StylusPro

v11.5
User Manual

Introduction to MPI Stylus – How to Use This Manual

Welcome to MPI Stylus Pro! We thank you for your patronage and hope that this manual helps you learn about the application in a quick, clear and efficient manner.

This manual has been designed with all levels of users in mind. For the beginner, it may serve as an excellent introduction to the program, and may be worked through from start to finish to quickly become familiar with the most powerful and commonly used features of the application. For more advanced users, it may serve as an ongoing desk reference for specific features within the application.

We encourage all users to familiarize themselves with the additional learning materials and resources covered in Chapter 11 (MPI Learning Programs Resources), in order to ensure that you are getting the most out of MPI Stylus Pro. And, as an MPI Stylus Pro user, you are entitled to full access to our forums, newsletters, white papers and support materials, conveniently located on our web site at:

http://www.markovprocesses.com

Do you have suggestions or corrections for information in this manual? If so, please contact us at manual@markovprocesses.com. Your questions, comments and suggestions will be read and responded to by an MPI Client Services specialist.

Thanks again for using MPI Stylus Pro!

Getting Help from MPI Support

Questions or comments about MPI Stylus Pro? MPI has an entire range of resources and tools available to help you quickly and efficiently learn and use our application. A brief summary may be found in Chapter 11 of this manual; however, for more information you may also log on to our web site at:

http://www.markovprocesses.com

Of particular note are our excellent user forums, which provide users a chance to share their general or specific questions about the product, and to get fast answers from MPI.

http://www.markovprocesses.com/phorum/

You will need your MPI Stylus user name and password to log in.

You may also contact us during business hours at the following numbers:

US/Canada: 908.608.1558
8:30 AM to 6 PM Monday-Friday EST
Closed market holidays.

Europe: +44 (0) 203 514 5571
9 AM to 6 PM GMT Monday-Friday GMT
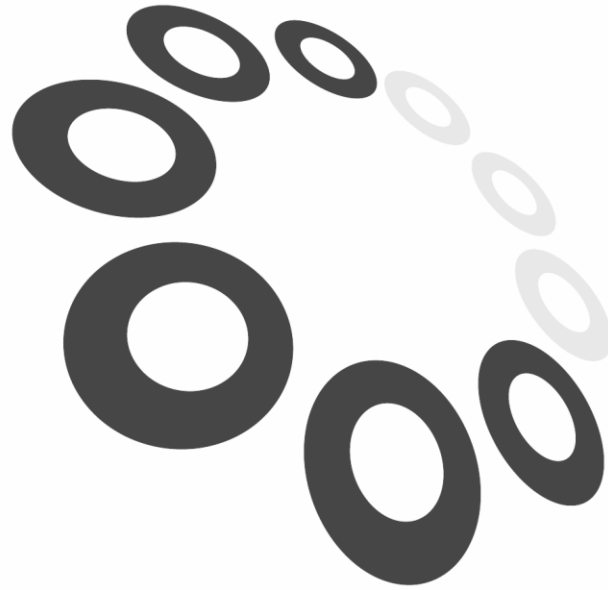Closed market holidays.

ABOUT MPI

Markov Processes International (MPI) is a provider of technology, solutions and services to the global wealth and investment management industry. MPI's flagship Stylus products give investment practitioners highly-customizable reporting capabilities, time-saving automation features, comprehensive data integration and powerful predictive analytics.

Rooted in the principles of transparency, objectivity and efficiency, MPI's solutions solve problems for over 350 clients worldwide in the areas of performance attribution and reporting, asset allocation, quantitative fund due diligence and risk analysis to ensure clients have the tools to succeed in ever-crowded markets.

Our mission is to bring innovative and precise solutions to the market that exceed the goals and exacting standards of our clients.

MPI's deep experience working with hundreds of clients for over a decade has led to the development of tools that deliver the highest quality results while minimizing time, resources and operational risk – allowing our clients to bring more value to their customers.

MPI is an independent, privately owned company headquartered in Summit, NJ with regional offices throughout North America, Europe and Asia.

StylusPro

Chapter 1

Installing and Updating MPI Stylus Pro

Overview

This chapter will briefly provide the background information on installing and updating the MPI Stylus Pro application.

Always make sure to check with your existing users (if any) to determine what installation approach is right for you.

Chapter 1

Installing & Updating MPI Stylus Pro - Quick Start Guide

Welcome to MPI Stylus Pro! This chapter will guide you through the installation and update processes for the application. Key topics include your Stylus user name and password, instructions for downloading and updating data, information on subscribing to 3^(rd) party database feeds, and more. Please note that this is not a full installation guide, but is instead meant to cover a typical user installation of the application. For more advanced installation procedures, please consult our MPI Stylus Installation Reference Guide.

Important Note – User Permissions

Many MPI Stylus Pro users work behind corporate firewalls or in high-security environments that prohibit traditional software installation and update options. Successfully installing and updating MPI Stylus Pro will require user Internet access and read/write permission to the installation location (i.e., C: drive) to download and run .MSI and/or .EXE files. If you are unable to install or update MPI Stylus Pro and/or its associated data feeds, please discuss your computer/network access privileges with your firm's technical support/information technology department. MPI Support will be unable to adjust your Internet issues or read/write capabilities.

Your Stylus User Name & Password

As an MPI Stylus subscriber, you have an assigned user name and password that are linked to your MPI Stylus license. This login information gives you complete access to the client-only features of our web site, including our user forums, documentation & training materials, and more. Our web site may be found at:

http://www.markovprocesses.com

Your user name and password are supplied to you when you first subscribe to MPI Stylus Pro. If you have not installed MPI Stylus Pro and/or cannot find your user name/password, please contact MPI at support@markovprocesses.com.

Installing MPI Stylus Pro

Installation

1. Go to the following link in your Internet web browser: http://www.markovprocesses.com You will need your Stylus user name and password.

2. Locate the latest version of MPI Stylus Pro. Save the .MSI file onto your computer. Once this download is complete, locate the file in its respective directory using My Computer or Windows Explorer.

3. Double-click on the downloaded .MSI file to bring up the Installation Wizard. Follow the prompts using the "Next" button to install MPI Stylus Pro. Please select your C:/ drive (or other hard drive) as the destination for your installation. (*Note: If you do not have Microsoft Installer (MSI), please download this free tool, available in the Support-> Updates section of our corporate web site*)

4. Once the Installation Wizard is finished, proceed to "License Activation."

License Activation

5. In order to activate the application, please save your license file (provided by MPI), named **STYLUS.LIC,** into your Stylus *root* folder following the installation (e.g. c:\Stylus\STYLUS.LIC).

Note on Licenses
You may view your License Expiration Date at any time by going to Help->About in the main MPI Stylus Pro menu. MPI understands that many of our users are not responsible for invoicing/payment, and therefore provides a 30-day grace period past expiration in order to allow you to continue using our product while arrangements are made for payment. During this time period, you will receive a pop-up notification every time you open the application, reminding you of the final cut-off date. This grace period is not provided to trial users.

Database update

6. To update the databases associated with your Subscription, please use the **MPI Updater Tool (Tools>MPI Updater)** from within your Stylus Pro application. After the list of databases available for download is retrieved, simply check the boxes next to those marked as **NEW**, and follow the prompts. If a database is listed as "N/A", then you are not currently listed as a subscriber to that database. If a database says "UTD," then you have the most up-to-date version available. If a database is listed as "Add", then the database was not previously available for download, but is now available and may be downloaded.

Network Installations & Advanced Technical Guide

These instructions are intended for the typical MPI Stylus Pro user, and are not for network installations or more advanced technical installations. Please refer to the MPI Stylus Pro Installation Reference for more information. It may be downloaded in the Support Materials section of our web site.

Updating MPI Stylus Pro Software Online

Periodic updates to MPI Stylus Pro may become available as new tools & features are added, or as industry changes warrant. We recommend that users periodically check for updates to make sure they are using the most recent version of MPI Stylus Pro.

To see your current version of MPI Stylus Pro:

1. In your main MPI Stylus menu, go to Help -> About.
2. Your current version number should be displayed, along with the date the current version was released.

To check for the latest version of MPI Stylus Pro:

1. Log on to the Support -> Updates section of our web site at http://www.markovprocesses.com.
2. Check under the "MPI Stylus Program" heading for the latest update to MPI Stylus.

To install an updated version of MPI Stylus Pro:

1. Make sure your current version of MPI Stylus is closed.
2. Click on the update link for the latest update and save the file to your hard drive.
3. Open the file on your computer to begin the installation process.
4. Run MPI Stylus.

Installing Data Sources for MPI Stylus Pro

MPI has always worked tirelessly to accommodate the diverse data needs of our users, offering a wide variety of databases and the flexibility to work with almost any 3rd party provider of manager data. Additionally, MPI Stylus users may import their own proprietary data or link multiple proprietary and/or third party databases through our optional Open Database Link (ODL).

All users are encouraged to download the MPI Database Updates User Guide, available on our web site.

Updating Standard & Subscription-Based Feeds

There are two methods of updating your data feeds for MPI Stylus. The first, called "MPI Updater" is the quicker and more-efficient of the two, as it may be done right through your MPI Stylus program. Due to technical problems that may be experienced by MPI Stylus users behind a corporate firewall, MPI also provides the update files in MSI form in the "Updates" section of our corporate website, at http://www.markovprocesses.com. If you are unable to use/access either update procedure, please refer your connectivity problems to your tech support/information technology department.

Updating via MPI Updater

The MPI Updater allows you to quickly check for updates in your data feeds from within Stylus, and then to efficiently run your updates without having to download files from our website. For instructions on using the MPI Updater, please see Chapter 10 (Helpful Stylus Tools.)

In addition, please see the Home module section in this manual for more information about checking for database updates prior to launching the MPI Updater tool.

Updating via the MPI Website

1. Make sure to close MPI Stylus before beginning this process.
2. Log on to our website at http://www.markovprocesses.com and go to the Support -> Updates section.
3. Select the appropriate index you wish to download and click on its associated link.
4. Save the MSI file to your computer's hard drive.
5. Using My Computer or Windows Explorer, find the downloaded file and double-click it to run it.
6. Click "Next" through the Installation wizard.
7. When finished, open MPI Stylus.

Adding Existing MPI Stylus Files to Your Installation

To add existing MPI Stylus files (for example, files already being used by your company) to your copy of MPI Stylus, please use the following steps:

Determine the file extension(s) of the files you wish to save into your MPI Stylus directory. The file extensions associated with MPI Stylus are:

File Extension	Stylus Module/Function	Stylus folder to save to
.sty	Stylus study	Stylus\study\sample
.unv	Prospector study	Stylus\pstudy
.itg	Integrator study	Stylus\integrat\sample
.ast	Allocator study	Stylus\allocat\sample
.stt	Stylus Template	Stylus\template\sample
.unt	Prospector Template	Stylus\ptemplat
.aat	Allocator Template	Stylus\atemplat\sample
.mng	Manager file	Stylus\managers\sample
.ind	Index file (Indices)	Variable
.fnd	Portfolio file (formerly Fund file)	Stylus\funds\sample
.set	Set file	Stylus\sets\sample
.smp	Style map file	Stylus\maps\sample
.stylusjob	User Level Interface (ULI) jobs	Documents and Settings\(User)\My Documents\Stylus Jobs
.stylusqueue	User Level Interface (ULI) queue	Documents and Settings\(User)\My Documents\Stylus Queues

Note that some files (such as Prospector studies) may generate automatic accessory files with extensions such as .cdx, .dbf, and .dbn. Though these files are necessary for a fully operational study, they do not need to be included when sharing .unv files with other users, as these additional files are recreated by Stylus when the study is run. The only exception is for users that have proprietary databases and wish to send the embedded data in their studies to another user. In this case, all associated files for a Prospector study must be kept together.

Save the appropriate files to the corresponding directories in your Stylus folder. You should then be able to access them through your MPI Stylus software.

Receiving MPI Stylus Pro files via e-mail

Some users who have received MPI Stylus Pro files from MPI or from other users have found that certain e-mail programs or Windows programs try to save the files with incorrect extensions, such as .html or .txt. This may be avoided by always making sure to preserve the correct file extension when downloading a study.

To do this when downloading using a Windows-based program, use "Save as" for the attachment and make sure that the "Save as type" dropdown menu is set to "All Files."

Remember that a very easy way to share your active study is to simply use:

Tools-> Send Current Study to MPI Support

And then to change the e-mail address in the e-mail before you send it.

Troubleshooting Installing & Updating

For more Frequently Asked Questions (FAQ), please visit our web site at
http://www.markovprocesses.com.

Q: I can't download or run the necessary files, I am unable to access the Internet, or my company does not allow me to install, update and/or overwrite files. What should I do?
A: Contact your tech support/IT department to discuss your computer's network or Internet connectivity, as well as user permissions and access to files on your computer or network. MPI will not be able to change permissions on your computer or corporate network.

Q: I am unsure whether to save MPI Stylus Pro to my computer hard drive or network. Does this matter?
A: Yes. MPI Stylus Pro may be installed to either a hard drive or a network, but many companies have preferences or regulations regarding the location of programs in their systems. Please check with your key user or your firm's tech support team for more information.

Q: Studies I received from another user look different on my computer. What is going wrong?
A: There are several reasons why this may be occurring.   Common explanations include, but are not limited to:

- ▪ The other user may have an older or newer version of MPI Stylus Pro
- ▪ The other user may be using data you do not have access to, or you or the other user may not have up-to-date data
- ▪ You may be using a different color palette than the other user

Q: A database I want access to is marked "N/A" in MPI Updater, or I can't see the database in my selections in the program.
A: All supported 3rd party databases come automatically configured in MPI Stylus; an inability to view or access a database, such as N/A in the MPI Updater, means that you are not listed as a subscriber to this database. To subscribe to a 3rd party database, please see the Appendices to this manual for contact information.

Q: How do I subscribe to a third-party database?
A: The Updates page of our website contains information on subscribing to various 3rd-party databases. Please consult this page, or contact MPI support for more information.

Chapter 2

Quick Start: Using the Home Module

Overview

Want to get up and running quickly in MPI Stylus Pro? Trying to get more familiar with new parts of the application? Getting to know the Home Module is a quick, easy way to help guide your use of the application. Not only are their helpful pointers on features and documents, but shortcuts for daily Stylus Pro use as well.

Chapter 2

Quick Start: Using the Home Module

The Home Module provides users with a clean, friendly and efficient way to learn more about the application and even guide their day-to-day use. In this chapter, we'll explore how users can make the most of this resource in improving their experience with MPI Stylus Pro. Please note that only users with MPI Stylus Pro 10.0 or higher will be able to use the Home module.

Home Module at a Glance

In this chapter, we will examine the following components of the Home Module. Let's take a quick look at each section to get a quick idea of what it does:

- Welcome – The perfect screen for new users. Review each module's functions, along with featured templates you can use out-of-the-box or customize to your own needs.
- New – Ready to create your own studies? You can create templates from, or review (and organize) templates across modules.
- Open – Looking for an existing study? You can search across modules and see detailed information across your full set of studies.
- Recent – Want to jump right to one or more studies you created or used recently? This is the place.
- Favorites – This is the perfect place to keep track of studies you use time and time again.
- Update Monitor – A quick and easy way to check for available updates for your databases.
- Help Center – Looking for support or training help from MPI? This quick list of references gives you easy access to some of our most popular documents, as well as quick links to all of our Support options.
- Online Resources – This tool allows you to access features of MPI's online web help documents directly through Stylus.

Toggling Home Module On/Off

Users who wish to turn the Home Module off (or on) can do so any time via the Configurator module; however, MPI recommends that all users avail themselves of the time-saving features included in the Home module.

Show Home module on Startup
The Home Module is turned on by default in MPI Stylus Pro (10.0 or higher). That said, it may be turned on or off at any time through the following steps:

1. In the main menu, go to File-> Configure. This will open the Configurator module.
2. Click on the 'Default' node in the Design Tree.
3. On the right-hand side, click the 'Home' tab.
4. You should now see a checkbox control that says 'Show Home module on startup; If this is checked, the Home module will appear on all future startups. If it is unchecked, the Home module will no longer appear at startup.
5. Save Configurator before closing.

Opening the Home Module on Request
Regardless of whether or not you use the Home Module on startup, you will always be able to access it at any time via the main menu. To do this:

1. In the main menu, go to File-> Home.
2. The Home module should open.

Welcome Screen

The Welcome screen is the perfect starting point for new users in MPI Stylus Pro. Each of the Stylus Pro modules are clearly explained in terms of client workflows, giving you the direction you need to pursue your goals in the software.

Figure 1

Module Overview
The first section you will notice is the Module Overview. This is where you can learn about the specific general uses and workflow applications of the modules that comprise MPI Stylus Pro. Please note that these introductions are usually quite general; there simply isn't room to list all the powerful applications of each module. Please feel free to contact us at training@markovprocesses.com if you are seeking more extensive module-based training.

Create Study
This convenient button will send you directly to the 'New' screen for the module in question, allowing you to get started with a blank study or work from existing templates.

Learn More
Want to dig deeper into the module and how to use it? Click 'Learn More' to jump to our embedded Help file, where you can scroll through the full text of our manual.

Back/Next
These buttons may be used to scroll between the different modules.

Featured Templates
In this section, you will find thumbnails and descriptions of some featured MPI templates related to the module in question. Simply double-click the template to open it and begin working.

New Screen
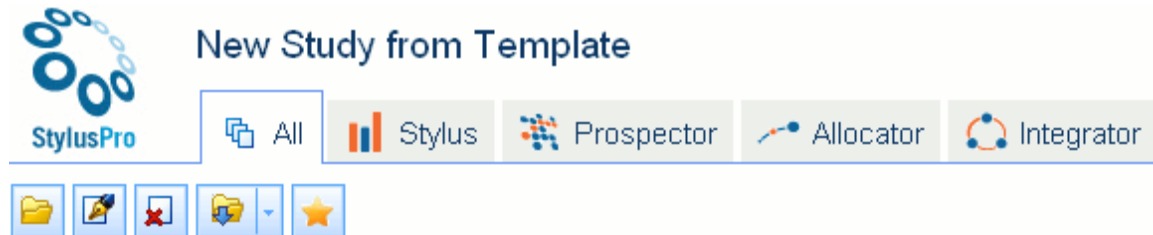
Figure 2

In this screen, you can create new studies in any module, using templates provided by MPI or developed by your firm. Helpful thumbnail previews allow you to assess your options at a glance; however, users are encouraged to take a few moments to open and run each template in order to better understand its offerings.

> *All*
> This tab allows you to view templates across all modules; this can be a helpful survey of your complete template library, especially if you do not remember in which module a specific template was constructed.

> *Stylus/Prospector/Allocator/Integrator tabs*
> These tabs will showcase templates by module, allowing for a more full appreciation of the types of workflow and output each module is intended to generate.

Template Menu buttons

In each tab, you will notice Template Menu buttons. These buttons only become highlighted when you click on a template, because their actions all relate to templates as individual files. The buttons are:

> *Open*
> This button will open the selected template for immediate use.

> *Rename*
> This button allows you to change the file name for the template in question.

> *Delete*
> This button allows you to delete a template. Always check with your Key User to ensure you really wish to delete a template permanently; template files take up very little space, and it is possible that other users in your group will have need of them now or in future.

Move
MPI's file management system allows users to organize their studies in whatever manner they please (for more information, see the Configurator chapter). This button allows users a quick and convenient method for moving a template from one template database to another. Don't worry – you will still be able to find the template easily in the module-specific tab!

Favorite
This option allows you to mark a given template as a 'favorite'. The template will still be visible here, but will also appear in your custom-created shortlist in the Favorites screen, discussed later in this chapter. This is a great tool for studies or templates you intend to use quite often. To remove a template from your 'Favorites', click the template once to make it active, and then click the 'Favorites' button again.
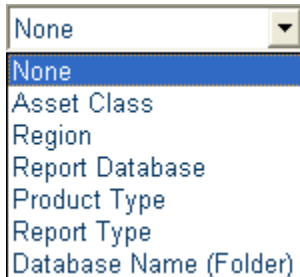
Group by:

In addition to the module-based groupings discussed above, MPI Stylus Pro allows users the flexibility to see templates based upon other categories that can be quite helpful in template searches. They are:

None
This option is the default, and places no additional categorization on templates.

Asset Class
This setting allows you to sort templates by their relevant asset classes, where available.

Region
This setting allows you to sort templates by their relevant geographic region, where available.

Report Database
This applies to report templates designed for use with funds from a specific database.

Product Type
This allows you to sort templates that have product-specific entries (i.e., ETF, Hedge, etc.)

Report Type
This sorts templates based on asset classes (i.e., equity, fixed income, etc.)

> **Templates vs. Existing Studies**
> **What's the Difference?**
>
> New users sometimes have a little trouble keeping track of the difference between a template and an existing study. While there really isn't much difference in terms of the file structure itself, the easiest thing to remember concerns saving the study.
>
> A template, whether it comes from MPI or your own firm, will have no study name when it is opened – you will have to give the study a name in order to save it. Thus, you can never 'save over' a template.
>
> Existing studies are templates that have been saved, or studies that have been built from scratch. When you open them, they already have study names and can be saved as-is, meaning it is possible to save over them.

Database Name (Folder)
This option sorts templates by database name (i.e., Stylus database, etc.)

Usability Options for Group by:

Several buttons may be found surrounding the Group by: option. These are added to help you customize and enhance your experience with this feature. They are described below, but please note that certain buttons will only appear when relevant 'Group by:' options have been selected in the dropdown menu.

Expand all groups

Clicking this button will cause all groups for a relevant grouping categorization to automatically expand. For example, if you have selected 'Asset Class', this button would expand all Asset Class options to show the relevant underlying templates for each class.

Collapse all groups

Clicking this button will cause all groups to collapse back to their closed state. The user may then choose to expand a single or all groups as they like.

Thumbnail View

This button allows you to view all shown templates as thumbnails, giving you a quick look not only at their file names and extensions, but also a sample of their output.

List View

This option allows you to see a list of templates, containing their file names, descriptions of their content (where relevant), and the date of each file's creation or last update. These columns may be sorted by clicking on the column heading, and the standard MPI Stylus Pro search options also apply.

Show Preview

This button toggles on/off a 'Preview' screen that allows the user to view the content of a specific template's 'Memo' tab. This can be a very helpful way to review template information, instructions, etc.

Open Screen

Figure 3

In this screen, you can open one or more existing studies from any module. As was the case with the New Screen, you may choose to work within a module-related tab, or you can work in the All tab to see your existing studies across modules.

The same controls used in the New Screen are used in Open, so please refer to the section directly above for information on how to use the assorted buttons and tools in this section.

Recent Screen

Figure 4

This screen allows you a quick and easy way to open studies that you have worked with in the recent past. Again, you may review these studies on a per-module basis, or across all modules.

> *Open*
> The Open option in this section works as in the 'New Section' above; you may also double-click a study to open it.

> *Favorites*
> As in the above sections, you may click the 'Favorites' button to add or remove 'Favorites' status for a template or study in this section.

Favorites Screen

Figure 5

'Favorites' allows you to have a customized, user-created list of templates and studies that are available to you for quick reference. This is the perfect way to keep track of the templates and studies you will be using more often, and you can view them separately by module or as a group.

View

This dropdown allows you to toggle between viewing your Favorite templates and studies. In both cases, you may view these by module or as a group. Please note that these options are grayed out until a specific study is selected.

Open
The Open option in this section works as in the 'New Section' above; you may also double-click a study to open it.

Favorites
As in the above sections, you may click the 'Favorites' button to add or remove 'Favorites' status for a template or study in this section.

Update Monitor Screen
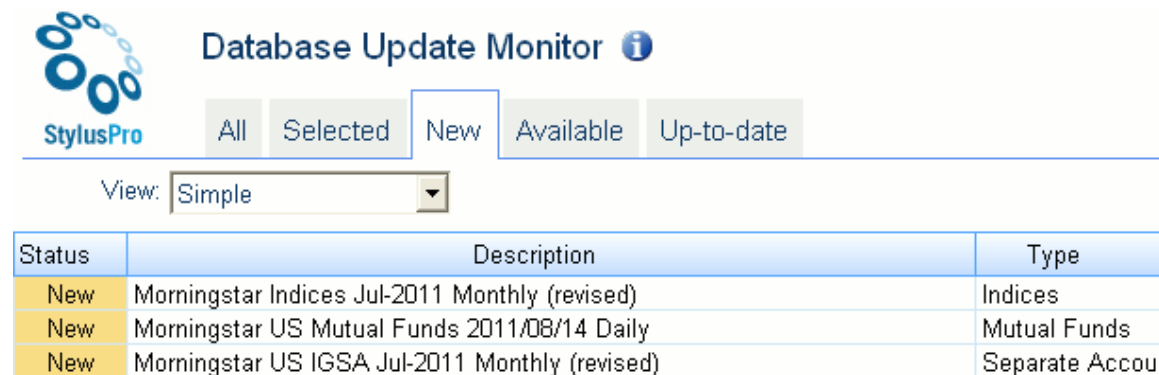
Figure 6

The 'Update Monitor' screen is a convenient way for you to check for available updates for your subscribed databases without having to open and run the MPI Updater utility.

