Multi Issue Core 90/10	iShares Core Aggressive Allocation ETF	Separately Managed Account	Dynamic	M12647798

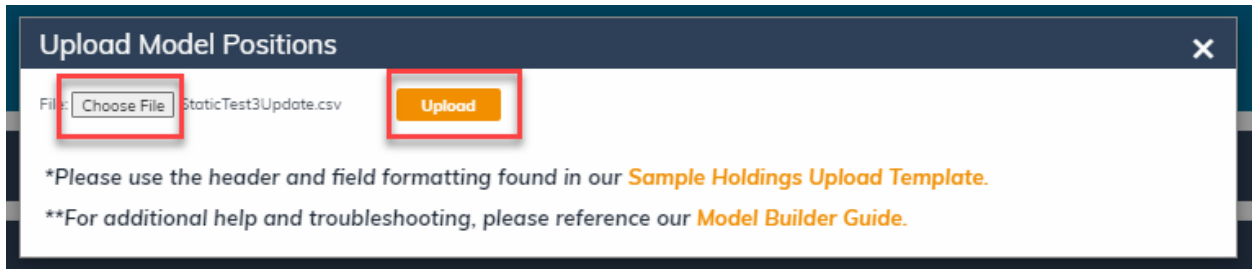
Simply copy and paste the Model ID into the left column for every holding.

***Make sure the Model ID is consistent throughout the file**

Once the CSV file has the correct format and contains the correct holdings data, save the file as a CSV. On the Positions tab of the Model Manager tool, press the orange Upload Positions button.

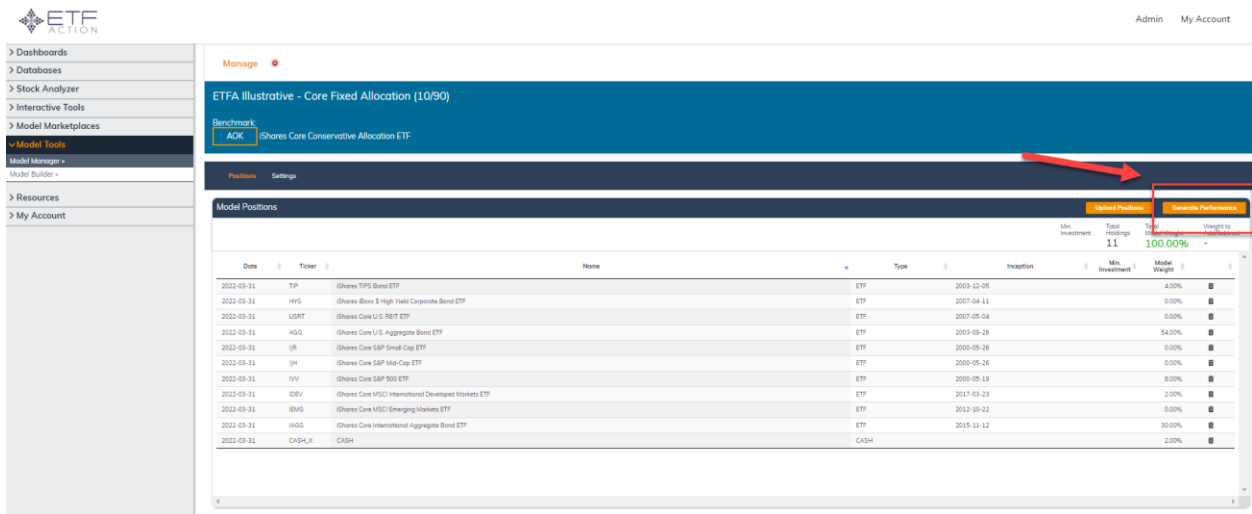
Date	Ticker	Name	Type	Inception	Min. Investment	Model Weight
2022-03-31	TIP	iShares TIPS Bond ETF	ETF	2003-12-05		4.20%
2022-03-31	HYG	iShares iBoxx \$ High Yield Corporate Bond ETF	ETF	2007-04-11		0.00%
2022-03-31	USRT	iShares Core U.S. REIT ETF	ETF	2007-05-04		0.00%
2022-03-31	AGG	iShares Core U.S. Aggregate Bond ETF	ETF	2003-09-28		54.00%
2022-03-31	ISH	iShares Core S&P Small-Cap ETF	ETF	2000-05-26		0.00%
2022-03-31	ISH	iShares Core S&P Mid-Cap ETF	ETF	2000-05-26		0.00%
2022-03-31	IVV	iShares Core S&P 500 ETF	ETF	2000-09-19		8.00%
2022-03-31	IEV	iShares Core MSCI International Developed Markets ETF	ETF	2017-03-23		2.00%
2022-03-31	EMSG	iShares Core MSCI Emerging Markets ETF	ETF	2012-03-22		0.00%
2022-03-31	JAGG	iShares Core International Aggregate Bond ETF	ETF	2015-11-12		30.00%
2022-03-31	CASH_X	CASH	CASH			2.00%