Available Updates

There are four options for viewing available database updates:

- All. This option monitors all databases available for download.
- New. This option will only monitor updates to databases you have already configured and installed in MPI Stylus Pro.
- Selected. This option will only monitor databases that you have specifically marked in the MPI Updater utility. For more information, please see the instruction set for MPI Updater.
- Up-to-date. This option monitors all databases to indicate which ones are currently up-to-date.

Open Updater
This button allows you to launch MPI Updater directly from this screen. This is a convenient way to engage in any needed database updates, or to add or remove databases from your 'Selected' list.

Refresh
The Database Update Monitor conventionally checks for updates when you click on the 'Update Monitor' node. If you have left this open or feel new updates might be available, you may click the 'Refresh' option to do a further live check for updates.

All requested databases are up-to-date
This note in the update pane means that all of your current databases available from the MPI Updater utility are up-to-date. Please note that database updates schedules are available in the Updates section of our website at markovprocesses.com.

Please note that internal databases for your firm are not available for review via the Database Update Monitor; please consult your Key User and/or IT team for more information on updating internal databases.

View: Simple/Detailed
This option allows you to see different column sets that may help you evaluate your data options more efficiently.

Help Center

Figure 7

The Help Center is the perfect first stop for users who would like to know more about contacting MPI Support, or finding core documents that match their specific interests.

MPI Support

Along the top of the Help Center are four buttons that are meant to provide you with quick access to information about MPI Support services and documents.

Forums

This button will take you to our web-based forums, which are the perfect resources for general (non-proprietary) questions and discussions. In addition to Q&A forums, you will also find opportunities to directly submit 'Wish List' items for our software, and to subscribe to updates related to various data releases. And because our forums are fully searchable, this can be the quickest way to get an answer to general questions - there's a good chance someone has asked your question before!

E-mail

This button opens an e-mail to our Support e-mail address, support@markovprocesses.com. This can be a great way to communicate with us when you have a complex or proprietary problem to describe, or you want to send us files for review. Remember that you can always send us your current study easily by going to Help-> Send current study to MPI Support.

Phone

Prefer to speak to a live MPI Support representative? Mouse over this button to see our Support phone numbers by region. Please keep in mind that each region keeps specific hours and may be closed for certain national holidays. For this reason, we always recommend e-mailing MPI Support - this will ensure that your question is seen by any Support team members, regardless of region.

Web

This button will take you to the MPI website, where you can find documents, templates, case studies, forums, company news and research, and more!

Online Resources

The Online Resources pane allows users to access various helpful elements of the MPI website without having to operate via a web browser.

MPI Portal
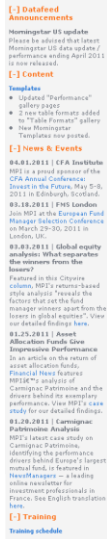
The MPI Portal brings the latest MPI news, events, content, training options and data feed announcements directly in to your application.

Users can check in with the click of a button to see the latest information – and follow links directly to related content on our webpage. While content and categories may change over time, you may customize the experience by collapsing or expanding sections of interest to you by using the + and – symbols next to each category heading.

Please note that users without a live Internet connection may get an error message in this space informing them that 'Authorization' is required (or a similar message). This can be fixed by establishing a live Internet connection with permissions to access and download HTML (web) pages. For more information, please speak with your IT team.

Troubleshooting the Home Module

For more Frequently Asked Questions (FAQ), please visit our web site at
http://www.markovprocesses.com.

Q: I don't see the Home Module when I start up. Where do I find it?
A: You can access the Home Module at any point by going to File-> Home in the main menu or clicking Ctrl+H. You can also arrange in Configurator to have the Home Module always show on startup. For more information, please see the Configurator chapter later in this manual.

Q: I am receiving an 'Authorization Required' error, or another error in place of content.
A: Several screens related to the Home module require an active Internet connection and the ability to access HTML pages (web site pages). MPI does not have access to your permissions issues for the Internet; for assistance with this issue, please speak with your IT department.

Chapter 3

Getting to Know the Basic Interface

Overview

This chapter covers global Stylus features and is designed to help the user quickly become comfortable working in any Stylus environment. Many of the tools and features in this section will be useful to all users regardless of their specific goals in using the application.

Chapter 3

Getting to Know the Basic Interface

Introduction to MPI Stylus Pro

The MPI Stylus Pro application is module-based, meaning that different research and reporting needs may be separated into different areas of the tool. The four major modules are MPI Stylus, MPI Prospector, MPI Integrator and MPI Allocator; a fifth module, MPI Configurator, is used only for global application settings and database configuration.

Our goal is to allow new users to familiarize themselves with the Stylus Pro interface quickly and conveniently. This helps the user feel more at ease when tackling a new module or unfamiliar program features. Therefore, MPI Stylus Pro is designed to share features and functionality between modules wherever possible and to be consistent with many recognized standards from other Windows-based programs.

This chapter has been designed to introduce global MPI Stylus Pro features; after reading this chapter, the user should be able to recognize the basic layout of any MPI Stylus Pro module, its relevant screens and tools, and its endpoint functionality.

Stylus File Locations

Everything you do in MPI Stylus Pro is done through "templates" or "studies", which are files related to a given module. All the files needed to run MPI Stylus Pro are normally meant to be located within the Stylus directory itself. The normal installation path for Stylus users who have installed the application on their computer would be:

C:\Stylus\

This would probably not be the correct path for a network installation of MPI Stylus Pro; therefore, we always encourage our users to know the drive on their computer or network where Stylus is installed. This will be important when you wish to create new folders, databases, or share studies with coworkers or MPI, as well as when you arrange backups of your files – something we encourage highly for all users.

Stylus File Types

Each type of file in MPI Stylus Pro has a particular extension associated with it; being able to recognize these files by their extension will allow you to share files with colleagues and MPI tech support more comfortably. Please make note of the following file types and associated extensions, as well as their related default folders. Some or all of these file types may occur in more than one folder; these recommendations are presented as an organizational guidelines for MPI Stylus Pro's default configurations.

File Extension	Stylus Module/Function	Stylus folder to save to
.sty	Stylus study	Stylus\study\sample
.unv	Prospector study	Stylus\pstudy
.itg	Integrator study	Stylus\integrat\sample
.ast	Allocator study	Stylus\allocat\sample
.stt	Stylus Template	Stylus\template\sample
.unt	Prospector Template	Stylus\ptemplat

.aat	Allocator Template	Stylus\atemplat\sample
.mng	Manager file	Stylus\managers\sample
.ind	Index file (Indices)	Variable
.fnd	Portfolio file (formerly fund file)	Stylus\funds\sample
.set	Set file	Stylus\sets\sample
.smp	Style map file	Stylus\maps\sample
.sbt	Stylus batch file	Variable

Stylus Pro Databases

MPI Stylus Pro stores files of similar types within various databases for organizational purposes. These databases fall into two common types: *true* databases and Stylus databases. All databases must be brought into MPI Stylus Pro through the Configurator module, and will be assigned a name (i.e., Morningstar) and a three-character unique ID (i.e., Mfi).

True databases include dBase, Microsoft Access, SQL Server, etc., and are normally used to organize and store large quantities of data, such as return series. MPI Stylus Pro has the flexibility to link to all of these databases; however, users may require the Advanced Database package to make full use of this functionality.

Stylus Pro databases can be Microsoft Excel sheets, folders on your hard drive or network, or other user files that can serve as databases. The folders listed in the table above all represent examples of these.

Getting Started in MPI Stylus Pro

When you first open MPI Stylus Pro, you may see one of two screens. If you are opening it for the first time, or have not turned off the Home Module, then you will see one of the Home Module screens (you can configure the software to decide which one shows on start-up). If you have turned off the Home Module, you will see the blank screen shown at right.

Getting Started in the Home Module

If the Home Module is open, please see the next chapter to get a sense of how to use the various screens to get the most out of MPI Stylus pro.

Getting Started with the Blank Screen

To get started, you will need to create a new study or open an existing study in any module. Opening, saving, closing and deleting studies will always be done the same way for any module; therefore, the instructions in this section should be useful for all users, regardless of which module(s) you wish to use.

Global Menus and Toolbars

MPI Stylus Pro Main Menu

The MPI Stylus Pro main menu is common to all modules in the application and controls many basic features, including opening, closing and saving studies. It also serves as the pathway to important application tools, such as MPI Updater, and to MPI Stylus Pro help features. Some of these features are also available through the MPI Stylus Pro toolbar, described below.

There are five sections to the MPI Stylus Pro main menu:
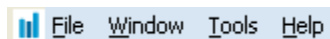
1. Operating System Menu
2. File Menu
3. Window Menu
4. Tools Menu
5. Help Menu

Operating System Menu
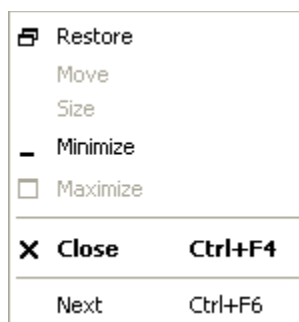
Figure 8

The Operating System menu brings into MPI Stylus Pro several basic program-level functions related to your Microsoft Windows operating system and MPI Stylus Pro on your desktop. Clicking the Operating System menu icon (which appears on the main menu as a book) opens the menu and allows you to make your selection. Please note that the Operating System menu will only appear when at least one study is open in MPI Stylus Pro.

Restore

This option is used when you have any study open and maximized (visible as the whole screen, not as a floating window) in MPI Stylus. Using the restore feature returns any open study (or studies) to being floating windows in the application. You may also use the restore function when MPI Stylus is open but minimized on your computer desktop. Simply right-click on the appropriate block on your desktop taskbar and click "Restore" to show MPI Stylus again.

Move

The Move option is only enabled when an actual study within MPI Stylus is not maximized, and therefore is smaller than the total available screen area for a study. When the Move tool is enabled, you may click it to turn your mouse's arrow icon into a pointer that will allow you to click anywhere on the study window and move the study to a different area of the window.

Size

The Size feature allows you to use your mouse to easily resize a study window that is not maximized. This may also be done by clicking on any edge of the study window and dragging in the desired direction.

Minimize

The Minimize option works only when a study is either maximized, or is not maximized but is the active window on your screen. When you click minimize, a study will be minimized to a small window at the bottom of your screen. Simply double-click on the study to maximize it again.

Maximize

The Maximize feature will display a study in a full-screen view within the program.

Close

The Close option will close a study in Stylus. When you click "Close," Stylus will first ask you if you wish to save the study.

Next

The Next feature is used when multiple studies are open, and you would like Stylus to show you in full-screen mode the next study in your Navigator.

File Menu
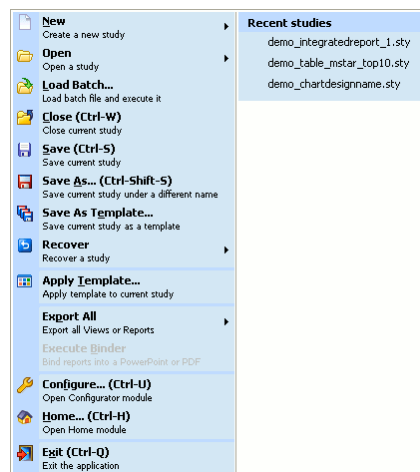
Figure 9

The File Menu in MPI Stylus Pro is similar to that in numerous other computer applications in that it controls major functions such as opening, closing, and saving studies. It is also the pathway to the Configurator module. Each segment of the File Menu is explained below. To get to any of the options below, click on the word "File" in the Main Menu.

New

This option controls the creation of new studies in MPI Stylus. These may either be completely blank studies or templates provided by MPI or specially created by your company.

Open

The Open option controls access to existing MPI Stylus studies, and will be the feature you are most likely to use for reaching your studies. Note that if the study is set to run any scripts on start-up, they will run when you open the study using File-> Open.

Load Batch

The Load Batch option is used in batch processing work, and is associated with Stylus batch files (.sbt). Please note that this option is associated with our Automation package.

Close

This option allows you to close the MPI Stylus study you currently have open. If more than one study is open, the close feature will apply to the active study only. To determine which study is active, please refer to your Multiple Study Navigator. If you are using cascaded or tiled windows, the active study is the one with the highlighted title bar.

Save

The Save option is used to save MPI Stylus studies. You will always be asked if you would like to save any study before you close it, but it is suggested that you save often throughout your work to avoid excessive loss of data/time/work in the event of a power, hardware or software failure. The Save feature on the File menu and the Save button on the toolbar are linked, and therefore either feature may be used.

Please note that if you are working in a new study that has not been saved yet, you will need to use the "Save As" function below to save the study. The general Save feature will be unable to save new studies because of the special names they are assigned (i.e., NONAME.sty). This feature requires a user to give their own name to a study, thus making it easier for them to find the study the next time they need it.

Save As

The Save As option is necessary when you save a new study for the first time, or when you wish to save a copy of an existing study under a new name, or otherwise create a backup copy of a study.

To Save As:

1. Go to File-> Save As.
2. The Save Study As… box will open. In the Study Name field, write in the new name you would like to give your study. Note that you do not need to type in the file extension – MPI Stylus will automatically append it for you.
3. If you would like to save your study in a different database than the one selected, use the browse function to scroll to the appropriate database.
4. You may also enter a new description for the study in the field below Database and Study Name.

5. You also have the option of making any adjustments to the Study-level tabs at this time.
6. When you have finished making your modifications in the Save Study As…box, click "Save." The old study will close and only the new version will be open.
7. You may click the "Cancel" button at any time to avoid saving the study in its new name. The old study will not close, as no new version has been saved.

Save as Template

The Save as Template option is used when you are trying to create a new template in MPI Stylus for future use as a starting point for studies. The template you create will be automatically saved to the correct folder and reachable in future through File->New for the appropriate module.

Recover

The File-> Recover tool opens the 'Recover Study' tool, which may be used to retrieve the Recovery copy of a Stylus, Prospector, Integrator or Allocator study. The controls for determining how Study Recovery works are located in Configurator, but the interface to recover them will be used through this control.

To recover a study:
1. Use File-> Recover to open the 'Recover Study' tool. You will be asked for which module you wish to recover a given study.
2. The 'Recover (Module) Study' box will open. You may then make your selection from the interface, which is quite similar to the interface for opening templates or studies. This includes the ability to move between databases/folders to find your relevant Recovery file version of a study. If you do not see a study listed, it may mean that no Recovery version of the study exists yet.
3. Once you have located and clicked on the file, click the green checkmark button to open it in the respective module.

The fields in the box are:

- ID - This shows you the actual file name for which you wish to request the Recovery version.
- Type - This shows you what the type of the file is. A 'Recovery' file is the official Recovery version; 'Temporary' files are older versions of Recovery studies that are preserved until a given threshold is met (in number of versions, or age of files, or both, based on Configurator settings). There are also 'Revision' copies that are periodically stored. Please consult dates and times for the version you wish to recover.
- Date - The date and time for the specific version's creation.
- Path - The file location of the Recovery or Temporary file. Please note that this is NOT the location for the main file for which this is a Recovery version, but rather the Recovery file itself.

Apply Template

The Apply Template option is a special feature in MPI Stylus meant to quickly allow you to apply the content of an existing template to any study. This normally affects the study by keeping any specified information in nodes but adding in any additional elements from the template, including managers, style outlines/maps, peer groups, views and reports.
To apply a template to a study:

1. Open the study to which you wish the template be applied.
2. Go to File-> Apply Template.
3. The "Select Template" box will open. Select the template you wish to apply to your active study by double-clicking the template name or clicking it once and then pressing the green checkmark. The template will now be applied to your study.

4.   Make sure to check each node of your Design Tree to ensure that you have the correct information selected. Once you have verified the information, you may wish to save the current study.

Export All

This option can export all View/Report content in a given study to the study home folder. For example, if a study called 'sample1.sty' were stored in your Stylus\Study\Sample folder, an export of this study would lead to a file being placed at this location. Note that checked items only are exported; unchecked items are disregarded.

The options for this are:
- Views. The file name will be studyname.exp. Charts will be saved in .wmf format, and tables in .xls format.
- Reports. The file name will be studyname.exr. Reports will be in .wmf format.
- Slide Show. The file will be a slideshow .exe file.

It should be noted that if the study has not been saved, Views and Reports will be saved in the default folder, which is the top-most study folder for the module in question (as listed in Configurator).

The File->Export All->View/Report option will export all the Views and Reports in the study to the home folder of that particular study. For instance, if the File->Export All->View option is used for a Stylus study called 'sample1.sty', which is stored in your '\Stylus\Study\Sample' folder, the Views from the study will be exported to a folder called 'sample1.exp' . Each chart from the Views will be saved in '.wmf' format whereas each table will be saved in '.xls' format. The same operation for the reports will generate a folder called 'sample1.exr' and the reports will be saved in '.wmf' format.

However, if the study has not been saved, then the Views and Reports will be saved in the default folder, which is the top-most study folder for that module, as listed in Configurator.

Execute Binder
This allows you to execute Binder settings from the main menu.

Configure
The Configure option is the pathway to the MPI Configurator module, which governs many of the global settings in MPI Stylus. For more information on MPI Configurator, please see Chapter 12.

Home
The Home option opens the Home Module, which contains the Welcome Screen and a host of other useful features. All MPI Stylus Pro users are *highly encouraged* to review Chapter 2 of this manual for a complete breakdown of the Home Module and how it can be integrated into your day-to-day workflow.

Exit
The Exit option is used for closing MPI Stylus. This feature is especially useful when you have multiple studies open, as you would otherwise have to close each one individually. When you use the Exit option, the program will ask you automatically if you want to save each of your open studies. Simply click "Yes" or "No" for each relevant study, and when all studies have been addressed the program will close.

Recently Used Studies List
The last option in the File menu is to open one of your most recently used studies. This list shows the MPI Stylus Pro studies you most recently had open, and studies for any module may appear on the list. It

should be noted that templates do not appear on the list – only actual studies do. You may change the number of studies that appear on this list in the Configurator module.

To open a study from the list:

1. Go to File-> and select with your mouse the name of the study you wish to open.
2. The study should open on your computer. Note that if the study is set to run any scripts on start-up, these will run at this time. This will also be the case when you use File-> Open.

Window Menu
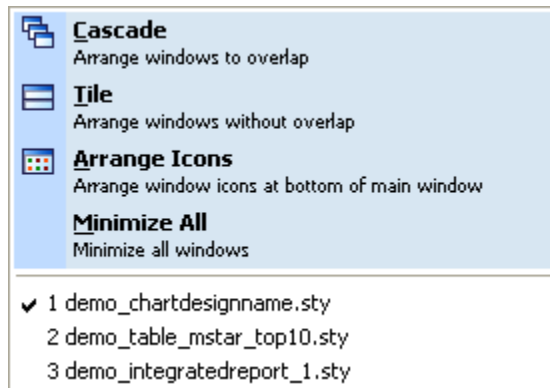
Figure 10

The Window Menu controls how you view multiple reports in MPI Stylus. The default setting in the program is to have the active study open full-screen in the program, with the Multiple Studies Navigator open on the left-hand side of the screen; however, this may be adjusted through the use of different window setups.

Cascade vs. Tile
The two options for viewing multiple studies in a format other than one-at-a-time full screen are Cascade and Tile. Each option provides for a different appearance that is indicative of how your screen will look when more than one study is open at the same time. MPI Stylus users may use whichever option they find the most comfortable; however, the full-screen option is generally recommended for optimal viewing of charts & tables in views and reports. In addition, export commands will always create files that mimic the size charts and tables would be were Stylus at its full-screen setting.

Arrange Icons
The Arrange Icons function is useful when you are using one of the two above views and you have minimized one or more studies. The Arrange Icons tool simply organizes them neatly on your screen.

Minimize All
This option minimizes all open studies in the program into icon bars at the bottom of your data pane. These may be maximized, cascaded or closed at any time by using the standard Microsoft Windows controls on the icons.

Open Studies List
The last feature in the Windows menu is a list of studies currently open in MPI Stylus. You may use your mouse to click on any study in this list and it will appear on your screen in either its full screen, tiled or cascaded appearance.

Tool Menu

The Tools menu is used to access certain special programs and utilities that work with the MPI Stylus application suite. The two that will always be listed are the MPI Updater and MPI Publisher; however, please note that MPI Publisher is an advanced package feature and may not be available to non-subscribers.

User-level Interface
This function allows you to open the User-level Interface, a standalone interface that provides an alternative method for populating and automating existing reports on the fly. For more information, please see the User-level Interface User Guide, available from MPI.

MPI Updater
Tools-> MPI Updater allows you to use the MPI Updater program to update your data streams in MPI Stylus Pro. For instructions on using the MPI Updater, please see Chapter 10.

Factor Search
This option is only available for subscribers to our Factor Search advanced package. For more information, please see the Factor Search User Guide, available from MPI.

Show Printers
This feature will open your operating system's Control Panel (to the 'Devices and Printers' area in order to help you to establish a default printer. This is necessary in order to use certain features of the program.

Force "as of date"…
This feature has been enabled as an option for all MPI-supplied databases (it will not work for 3rd-party vendor databases). Through this feature, the user may force Stylus to use a specified date as the 'as of date' for reporting purposes. Once enabled, this feature must additionally be 'turned on' in Configurator for each database you wish to use it for.

- Use the most recent date (default) – This setting is the default for the program, and makes no changes from normal work.
- Force "as of date" to – Enables the custom option.

Help Menu

The MPI Stylus Help Menu contains a variety of useful features meant to assist our users. Each feature is described below; however, we recommend you see Chapter 11 of this manual for a list of more solutions available for MPI Stylus users.

Topics
The Topics menu opens the MPI Stylus Help Guide, which is a specially adapted version of this manual meant for quick use within the application.

Manual
This opens the most recent version of the MPI Stylus Pro User Manual included in your install folder.

Formula Reference
MPI formulas are now contained in a standalone PDF reference document accessible through this link.

What's New

This opens the 'What's New' (readme) file included with the latest MPI Stylus Pro major release. This is a quick and convenient way of scanning the major additions and enhancements to the product by module and/or advanced package.

Macro Reference
This opens the Macro Reference, which contains a complete list of all global/module-based macro statements and their relevant parameters.

Automation Reference
Automation advanced package subscribers will be able to use this function to open up the Automation/Scripting Reference, which contains a complete list of supported script statements and their relevant parameters.

Tip of the Day
The Tip of the Day box is a great feature for new MPI Stylus users and those seeking to develop a better overall understanding of the application. The default setting in MPI Stylus is for the Tip to appear whenever you open the program; however, once the box is closed it may also be opened at any time by going to Help-> Tip of the Day.

If you do not want the Tip of the Day to show at startup, simply uncheck the box that says "Show Tips on Startup." The box will not appear the next time you open the program. You may re-click this box again at any time by opening the Tip of the Day box and checking "Show Tips on Startup."

When the Tip of the Day box is open, you may click "Next Tip" to see another tip, or "Close" to close the box. Note that this box is specially formatted to allow you to work in MPI Stylus with the box still open, allowing you to move it out of the way and try the tip without having to memorize it and close the box.

MPI Home Page
This option will launch your default web browser and open the MPI corporate home page, which may be found at:

http://www.markovprocesses.com

The MPI home page is an extensive client resource, and every MPI Stylus user should familiarize him or herself with its features in order to ensure that they are getting maximized support & information from MPI.

MPI Support Forum
The MPI Support Forum should be almost every client's first stopping point (after this manual) when they have a question about MPI Stylus. The forum is fully archived and searchable, meaning that you may often find that another client has already asked the same question, and an MPI Client Services Representative has provided a detailed text explanation. In addition, forum questions are sent to several members of the MPI organization, ensuring that the person best suited to answer your question is among the first to know you need assistance. And because forum postings benefit our entire client base, forum responses are always extremely fast.
You may also access our forum at the following address:

http://www.markovprocesses.com/phorum/

To log in you will need your MPI Stylus user name and password. These are provided to users when they first purchase MPI Stylus Pro.

Send Current Study to MPI Support

This feature communicates with your default e-mail program (note: this will not work with web-based e-mail)) and begins a new e-mail, with support@markovprocesses.com as the address and certain files automatically entered in as an attachment. All you need to do is fill in the subject line and the body, and the e-mail is ready to send! Please make sure to include your full name, company and telephone number in the body of your e-mail.

Please note that NONAME studies (new studies that have not been saved) are not included in this process. Thus, to send a study to MPI, you must first save it with a filename.

The following file types attach to your e-mail; you may remove any or all of them as you see fit:
- The study file for the active study
- Stylus.ini and Stylus.log files
- .FND and .MNG files used in the study, if the study has such files loaded

About
The About section provides you with basic information about your MPI Stylus installation. To retrieve the About box, simply click Help-> About.

The About box tells you several important things about the MPI Stylus program you are running.

1. Version – This tells you the current version of MPI Stylus Pro that you are running, as well as the release date for this version. In certain cases, no release date will be listed.
2. Modules – This tells you the modules to which you have access on your user license.
3. Licensed to: - This field will contain the name of the user or organization to which this application has been licensed.
4. Serial Number: Your MPI Stylus user serial number will appear in this section.
5. Expiration – The expiration date for your current MPI Stylus license file. Once this date has passed, you are permitted a 30-day grace period to renew the application prior to termination of access.
6. Packages – This section will tell you the various subscription features enabled in the license. Possibilities may include Automation, Advanced Reporting, Advanced Database, Advanced Analytics, etc.

Acknowledgments
This button provides acknowledgments and disclaimers for various major data partners.

Version Detail
This button will display for you the date and time of creation/update for a variety of important files included in the MPI Stylus Pro application. Most users will not have any reason to use this feature; it is intended for the use of MPI client services specialists attempting to determine whether or not you currently have the most up-to-date version of key files, and is also useful for technical support people in client firms who wish to determine the current installations on a user machine.

Icon Menu (Ribbon)

The Icon Menu is visible throughout different parts of the application. Depending upon what screens are active (i.e., Parameters in the Design Tree, or a Report page), the options will change to reflect a helpful set of quick tools available to the user. More information about icons may be found in the relevant chapters.

MPI Stylus Pro Toolbars

Toolbars in MPI Stylus Pro contain icons that represent key application functions and features that are either linked to main menu options, accessible through right-click menus, or in some cases unavailable elsewhere in the application. Not all buttons will appear in all modules, and some may only appear in certain circumstances. In many cases, additional information on a button's function may be found in other relevant sections of this manual.

Button	Function Name	Description
	New	This button is the same as File-> New and should be used when you are trying to create a new study.
	Open	This button is the same as File-> Open and should be used when you are trying to open an existing study.
	Save	This button is the same as File-> Save. Please note that, just as with the menu version of Save, this button is not the same as "Save As" and should not be used for new studies.
	Run	This button is used to run studies in MPI Stylus and may be one of three colors. Red indicates that the study may not currently be run because something vital is missing – usually a manager. Yellow means that the button must be pressed to run the study again, because data has been changed and MPI Stylus must recalculate something. Green means that the study has been properly run and output may now be viewed. For more information on Run processes, see 'Running a Study' in this section.
	Navigator	Pressing this button turns on or off the Multiple Studies Navigator, which appears to the left of the Design Tree when multiple studies are open. Turning the Navigator off does not close the other studies; it only hides them from view.
	Export	This button is for exporting the active chart or report (either by section or in its entirety.) Depending on the item selected, this will allow you to either send the data to your clipboard, export it as an image file, or export it as a functional file, such as an Excel or text file.
	Print	This button opens the print utility, with which you may print anything in MPI Stylus. The print utility for Views is surprisingly powerful in MPI Stylus, and is examined in the next section below. In reports, the print utility is similar to basic Windows printing for pages of documents.
	Attributes Editor	The Attributes Editor allows for customization of charts/tables/memos and will become a familiar tool to any user with reporting needs in the program.
	Stationary Objects	This button opens the Stationary Object creation/editing tool and is found only in Reports.
	Object Editor	This button opens the Object Editor, allowing for the creation, editing or deletion of objects in charts in Views or Reports.
	Page Designer	The Page Designer is used in Reports to allow the user to quickly redesign the basic structural look of the page without having to return to the Design Tree. It may also be used to redesign Views.
	Chart/ Table/ Memo Designer	This button launches the Chart/Table/Memo designer, which is used in both Views and Reports settings. Note that the exact designer name will correspond to the View being created (i.e., Chart Designer for Charts.)

	Zoom to Whole Page View	This button adjusts your report to the whole page view, in which the full page of any report is visible on screen.
	Zoom to Page Width View	This button adjusts your screen to the page width view, in which the viewable size of the report is adjusted such that the report is as wide as your screen.
	Slide Show View	This button switches to Slide Show view, which makes your report truly full screen. You may then move your mouse to the right side of the screen and click to move forward, or to the left side of the screen to click and move backwards.
	Zoom In	This button allows you to zoom in on sections of your report.
	Zoom Out	This button allows you to zoom out from your report to extreme distances, giving you maximum control on zoom size.
	First Page	This button returns you to the first page of your report.
	Last Page	This button takes you to the last page of your report.
	Back One Page	This button takes you back one page in the report.
	Forward One Page	This button advances you one page in the report.
	Allow multiple selection	This button allows you to select multiple studies to be opened simultaneously from the Select Study tool.
	Delete from the database	This button allows you to select a study to be deleted from its database or folder and may be accessed through the Select Study tool. You may first use the "Allow multiple selection" button above if you wish to select multiple studies for deletion.
	Move to another database	This button allows you to move a study from one database/folder to another without having to manually move the file outside of Stylus Pro.
	Automatically run studies after open	This button allows you to have Stylus run any and all studies you are trying to open from the Select Study tool.
	Stop analysis	This button, located in the lower right-hand corner of the application when a study is actively run, allows you to stop the run command midstream. This feature is now also possible via the Escape (Esc) key, which can also stop other processes.
	Restore button	This button restores settings in a pane or view to their original settings when first opened. Please see Chapter 3 for more information.
	Show design names as titles	This button allows you to show the names of charts, tables and memos as titles above them in Views, so that you may easily determine which name corresponds to which piece of output.
	Script Recorder	This toggles script recording on/off. (Automation package only)
	ULI	This toggles the User Level Interface screen on/off.
	Add View/Report	Adds a View or Report to your study.
	Delete View/Report	Deletes a View or Report from your study.
	Change Report Layout	Changes Report layout, margins, headers, etc.
	Insert New Report Page	Inserts a new page
	Delete Current Report Page	Deletes the currently active page of the report.
	Add blank chart	Adds a new, blank chart.

		Add blank table	Adds a new, blank table.
		Add blank memo	Adds a new, blank memo.

Figure 11

Running a Study

When a study is run, quite a number of actions take place that the MPI Stylus Pro user may want to keep in mind. These actions may affect different modules and features in unique ways, or be global across the application. It should be noted that, for Advanced Packages, additional actions may take place on Run that are not listed here.

How Information is Stored
With Stylus and Allocator, only inputs are saved (i.e., selections in the Design Tree). Output is created on-the-fly when it is summoned for view by the user. By contrast, Prospector stores Output when it is not visible upon the screen. As a component of this, running a Prospector file will cause several other files to be created or updated, in order to store this information. Integrator stores the previous run/saved Report output, but must be Run again each time it is necessary to update a report.

Please note that such storage is the default; additional options are available via such elements as the History tab, Dictionaries, etc.

Additional functions worth knowing include the following:

Stylus/Prospector
In both modules, the following actions take place:
- All values related to Asset Loadings and Style intercepts are calculated
- Additional analysis is computed for Predicted R2
- As of version 8.1, the 'Perform Style Analysis on Peer Groups' option, when active, will initiate this analysis on study run
- Depending upon user parameter selections, additional analysis related to Index Selection and confidence intervals may be computed as well

Allocator
In Allocator, the following actions take place:
- Running the study computes the portfolios along the efficient frontier and for simulating projection paths

Integrator
In Integrator, the following actions take place:
- Running the study runs the underlying studies. Based on user selections, additional actions (such as scripts) may also be initiated at this point, but this is by Integrator or study-level commands, as opposed to the Run button itself.
- 'Linked' charts/tables/memos from underlying studies are extracted, and Reports are updated if this option has been enabled in the Options node.

Right-click Menus in MPI Stylus Pro

For your convenience, MPI Stylus has several menus accessible through clicking your right mouse button. These menus contain the most common or useful features for a given area of the program, and often are

the fastest or only way to accomplish certain functions. In other cases, choices on these menus correspond to buttons or menus on the main toolbar.

Design Tree Menu

There are several options available in right-click menus in Design Trees. The "selected item" will be the item on the Design Tree on which you right-clicked to bring up the menu:

Menu Selection	Function
Up	Will move the selected item (i.e., manager, map, chart, report) up one position within a given node on the Design Tree.
Down	Will move the selected item (i.e., manager, map, chart, report) down one position within a given node on the Design Tree.
Copy	Copies the selected item.
Paste	Pastes a copied item into the appropriate area of the Design Tree.
Delete	Deletes a selected item.
Enable All	This checks/activates the relevant item on the Design Tree, as well as any children. For example, for a Manager Group, this would enable all funds in the group.
Disable All	This unchecks/deactivates the relevant item on the Design Tree, as well as any children. For example, for a Manager Group, this would disable all funds in the group.
Clear All	This deletes all items from the relevant area of the Design Tree. For example, it may be used to delete everything from a node, all Managers from a Manager Group, etc.
Lock	This locks a particular Manager or Manager Group to the Design Tree, meaning that the item may only be deleted by first being explicitly 'unlocked' and then deleted. Locked items retain their checked/unchecked status.
Unlock	This unlocks a given item, allowing for its status to be changed in some way (checked, unchecked, deleted, etc.)

Figure 12

Views Menu

The right-click menu for Views will change depending on whether it is a chart or a table you are working with. These menus have some features in common, as may be seen below. Common features are covered in the "Charts" menu.

Charts Menu

Menu Selection	Function
Maximize	This feature will make a particular chart or table in a View full-screen. This may also be achieved by simply double-clicking on this chart or table.
Restore	The Restore option is only activated when you have maximized a chart or table; restore will simply return it to its original size, making other charts/tables in the View visible again.
Create Label	Create Label will insert an object directly onto the point where you right-clicked, populating it with data from the chart. Labels created in this fashion should be edited with the Object Editor.
Export	The Export option will allow you to copy a bitmap or metafile version of the chart to your computer's clipboard, or to save the chart as an image file.
Print	This option will print the selected View.
Attributes Editor	Opens the Attributes Editor.
Object Editor	Opens the Object Editor.
Page Designer	Opens the Page Designer.
Chart/Table/Memo Designer	Opens the Chart/Table/Memo Designer.
Propagate Chart Style To…	Opens the Propagate Chart Style To… Menu.
Copy	Copies the current object or page.
Paste	Pastes the current item from the clipboard.
Delete	Deletes the active object or item.

Figure 13

Tables Menu

Menu Selection	Function
Maximize	See "Chart" table above.
Export	The Export option allows you to export table text to the clipboard; to export it to a file (such as Excel); to export the information as a new series; or, where applicable, to export loadings as a new portfolio.
Page Designer	See "Chart" table above.
Chart/Table/Memo Designer	See "Chart" table above.
Copy	Copies the table to the clipboard.
Paste	Pastes from the clipboard.
Delete	Deletes the current table.

Figure 14

Reports Menu

The right-click menu for Reports will change slightly depending on which page of the report you are on, as page relationship features (such as First Page, Previous Page) are only available for certain pages.

Menu Selection	Function
Zoom to Page	Automatically zooms to normal full-page view for report page.
Zoom to Page Width	Automatically zooms to make page width full-screen.
Slide Show	Allows you to view your report in a slideshow format.
Zoom In	Zooms in one step. Same as the "Zoom In" button.
Zoom Out	Zooms out one step. Same as the "Zoom Out" button.
First Page	Takes you to the first page of your report.
Previous Page	Takes you to the previous page of your report.
Next Page	Takes you to the next page of your report.
Last Page	Takes you to the final page of your report.
Print	Used for printing your report.
Export	Allows you export your entire report to PDF, PowerPoint, or RTF files. Also allows you to export specific pages or areas to their appropriate file types (see Chart and Table guides above.)
Attributes Editor	Opens the Attributes Editor.
Object Editor	Opens the Object Editor.
Stationary Objects	Opens the Stationary Objects Editor.
Page Designer	Opens the Page Designer.
Chart/Table/Memo Designer	Opens the Chart/Table/Memo Designer.
Propagate Chart Style To…	Opens the Propagate Chart Style To… Wizard.
Design Linked	This allows you to jump directly to the Chart Designer/Table Designer for the chart (or table) without having to leave the Report tab.

Figure 15

Keyboard Shortcuts

A variety of keyboard shortcuts may be used to interact with MPI Stylus Pro. In some cases, these shortcuts are similar to shortcuts used in other applications; however, in many cases they are not. For this reason, users should always take a moment to ensure that they are comfortable with the exact effect each shortcut will have upon their studies or the application as a whole.

Global Shortcuts

Function	Key Shortcut	Notes
New		
Stylus study	Shift+Ctrl+O	
Prospector study	Shift+Ctrl+P	
Integrator study	Shift+Ctrl+I	
Allocator study	Shift+Ctrl+L	
Open		
Stylus study	Ctrl+O	
Prospector study	Ctrl+P	
Integrator study	Ctrl+I	
Allocator study	Ctrl+L	
Configurator study	Ctrl+U	
Latest study from recently used list	Ctrl+0	
Study #x from recently used list	Ctrl+1..9	
Close		
All Studies/Configurator	Shift+Ctrl+W	
MPI Stylus Pro	Ctrl+Q	
Switch to Design Tree	Ctrl+F	Sets focus on Design Tree, allowing for keyboard interaction
Stop	Esc (Escape key)	Interrupts running processes, including Scripts (and infinite loops), run button activation and Binder processing.

Figure 16

In Studies

Function	Key Shortcut	Notes
Save		
Study or Configurator	Ctrl+S	
Save As	Ctrl+Shift+S	
Close		
Study or Configurator	Ctrl+W	You will be prompted to save the study or Configurator before closing
Switch		
To last Tab/Page	Ctrl+END	When in the Design Tree or Views, takes you to the last tab in your study. When in a Report, takes you to the last page
To next Tab/Page	Ctrl+PAGEDN	Takes you to the next tab/page

To previous Tab/Page	Ctrl+PAGEUP	Takes you to previous tab/page
Run		
Run study	Ctrl+R	
Run script	Shift+Ctrl+R	
Copy		
Design Tree node	Ctrl+C	Copies the active (clicked/selected) node
Paste		
Design Tree node	Ctrl+V	Pastes the previously copied node contents into the active node (even if this is not the same node as was copied).

Figure 17

Views/Reports

Function	Key Shortcut	Notes
Views and Reports		
Chart/Table/Memo Designer	Ctrl+D	
Page Designer	Ctrl+G	
Object Designer	Ctrl+B	
Attributes Editor	Ctrl+T	For Attributes Editor, Ctrl+T works as a toggle, and may be used to open or close it.
Stationary Object Editor	Ctrl+K	This is for Reports only, but is included here for ease of finding.
Switch between active page elements	Tab	In a View or Report, will cycle through charts/tables/memos based on order on the Design Tree,
Switch between active page elements (reverse)	Shift+Tab	Reverse shifting through page elements.
Views only		
Toggle chart zoom	Shift+Enter	Toggles a chart's zoom maximized/restore state
Reports only		
Go to first page	Ctrl+Home	
Go to last page	Ctrl+End	
Go to previous page	Ctrl+Left arrow (<-)	
Go to next page	Ctrl+Right arrow(->)	
Zoom In	Ctrl+Plus Ctrl+Up arrow	This may also be done by scrolling the moust wheel up.
Zoom Out	Ctrl+Minus Ctrl+Down arrow	This may also be done by scrolling the mouse wheel down.
Zoom to page	Ctrl+Shift+Minus	
Zoom to page width	Ctrl+Shift+Plus	
Pan right	Right arrow	
Pan left	Left arrow	
Pan up	Up arrow	
Pan down	Down arrow	
Position/Size form	Ctrl+E	
For this form only		

Change position of C/T/M	Arrow keys	
Change dimension of active C/T/M	Shift+Arrow keys	
Pop-ups (where appropriate)		
Cancel	Esc	
Ok/Enter	Enter	
Apply	Ctrl+A	

Figure 18

Working with Studies

MPI Stylus has been designed so that study and template management issues are nearly identical for all modules, allowing the user to feel very comfortable managing studies even in a new or unfamiliar module.

Creating a New Study

Creating a new study in MPI Stylus is simple! There are only two things you need to decide:

1. Which module would you like to use?
2. Would you like to use a standard template or simply start from scratch with a blank study?

MPI Modules

Users are encouraged to refer to the module-specific chapters for more information on their basic functions, but in general, the list below can help you quickly determine which module is best suited for your purposes:

- Stylus Module – Use for analyzing one or more managers, comparing managers, and creating reports.
- Prospector Module – Use for creating or editing peer groups or for conducting manager searches.
- Integrator Module – Use when you would like to combine views from multiple studies and/or modules into a single report.
- Allocator Module – Use when you are examining asset allocation options or want to examine allocation statistics for portfolios.

Blank Studies vs. Standard Templates

MPI Stylus allows you to start each session by either using a blank study or a template (a third option, using an existing study, does not apply when you are creating a new study.) Whether or not you want to start with a blank study or a standard Stylus module template will depend on what your goals are for your analysis.

A *blank study* in MPI Stylus is one in which no information exists – the design tree is completely unpopulated. (We will cover the design tree concept later in this chapter.) The only exception is that modules with Style Outlines will have "Cash" automatically populated on their design tree with the study's default cash proxy. (The default is usually the 3-month T-bill Total Return Index; however, please always check to be sure of what cash proxy is actually set, as proxy may be changed by other users.) In cases where "Cash" is present on the Design Tree, it *will always be populated and may not be deleted.* You may temporarily remove it from your considerations by unchecking the box to the left of it under Style Outline, but this simply sets the risk-free rate to zero, as opposed to actually removing it altogether from your study. For more information on changing the cash proxy/risk-free designation in MPI Stylus, please see Chapter 12 (MPI Configurator) for the program-wide proxy setting, or refer to the parameters sections of this manual.

You will probably want to use a blank study if:

- You have very specific ideas about what kind of analysis you would like to run, what to include in your Design Tree, and what (if any) Views and Reports you will create.

- You wish to replicate fully an existing analysis or report, and want to ensure that unnecessary information is not included.

A *standard template* comes with MPI Stylus and may include a fully populated design tree; in some cases, it may even include selected managers or other indices..

You will probably want to use a standard template if:

- You would like to quickly conduct analysis based on generally accepted criteria present in the template.
- You would rather edit existing Views and Reports than build new ones from scratch (for applicable modules.)
- Your company maintains templates for certain managers, portfolios, peer groups or asset classes. For information on whether or not your company maintains standard templates of its own design, please see your key MPI Stylus user(s).

Once you have decided whether to use a blank study or a standard template:

1. On the MPI Stylus main menu and go to File-> New->. Select the option that corresponds to the module you would like to work in (Stylus, Prospector, Integrator, or Allocator.) The "Select Template" menu will open.
2. If you wish to create a blank study, click on the green checkmark in the upper-right hand corner of the menu *without selecting from any of the choices available*. This will open a basic, unpopulated study ("Cash" will be populated in appropriate modules).
3. If you would prefer to use a standard MPI template, please select the most appropriate template from the choices in the "Select Template" box. Note that not all modules may have the same number of templates. Once you have selected the appropriate template, you may click the green checkmark in the upper-right hand corner of the menu to open it. Don't worry if a template does not exactly fit your needs; all templates are fully editable, and are presented as a quick-start convenience for our users.
4. Your study should now be open and ready for adjustment.
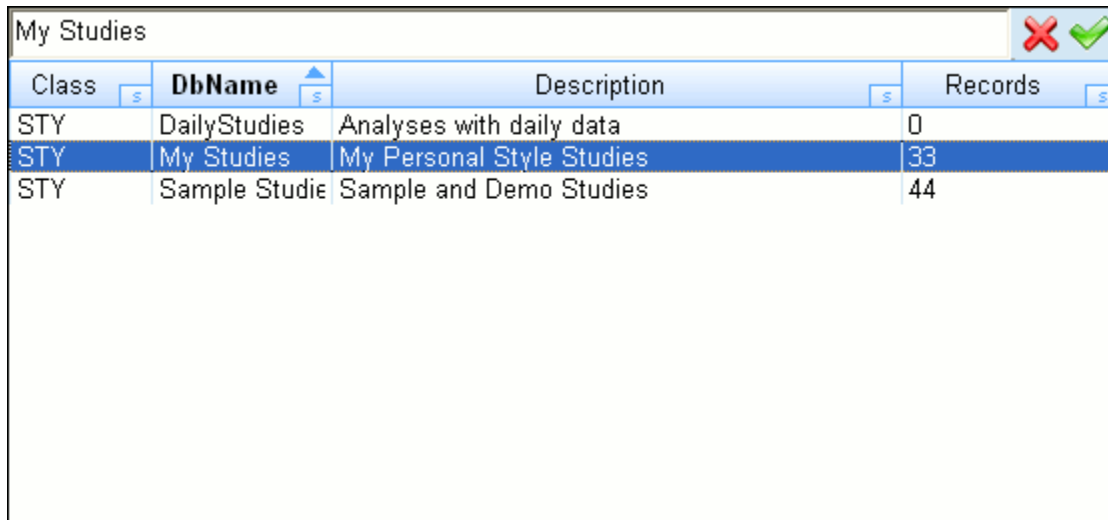
Opening an Existing Stylus Pro Study

Depending on the nature of your company's use of MPI Stylus, you may not wish to start a new study, but instead run or make adjustments to existing company studies. This will include cases where you previously started a new study from either a blank or a standard template, and then saved your work for later use. Please note that if you are trying to open an existing MPI standard template, this is considered a new study – please refer to the previous section in this chapter.

To open an existing study in MPI Stylus:

1. In the MPI Stylus main menu, go to File-> Open->. Select the option that corresponds to the module you would like to work in (Stylus, Prospector, Integrator, Allocator.) The "Select Study" menu will open.
2. All Stylus Pro studies are stored in folders/databases on your computer or network; please make sure to always note where a study is stored when you save it. If you have saved a study in a database/folder other than the default one in the "Select Study" menu, you will have to browse to the correct database to locate the study. If you are already in the correct database, skip to step 4.

To change databases, you will need to click the ellipsis button (…) in your Select Study box. This will bring up a listing of your relevant databases (databases containing the types of studies you are seeking, such as .sty files.

Figure 19

You will be able to see how many records are available for each database, and then either double-click on the database you like or click its name and press the green checkmark. This will then open the new database, allowing you to select the appropriate study from within.

3. Once you have found the correct file, double-click it with your mouse to select it. You may also click the study name once and then click the green checkmark to open it.
4. If you would prefer to open multiple studies in MPI, please use the "Allow multiple selections" button in your "Select Study" menu.
5. Your study/studies should now be open. Please note that you must run each study to launch it, unless one or more studies are populated with scripts commanded to run upon the opening of the study.

Opening Studies Options Buttons

Allow Multiple Selections Button

This button allows you to select multiple studies for simultaneous opening. This saves you having to continuously use the File-> Open feature when you wish to work in several studies at once. This is a module-specific feature, meaning for example that you cannot open a Stylus study and a Prospector study at the same time. You may however open them individually or open multiple studies of the same type at once, and have multiple MPI Stylus modules open simultaneously.

Automatically Run Studies After Open Button

This button commands MPI Stylus to automatically run the study/studies you are opening automatically, saving you having to move through each study pressing the "Run" button. Note that this option only works for the Run command, and does not apply to the running of scripts. To automate the running of a script upon opening a study, use the "Run on startup" check box in the Script tab of a study. For more information, please see the "Study-level Tabs" section later in this chapter. Note that the button color tells you the state of the study run, as it would for normal studies as well.

Saving your Stylus Study

You will probably want to save a study after you have created or edited it. There are three ways to save a study in MPI Stylus:

1. You may save a previously saved study under the same name, overwriting the most recently saved version.
2. You may save a new study, or save an existing study under a different name, by using the "Save As" feature. For an existing study, this would allow you to save your changes without overwriting the previously saved version of the file.
3. You may save a new or existing study as a template.

Saving a new Study

Please note that MPI Stylus will not allow you to save new studies under their automatically assigned default names (i.e., NONAME.sty, NONAME.unv). This is a precautionary measure; by forcing you to give your study an appropriate name, you will be much more likely to be able to locate it again easily when next you need it.

To save an existing study under the same name, overwriting the most recently saved version:

1. Make sure that you wish to overwrite the most recent copy of this file with any changes you have made.
2. On the MPI Stylus main menu or toolbar, you may either use File-> Save or press the Save button. In both cases, Stylus will ask you if you are sure you would like to overwrite the existing file. Click "Yes."
3. Your study is now saved.

There are two ways to save a new study, or save an existing study under a new name. The first is to use the "Save As" option:

1. On the MPI Stylus main menu, go to File-> Save As. The "Save Study As" menu will appear. When you first create a new study and click "Save" you will be directed here automatically.
2. Make note of the specified database. If you would like to change the database in which a study is saved, you may do so by using the ellipse button.
3. Give the study a name that you feel will allow you to correctly identify it later. A good name is short and descriptive; for example, the name of the client whose portfolio this study examines, the asset class around which the study is built, etc. The default name of the study (i.e., NONAME.sty) will already be selected. Delete this text and enter your new study name. You do not have to type in the file extension (i.e., .sty, .unv) – Stylus will enter this information for you automatically.
4. In the field below the "Database" and "Study Name" entry fields, you may enter a description of your study. This is entirely for internal use, and is an excellent place to note in more detail the specific notes of interest for your study. Good examples might include "Client A Portfolio vs. Model Portfolio B", or "Fixed Income Manager Comparison."
5. You do not need to enter any information into the tabs at the present time – these may all be editable through the study itself; however, you may if you wish to.