Next, press the Choose File button and select the CSV file. Once the file has been selected, press the orange Upload button

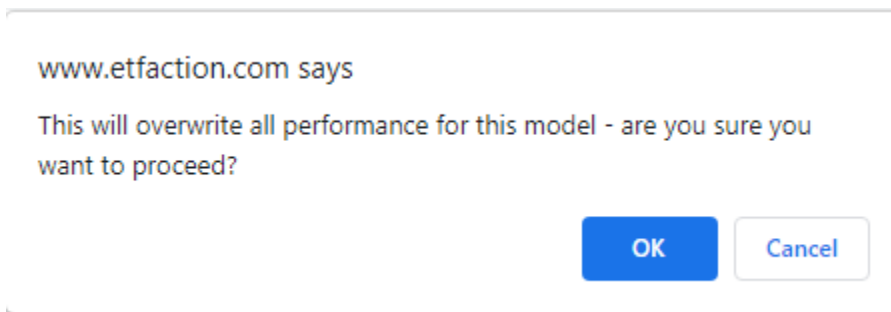


The updated holdings will populate into the Model Manager page and be automatically saved.

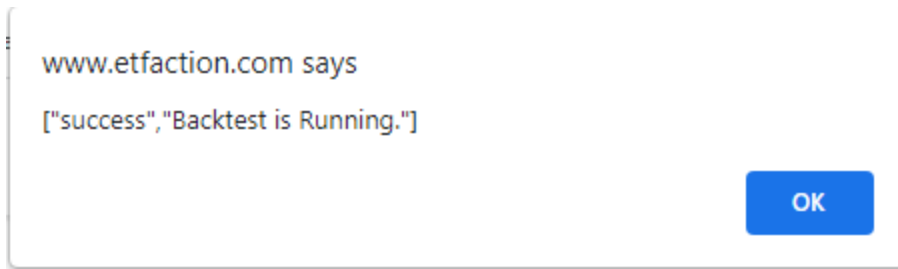
Next, press the orange Generate Performance button to update the performance of the Dynamic Model based upon the changes you have made.



Next, press OK on the popup window to confirm you would like to regenerate performance for the Dynamic Model



Next, a popup window will appear confirm that the backtest is running



Press the OK button and you will receive an email confirming that the performance has been regenerated for the updated Dynamic Model

ETFA Illustrative - Core Fixed Allocation (10/90)



Backtest Completed.

Backtest Complete for model ETF A Illustrative - Core Fixed Allocation (10/90)

Once the backtest has been completed successfully, users will be able to access and analyze the updated Dynamic Model through the My Marketplace under the Model Marketplaces dropdown.

Updating Settings for Models

Users can update the settings for any model from the Settings tab of the Model Manager tool under the Model Tools dropdown.

From the Model Manager page, select the desired model and click on the Settings tab. From this page, users can update any of the below settings including the Benchmark, Target, Objective, Strategy, Risk Category, Manager, Category, Asset Class, Implementation, Security Type, Minimum Investment (\$), Management Fees (%), and Tax Managed or ESG categories.

To save any changes, make sure to press the orange Save button at the bottom of the screen.

FAQs

See below for common errors when attempting to upload or update holdings for a Model or Blended model:

Security held prior to inception

Ensure all holdings in a model or blended model are actively listed on the holding date(s) included

Security held after transition or close

Ensure all holdings in a model or blended model are actively listed on the holding date(s) included

Date format incorrect

Ensure the date format on the CSV file is as such: MM/DD/YYYY. All other formats will generate an error when attempting to upload a holdings file

Weights do not add up to 100

Ensure the weights for all holdings add up to 100 for each date included in a holdings upload file. If all weights do not add up to 100 for each date, an error will be generated when attempting to upload.

Wrong file format

Ensure the file type of the model holdings upload file is CSV (Comma Delimited) Any other file type such as Excel Workbook, CSV UTF-8, CSV (Macintosh), or Text (Tab Delimited) are not accepted for the system and will generate an error when attempting to upload the holdings file.

Old file used which contains data (even if deleted)

When building a model holdings upload file, always use a new CSV file or the upload template provided on the ETF Action site. If you use a previously used holdings upload file and delete all data, the system

can read data included in previous versions and will generate an error when attempting to upload the holdings file.

Ticker format incorrect

Ensure the format of tickers included in a holdings upload file are as such: AAPL, 8865-HK, MVPS, LPEIX. For US listed securities, do not include "-US" at the end of the ticker. For foreign listed securities, include the "-HK" or "-DE" at the end of the ticker. If the ticker format is incorrect, an error will generate when attempting to upload the holdings file.