6. Press "Save." Your study will now be saved, and in future may be located by using File-> Open->.

The second option for saving studies is to simply rename and save the study from the Study node:

1. Click on the Study node of the study you wish to save.
2. In the data pane, you will see the "Study Name" field, which will display the name of the current study (for new studies, this may be something like NONAME.sty).
3. Delete the name in the Study Name field and type in the new name for the study. You do not need to enter the file extension – MPI Stylus Pro will automatically supply it when you press Enter.
4. Click the Save button on your main toolbar. The study will now be saved in its new name. Please note that this new study will now become the active study – if you wish to use the old study again, you will need to reopen it.

Saving a study as a template

Some users like to design their own templates for the program, for their own use or for deployment to all company MPI Stylus users. Once it has been saved, any template created through this process will be found by going to File-> New-> and then selecting the template name.

The basic steps for saving a study as a template are very similar throughout all modules in MPI Stylus; however, it should be noted that each module will have its own special interface screen and template options. The general instructions below will work for all modules, but users are encouraged to reference the module-specific data tables below for more information on what information in the template "Save Template" box means.

To save a study as a template:

1. On the MPI Stylus main menu, go to File-> Save As Template. The "Save Template" menu will appear.
2. Specify the database where you would like your template to be stored. The default is the "Sample Templates" database.
3. Give your template a short, descriptive name for easy identification.
4. In the "Narrative Description" field, enter a concise description that you feel will allow your users to quickly decide whether or not this template is appropriate for their needs.
5. You may now decide which components of the current study you are using to create your template will be included in the actual template. These options come in two basic categories. Please see the module-specific tables below for information on what is meant for each inclusion. The default setting will be to copy the template exactly by selecting all options with the exception of "Properties.WEB." This setting is only relevant to users creating templates for MPI StylusWeb – most MPI Stylus users will wish to keep this box unselected.
6. Once you have decided which elements to include, press "OK" to save your template.

Deleting a study

Deleting a template or study is easy, and may be accomplished several ways – either through the MPI Stylus program, or by deleting the necessary files yourself by going into the folders in Windows. This manual only supports the program-associated solution. Please always check with your company's other MPI Stylus users before deleting any study or template – even ones you do not personally use. Files deleted through the program do not go to your system's Recycle Bin – they are instead fully deleted. Once a study or template is deleted in MPI Stylus, it may not be recovered, unless your company maintains appropriate/timely system backups. *MPI does not maintain backups of client studies or*

templates – please contact your company's tech support team for information about backup procedures and availability.

To delete a template or study:

1. Go to the appropriate process for opening the module template or study you would like to delete. For example, to delete a template you would go to File-> New->, whereas to delete an existing study, you would use File-> Open ->.
2. Once the appropriate New/Open menu has appeared, locate the template or study you wish to delete and select it with your mouse. Do not actually open the template or study.
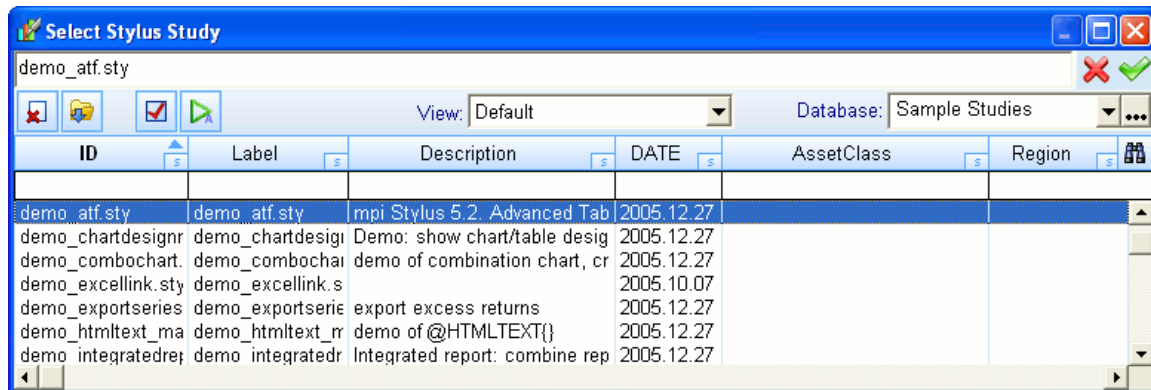
Figure 20

3. In the upper left-hand corner of your "Select Template" or "Select Study" menu, you will see the "Delete from the database" button, which looks like a trash can. Click this button.
4. You will be asked if you are sure you wish to delete the file. Click "Yes."
5. This file has now been deleted from MPI Stylus.

Sharing studies

Sometimes users may be asked to share studies with colleagues, or send a study to MPI Tech Support to assist with a question or problem. Knowing how to share these studies will significantly decrease your work time on Stylus issues, and help resolve issues more smoothly.

Files in Stylus

As we mentioned earlier, all studies in MPI Stylus are files, and have certain extensions associated with them. The key to sharing studies in MPI Stylus is to:

1. Know where to find the file you want to share.
2. Know how to get that file to the person with whom you wish to share it.
3. Know where to save files you receive from other users/MPI.

Locating Files in your Stylus Folder

The simplest way of finding out where the actual file for a study is located is to make note of the database in which the study is saved. This database will correspond to a certain folder within your Stylus folder. For a listing of database names and their associated folders, please see Chapter 5.

Alternately, if you know the name of the actual file (i.e., somename.sty), you may search for this file using Windows file management features.

Stylus Files as Attachments

MPI Stylus files may be sent as attachments to e-mails like any other file, and do not need to be zipped beforehand. All information necessary for running the file, including design tree population, views and reports, will be included in the file itself.

Saving Stylus Files from MPI/Other Users

To use a study from another user in MPI Stylus, all you need to do is save the study in the correct folder. For a complete list of recommended folders, please see "Stylus File Types" at the beginning of this chapter.

Design Trees in MPI Stylus Pro

Design Trees are a common element in all Stylus modules, and with good reason. A Design Tree is a module's backbone – it provides the user with a simple, consistent way of putting together any analysis, always asking for information in a logical order. The differences between modules call for Design Trees that are unique to each module in the series of choices they offer the user, but navigability of Design Trees will always be the same.

This section will introduce you to the basic Design Tree concept, and allow you to quickly learn how to navigate all of the features of a Design Tree. The chapters in this manual that cover each specific module will contain additional Design Tree information, some of which will be repeated from what is discussed here.

Why a Design Tree?

The Design Tree simplifies the basic elements of analysis into clear, well-defined parts. By using a Design Tree, a client not only can create or run analysis in a quick fashion, but also can become more alert to the various elements that comprise a solid, correct financial analysis. Design Trees in Stylus govern both the creation of input and output, meaning that very little time is necessary to actually get at the data results you require.

Basic Appearances

The Design Tree always appears vertically on the left-hand side of your screen in MPI Stylus. The only feature that ever appears to the left of the Design Tree is the Multiple Studies Navigator tool. The Design Tree always consists of the following elements:

- A special "Study" super-node that contains tabs controlling numerous study features.
- "Nodes". Each represents a major element of your study design.
- The Design Tree may always be found on the "Designer" tab of the study. Output tabs will be discussed in more detail later in this chapter.

In addition, control of elements on the Design Tree may be regulated through the use of a right-click menu. This menu allows you to move specific elements within nodes, such as managers, indices, views and reports, up and down, as well as to copy, paste or delete them. It should be noted that while you may change the position of elements within nodes, the order or number of nodes cannot be changed.

Although each node has its own features and purpose, it is often the case that different nodes have similar screens and interaction capabilities. One of the most common screens in the data pane will be discussed in part 3 of this section.

Navigation

Design Trees may be navigated using the mouse, or you may use your computer up/down arrows to move throughout the features.

Module Design Trees

Each module has its own Design Tree, available for study in that module's chapter in this manual. For the purposes of simplicity, we will work with the Stylus module Design Tree in this section as we discuss the navigation features common to all Design Trees in the application.

Here is the basic Stylus module Design Tree:
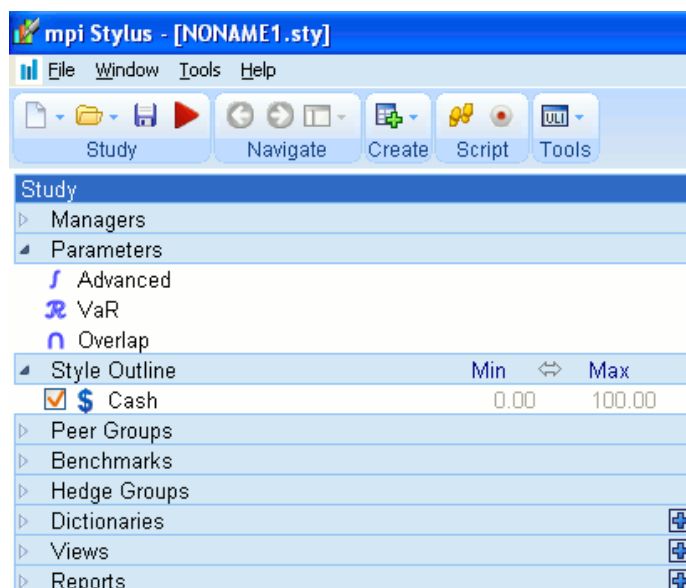
Figure 21

Notice that Cash always appears on a MPI Stylus design tree, even when the study is new and unpopulated. You may uncheck Cash to remove it from consideration in a study, but it may not be removed from the design tree. You may change the Cash setting in Configurator or in the Parameters node.

Alignment Arrows

Alignment arrows allow you to quickly move your Min/Max settings to the left or right on your design tree to adjust for visibility, screen size, etc.

To use the alignment arrows:

1. Left-click your mouse on the alignment arrows and hold down the mouse button.
2. With the button held down, drag your mouse to the right or left. The Min/Max settings should adjust with your mouse cursor.
3. When you are satisfied with the alignment of Min/Max, release your mouse button.

Right-click Menu

The Design Tree right-click menu discussed earlier in this chapter is an important element of Design Tree navigation, allowing you to move items within nodes, as well as copy, paste or delete them. For more information, please see the right-click menu sections earlier in this chapter.

Study Node

The Study node of your design tree contains special study-wide controls that regulate features such as automation scripts & macros, certain color and symbol controls, text substitute features and more. This is also the place to find out what the full name of your file is, and in what database in MPI Stylus it may be found.

Blue Lettering in Study node tabs

Please note that a tab on the Study node will switch to blue lettering when populated, allowing you to determine quickly which tabs are being used in the study and which are empty.

Database

The Database category simply tells you in which database the current study is located.

Study Name

This area shows you the name of the current Stylus study. You may change this at any time, but please note that changes will not be reflected until you save the study.

Description Field

The Description Field is the unlabeled field located directly beneath the "Database" and "Study Name" fields. The text you enter here will be visible in the "Description" column when you use the File->New or File->Open options to open a new study.

Memo Tab

The memo pane is an area for entering various textual notes for internal use. Examples include:

- Entering notes for colleagues on how/when to use a template.
- Maintaining a list of clients for which a template is to be used.
- Keeping a log for when a study has been run for client-use.
- Compliance-related purposes.
- And more…

It should be noted that templates created in older versions of MPI Stylus Pro may show information in the Memo pane that concerns macro automation. In older versions of MPI Stylus Pro, the memo pane was a catchall area for both general internal memos and macro automation information. It should be noted that macros will still work in the memo pane in new versions of MPI Stylus Pro, but we recommend moving macros to the Macro Tab Pane in order to reduce confusion and avoid accidental erasure.

Script Tab

The Script Tab Pane is the area of MPI Stylus where all scripts should be entered for processing. The pane will adjust to fit extra text, so there is no special limit on the length of scripts. Scripts are a part of the MPI Stylus Pro Automation package; for more information, please consult your MPI Stylus Pro sales associate.

In addition to the text entry pane, there are three features included in the Script Tab Pane.
Run on Startup

☐ Run on startup

Checking the "Run on startup" feature will tell MPI Stylus that you would like to have your script run automatically every time you open the study. "Run on startup" is normally used once you have finalized your entire study and it is ready to be used in production; however, while designing the study you may wish to keep control of when a script is run, in order to check a study and make any last-minute adjustments before processing it. For this reason, we also include the "Script Run" button.

Script Run button

The Script Run button in your Script Tab Pane allows you to choose to run a script at any time, and is recommended for most program users who are working with automation.

Force Run to execute script

Checking this option will cause your script to run every time the study is run.

Macro Tab

The Macro Tab Pane is the pane in which any study macros should be defined/entered. Like the Script Tab Pane, this pane will expand to accommodate a large amount of text, so there is virtually no limit to the amount of macros you include.

Studies created in older versions of MPI Stylus Pro may have macro information in the Memo Tab Pane; it should be noted that macros will work in either pane, but for organizational purposes should be located in the Macro Tab Pane only.

Extensive detail on macros may be found in Chapter 9 of this manual.

Binder Tab

The Binder Tab Pane (available in Stylus, Allocator and Integrator) enables the creation of a report book (combination of different reports, or the same reports for different managers) from a single study without having to resort to scripting. This makes it an attractive feature both to those who do not subscribe to our Automation package, as well as to those who do not have the time or inclination to avail themselves of automation's extremely powerful features.

The Binder concept is based on selecting one or more Reports in your study and indicating whether Stylus should run the study for all managers at once, or each manager sequentially. The output file will then be saved in the "File Name" path. This process may also be extended in Integrator in order to combine reports from different studies (i.e., for different asset classes.)

PDF/PPT

This allows you to select the type of output you desire. If you are using PPT as your output, it is important to use the Screen layout control when creating the Reports involved. For more information, please see the Report chapter.
File Name
This tool allows you to type in (or browse to, using the … button) the location where you wish to have your output saved.

Preview File if Exists
This option allows you to open the current version of the .PDF or .PPT file if one already exists; if no file exists, a "File not Found" error will be returned.

Embed Fonts
This feature is used to embed fonts in a file – this is useful when you are sending your file to other parties who may not have the fonts you are using. It is highly recommended that you only use this in the case of extremely rare or unique fonts, as it can have a dramatic effect on file size.

Append to Existing File
This feature allows you to attach the output you are creating to the end of an existing piece of output; for example, if the file you have selected in "File Name" already exists as a PDF, you can choose to have the file you are generating now added at the end of the other file, as opposed to overwriting it.

Bind
This button should be pressed when you are ready to create your output.

Color & Symbol Tab

The Color & Symbol Tab Pane is one of the most useful tools in MPI Stylus for creating clean, consistent reports. Using this tab pane, you can dictate on a study-wide level in what colors and shapes any manager, index, benchmark, universe statistic, or even chart components appear. This allows for the enforcement of company logo colors, for report-wide consistency, and allows users to avoid the tedious task of implementing this consistency through the "Attributes Editor" of "Propagate Chart Style to…" features. The default setting is "Auto," which is tied to the current individual settings for each chart, defined within the Attributes Editor.

Use identity-based color/symbol assignments
This feature allows you to assign a variety of properties that will help to control the colors and symbols that appear in output. For more information, please contact MPI Support.

Maintain design-tree based benchmark colors
Allows you to maintain colors based on specific design tree elements.

Use study color palette
This Feature allows users to define a study-specific color palette, which may be generated from scratch or copy/pasted in before adjustments are made. When enabled, this palette is used in study reports instead of the global Stylus color palette specified in Configurator. This setting also takes precedence over the 'Force standard color template palette to be used with template' property which may have been set by a template designer in the Study/Template properties (access to study/template properties is available only to ULI/WEB Template Designer mode users, and thus this section may not be relevant to most users).

Edit Palette
This feature allows you to edit the color palette used in the active study.

Compatibility with Attributes Editor.

Because the Color & Symbol tab and the Attributes Editor may both be used to control series colors, it is important to understand the logic between the two. This becomes especially important because chart components (such as a manager or index name in a given chart) may have the option to be set to different colors than the managers and benchmarks themselves.

Stylus will first check for a color specification in the specific component section of the Color & Symbol tab. If no specification is present, the default will be to any specification in the Managers/Index sections of the Color & Symbol tab. If this is also unavailable, the scheme set in the Chart Attributes editor is used.

Rules can be copied / pasted from and to Advanced Table Formatting. This allows users to utilize previously configured entries as a starting point.

Text Substitute Tab

The Text Substitute Tab is meant to give MPI Stylus users a quick, easy-to-check option for instituting text substitutions on a study-wide level. This feature works similarly to some macros, in that it allows for automated substitution, but it does not require the complex setup of a macro to enact. Note that this feature is not intended for memos in MPI Stylus, but rather for features that automatically bring in certain text, like the titles of managers, indices, etc.

For example, if you were to create a memo in a View or Report with the word "Test" in it, and then to use the Text Substitute Tab to ask MPI Stylus to replace the word "Test" with "Fail," you would find the program would make no change. However, if you were to have a manager on the Design Tree named "Manager 1", and asked the Text Substitute Tab to replace this with "Portfolio Manager 1", it would automatically be called "Portfolio Manager 1" in all Views and Reports, except in Memos. Therefore, memos should continue to use macros for this type of replacement.

To substitute text:

1. In the "From" column, enter the text you would like to be replaced. This need not be an exact match; please look below for text match options.
2. In the "To" column, enter the text with which you wish to replace the old text.

Exact Match
The exact match option will only make replacements where the exact text you have entered in the "From" column is found.

Head Match
The head match option allows you to specify the beginning characters in a text string to be replaced. Please note that only the characters in your text string will be replaced – the entire text string (if it has additional characters) will not be replaced.

Tail Match
The tail match option allows you to specify the ending characters in a text string to be replaced. Please note that only the characters in your text string will be replaced – the entire text string (if it has additional characters) will not be replaced
Substring Match
The Substring match can locate and replace text entirely embedded in a longer text string. Please note that only the characters in your text string will be replaced – the entire text string (if it has additional characters) will not be replaced.

Special Symbols
The Text Substitute tab now also includes options to display subscripts, superscripts and Currency symbols in a report.
For example,
    1. Trademark: ™
    2. Service mark: ^{SM} or use @htmltext {^{SM}} in a memo or a chart.
Please note that this feature will also be supported in chart axis texts

Field Map Tab

The Field Map tab allows you to rename header fields from one or more databases. This can be useful for a variety of applications, including when you want to have a standard name and column associated with a type of data that exists in multiple databases under different names.

For example, suppose that Databases A and B have columns that contain the Expense Ratio for a Manager. Database A calls this "Expense R" and Database B calls this "Exp Ratio". When you are using both databases in MPI Stylus Pro, these will appear as two separate columns, with information populated only for funds in the appropriate database. Using the Field Map tab, the user can rename both columns "Expense Ratio", causing them to appear as one column in a table, with the appropriate number from the respective database displayed.

Properties Tab

This tab is primarily used for adding, editing or removing Manager Properties. This has a number of uses and is often tied to our Dictionaries functionality, which is part of an advanced package. Beginning with MPI Stylus Pro 11.0, properties were added to this tab allowing you to define benchmarks specific to each manager in your study.

Read-only
This option allows you to make a study 'read only'. When you check this box and then save the study, it will no longer be possible to save over the current version of the study. Any attempt to save will become a 'Save As' instead, and thus the original study will always be preserved. This may be undone by unchecking the box, and then saving the study. It will now be possible to write over the study.

History Tab

The History tab gives you the flexibility to store any data in either a Disctionary or SQL/Access file or database, to be called into the respective study at a later point. Likewise, the feature allows you to take data from the assigned table within the study and export it to the above-mentioned file/database so that, at a later time, the field history values may be shown.

The History Tab is available as part of our Advanced Database package, and MPI maintains a sample study demonstrating the use of this feature, available on our website or from support@markovprocesses.com.

Summary Tab

The summary tab gives the user a quick glance at the overall design and content of their analysis and includes information on series, standard and advanced parameters, and the benchmark contained in a given study. This has several very useful applications and should be a helpful resource for all users.

Series

Label	Begins	Ends	Freq	Missing	DB	ID	Currency	
Fidelity Magellan	196306	201107	M	0	Mfi (Mstar US)	FOUSA00CGP	USD	M
Cash	197801	201106	M	0	DFI (US Fixed)	SB3MTB.IND	USD	O
Russell6					Map (StyleMaps)	RUSSELL6.SMP		m
Top Value	198601	201106	M	0	DEQ (US Equity)	rlgval.ind	USD	O
Top Growth	198601	201106	M	0	DEQ (US Equity)	rlggro.ind	USD	O
Mid Value	198601	201106	M	0	DEQ (US Equity)	rmidval.ind	USD	O
Mid Growth	198601	201106	M	0	DEQ (US Equity)	rmidgro.ind	USD	O
Sm Value	197901	201106	M	0	DEQ (US Equity)	r2value.ind	USD	O
Sm Growth	197901	201106	M	0	DEQ (US Equity)	r2growth.ind	USD	O
S&P 500 Index	197301	201106	M	0	DEQ (US Equity)	sp500.ind	USD	B
Currency	197001	201106	M	0	CUM (Currency monthly)	USD	USD	C

Parameters

Currency:	USD
Interval:	1/2/1986 - 6/30/2011
Window:	36 months / 306 computations, moved monthly
Frequency:	used common monthly frequency
Holdings:	long only

Advanced

Model:	CAPM
Win Position:	centered
Calculations:	first point, last point
Weights:	half life is 1.00 of window size

Benchmark

Assigned:	S&P 500 Index (DEQ sp500.ind)

Figure 22

Series controls

The Series section of the summary tab contains very useful information about each return series in the fund, including:

- Label – The name of the return series as it appears on your design tree
- Begins – The inception date/earliest return in each series
- Ends – The most recent return available for each series
- Freq – The data frequency (monthly, quarterly, etc.)
- Missing – The number of missing returns identified by Stylus. If this number is greater than zero, you may view the missing return dates by clicking on the manager's name in the design tree and pressing the Warnings button.
- DB – The database where the return series is located.
- ID – The unique ID for the return series file.
- Currency – The currency in which the series is calculated.
- Series type – This unlabeled column tells the user if a series is a manager (M), map (m), style outline (O) or benchmark (B.)

Parameters

This section tells the user the basic parameters for the analysis:

- Currency – What unit of currency is being used in the analysis (i.e., USD)?
- Interval – This is the time period specified in your date range, and will specify a range of dates regardless of whether the Interval, First or Last options are selected in the Parameters node.
- Window – This displays your window size, the number of calculations and the period at which the window moves (i.e., monthly). If "Use Single Computation" is checked, this area will only say "Single Computation."
- Frequency – This displays your selected frequency information – either the common frequency or the forced frequency setting from the Parameters node.
- Holdings – This tells the holdings assumption used in the study (i.e., Long only, shorting, etc.)

Advanced

This section displays settings from the Advanced Parameters pane.

- Model – The model type (CAPM, APT, etc.)
- Win Position – The window position being used (Centered, Trailing, Custom)
- Calculations – Whether or not Style in first point/last point are being employed
- Weights – The weights setting for the window

Benchmark

This displays the benchmark type (i.e., Assigned) and the benchmark itself.

Searching Options in MPI Stylus Pro

Using the Search box ('S' box)

Each column will also have a small box with an 's' in it, in the lower right-hand section of the column heading. Clicking this will open the "Search" box. You may also use F2 to open this once you have clicked in the pane itself, and F3 to repeat a previous search. You may also hit the ESC key at any time during a search to stop the search process.

Please note that the binocular icon may also be used to open a search box.

Text
This is where you will enter the text you are searching for. Be careful of entering too much information – each database may have its own abbreviations, and Stylus will only return a record that precisely matches what you enter. For example, typing in 'Dodge and Cox' will not return a result because it is listed as 'Dodge & Cox.'

Find in:
This allows you to select the column you wish to search. You may choose to search more than one column if you wish.

Select All/Select None
This allows you to quickly select all or no columns for your search.

Substring
This allows you to search within a larger text string. For example, to search for 'idel' in the larger string 'Fidelity.'

Forward/Backward
This determines whether or not the search begins at the start or end of the database, and in which direction it occurs. This may be used to save time in extremely large databases.

QuickFilters

QuickFilters are special, easy-to-use searching tools that allow you to quickly locate Managers, Style Indices, Assets, etc. without having to use the traditional search features in MPI Stylus Pro.

QuickFilters are controlled through white boxes found just below column headings in the following sections of the application:

Module	Node
Stylus	Managers
	Style Outline
	Peer Groups
Allocator	Assets
	Benchmark
	Portfolios
	Efficient Portfolios

Figure 23

You may type into these boxes strings of letters or numbers to help MPI Stylus Pro identify the possible matching record(s) of interest to you. Once these records are identified, the filter field will be highlighted in order to ensure you know there is a QuickFilter being applied. QuickFilters do not persist in the same way that Prospector filters do; they are instead temporary search tools, not permanent filters. Once you close a study, any QuickFilters in that study are lost.

Searching for text strings

In addition to simply typing in a word, phrase or number to find all records beginning with that sequence of characters, you may also use the ~ sign to search for strings. For example, if you were searching for a record such as:

<div align="center">Fidelity Contrafund</div>

You could use the following entry: **~fund** to find this. Just entering "fund" by itself would not work because it would look for strings beginning with the word "fund" as opposed to containing it anywhere.

Navigator Panel
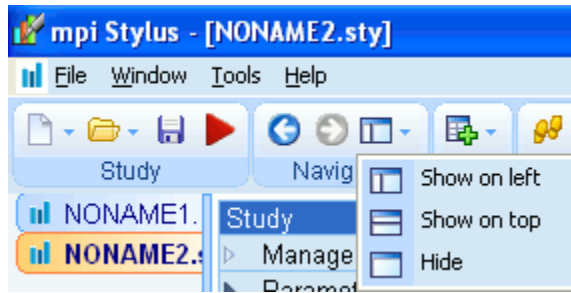
Figure 24

The Navigator Panel in MPI Stylus will automatically appear whenever you have more than one study open in the application at the same time – even if the studies are from different modules. This provides you with a convenient tool for easily moving between studies (and modules) in the application. You may click on any study name on the Navigator Panel to choose which study to make active on your screen.

Positioning the Navigator Panel
The Navigator Panel can be positioned on either the left side of the application frame, the top of the application frame, or hidden altogether. You can choose from these options in the Navigate section of the Main Stylus toolbar.

Moving Between Studies/Modules Without the Navigator Panel
If you do not wish to see the Navigator Panel but would like to move between studies and modules, you may use the Window option in your main program menu to switch between open studies in any module.

Data Panes in MPI Stylus Pro

The Design Tree may be the backbone of the application, but Data Panes represent the heart of a user's interaction with MPI Stylus. Almost all of the work you do in designing your analysis will involve some interaction with data panes.

This section will introduce you to the basic Data Pane concept, and allow you to quickly learn how to navigate all of the features of a basic Data Pane. The chapters in this manual that cover each specific module will contain additional Data Pane information, some of which will be repeated from what is discussed here.

Basic Appearances

The Data Pane always appears on the right-hand side of your screen in MPI Stylus. Depending on the module and node you are in, Data Panes can vary dramatically from one another. Views in Stylus are even done through Data Panes!

While most Data Pane interaction is customized to a particular module, there are some basic features common to numerous nodes and/or modules in MPI Stylus; therefore, they will be introduced here as a good standard for navigating Data Panes in the application. Users are encouraged to use both this section, and specific modular chapters, as references.

Data Selection Data Pane

One of the most common screens with which a user is asked to interact with a node in Stylus consists of the list of items to choose from, and the toolbar with the following buttons: Clear All, View, Edit, New, Refresh, Delete, and Move. This screen can be found in multiple applications on varying nodes. For more complete information, see the appropriate node in Design Tree descriptions.

The data selection data pane screen is very important in MPI Stylus, because it serves two vital functions:

1. It allows for series selection of funds, portfolios, indices, sets, peer groups, managers, sources, etc.
2. It is the only place in Stylus where users may create new return series, portfolios and style maps. Peer groups may also be created here, but Prospector is the preferred method for doing this.

The data selection data pane screen consists of three distinct parts; though the picture below gives a sample for managers, the same elements are true for the other nodes, such as peer groups, in which this screen type appears. The three common elements are:

1. The toolbar buttons
2. Database field
3. Source fields populated with relevant data information

Each button is summarized in the table below, and then discussed in greater detail on the following pages. For more node- or module-specific information, please see the chapter or section dealing with the appropriate node or module.

Button	Function

Clear All	Deselects all checked options and removes them from the Design Tree.
View	Allows you to view relevant details about a series.
Edit	Allows you to edit series information.
New	Allows you to create a new return series, fund, style map or peer group.
Refresh	Refreshes the data in the data pane.
Delete	Allows you to delete a series.
Move	Allows you to move a series to another database.

Clear All

This button will deselect/uncheck all selections currently selected in your database, *and* remove them from the Design Tree as well. Please note that this function removes both checked and unchecked elements from the Design Tree, as opposed to unchecking them, and therefore the appropriate node in the Design Tree will need to be repopulated entirely if the Clear All button is pushed.

View

The View button is only enabled when a specific element is highlighted in the selection list – for example, a specific Manager has been selected. When the View button is pressed, the "Series View" box opens, and the following information about a manager may be viewed:

Field	Function
Label	This is the basic name of the fund, and the name that appears on Views, Reports and the Design Tree. This label remains correctly populated in the Series View even when a fund is renamed on the Design Tree.
Database	This field shows the source database from which a fund's return series are being pulled.
ID	This field shows the unique ID name/number assigned to a given fund by its source provider.
Close button	This button may be used for closing the Series View tool when you have finished examining the data.
Description	This field may be identical to the Label field, or may contain a longer or alternative name, a brief description of fund makeup, etc. This content is determined by the data provider in most cases.
Memo	This field displays the memo content, if any, entered for a given fund at the time it was configured in MPI Stylus. This is an optional field that will seldom be populated.
Date Controls	There are four elements to the date controls in MPI Stylus, all pictured above: a. YYYYMM – This control is for reconfiguring the numerical date display for a fund, and will not be editable in the Series View box through this function. The default display is four digits for the year, and then two for the month. b. 1% - This element displays whether returns are presented as percentages or fractions. c. Date/Return – This field displays the corresponding return for each period (i.e., a given month and its return.) The earliest date/date of inception is always first, with the most recent date always last. You may have to scroll to see the most recent returns. d. Warnings – This button is only activated when MPI Stylus encounters a problem with the return series, such as duplicate returns, incorrect period end dates, etc. Clicking this button opens a window revealing the nature of the problem. In general, this is an issue only with data brought in from client sources.

Fund Detail Controls	These four controls relate to specific qualities of the fund data:
	  a. Frequency – The period upon which returns are based (i.e. monthly, quarterly).
	  b. Type – This is the actual type of database being brought into MPI Stylus.
	  c. Currency – The currency in which fund data is presented.
	  d. Series Type -The type of series: Return, Level or Change

Since Inception	Controls related to the Since Inception status of the fund. The options are:
	  a. Start date
	  b. End date
	  c. Fractional return
	  d. Total return

Figure 25

More specific information on relevant View Screens for each node may be found in the actual node descriptions.

Edit

The Edit button is made active when you click on any specific manager, style map, peer universe, etc. in the Data Pane. For a peer universe, the Edit function will immediately launch the relevant Prospector study for editing. In the case of a manager, the Edit function opens a window very similar to that of the "View" button above, with the following differences:

1. Every field with the exception of "Frequency" is opened for editing, though in many cases it will make no sense or have no effect to change them (for example, database, data type, etc.) This is a more useful field for editing label, description, memo, dates and returns.
2. Three new buttons are added below the "Warnings" button. They are:
    a. Add – This allows you to add specific dates and accompanying returns. When you click on it, a calendar browse tool will open on your computer. You may scroll through it to find the exact date for which you wish to enter a return. The << and >> arrows scroll by the month, and the < and > arrows scroll by the day.
    b. Delete – This allows you to delete any date and return line in the return series. Simply click on the appropriate line and press the "delete" button. Note that MPI Stylus will not confirm the deletion with you – please only press the Delete button if you are confident you wish to delete a date/return line.
    c. Paste – This feature allows you to paste in a date/return series from your computer's clipboard, instead of typing returns in manually. MPI Stylus should be able to correctly interpret most recognized date formats used in programs like Microsoft Excel; however, please always check your dates and return stream after pasting them in.

New

The New Button is useful for creating a new Series, Portfolio, Style Map or Peer Group. Each will be examined below in turn; for extensive information in efficiently creating peer groups, please see the MPI Prospector section of this manual.

In the case of new series, portfolios and peer groups, MPI Stylus offers additional ways of bringing this information into the application. To minimize time spent creating or importing data in the application, it is a good idea to familiarize yourself with all the options available to you.

Series

Series are defined as one of three types; **Return**, **Level** or **Change**. This refers to their treatment for analysis and aggregation. Return is the % change in value from one period to the next, and is the type of the vast majority of series in Stylus. Level is a time series of values before any transformation, such as index levels or interest rates. Change refers to the first difference of a series of values, or the absolute change from one period to the next, expressed as (t_n-t_{n-1}).

The New Series option is useful for manually creating a single portfolio/return stream in MPI Stylus. When you select the New->Series function, the "New Series" box will open and you will be asked to input three preliminary types of data:

1. Format – There are three basic formats for importing data as a new series:
    a. MPI ASCII – This is default option and is recommended in most cases. ASCII stands for "American Standard Code for Information Interchange," and is a widely accepted method of codes used to present text.
    b. MPI Link – This allows you to link to an Excel spreadsheet. Although this tool is still usable, this format has been rendered obsolete by the Excel Database capability in MPI Configurator. MPI Link remains in the application for the purposes of backward compatibility.
    c. MPI SMART Link – This format provides much quicker access to data than MPI Link because, in addition to containing information from the MPI Link file, it also contains the return data. The data is extracted from the spreadsheet and updated only when the spreadsheet changes. Although this tool is still usable, this format has been rendered obsolete by the Excel Database capability in MPI Configurator. MPI Link remains in the application for the purposes of backward compatibility.
2. Frequency – This field allows you to specify the frequency with which returns will be available. The choices are daily, weekly, monthly, quarterly and annually.
3. From…To – This timeline allows you to use sliders to designate the start and end dates for your return stream. Each viable date for the period you select will be made available – in other words, if you select a monthly frequency, the last day of each month will be available for selection, whereas for a quarterly frequency it would be the last day of each quarter-ending month. The sliders will allow you to enter a date through the end of the current month.

When you have finished with the above options, you may press "OK" to begin your return series, or press the "Cancel" button to discard it.

Series Edit Functions

Now we will take a moment to look at the Series Edit box. Edit boxes in Stylus can be very similar, but each is designed to offer the appropriate options for the particular task you wish to achieve.

Field	Function
Label	The label should be the fund, portfolio or index's short, commonly accepted name, such as "S&P 500," "Fidelity Contrafund," etc. This field determines what the series will be called by default in your studies.
Database	The default database for new portfolios is your SampleMng database; however, you may save a new portfolio in any editable database linked to MPI Stylus. Make sure to note in which database a new series is stored so that you may find it later.

ID	3rd party databases assign their funds unique ID numbers. For a new return series, you may assign any ID # you like, as long as it is unique. Please note that MPI Stylus imposes a 14-character functional limit on ID's.
Description	This field is commonly used for longer fund names, information on a portfolio, etc.
Memo	Optional field is used for any internal notes.
YYYYMMDD	This field allows for you to specify in which format your date ranges appear. Each unit (i.e., Y, M) stands for both the presence of a digit, and its value – in other words, YYYY shows the four digits for a year, and DD shows two digits for a day (06, 15, etc.)
Secondary date field	The options in this field are either 1% or FRAC. This field regulates whether returns will be shown in percentages or fractions. The default setting is 1% for percentages.
Frequency	The frequency field cannot be edited in this Series Edit box. Frequency should be specified whenever a return series is created in MPI Stylus Pro; frequencies for 3rd party vendor databases may not be adjusted.
Type	This feature informs you of the type of database being used for your returns data and should never be changed.
Currency	This allows you to select the currency in which the fund's returns are expressed.
Country	This option allows you to select the relevant country for the fund.
Series Type	This allows you to define the type of series: Return, Level or Change
Warnings	Click on this button to examine any problems MPI Stylus has with your data.
Add	Use this feature to add new dates.
Delete	Use this feature to delete a date/return line.
Paste	This allows you to paste in a larger number of dates and returns, such as a complete return series from a text file or spreadsheet.
Copy	This allows you to copy one or more returns from the Series Edit tool for Managers, Benchmarks and the Style Outline. To copy all returns, do not click in the Date/Return section when you open the Series Edit tool; simply select the Copy button instead.

Figure 26

Portfolio
Note: This feature was known as the "Fund Editor" in previous versions of MPI Stylus.

The ability to create a new portfolio in MPI Stylus has several possible applications. Unlike the New Series tool, where dates and returns are entered, creating a new portfolio is a matter of understanding the assets you would like in your portfolio, expressed in terms of percentage allocations or dollar amounts.

This process also makes it easy to create several fund-like investment tools, including:

- Client portfolios for analysis
- Hypothetical or suggested portfolios for comparison to client models
- Blended benchmarks
- Specialty "funds" that combine different share classes of the same fund

Portfolio Editor

The Portfolio Editor gives you a significant level of control in setting up portfolios, fund of funds, blended benchmarks, etc. You may set these up as a "Simple" or "Advanced" portfolio, with each option explained below.

IMPORTANT NOTE ON PORTFOLIO DATABASE LINKING

For users who wish to maintain a large number of portfolios in MPI Stylus Pro, we highly recommend Portfolio Database Linking as a component of your work process. This allows you to make allocation updates/changes and add or remove portfolios in a database environment, as opposed to manually in MPI Stylus Pro. This may be done in two ways:

- Excel – All users may link Portfolios via Excel spreadsheet through Configurator. For more information, please see the Configurator chapter.
- Other Databases – Using the Advanced Database package, users may link a database of portfolios into MPI Stylus Pro from typical database applications such as Access or SQL. For more information, please contact MPI Support.

Simple Portfolio

A Simple Portfolio implies the default buy and hold strategy, but also has an option to select automatic rebalancing for the data frequency. This type of portfolio does not have multiple dates assigned to it and defaults to the common period for all selected time series.

Advanced Portfolio

The Advanced Portfolio allows for a rebalancing scheme selection and multiple date entries.

Fields in both the Simple and Advanced Portfolios

Field	Function
Label	The label should be the portfolio, fund or blended index's short, commonly accepted name, such as "S&P 500," "Fidelity Contrafund," etc. This field determines what the series will be called by default in your studies.
Database	The default database for new portfolios is usually your SampleMng database; however, you may save a new portfolio in any editable database linked to MPI Stylus. Make sure to note in which database a new series is stored so that you may find it later.
ID	3rd party databases assign their funds unique ID numbers. For a new return series, you may assign any ID # you like, as long as it is unique. Please note that MPI Stylus imposes a 14-character functional limit on ID's.
Description	This field is commonly used for longer fund names, information on a fund, etc.
Memo	Optional field is used for any internal notes.

Figure 27
Editor Tab

The Editor Tab is used to select, apply weights to and (where applicable) rebalance assets. It will have additional features when the Advanced Portfolio option is selected; these are indicated below. Otherwise, all features are found in both options.

Control	Function
Select Assets	Allows you to browse through your databases locating return series to be used as assets in your portfolio. This was formerly called "Edit Assets."
Equal Weight	Imposes an equally balanced weighting scheme on your portfolio's assets. For example, four assets in a portfolio would result in a weight of 25% being given to each.
Sort	The Sort option allows you to sort all of the assets currently included in your portfolio in ascending or descending order by database, ID, label, ticker, begin date, end date or weight size.

Groups	Allows you to manage settings related to Manager Groups.
Copy	The Copy function allows you to easily select assets within a portfolio and then paste them into your design tree or another location.
Paste	The Paste function allows you to paste into your portfolio as assets any series currently stored on your computer clipboard.
Rebalance checkbox	The Rebalance checkbox only appears in the Simple Portfolio option and allows you to toggle between having no rebalancing scheme and using whatever the default would be based on data frequency. For example, all monthly assets would lead to monthly rebalancing. When this is the case, you will also see the period being used in this rebalancing listed below the checkbox.
Label	The label field allows you to manually enter the label for underlying series in a portfolio.

Figure 28

Advanced Portfolio Controls in the Editor Tab

Control	Function
Rebalancing dropdown menu	Allows you to choose a rebalancing scheme of daily, weekly, monthly, quarterly, annually or no rebalancing.
Extend begin date	Limits the portfolio date range at the beginning to common dates
Extend end date	Limits the portfolio date range at the end to common dates
Add Date	Allows you to add dates to your portfolio in order to insert specific cases of rebalancing or asset allocation.
Duplicate Date	This control adds the same date as the currently selected date, only one period later. For example, if you selected 4/30/2006 and used this feature, it would add 5/30/2006.
Delete Date	Allows you to delete the currently selected date.

Figure 29

Adding Extra Columns
Users who wish to add cosmetic 'extra columns' in the Portfolio Editor for their own convenience may do so. Note that these extra columns will not appear in, or be available as, columns in output. They are purely for the user's internal purposes.

There are two ways to add these columns:

- *Locally* – Specific to a single portfolio and defined by using the 'Extra Columns' button to the right of the Asset list table.
- *Globally* – Will be available in all Portfolios, and are defined via Configurator-> User Interface.

In both cases, there are two features to note:

- *Label* – Used to denote the extra column name

Values – Retrieved from the asset database header. If the header has no field, then the value will be blank.

Right-click Menu for Advanced Portfolio Dates

For Advanced Portfolios only, a right-click menu has been added to allow you to work with date columns in several ways.

Control	Options	Function
Set date to	Common period start	The first date common to all assets will be used.

	Common period end	The last date common to all assets will be used.
	Total period start	The first date available for any asset will be used.
	Total period end	The last date available for any asset will be used.
Add new date	-	Allows you to add dates to your portfolio in order to insert specific cases of rebalancing or asset allocation.
Duplicate date	-	This control adds the same date as the currently selected date, only one period later. For example, if you selected 4/30/2006 and used this feature, it would add 5/30/2006.
Delete date	-	Allows you to delete the currently selected date.
Equal Weights	-	Inserts equal weights for the date in question.

Figure 30

Returns Tab

The Returns tab allows you to examine the returns for all assets currently selected in your portfolio and may be used for Simple and Advanced Portfolios.

To Create a New Portfolio
1. Click on the Managers node of your Design Tree, and then click on the "New" button in the data pane. Choose "Portfolio." The Portfolio Edit box (see picture) will open.
2. Choose a label for your new portfolio. This will be the portfolio name as you would like it to appear in charts & tables.
3. Choose the database for the portfolio to be stored in. The default database is Funds (My Funds), and is recommended for all portfolios you create through this method.
4. Assign an ID number to your portfolio. This should be a unique name or number code, and has a 14-character limit. This name will have a .fnd extension attached by the program, and thus will be the actual file name of the portfolio.
5. Enter a description of the portfolio. Examples might include, "Test portfolio for Client A," "Blended benchmark – 40% S&P500, 60% Wilshire," etc.
6. You have the option of entering a memo here for internal purposes. This is a good place to include any extra notes you find relevant.
7. Set your rebalancing here. You may rebalance on any of the following periods: Daily, Weekly, Monthly, Quarterly, Annually, or no rebalancing.
8.
9. You are now ready to add dates and assets to your portfolio. These can be added in any order.
10. To add assets, click on the "Edit Assets" button. A browse tool will open that will allow you to move between databases, selecting series as you see fit. Note that field heading sort and search features may be used here. When you have selected all the assets for your new fund or portfolio, click the green checkmark. The assets will now appear listed in your Portfolio Edit box.
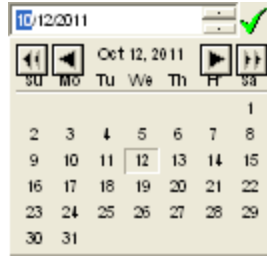
11. Now that you have selected your assets, you will want to add each date where a change occurred in the portfolio. To add a date, click the "Add Date" button. A calendar browse tool will appear. You may use the single arrows to browse by month, and the double arrows to browse by year. Once you have found the appropriate date, simply click on it to bring it into the Dates field of the Portfolio Edit box.

12. The date you selected will now appear as a field. For each series, there will be a 0.00000 designation for the date in question. Simply enter the percentage for each series' allocation in your overall portfolio at that date. The percentage must add up to 100. In certain cases, it is possible that rounding issues will cause percentages to add up to 99.9999, 100.00002, etc. MPI Stylus should operate normally in spite of this slight rounding digression. Enter a date for each change you must make in portfolio allocation.

13. You may delete a date at any time by clicking in the column/row that pertains to the date and using the "Delete Date" button.

14. If you want to assign each element of the portfolio the exact same weight for a period, you may use the "Equal Weights" button instead of manually typing in the weights. Please note that rounding situations may occur (for example, three funds equally weighted will result in a Total of 99.999996.

15. Save the portfolio by pressing the "Save" button. You are now ready to work with the new portfolio in MPI Stylus.

16. You may press the "Cancel" button at any time in this process to cancel your portfolio build.

Adjust Series

In addition to bringing in return series manually or through databases, users have the ability to make specific adjustment types to series. These are accessed through the 'Adjust Series' check box, found on the series preview Data Pane when you click a series in the Design Tree.To create the adjustments, the 'Add' button must also be selected.

Figure 31

Adjusted Series Display

When a series is adjusted, the original and adjusted returns will both be visible. Only the adjusted returns for a series will be used for analytics. To use unadjusted returns as well, you would bring in a second version of the series and keep the default returns for that second series in place.

Identifying an Adjusted Series
When a series is adjusted, the series' name will become italicized in the Design Tree for easy identification.

Using Adjusted and Unadjusted Returns for a Series

In order to allow use of both an original and adjusted series in the same study, users may bring the same series into the Design Tree multiple times by holding down the 'Ctrl' button and dragging the series in question to the Design Tree.

The available adjustment types are:

Series Shift
This function moves a series' returns forwards or backwards in time by the number of periods specified in the control. For example, to use lagged returns as an explanatory variable, you would choose the index in the Style Outline and select Lag periods 1 for a single period, 2 for two periods, etc.

Operation with Series
This option allows basic operations to be applied to the original series. The first control allows you to select the operation (multiplication, addition, etc.) and the second control defines the value. Specifically, the second control allows you to:

- Manually enter a value (i.e., 12). An example use of this could be to multiply by a value to simulate leverage.
- Select another series in the study from the pull-down menu. An example use could be to add or subtract two return series from one another.
- Enter a macro (i.e., @DBF{@MNG{0,DBID}, @MNG{0,FILEID}, Expense Ratio}). This example would help you bring in a Manager's Expense Ratio to then subtract from the return stream.

Convert to Change
This option will convert either a Level or Return series to a first difference, or $(t_n - t_{n-1})$. If the original series' type is Level, the conversion is done directly. If the original series' type is Return, 'Price' and 'Date' must be entered.

Convert to Level
This option creates an Index Value for a series given a specified base date. The first control, "Price," sets the initial index level. The second control is the date of the initial level. There are three options for data entry: manual input, selecting from a calendar control or entering as a macro. Please note that the values entered are for the end of period; for example, a level of 1,000 entered for Dec. 15, 2003 will be treated as 1,000 as of December 31, 2003 for monthly data.)

Convert to Return
This option will treat the original series as levels (for example, NAV or Index Values) and convert them to a return series, taking: $(t_n - t_{n-1})/t_{n-1A}\backslash$

Convert to Currency

This option will convert *and maintain* a series' currency. For example, assume you have an original series in USD and convert it by dividing the Manager's return in USD by the return in JPY $(1+r_{MngUSD})/(1+r_{JPY})-1$. In the study, the converted series will remain in JPY rather than be converted back to the Study's currency as defined in Advanced Parameters. This provides the opportunity to show local currency returns. If the original series is in a currency other than USD, using 'Convert to Currency' and selecting the same currency (i.e., for a series in JPY, set the converted currency to JPY as well) will maintain the series' original currency.

Truncate

This option will limit a return series to a specified date range, eliminating values before the 'From' date and after the 'To' date. There are three options for the date entry: it can be entered manually, selected from a calendar control or entered as a macro.

User Macro

This option permits the entry of a macro in order to perform an operation that hasn't been pre-defined in the drop-down list.

Adjust Portfolio

Similarly to the 'Adjust Series' option, the 'Adjust Portfolio' feature allows you to make changes to Portfolio returns before using them in charts and tables. Once the feature has been clicked, the dropdown tool is enabled and you may select the type of change you wish to make.

Convert to Currency

Enables the user to convert the portfolio information into another currency.

Operation with Series/Portfolio

This option allows basic operations to be applied to the original portfolio. The first control allows you to select the operation (multiplication, addition, etc.) and the second control defines the value. Specifically, the second control allows you to:

- Manually enter a value (i.e., 12). An example use of this could be to multiply by a value to simulate leverage.
- Select another series in the study from the pull-down menu. An example use could be to add or subtract two return series from one another.
- Enter a macro (i.e., @DBF{@MNG{0,DBID}, @MNG{0,FILEID}, Expense Ratio}). This example would help you bring in a Manager's Expense Ratio to then subtract from the return stream.

New Map

The New Map button allows you to create custom Style Maps. MPI Stylus comes with a large range of Style Maps meant to cater to different asset classes and investment interests. Before creating a new map, we recommend that you first check the list of style maps provided by MPI in order to make sure there is no current map that fits your needs.

Figure 32

Many of the fields in this map you may recognize from other menus and edit boxes in MPI Stylus Pro. The new fields to learn about are:

1. Title – You may enter the title for your Style Map in this field. You may change this later by using the Attributes Editor for the chart.
2. X Axis – You may enter the appropriate legend (i.e., Value-Growth) for the X-axis in this field. You may change this later by using the Attributes Editor for the chart.
3. Y Axis - You may enter the appropriate legend (i.e., Large-Small) for the Y-axis in this field. You may change this later by using the Attributes Editor for the chart.
4. Label/Db/Name – This field will display the underlying indices of your Style Map once they have been selected. The Edit and Delete buttons will be used to add or remove these indices (please see "Creating a New Style Map" below.
5. Visual Style Map grid – The visual Style Map grid displays the actual appearance of your Style Map, and allows you to specify clearly where you would like your indices to be located. The double-grid exists to allow for rounding issues in Style Maps. Theoretically, no point in a Style Map would be further from the center in the same direaction as a given index; however, rounding issues can cause points to exist outside the boundaries created by the indices. Therefore, it is suggested that you locate all Style Map index points within the boundaries of the gray four-square grid.

Creating a New Style Map

To create a new Style Map:

1. Click on the "Style Outline" node of your Design Tree and select New->Map in the data pane. (Note: This function may also be reached through numerous other modes.) The Map Edit box will appear.
2. Insert a label for your Style Map. This is the name the map will be given in the database, on the Design Tree, and as the name that will appear in the Style Map chart block when you are selecting a relevant Style Map for chart creation.
3. Choose in which database your map will be stored. The default database of "StyleMaps" is highly recommended.
4. Enter an ID for your Style Map. This needs to be a unique name or number of no more than fourteen characters.
5. In the Description field, enter a brief description of the new map's purposes or coverage. For example, "U.S. Corporate Bond/Mortgage/Cash Style Map."
6. The memo field is optional and should only be used to store internal information about the Style Map, such as the reason for its creation, the clients for which it ought be applied, etc.
7. Assign a title for the Style Map, and for the X- and Y-axis. These may be changed later.
8. Click the "Edit" button to open the browse tool. You may now move between databases and select any index you would like represented in your Style Map. Check each index you wish to include. When you are done, press the green checkmark to return to the Map Edit box.
9. If you wish to delete an index at any time, click on the index in the "Label/Db/Name" field and then press the "Delete" button.
10. All of the indices you have selected will now appear on top of one another in the center of your Style Map. Using your mouse, click the black square that represents the topmost index, and drag it to the appropriate area of the Style Map. The square representing the index you are currently clicked on will turn red. Please note that we do not recommend having more than six indices in one Style Map.
11. Beneath each square will be a plot point in parentheses that tells you the current location of the dot on the Style Map. You may use these to ensure that the points are evenly spaced or otherwise in the correct position.
12. When you are finished, click the "Save" button to save your new map, or click "Cancel" to discard the map at any time.
13. You may now go to the "Style Outline" node on your Design Tree and use the ellipse button to browse to the appropriate database and find your Style Map. Once you select it, you may click on its name on the Design Tree to examine its setup, or click on the name of any of the underlying indices to see their specifics and returns.

Refresh

The Refresh button is useful when you are working with external databases in MPI Stylus. Pressing the Refresh button updates all of the information in your data pane/design tree.

Delete

The Delete button allows you to delete managers, style maps, peer groups, indices, etc. Deleted items are permanently erased – they do **not** go to your computer's Recycle Bin.

To delete something from a data pane:

1. Select the item you wish to delete with your mouse. It will be highlighted.
2. Press the "Delete" button.
3. You will be asked if you are sure you would like to delete the file in question. Click "Yes" to delete or "No" to cancel.

Move

The Move function allows you to move a file (for example, a manager) from any editable database to any other editable database (note that many 3rd party databases are not editable). To move a portfolio, style map, etc., from one database to another:

1. In the data pane, open the database that currently contains the item you wish to move.
2. Locate the item and select it with your mouse. The "Move" button will become enabled.
3. Click the "Move" button and browse to the database to which you would like the selected file moved.
4. If the move cannot be made, you will receive a pop-up window informing you it was unable to move the item between databases.
5. If the move can be made, you will receive a request for confirmation for moving the file from one database to the next. Carefully check that you are using the correct file and databases, and then press "Yes."
6. You may press the red "X" or answer "No" to the move pop-up to cancel the moving process.

Output Tabs in MPI Stylus Pro

Output tabs in MPI Stylus may be found along the bottom of your screen in any of the modules, and are used to allow the user to see the relevant output for a given study. The only output tab present in every study in all modules is the Designer Tab, which contains the Design Tree for the study/module.

Output Tabs in Reporting Modules – Stylus, Integrator, Allocator
The output tabs in the three reporting modules in MPI Stylus (Stylus, Integrator and Allocator) will always be correlated to the views and reports listed on the design tree in the study. If a view or report is not checked on the study, then its corresponding tab will not appear.

Output Tabs in Prospector
MPI Prospector is not a reporting module and has no Views or Reports nodes; therefore, its output tabs will be focused on helping the user fulfill Prospector's main functions – peer group editing and manager searches.

Output tab
Every Prospector study will have two tabs automatically – the Designer tab, where the design tree is kept, and the Output tab. In a new Prospector study, the Output tab will automatically contain a "Table1" that is controlled under Output-> View in the design tree. The contents of this table will be expandable depending on the source brought into the study, and any analytics the user chooses to create.

Source Tab (i.e., Morningstar, Lipper, etc.)
An additional tab will be added for each source brought into the study through the Source node. A source tab will bear the "Dbname" of its corresponding source; for example, a Morningstar source would result in an "Mstar" tab, a HFR Hedge Fund database source would result in "HFR," etc.

Working with Output Tabs

Output tabs are an important part of MPI Stylus, and are very simple to work with.

Creating an Output Tab
The only Output tab that cannot be created or destroyed is the Designer tab, which will be present in all studies. Otherwise, the Output tab that you create will always be a function of the work you are doing in a given module – Output tabs do not exist for their own purposes, but are rather tied to a given task. Therefore, please consult the table below for the sections of each module that affect output tabs. You may then consult that section of this manual.

Module	Output Tab	Created By?
All	Designer	--
Stylus	View Tab	Making a new View
	Report Tab	Making a new Report
Prospector	Source Tab	Selecting a source in the Source Node
	Output Tab	Always present
Integrator	View Tab	Making a new View
	Report Tab	Making a new Report
Allocator	View Tab	Making a new View
	Report Tab	Making a new Report

Figure 33

Renaming an Output tab

View or Report output tabs may be renamed by renaming their corresponding view or report on the design tree or in the data pane. Likewise, the Source tab in Prospector will always bear the name of the source as listed in the design tree; therefore, a change to the name in the design tree will also change the tab. The Designer tab in all modules, and the Output tab in Prospector, may not be renamed.

Hiding/Unhiding an Output tab

View and Report output tabs may be hidden (without deleting their content) by deselecting their corresponding view or report on the design tree. This allows you to control how many tabs are displayed at the bottom of your screen and makes for a more efficient workspace. The Designer tab in all modules, and output tabs in Prospector, may never be hidden.

To hide/unhide an output tab:

1. On the design tree in the Views or Reports nodes, locate the View or Report output tab you wish to hide.
2. Click on the check box next to the output tab. The box will become unchecked and the tab will disappear from the bottom of your screen. The tab information will still be stored on your design tree.
3. If you wish to see the tab again, simply recheck the box next to the View or Report on the design tree. The tab will reappear.

Scrolling through Multiple Output tabs

When more output tabs have been created than may fit along the bottom of the screen, MPI Stylus will automatically enable a scrolling control that will allow the user to access tabs that may not be visible on your screen due to the high number of tabs. The user may avoid this by hiding/unhiding tabs (see previous section) in order to only see tabs he or she is currently using.

To scroll through output tabs:

1. The output tab control arrows will only appear when there are too many output tabs on the bottom of your screen to be shown.
2. To scroll through the tabs when these controls are visible, click one of the two arrows pointing in the direction you wish to move. The simple arrow (the inside pair) will move you one tab to the right or left; the arrows pointing to lines (the outside pair) will move you to the last tab on either the right or the left.

3. Please note that the design tree is located on the Designer tab; therefore, even if you click through numerous tabs (more than may be displayed on screen), the Designer tab will remain visible for ease of use.

Chapter 4

MPI Stylus

Overview

MPI Stylus is the module that allows users to create their own research and reporting solutions and applications. Users can generate comprehensive performance-based statistics and publish professional-quality reports in multiple formats.

Chapter 4

MPI Stylus

Introduction to MPI Stylus

The MPI Stylus module is the most widely used element of the MPI Stylus Pro application, and represents much of the true power behind MPI's powerful research and reporting solutions.

MPI Stylus allows you to perform and report on analysis by:

- Identifying and monitoring portfolio styles over periods of time
- Understanding the factors responsible for a fund's performance
- Comparing fund or portfolio performance to benchmarks, peer groups, style indices and to 3rd party or user-provided return streams
- Leveraging a comprehensive set of performance-based statistics

Getting Started in MPI Stylus

All modules in MPI Stylus Pro can essentially be divided into four parts:

1. Main Menu. This appears across the top of your screen and is used to open, run and save studies.
2. Design Tree. The Design Tree is found on the left side of your study and is used to navigate through the various major elements of your research and reporting.
3. Data Pane. The Data Pane is found on the right side of your study and is used to interact with the application.
4. Output tabs. These are found along the bottom of your study and are used to view output.

For more information about these elements, please see Chapter 3.

Working with Stylus Studies

MPI Stylus studies may be created, edited, and deleted like all other files in the application. For more information, please see Chapter 3.

Stylus Design Tree

The MPI Stylus design tree is the backbone of the Stylus module and provides an easy and consistent method for users to quickly create or edit their analysis.
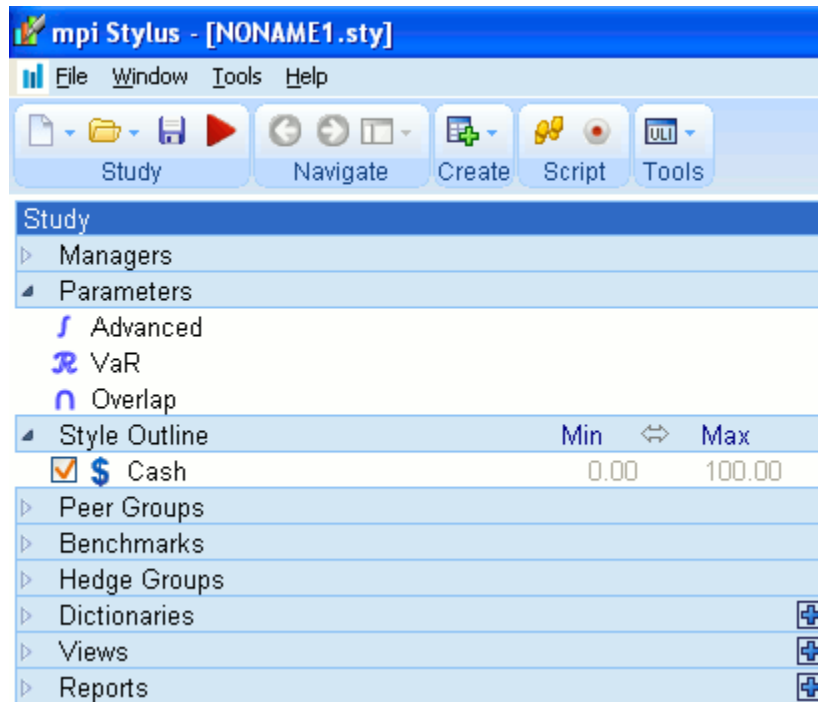
Figure 34

Design trees in MPI Stylus Pro are always made up of nodes. Nodes represent specific concepts or types of information that are important for your analysis. The nodes in MPI Stylus are:

Node Symbol	Description	Function
Input Nodes		
	Managers	Regulates the funds/portfolios examined in the study.
	Parameters	This node contains a variety of date, analytical and other background information that controls the way the analytical engine for the module works.
	Style Outline	Regulates Style Outline/Style Map information.
	Peer Groups	This is where you will add peer groups for comparing managers to broader families of funds.
	Benchmark	This is where you will add one or more benchmarks to your study.
	Hedge Groups	This rarely used node is specifically for entering assets that are being hedged against.
	Dictionaries	This node is used for controlling Dictionaries in the application.
Output Nodes		
	Views	Your personal library of charts, tables and memos.
	Reports	Your publishable output.

Figure 35

In addition, there is also the Study node at the top of the design tree. This section governs a variety of study-wide settings, including automation, color and symbol conformity settings, etc. For more information, please see Chapter 3.

When designing your analysis, you will move down the list of design tree nodes to input the information necessary and then to create, view and organize output.

Input Nodes

The input nodes of your design tree will regulate the information you wish to add to your analysis, including funds/portfolios, benchmarks, peer groups, style maps, etc. Although you do not need to populate all nodes in order to run analysis, Stylus will be unable to run any analysis without a certain amount of information available (such as return series) to populate output.

Managers Node

The Managers node of the design tree is typically the first node you will visit when constructing a new analysis or editing a study/template. This node controls or allows you to view:

- Funds or portfolios included in your study
- The source database(s) from which funds will be selected (i.e., Morningstar)
- Examination and editing (where allowable) of fund return series
- All basic information about a particular fund (inception date, currency, frequency, etc.)

In addition, the Managers node can be used to examine all the fields being imported from a given source.

Selecting a Manager

To select a new manager in Stylus:

1. Click on the Managers node of the design tree. In the data pane, you will see the list of available funds/portfolios in your database.
2. To switch databases, click the (…) button at the end of the database line. You can then browse to the appropriate database.
3. To select a manager, you may click the check box to the left of the manager, double-click the manager's name in the data pane, or drag the manager's name to the Managers node with your mouse. It will then appear on the design tree.

Finding Managers

Using the Search box ('S' box)
The Search box is a convenient way to quickly find managers, benchmarks, etc., allowing you to search one or more columns simultaneously for text strings or numbers. For more information, please see "Searching Options in MPI Stylus Pro" in Chapter 3.

Using QuickFilters
You may use QuickFilters to help you quickly identify the Manager(s) you require. For more information, please see "Using QuickFilters" in Chapter 3.

Viewing Manager Information and Return Streams

By clicking on a manager's name on the design tree, you may view the following information:

- Fund name
- The database where the fund's return stream is located
- Unique ID number
- Basic memo information
- Series adjustments if they've been applied
- Date format
- Return units (percent or fraction)
- Frequency of returns (i.e., monthly, quarterly)
- Database type
- Series Type
- Currency
- Country of origin/currency
- Return stream
- Warnings (if any) about the returns data
- Since Inception information, including:
    - Start date
    - End date
    - Fractional return
    - Total return

List Selection

Starting with version 11.3 Stylus provides an additional tab for selecting managers. In addition to **Database Selection**, there is now the **List Selection** tab. This allows user to select a manager from the fund list previously set up by the user. See Stylus Workspace section of the manual.

Editing Manager Information

In some cases, it may be possible to edit manager information through the Managers node. This will not be possible for 3rd party databases of other data streams downloaded through MPI; it is rather meant for new funds/series created by the user within MPI Stylus Pro.

To edit a manager:

1. Click on the manager's name in the design tree to bring up the manager information in the data pane.
2. Click the "Edit" button (if it is not activated then the funds may not be edited.)
3. The Series Edit or Portfolio Edit menu will open. For more information on this item, please see Chapter 3.

Manager Groups – Organizing Managers

Users may add 'groups' to the Design Tree in order to allow for more structure and organization, especially for larger lists of Managers. These Manager Groups can then be to quickly check/uncheck all Managers in a group, and can serve other useful purposes as well.

Creating a new Manager Group

1. On the Design Tree node, right-click on the Managers node and select 'Add Group'. A new Group will appear, with the name syntax 'Group#', where # is the lowest available integer not used by

another Group. For example, if you have created five groups and renamed them all, a new Group would be called Group1.

2. You may now add, delete and reposition Managers within this Group as you would in the Design Tree.

Checking/Unchecking Managers/Manager Groups

3. You can individually check/uncheck specific Managers within the Group, or you can check/uncheck the entire Group, which would affect all underlying Managers. Please note that Stylus will 'remember' your selections; in other words, if a Group has four Managers and then you individually uncheck two, and then uncheck/recheck the entire Group, those two Managers will remain unchecked.

a. In addition to checking/unchecking the Group, you can also right-click on the Group and select 'Enable all' or 'Disable all'. While 'Disable all' works the same as unchecking the group, 'Enable all' does not. When this option is selected, all Group funds are checked, even if they were not formerly checked under the Group.

Locking Groups

4. Users may select to 'Lock' a Group, which would mean that it cannot be disabled/unchecked as a Group, nor can any underlying series in it be disabled/unchecked. This is helpful in preventing accidental deletion.

5. Please note that when a Group has been locked, adding additional Managers to the Group will not lock those Managers within the Group. They will be available for checking/unchecking, addition and deletion. Managers that were in the Group at the time of the locking will remain locked. Users may select 'Lock' again when this happens to include any new series in the 'Lock'.

6. To unlock a Group, simply right-click and select 'Unlock'.

Group Properties
Also available on the right-click menu is 'Properties', which brings you to Properties for the relevant Manager Group.

Load underlying assets
Currently, Properties relates entirely to Portfolios. When checked, the underlying assets of the Portfolio(s) in the Group will also be added as constituents.

Use current (non-zero) assets only
This option is enabled only when 'Load underlying assets' is checked. When this option is also checked, only current assets with weights for the most recent portfolio returns date will be introduced as standalone assets in the group. Older assets that are no longer portfolio constituents will not be added.

Warnings

The Warnings button at the bottom of the manager data pane will automatically be highlighted in cases where MPI Stylus detects problems or inconsistencies in the return data. This may be because of missing or incorrect dates, improperly formatted returns, or other causes. When there are no warnings, this button will appear inactive.
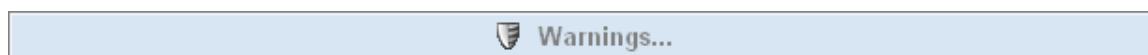
When MPI Stylus does detect a problem, this button will become activated and may be clicked on.

When the Warnings button is clicked, the Returns Verification screen will open. You will be able to view the entire return stream for the fund in question and there will be a pane explaining the problems detected, and any steps taken to correct this problem. In the example below, the program has detected a return linked to the beginning of a month and adjusted it to the month end date. It should be noted that missing returns can affect your analysis, whereas adjusted/extra returns generally will not.

Parameters Node

Figure 36

The Parameters node contains a variety of important study-wide information, some of which will require attention with every study but most of which will seldom require any user changes. Many of the detailed elements seldom requiring adjustment will be located under the "Advanced" section of the tab, and should not be changed unless there is a specific reason for doing so, as changes in this section can dramatically affect your analysis.

Engine Type

This option set will only be visible to users who subscribe to our Hedge advanced package (which contains Dynamic Style Analysis).

Sharpe/LWR

This is the default setting in MPI Stylus Pro. Any user who does not subscribe to Hedge, and thus does not see the 'Engine Type' feature set, is automatically working in the Sharpe/LWR space. This essentially means that their Style Analysis will run under the Locally Weighted Regression model, using windows (unless Single Computation is checked) to inform their analysis.

MPI/Dynamic
This option set switches to the Dynamic Style Analysis (DSA) model. For more information, please see our DSA User Guide, available from MPI.

Use Common Range for General and Style Analysis

This option is useful in situations where your study timeline length needs to be longer than would be allowed by your Style Outline indices, which curtail the length of a study in their default setting. When this option is unchecked, a second study timeline is created that allows you to run simple statistics (unrelated to the Style Outline) over longer time periods, while continuing to run Style Outline-driven statistics for the shorter, relevant period.

Date Range scrollbar
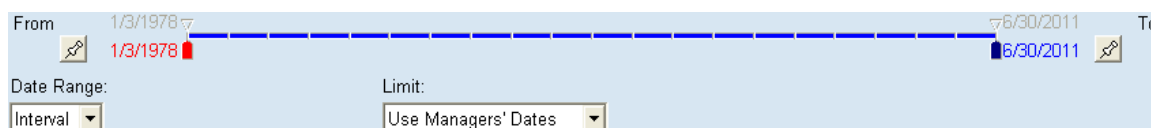
The date range scrollbar allows you to specify the range of dates for which data points will be available in your analysis. This range may consist of:

- Interval, in which both the start and end date must be specified, and all data points (inclusive) between the two dates will be available
- Last, in which the last X number of periods may be used to regulate available data points.
- First, in which the first X number of periods may be used to regulate available data points.

In the case of Last and First, the timeline will not be separately controllable and will need no adjustment from the user. However, in the case of Interval, the scrollbar will be used to specify the exact date range to be used. In addition, interval is one of the only two time configuration settings that allows for back testing (because it allows you to adjust the end date); the other is the First option.

In addition to the Parameters node controls, MPI Stylus Pro allows you to specify the date range you would like to view on a chart-by-chart (or table-by-table) basis; therefore, it is recommended that you allow as much data as possible in the Parameters node and institute controls on particular charts or tables.

Interval
The interval option allows you to specify the date range to be used for your study. You may do this manually by following the instructions below; however, some of this may be done automatically through Stylus itself, as well as through the use of the Limit function.

When the beginning and end sliders on the date range scrollbar are at the leftmost and rightmost positions, all available manager data is being used in the analysis. If there are style indices selected in the Style Outline, the date range will automatically default to the beginning of the most recent return series (which may be a manager or style index) for its beginning (from) date. Otherwise, the date range may be limited by the Limit function.

It is possible for differences to exist in the time bar length between the dates at the top of the time bar and those at the bottom. The top dates reflect the range available for reporting, while the bottom dates reflect the range available for analysis. Note that the top and bottom date ranges will coincide with one another when "Use Single Computation" or "Style in first point" and "Style in last point" (advanced parameters) are selected in the Parameters node.

Pushpin buttons
The pushpin buttons give you control over date range updates and adjustments for your study. When the pins are pushed in, the bottom dates on the date range scrollbar become gray and you may no longer adjust the date range. This locks the slider and lets your study adjust the "To" date to the most recent data point whenever you update your data. When you update your database feeds and open the study, the date range will automatically include the most recent returns.

If one or both pushpin buttons are not pushed down, the bottom dates on the scrollbar will have red and blue sliders which you may adjust with your mouse. The data available in your analysis will change as the slider moves.

First/Last
The First and Last options for date range allow you to specify a period length (from the start or end of the total date range) for which data will be available. The date range scrollbar becomes disabled and instead only shows the range specified by the period controls. You can then enter the number and type of periods you wish to analyze.

+fraction
The +fraction option allows you to include any fractional parts of a selected date range. This allows you to start with the beginning of a calendar period and to use the latest available dates past a period. Without +fraction selected, the date range will coincide precisely with the specified periods you have requested.

Limit

The Limit feature allows you to specify how Stylus should interpret available date ranges from your return series. The limit becomes especially important when you have multiple funds selected for analysis; however, even a single fund may be limited by style indices or the benchmark. You have three options:

- Use Managers' Dates
- Use Common Dates
- None
- Limit to Common End Dates

Use Managers' Dates
The Use Managers' Dates option will allow all the available data from your return series to be considered for analysis, even if you have multiple funds selected with different series length. For example, if you are analyzing two funds – one from 1968 and one from 2001 – the Use Managers' Dates option will allow you to show data from 1968 forwards in your charts and tables.

The important exception to this is that the fund may still be limited by other return series, such as style indices. Remember that Cash is always present on the design tree, and thus can always be limiting your analysis dates.

Use Common Dates

The Use Common Dates option allows for an apples-to-apples comparison of return series by limiting the date range interval to time periods common to all selected return series. For example, if you are analyzing two funds – one from 1968 and one from 2001 – the Use Common Dates option will allow you to show data from 2001 forwards in your charts and tables.

None
The None option will only constrain your analysis by the earliest date of the longest return series, regardless of the type of series or node in which it is located.

Limit to Common End Dates
This feature allows you to limit your study to the last available date for all series, which can be helpful if one or more managers have been updated ahead of schedule, or when managers with old data need to be displayed in a report.

Computations

The computations area is used to determine the average portfolio style during a specified period, to analyze the dynamic of the portfolio's style and to monitor style changes.
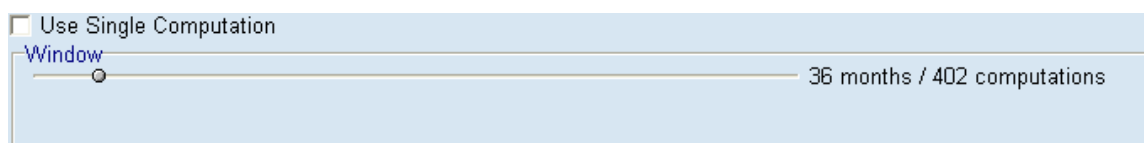
Use Single Computation
Use Single Computation gives the user the average style for your date range. When this option is selected, the window size is equal to the total length of the range, and the Window scrollbar does not appear.

Multiple Computations
When you uncheck "Use Single Computation" and use multiple computations instead, you can define the length of the moving window by sliding the circle along the line. The length of the window and number of computations are shown to the right of the slider and the date changes accordingly.

The length of the window controls the degree to which MPI Stylus is capable of suppressing noise in the data. The longer the window, the larger the proportion of noise that is filtered out. When the window is too long, though, the ability to detect changes in the portfolio's asset allocation becomes very limited.

The selection of the "right" window size is more an art than a science, and involves taking multiple factors into account, including:

- Periodicity of returns
- Style dynamic
- Market conditions during the period being analyzed
- Style outline
- Purpose of the analysis

Default settings are generally recommended for this tool because they tend to work well in most cases.

Frequency

Use Common Frequency
The Use Common Frequency option allows you to change the frequency of return data in cases where one or more return series use different data frequencies. In most cases, higher frequency means higher accuracy of analysis; therefore, MPI Stylus tries to use the highest possible common frequency of returns by default.

Nevertheless, there are several cases where a lower frequency may be called for. An example might be the analysis of an international portfolio, when times for computing end-of-day returns will differ from those used in the computation of major style indices.

Forced Data Frequency
If you wish to force a particular data frequency, simply uncheck "Use Common Frequency" and select one of the available options. In addition to four period options (weekly, monthly, quarterly, annual) there is also a None option, which preserves frequencies for each return series.

Holdings

Use Long Only Holdings
The Use Long Only Holdings option disallows short positions in analysis of return series, and is the default setting for this area. When this option is selected, all return series will be held to this standard.

Holdings Options
In most cases, the accuracy of style analysis can be improved by *a priori* information about the analyzed portfolio, particularly information regarding limitations and restrictions of the investment policy. The most common piece of information available to an analyst is the knowledge of the rules with respect to leveraging and short selling. This information can be mathematically expressed in terms of the constraints on the values of the asset loadings. The corresponding model is called the constrained regression model.

Use Long Only Holdings is the default setting, which will be sufficient for an analysis in most cases. On the other hand, when you know or strongly suspect that leverage and/or hedging is being used, you should deselect the Use Long Only Holdings check box and make use of the other Holdings options.

When you uncheck "Use Long Only Holdings," you have the ability to select five different holdings interpretations:

- Long only
- Individual
- No constraints
- Leveraged
- Short

These options allow you to specify relevant elements of the investment policies used by the portfolio manager. MPI Stylus uses this information to specify constraints for the optimization model.

MPI Stylus supports several optimization models. Based on the information you supply, MPI Stylus selects the appropriate model for each specific analysis. Specifically:

Multiple Linear Regression is used when the Use Long Only Holdings check box is unchecked and the No Constraints option is selected on the Data Pane of the Parameters node. See Constraints Specifications for more information.

Constrained Regression is the default model and is used unless the No Constraints option is specified on the Data Pane of the Parameters node.

Asset-based (CAPM) model is the default. The Effects Based (APT) model is used when the Effects-based (APT) check box on the Data Pane of the Advanced node is checked.

Long Only
Long only indicates that no leverage or short selling is allowed, so using this option is equivalent to having left the check box Use Long Only Holdings selected.

Individual
Individual is the most flexible option, permitting you to specify constraints on any element of the Style Outline.

Leveraged
Leveraged allows you to specify the maximum permissible leverage.

No constraints
No Constraints directs MPI Stylus not to use *a priori* information. The ability of the software to suppress noise in the data is limited when this option is set. When the No Constraints option is checked, MPI Stylus uses the multiple linear regression model. This allows you to find asset loading that ensures the best fit to the historical returns data. In some cases, the results may be distorted by noise in the data.

Short
Short allows you to specify the maximum permissible short position.

Index Selection Model

The Index Selection model assists the user in adding indices to the Style Outline that provide the most meaningful result versus their selected manager(s). It seeks to do this by maximizing Predicted R-Squared, MPI's proprietary measure of predictive power. The options are:

All Indexes
This option is the default, and will use all indexes selected by the user on the Style Outline for the regression.

Full Search
The Full Search option brings the power of running all iterations and combinations of style indices to your analysis. This is modified by a Forward/Backward toggle and a "Full Search Depth" feature.

- Forward caps the maximum number of indices that can be included. For example, with 6 possible indices and a "Full Search Depth" of 4, the forward full search will return a combination of 1 to 4 indices for input to the style analysis.

- Backward caps the maximum number of indices to be excluded. For example, with 6 possible indices and a "Full Search Depth" of 4, the backward search will return a combination of 2 to 6 indices for input to the style analysis.

Stepwise
The Stepwise Functionality mirrors the old "Smart Front/Smart Back" functionality of versions 7.0 and earlier. Essentially, the model runs through the indices by either adding them (Front) or removing them (Back) and checking if each index's addition/removal affects Predicted-R2 for the better or the worse. In both cases, the application runs through two iterations of the available indices before producing results. Please note that the old basic Front and Back features have been removed.

Combined
This option first performs the "Full Search" and then the "Stepwise" options both. For example, with a total of 6 indices and a Full Search depth of 4, the Forward Combined search would turn up four indices from the Full Search, and these results will then be compared with supersets with 5 and 6 indices in them in a stepwise search.

Apply to Benchmark
Apply to Peer Group
These options apply the same index selection model to the style analysis for the benchmark and peer group members as for the managers. If unchecked, these style analyses employ the "Use All Indexes" model.

Currency

The currency menu allows you to specify the currency in which you want dollar amounts expressed in MPI Stylus Pro. For a complete list of supported currencies, please see Chapter 3. It should be noted that the currency option here is not the same as the currency in the Series Edit box.

Cash

The Cash feature allows you to specify the cash proxy for your study. In MPI Stylus Pro, the default is normally the 3-month T-bill total return index; however, this may be changed in MPI Configurator. Therefore, always make sure to check which proxy is specified in your study.

There are two fields in the cash area. The first field displays the name of the database (i.e,, US Fixed) where the cash proxy return series is located, and the second field displays the name of the file representing this series.

To change cash proxy:

1. Click the ellipsis (…) button at the end of the Cash line to open the browse utility.
2. If you need to change databases to find your file, you may do so by clicking the (…) button at the end of the database line in the browse utility.
3. Once you have located the correct database, double-click the name of the index you wish to use for your proxy. Alternately, you may click the name once and then press the green checkmark.

View Cash Series
The 'Series View' button also appears here. This allows you to quickly open the 'Series View' window to see the series, including returns, dates, etc.

Advanced Parameters

Advanced parameters in MPI Stylus Pro represent a variety of elements affecting your analysis, and should only be changed by experience users with explicit reasons for making changes. Any changes made in this section can dramatically affect your analysis, and the defaults have been designed to work with most analyses.

Figure 37

Model Type

Capital Asset Pricing Model (CAPM) differs from Arbitrage Pricing Theory (APT) in one respect. In CAPM, asset loadings of style indices are forced to total 100% - this is not the case in APT. In all other respects, these models are equivalent; use the information below as a general guide for selecting the appropriate model.

CAPM (asset-based)
CAPM is the default setting for model type and should be used when style indices are proxies of assets.

APT (effects-based)
APT should be used to perform fundamental analyses of portfolios when style indices are not assets, but rather values of fundamental factors that determine securities prices (such as earnings growth, dividend yield and capitalization) and/or economic factors (such as money supply, rate of inflation, economic growth, etc.)

Intercept
This checkbox option provides the opportunity to perform Style Analysis with or without an intercept. In earlier versions of MPI Stylus Pro, Style Analysis was calculated with an intercept – which remains the default setting. When this is used, the intercept is a component of Selection Return (Manager Return – Style Return), but it is equivalent to the Intercept (Alpha on the Performance block) plus the residual term (Error on the Performance block). When Intercept is unchecked, Selection Return is equal to the residual.

Window Position

The window position determines which months will be included in the analysis. For example, assume that you want to determine asset loadings of a portfolio as of the end of December 1995, using monthly return data and a twenty-four month window. The obvious question becomes, which twenty four months of data should be used?
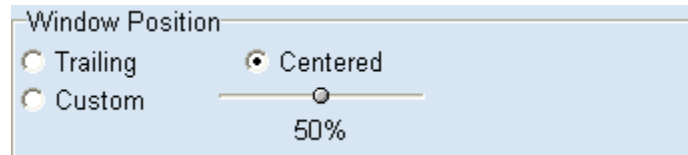
Figure 38

Trailing
The trailing window option works well when asset allocation remains approximately constant during all time periods covered by a window but is subject to substantial error when allocations change frequently. (This problem can be alleviated somewhat by weighting returns in the window.)

In the case above, the trailing window would cover a period from January 1993 to December 1995.

Centered
The centered window option (default) is more robust than the trailing window because it captures changes in a portfolio's asset loadings more accurately. (When the portfolio style is stable, trailing and centered windows are equally accurate; in dynamic portfolios, centered is preferable.)

In the case above, twelve monthly returns prior to the point of estimate (trailing) and twelve monthly returns following the point of estimate (leading) would be used for the window, giving a range of January 1994 to December 1996.

Custom
This option allows you to specify exact window position on a percentage basis (50% would be the same as centered; 100% would be the same as trailing.) To adjust window position, you will simply need to move the circle along the slider tool.

Calculations

Calculations options allow you to fine-tune your analysis. The five available options are:

- Style in first point
- Style in last point
- Use log returns
- Use portfolio composites
- Perform style analysis on Peer Groups

Style in first point
Style in last point

When the moving window technique is used to estimate asset loadings, the number of full regression windows is smaller than the number of available portfolio returns. As a result, portfolio style in certain points cannot be directly calculated.

In the case of trailing window analysis, asset loadings in the first *n*-1 (*n* is the window size) data points are not defined. When a centered window is used, asset loadings in the first (*n*-1)/2 and the last (*n*-1)/2 data points are not defined (assuming that *n* is odd).

By checking Style in First Point and Style in Last Point, you direct MPI Stylus to extrapolate the results of the analysis in order to compute estimates of asset loads in these points.

Use log returns
This option simply instructs MPI Stylus to use logarithms of all returns in calculating asset loadings.

Use Portfolio Composites
This option only affects analysis for funds' returns (.fnd files). When checked, only the fund's composite returns are used as inputs, even though the underlying portfolio returns and respective weights remain available. When this option is not checked, all of this information will be used for analysis.

Perform Style Analysis on peer groups
This option allows style analysis calculations to be performed on peer groups. Please note that, in the case of larger peer universes, this can significantly affect study run times.

Return Weighting Scheme

Figure 39

Rapid changes in portfolio asset allocation may lead to substantial errors in determining an effective asset mix of the portfolio, especially when a trailing window is used. Locally Weighted Regression (LWR) alleviates this problem by incorporating both weighted returns around the point of estimate and centering the point of estimates. Weighing returns assign more importance to the more recent return data, and centering the point of estimate balances the return data.

Use Weights
The Use Weights check box allows you to instruct MPI Stylus to use weighted returns. If you do not select this, the other options in this area (Half-life, etc.) will become unnecessary and disappear.

If you do select the Use weights check box in the Return Weighting Scheme group, the weighting decay factors appear and the analysis uses exponential weighting of returns.

HALF-LIFE SETTINGS
It should be noted that only one of the three half-life settings may be adjusted at any time, as the remaining settings are a function of the setting you select. Regardless, you are simply determining how heavily the returns closer to the point of estimate are weighted in comparison to returns that are further-removed.

Half-life (window size)
The point at which the return weight has been reduced to 50%. For a 24-month window, a 1.0 setting would mean that the 24th return from the point of estimate would be weighted at 50%. The half-life in

months would be 24. If the half-life in months were set to 12 for a 24-month window, the half-life in terms if window size would be .5 (12/24=.5).

Half-life (frequency of returns)
This option allows the user to specify half-life in terms of frequency (i.e., months) as opposed to window size. Please see the above explanation for how half-life in window size relates to half-life in months.

Decay factor
This feature provides a third method for entering half-life. Decay factor is the exponential factor that must be applied to arrive at the designated half-life. It is the amount by which the returns are reduced in each period exp[(1-decay factor)*n].

Output

Initial Investment Value
This field may be used to specify (in dollars) the initial investment value to be considered in any cumulative growth/wealth charts or tables.

Fiscal Year-end month
The fiscal year-end month setting may be used to specify the correct ending month for a fiscal year. The default setting is 12 (December), but this may be changed to any other month by specifying that month's number in the calendar year (i.e., June would be 6.)

Annual Minimum Acceptable Return (MAR)
The Minimum Acceptable Return (MAR) allows you to specify the minimum annualized return rate to use as a threshold for all Excess (MAR) calculations. This affects the following blocks: Performance, Gain/Loss, Risk, Downside Risk, Performance Statistics and Downside Statistics.

Output Asset Loadings in %
This feature allows you to output asset loadings on a percentage basis, and is only used for the APT model.

Number of trading days in a year
This allows you to specify the number of trading days in a year. The default is 250, but users may select any number between 200 and 300.

Peer group percentiles
This allows users to specify the percentile breakdowns for peer group bands. The default is 5, 25, 50, 75 and 95.

Calendar

The Calendar features allow you to specify how Market Holiday dates (and their data) are treated. Market holidays (days when markets are closed for trading) are automatically provided by MPI in the form of a text file linked into MPI Stylus Pro. The field for these holidays will appear blank, but there is underlying data to inform the program of days when the market was or will be closed.

Returns for these dates are automatically ignored; if you are an international client and use different market holidays than those recognized in the United States, a different holiday file may be called for.

Use Market Holidays

When this box is checked, MPI's holiday file is enabled; unchecking this box means that market holidays will no longer be ignored (for return purposes) and will appear as dates with missing data.

Week ends on
This control allows you to define the end date for weekly data. Previously, any weekly series would have its returns shifted to the Friday of each week, regardless of the day on which returns were reported. The resulting mismatch could invalidate the analysis based on these series. Setting the "Week ends on" control to the appropriate week day eliminates the possibility of this error. Friday remains the default.

Missing Data Handling

This section helps Stylus determine how you would like missing data to be handled. It may either receive no adjustment or be replaced/adjusted in another fashion.

None
In this case, no adjustments are made and data remains missing.

Replace with Style
This option will replace missing data with the Style Return estimated from the Style Analysis optimization. In this case the Style Window (under Parameters) must be wider than the missing date range.

Replace with Benchmark
This option replaces the missing data with the Benchmark Return. Note that this will always use your default benchmark.

Remove and Compound
This feature treats missing dates as holidays without having to use the holiday file itself.

Confidence Intervals

This section allows you to generate confidence intervals for asset loadings using Monte Carlo simulation methods.

Level
This tool allows you to adjust the confidence level. The default is 95 but values from 0 to 100 are supported.

Use Monte Carlo
This option turns on the ability to use Monte Carlo simulation, which is necessary to activate the remaining controls in this section.

Iterations
This tool allows you to adjust the number of iterations the simulation will run through. The default is 100 but this may be raised or lowered.

Normal Distribution

This checkbox (default is unchecked) allows you to specify that a normal distribution should be used.

Repeatable
The random nature of Monte Carlo simulations means that variations will occur each time a simulation is run. By checking 'Repeatable', you are instructing MPI Stylus Pro to run the same iterations as the previous time the simulation was run.

Apply to benchmark
Apply to peers
These options allow you to run the benchmark and peer universe through the simulation as well. By default these are unchecked and only the Manager(s) are analyzed.

CUSUM

This tab provides the necessary background parameters for working with CUSUM in the application. For more details, please see the CUSUM User Guide and associated video, available via the MPI web site.

Proxy

The Parameters section in the design tree contains a Proxy node. This node allows users to choose one of the seven options for proxy assignment within the study, after enabling the Use Proxy checkbox: Workspace Default, Series, Benchmark, Style, Peer, Library and None.
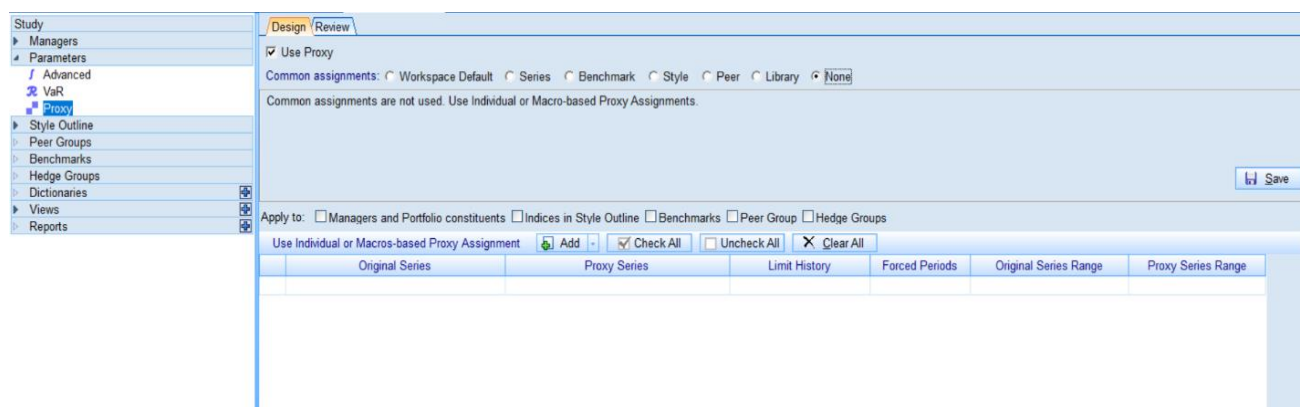

Figure 40

Workspace Default: This setting allows users to proxy the return series using the category association within Stylus Workspace and the specified proxy assigned on the category. Stylus Pro has mappings for several databases, including the Morningstar US family of databases and HFR database.
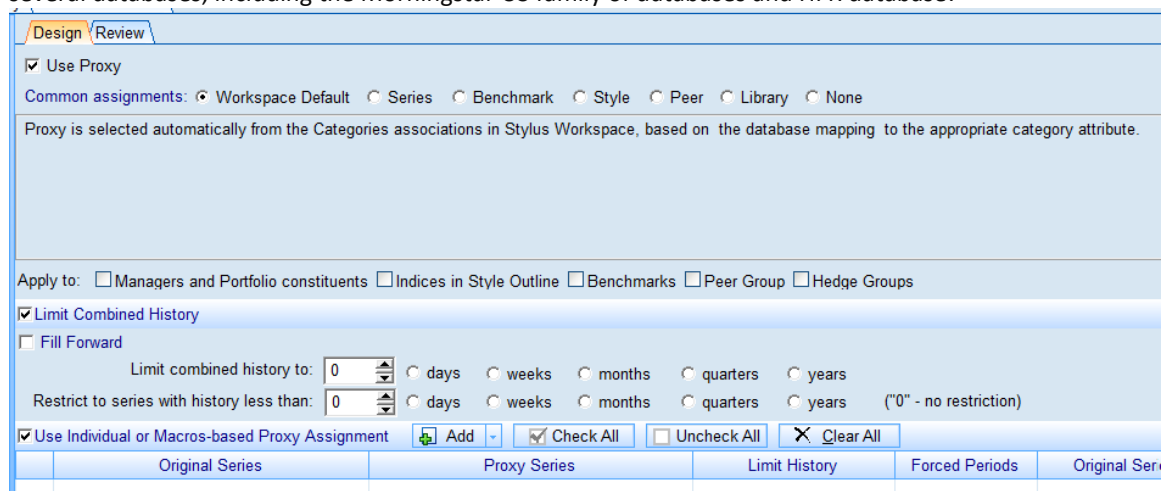

Figure 41

Figure 42 shows an example of the default assignments of Proxy Series within Stylus Workspace. Users with an Advanced Analytics license can modify these assignments and create their own classification mappings.

Attribute: MPI Category: MStar △	Default Model	Default Benchmark	Default Proxy
Allocation--15% to 30% Equity	Allocation US 10	Dow Jones US Moderately Conservative Po	Dow Jones US Conservative Portfolio Index
Allocation--30% to 50% Equity	Allocation US 10	Dow Jones US Moderately Conservative Po	Dow Jones US Moderately Conservative Portfoli
Allocation--50% to 70% Equity	Allocation US 10	Dow Jones US Moderate Portfolio Index	Dow Jones US Moderate Portfolio Index
Allocation--70% to 85% Equity	Allocation US 10	Dow Jones US Moderately Aggressive Portl	Dow Jones US Moderately Aggressive Portfolio I
Allocation--85%+ Equity	Allocation US 10	Dow Jones US Aggressive Portfolio Index	Dow Jones US Aggressive Portfolio Index
Bank Loan	US Bank Loans	S&P/LSTA Leveraged Loan TR	S&P/LSTA Leveraged Loan TR
Bear Market	Global Equity Regions	S&P 500 Index	S&P 500 Index
China Region	China Equity by Style	MSCI China ND USD	MSCI China ND USD
Commodities Agriculture	Commodities Agriculture	Bloomberg Agriculture TR	Bloomberg Agriculture TR
Commodities Broad Basket	Commodities Broad	Bloomberg Commodity Index Total Return	Bloomberg Commodity Index Total Return

Figure 42

Series: This setting allows users to assign a single proxy series (*S&P 500 Index* in the example below) to all the return series in the Stylus study.

Benchmark: This setting allows users to apply one of the benchmarks selected in the Stylus study as a proxy series for all the managers available in the study. It is possible to specify the benchmark by selecting either the name of it or the exact numeric position based on the list available under the Benchmark node of the design tree (from 1 to 9 and from -1 to -9).
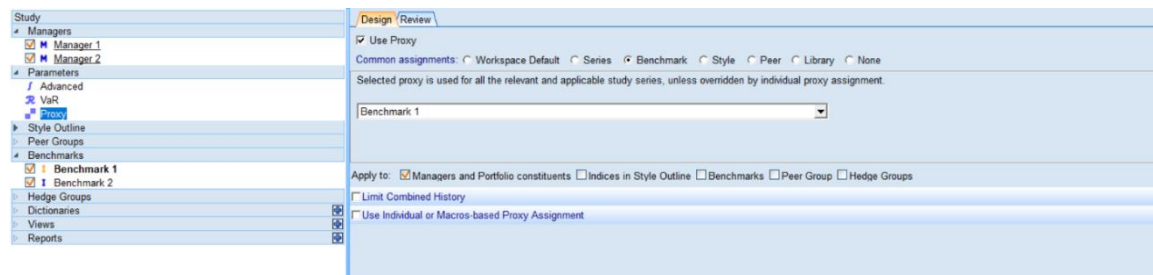
Figure 43

Style: This setting allows users to assign a synthetic series built dynamically as a proxy series for all the managers selected in the Stylus study. The synthetic series construction process relies on the market factors listed under the Style Outline node of the study design tree; the market risk exposures are calculated by regressing the manager versus the market factors. It is possible to choose among three different types of exposures (as result of the multi-factor regression) to be used to build the synthetic series: *earliest, average* and *recent* exposure.

Peer: This setting allows users to use either the average or the median of a peer group as a proxy series for all the managers selected in the Stylus study. The existing peer group must be loaded into the study under the Peer Groups node of the design tree in order to compute the proxy series.
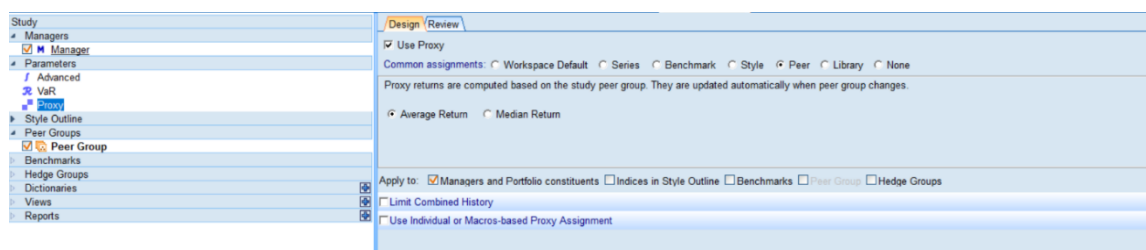
Figure 44

Library: This setting allows users to link the Stylus study to a library of generic proxy rules set in the Stylus Workspace. This feature allows users to build a Proxy Library and use it in multiple Stylus studies.

Use Individual or Macro-based Proxy Assignments
This option allows users to assign an individual proxy to each series within the study. The option enables the grid shown in Figure 9. This option is also applicable when using one of the Common assignments and allows users to override any such assignment for specific series.

The grid can be updated manually by adding series to "Original Series" column. It can also be populated by clicking the arrow next to "Add" button and selecting one of the options:

1. Add from databases
2. Add managers
3. Add indices
4. Add benchmarks
5. Add peer group series
6. Add sources

Notes:
- When a user selects a portfolio (.fnd file) the constituents of the portfolio will be added to the grid.
- Removing a series from the design tree does not automatically remove the series from this grid.

The Forced Periods field can be used to override the returns of any period with the proxy returns. This is often helpful when a manager starts and has a partial period return for the first month.

Column Definitions

Original Series	Series for which the proxy is being defined
Proxy Series	Series which is being used to fill in the returns of the Original Series
Limit History	Maximum length of track record to be used within the study. The length specified is equal to Original History + Proxy used. For example, if the original manager has five years of history and the Limit History is specified as 10Y (10 years) then the combined series (original series + proxy) will be limited to no more than 10 years even if the Proxy series has a significantly longer history. The limit is specified as nP, where n is the number of periods and P is the period type (D: days, W: weeks, M: months, Q: quarters, Y: years). For example, 120M.

Forced Periods	Time periods to be overridden from the proxy series, even if the original series has returns for those periods. (A specified return value can also be specified instead of a proxy return). For example 20120501, 2013010120131231, 20150515[0.1408], 20150101..20151231[0.00].
Series Range	Shows the range of the original series (before proxy is applied)
Proxy Range	Shows the range of the proxy series
Check box column (left)	No proxy is applied to the series unless the checkbox is in checked. Users can check individual check boxes and also use Check/Uncheck buttons on top of the grid.

Figure 45

Proxy Information

Design Tree

When a returns series has a proxy assigned, it will appear underlined in the Design Tree. This is to help give a visual hint that a proxy is in use.
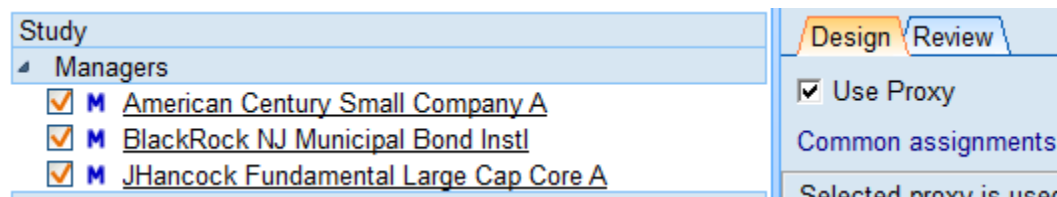
A Review tab has also been added to give a summary view of all the proxy series being used and the time range for each.

Other Options
Apply To

By default, proxies are applied to individual managers and managers within portfolios specified by the Manager node on the design tree. Users can also enable proxy use for series specified in other sections of the design tree as shown in Figure 46.

Figure 46

Limit Combined History

Figure 47

When checked, this option will limit the history of combined series (original + proxy) to the specified number of days, weeks, months, quarters or years.

Fill Forward: This option turns on proxy returns for any time periods after a return series ends.

Advanced Proxy Specification

When using the Individual Proxy assignment option, it is possible to specify both the series to be proxied and the series being used as a proxy in Stylus expressions and macros. The following example shows how to specify a category average series from the Morningstar database to be used as a proxy.

	Original Series	Proxy Series
☑	decode('@SELF{DBID}','Mfi',1,'Mce',1,'Mfv',1)=1	[@SELF{DBID}]@DBF{@SELF{DBID},@SELF{FILEID},Category Code}

Figure 48

The original series option specifies that any series where database ID is either "Mfi", "Mce" or "Mfv" will use the series that has an ID matching the category code. The category field for each fund within the above-mentioned databases will be represented as a two-letter code. The code will also correspond to an ID for a category average series (named as Cat: <Category Name>).

	Cat Code	STY_DBID	STY_PROXYLBL	STY_PROXYSTART	STY_PROXYEND
1290 Multi-Alternative Strategies R	GY	Mfi	Cat: Multialternative	20080430	20150731
1290 High Yield Bond A	HY	Mfi	Cat: High Yield Bond	20080430	20141128
1290 DoubleLine Dynamic Allocation I	CA	Mfi	Cat: Allocation--30% to 50% Equity	20080430	20160331
1290 Low Volatility Global Equity I	WS	Mfi	Cat: World Large Stock	20080430	20170228
1290 GAMCO Small/Mid Cap Value T	SB	Mfi	Cat: Small Blend	20080430	20141128
AMG Pantheon Advisory	MR	Mce	Cat: Miscellaneous Sector	20130228	20130430
1290 VT Convertible Securities K	CV	Mfv	Cat: Convertibles	20080430	20131031
AGFiQ US Market Neutral Anti-Beta	NE	Met	S&P 500 Index	19730131	20110930
ALPS Disruptive Technologies ETF	ST	Met	S&P 500 Index	19730131	20171229

Figure 49

Saving a Proxy

Proxy set up in a study can be saved and placed in a Proxy Library within Stylus Workspace. This is accomplished by clicking on the "Save" button in the top right corner of the proxy definition screen.

☑ Use Proxy
Common assignments: ○ Workspace Default ● Series ○ Benchmark ○ Style ○ Peer ○ Library ○ None
Selected proxy is used for all the relevant and applicable study series, unless overridden by individual proxy assignment.

S&P 500 Index	MPI Indices Monthly	S5500	···	⊡ View

⊟ Save

Style Outline Node

The proper selection of style indices is one of the most important steps in style analysis. Portfolio returns are regressed against the returns of one or more style indices to determine market exposure. MPI Stylus comes with a broad selection of databases from which users can choose style indices, including US Equity, US Fixed Income and other market indices. In addition, new return series may be added by the user and serve as style indices.

Style Outline	Min	⇔	Max
☑ $ Cash	0.00		100.00
☑ ⊞ Russell6			
☑ I Top Value	0.00		100.00
☑ I Top Growth	0.00		100.00
☑ I Mid Value	0.00		100.00
☑ I Mid Growth	0.00		100.00
☑ I Sm Value	0.00		100.00
☑ I Sm Growth	0.00		100.00

Figure 50

Style Indices

In general, any financial instrument that can be characterized by periodic historical returns can be a style index. In MPI Stylus Pro, a style index can be either a real or hypothetical series of returns. Normally, it is a market index; however, it can also be a managed portfolio or group of portfolios, a fund, stock, currency or commodity.

Usually, the decision as to which style indices to select is partially based on *a priori* information about the portfolio(s) being analyzed. Generally speaking, the fewer unnecessary style indices in your Style Outline, the higher the accuracy of your analysis. Very seldom will similar indices need to be included in your style outline; in fact, this could be counter-productive. For example, if you included both the Russell and Wilshire small value indices simultaneously, the accuracy of the estimate would usually deteriorate, and in some cases the results may simply be meaningless.

Style Outline

A style outline is a hierarchical structure that reflects logical relationships among style indices. Each broad asset class can be represented by a combination of several more narrowly defined asset classes or styles. For example, a broad class such as US Equity can be defined with the S&P 500 serving as its proxy, but at the same time it may also be defined by a combination of value and growth styles represented by the Russell indices. In most cases, this hierarchical structure will also include a proxy of risk-free rate, such as Cash.

Style Maps

Style maps combine the organizational qualities of a style outline with the visualization capabilities of charts.

Selecting a style map in the Style Outline node will work just like selecting a manager in the Managers node, with one important difference. When you select a style map, you will also add its underlying indices to the design tree.

The extension for style maps in MPI Stylus Pro is .smp.

Style Maps Database

MPI Stylus Pro comes with numerous pre-defined style maps representing various market segments that make style outline building easier, safer, and reduce the chance of error. These maps are stored in the StyleMaps database (the description will say "Sample Style Maps") which may be reached in the application like any other database.

Alignment Arrows

Alignment arrows appear twice in the MPI Stylus design tree, and allow you to move (align) the Min/Max settings to the left or right. These arrows are discussed in full detail in the Basic Interface section of this manual.

Creating a New Style Map

For information on creating a new style map, please see Chapter 3.

Selecting a Style Map or Style Index

To select a style map or style index:

1. Click on the Style Outline node on your design tree.
2. In the data pane, browse to the database that contains your desired style map or indices. For example purposes, we will browse to the StyleMaps database.
3. Once you have located the correct Style Map or index, you may double-click its name in the data pane or click the check box next to it. If it is a style index, it will appear on the design tree under Style Outline. A Style Map will appear on the Style Outline as both the map itself and its underlying indices.

Reviewing a Style Map

When you click on a style map (as opposed to one of its underlying indices) on the design tree, you can get a quick sense of the visual composition of the style map as well as the indices comprising each plotted average.
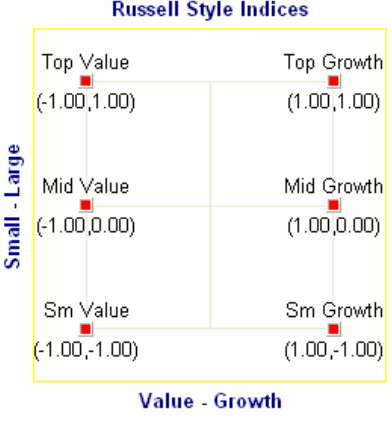
Figure 51

Reviewing Style Indices

You may review any style index (whether it is linked to a style map or is stand-alone) by clicking on the name of the index in the Style Outline node of the design tree. This will essentially show you the same screen as you would get by reviewing a manager in the Managers node – name, frequency, return series, etc.

Saving a Style Outline as a Set

Users may save a Style Outline as a set by right-clicking the Style Outline and selecting the 'Save Outline as Set' option. This allows you to use the group of indices in the set anywhere in MPI Stylus Pro where sets are supported, and can also be a convenient way of later retrieving this group of indices from the Sets database.

Editing a Style Map

To edit an existing Style Map:

1. Click on the style map in the Style Outline node of the design tree.
2. In the data pane, click the "Edit" button. This will open the Map Edit tool.
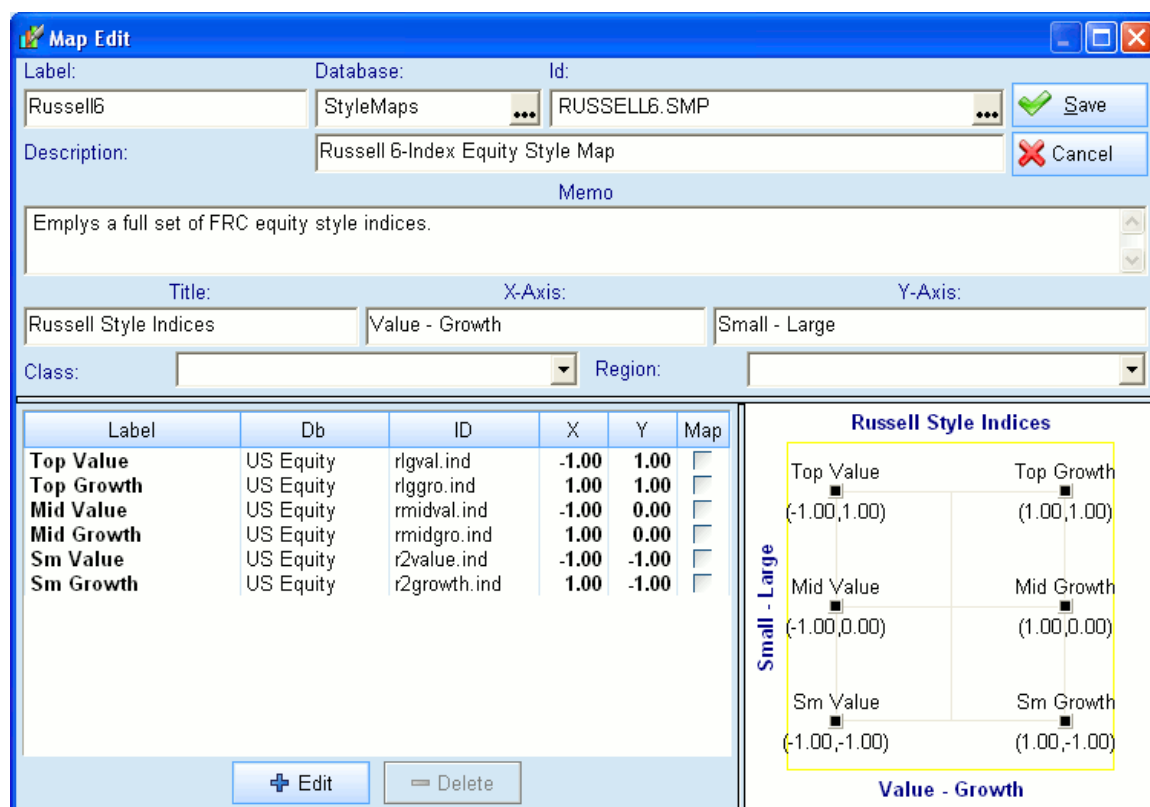
Figure 52

3. You may then adjust the name, proxy, map title, axis titles, underlying indices and plot positions of the map using this tool. When you have finished, click the Save button. You may also click the Cancel button at any time to close the map without saving your changes.
4. If you want to edit the style map but save it under a different name to avoid overwriting the old map, you may do so by simply changing the map's name in the ID field. The application will automatically append the correct .smp extension for you.

Deleting a Style Map or Index

To delete a Style Map or Style Index from the design tree, simply click on it in the Style Outline node of the design tree and press the "Delete" button on your keyboard. Alternately, you may right-click and select "Delete" with your mouse.

Peer Groups Node

About Peer Groups

It is often beneficial to look at a portfolio's performance relative to a group of similar portfolios, or *peers*. This comparison provides valuable insight into a specific segment of the market and puts the results of analysis into the proper perspective.

When peers are assembled they are said to be in a *peer group* or *peer universe*. Peer universes are peer groups that have been created using filters applied to fund databases in MPI Prospector. MPI Stylus Pro allows you to define peer groups of any size, and evaluate the performance of the analyzed portfolio in terms of its numerical and percentile rank within a group. For more information on Prospector, please see Chapter 6.

In addition to peer universes, there can also be *sets*. A set is static and will not change from period to period – in other words, it will always contain the same given funds. Peer universes, on the other hand, will update to include funds from the most recent period as part of their group.

When working with peer groups in Stylus, you can:

- Add a peer group to your study
- View a peer group's details and launch the group for editing in Prospector
- Use statistics from a peer group in charts and tables, including distribution, median, average, min, max and size.
- Beginning with version 11.0, analyze managers against different peer groups across charts and tables

Creating a Set

MPI Prospector should always be used to create new peer universes; however, sets may be created directly through the Stylus module.

Adding a Peer Group

Once a peer group has been created in MPI Prospector, the user may bring it into their study as they might a manager or style outline, but through the Peer Groups node.

To bring a new peer group into Stylus:

1. Click on the Peer Groups node of the design tree.
2. In the data pane, browse to the appropriate database that contains your peer group. You may use the (…) button to switch databases.
3. Once you have located the correct database, double-click the name of the peer group you wish to use. Alternately, you may click the check box next to it.
4. The peer group should now appear in the Peer Groups node of the design tree and be ready for use in your analysis.

Reviewing a Peer Group

When you click on the name of a peer group in the Peer Groups node of the design tree, the data pane will display important information about the peer group, including its name and database, as well as a

complete list of funds that comprise it. You may also launch the peer group from this screen into Prospector for editing by clicking the "Edit" button.

Editing a Peer Group

To edit a peer group, you will need to open the peer group in Prospector and work with it there. Because all peer groups are Prospector studies (except sets), you may open the peer group directly in Prospector by going to File-> Open-> Prospector Study.

However, if you already have the group selected in your design tree, there is an easier way to launch it into Prospector.

To open a peer group for editing from the Peer Groups node:

1. Click on the peer group's name in the Peer Groups node of the design tree.
2. In the data pane, click the "Edit" button.
3. The peer group will open in MPI Prospector and be ready for editing. Please make sure to save it when you are finished working with it.

Deleting a Peer Group

You may either delete a peer group from your design tree, or delete the actual file itself from MPI Stylus Pro. To delete the entire file, please follow the instructions in Chapter 3.

To remove a peer group from your design tree:

1. Click on the peer group's name in the Peer Groups node of the design tree.
2. Press the "Delete" button on your keyboard. Alternately, you may right-click and use the "Delete" option there.
3. The peer group will be removed from your design tree.

Multiple Peer Groups and Defaults

Beginning with Stylus Pro 11.0, you may analyze managers against different peer groups within a single study. To accomplish this you must pay careful attention to the "default" settings of peer groups in the design tree.

Each peer group added to the design tree is marked as a default (in bold font). Using Stylus with more than one group marked as default will lead to a single peer group that represents the union of each selected default peer group.

Creating a Secondary Peer Group

1. Add a peer group to the design tree as described above
2. Right click on the new peer group and select Default. Note that the peer group is no longer shown in bold font.
3. Select this new peer group in the designer of each chart or table you wish to compare your managers to. See the Parameters – Series Selection Settings in Chapter 5 for more information.

Benchmark Node

MPI Stylus Pro supports several types of benchmarks and gives you the flexibility to select the most appropriate benchmarks based on the goals of your analysis. Because benchmark selection seriously affects the validity of the interpretation of your analysis, including such important benchmark-dependent statistics as alpha and beta, great care must be taken to select the appropriate benchmark for your fund(s).

Strictly speaking, you do not need a benchmark for all analyses. Many performance statistics can be calculated without a benchmark selected; however, the ability to compare such statistics or any other characteristic of a portfolio to a benchmark is so valuable that they are generally included in all real-life analyses.

MPI Stylus Pro supports four types of benchmarks:

- Assigned – One or more specific benchmarks selected by the user
- Manager-specific – Primary and secondary benchmarks that may differ by manager
- Peer – One of several peer group statistics may serve as a benchmark
- Style – Special customized benchmarks that are derived from your style outline.

Assigned Benchmarks

An assigned benchmark is a specific return series selected by the user. Assigned benchmarks may be established benchmarks, like the S&P 500, indexes such as the Russell indices, or any other return series in the application. You may assign one or more benchmarks just as you might select a manager in the Managers node.

Notes on Setting a Default Benchmark
In any study containing multiple benchmarks, one will be considered the default benchmark for the purposes of calculating benchmark-dependent statistics. This is clearly visible on the design tree, as the default benchmark will have a blue icon with white lettering to its left. To change the default, please right-click on the benchmark you wish to use and select "Default" from the right-click menu. Please note that studies created in previous versions of MPI Stylus Pro will automatically have their single benchmark selected as the default.

Multiple Benchmark Ramifications on Automation
The multiple benchmark feature affects macros and scripts both; for more information, please see the macroref and autoref documents in your Stylus\docs folder.

Manager-specific Benchmarks

In Stylus Pro 11.0, you have the flexibility to assign a benchmark individually to each manager that is most appropriate to the manager's mandate. You define these benchmarks through new properties MPI_BMKPRIMARY and MPI_BMKSECONDARY, found under the Properties tab under Managers in the design tree. Stylus provides the flexibility to define these properties in multiple ways:
- Manually
- Through a dictionary or external database lookup
- By selection based on another manager property (e.g. manager's asset class)
- For some vendors, by referencing the benchmark specified by the manager

Add Peer Benchmark

To select a Peer Group Benchmark, click on the "Add Peer Benchmark" button at the bottom for the Benchmark node data pane. When you select a peer group benchmark, a return series is automatically created based on all the portfolios in your peer group. Peer group benchmarks are very effective when classifications are accurate. You may specify one of four methods of calculation:

Average Return
Average return computes the benchmark return as the unweighted average of the returns of all portfolios in the group.

Median Return
Median return computes the benchmark return as the median of returns of all portfolios in the group. Compared to the average return, this method is less sensitive to the effect of outliers in small peer groups.

Average Style
Average style computes the benchmark return as the average style return of all portfolios in the peer group, after the style of each portfolio is calculated.

Median Style
Median style computes the benchmark return as the median style return of all portfolios in the peer group after the style of each portfolio is calculated.

Add Style Benchmark

To select a Style Benchmark, click on the "Add Style Benchmark" button at the bottom for the Benchmark node data pane. Style benchmarks are calculated benchmarks based on the results of style analysis for a portfolio. They appear in charts/tables by default as FundName (Style Benchmark).

There are two types of style benchmarks: Historic Average and Dynamic.

<u>Historic Average</u>

The calculation for Historic Average of a Style Benchmark will depend upon the engine being used in the Parameters section of your software.

> *Common Scenario*
> Subscribers to our core software who *do not subscribe to our Dynamic Style Analysis (DSA)/Hedge Advanced Package*
>
> For most users of the software, Historic Average will make use of the 'Use Single Computation' calculation option. While this is not averaging the results from window-based analysis, it may still be interpreted as average style because it is running one multivariate regression over the entire period of analysis.
>
> *Dynamic Style Analysis (DSA) Scenario*
>
> For users subscribing to our DSA/Hedge package, the behavior will be different *as long as DSA is selected in Parameters*. In this case, Stylus will average the exposures over the analysis time period and multiply these factors by factor returns to construct the average style return.

When to Use Historic Average Benchmarks

These can be effective when there is reason to believe that changes in asset allocation during the entire period were caused by changes in market conditions (or by a perception of changes in market conditions by the portfolio manager). This type of benchmark should not be used if there are reasons to believe that the changes in asset allocation were caused by external factors and administrative decisions, such as changes in investment policies.

Dynamic

Dynamic benchmarks use the style analysis of historical returns in a portfolio. As opposed to the Historic Average, the asset mix for this type of benchmark changes with time.

- *Cumulative* – The cumulative option instructs MPI Stylus to calculate the dynamic benchmark point of estimate as an average style from the start of the analyzed period to the point of estimate. Otherwise, MPI Stylus computes the benchmark based on the window size specified in the Parameters node of the design tree.
- *Lag* – The lag parameter specifies the time horizon of asset allocation decisions. It allows you to distinguish between and evaluate separately long-term and short-term decisions of the portfolio manager. When the lag is set to zero, the Dynamic benchmark (without the Cumulative option) is equivalent to Style. In this case the timing return, by definition, would equal zero.

Automatically Apply Model

Starting with version 11.3 users can click "Automatically apply model checkbox" **before** adding a manager to the study. For any manager that is part of one of the mapped databases Style Outline, Peer Group and Benchmarks node will be automatically populated. Please note that is will overwrite any previous values in these nodes.

Figure 53

Hedge Groups Node

The Hedge Groups Node is used to apply hedging instruments to the assets under the Style Outline. This can have different applications – for example, in currency hedging.

Consider the following case. A user selects Japanese Yen as the hedging instrument by bringing it into the Hedge Groups node. Now, all assets in the Style Outline will show up on the right-hand side (Min/Max) as 'hedged assets'. Users can select a specific asset (for example, MSCI Japan Large Growth USD) to be

hedged with Yen. When the analysis is run, Stylus will automatically consider this hedging implementation and calculate estimated asset loadings for MSCI Japan Large Growth and its Yen hedging positions correspondingly.

Dictionaries Node

Advanced Database package subscribers will have an additional node titled 'Dictionaries Node'. Dictionaries serve as an intermediate storage facility in Stylus that can allow for the creation of more complex analytics or reports when combined with automation. For more information, please see the Dictionaries User Guide, available on our website.

Views and Reports

Views and Reports are the output of MPI Stylus Pro, and represent one of the most powerful areas of the application. Due to the comprehensive set of features and options available to Stylus users, Views and Reports will both be covered in their entirety in Chapter 5 of this manual. This chapter will also apply to creating Views and Reports in Allocator and Integrator; however, special features available for those two modules will be covered in their respective chapters.

Troubleshooting MPI Stylus

For more Frequently Asked Questions (FAQ), please visit our web site at
http://www.markovprocesses.com.

Q: My Stylus study cannot be run. The run button is red and says there is not enough data to run the analysis.
A: This generally means that a major piece of information required for your analysis is missing. In most cases, no manager has been selected or is checked in the design tree. This is easily fixed by adding the missing series (manager, peer group, etc.) to your design tree.

Q: My date range is constrained and is not going back to the inception date of my manager. Why is this happening?
A: Any time the date range listed in your Parameters node is not consistent with your requirements, it means that another return series is constraining your analysis. This may be another manager, benchmark or style index. You may wish to adjust the Limit function in Parameters to change Stylus' date range requirements, or you can locate the constraining series through the Summary tab and then change it to a more acceptable series.

Q: My views or reports are blank/not populating correctly.
A: You may need to run or re-run your study. Sometimes changes may only be reflected when the study is rerun to refresh calculations.

Chapter 5

Views and Reports

Overview

MPI Stylus Pro's reporting package has been designed to accommodate the full range of reporting needs for the financial services industry. From one-page fact sheets to automated institutional books, MPI Stylus Pro's Views and Reports features allow you to leverage the power of unlimited performance-based analytics and data visualization into your Reports.

Chapter 5

Views and Reports

MPI Stylus Pro's Views and Reports features have been designed with the diverse reporting needs of the financial services industry in mind. From templates designed with the independent advisor in mind to institutional-quality reporting solutions for investment banks, MPI Stylus Pro users will find a host of visual analysis and reporting solutions ready to enhance their productivity.

Reporting in MPI Stylus Pro Modules

MPI Stylus Pro consists of four main modules – Stylus, Allocator, Integrator and Prospector. All four of these modules have Views functionality, but Prospector has no reporting functionality as it is an analysis-specific application. MPI Integrator may be used for creating Reports from Prospector studies.

Understanding the Views/Reports Concept

The differences between Views and Reports in MPI Stylus Pro are more significant than they might first appear, and understanding the rationale behind the system will help users make the most efficient use of MPI Stylus Pro's output features.

You should think of the Views node as your own personal chart, table and memo library. You may create as many charts and tables as you feel necessary to conduct a thorough analysis, even if you do not intend to use all of the output in your final Report. This allows you to quickly and efficiently create output for your analysis without having to worry too much about final aesthetic details or organization. Because the organization of your Views will not affect the appearance of any Report you create, you may organize Views in whatever way you find most useful.

Reports will be actual, final output – something you can feel comfortable sharing with clients, colleagues, partners and prospects. These can be made up of any or all of the Views you have already reviewed – and, through the special "Link to View" feature discussed later in this chapter, users will be able to use the same chart or table in multiple Reports (or multiple times in the same Report), without having to create or change it multiple times.

Views

Views are your own personal library of charts, tables and memos. You may create as many Views as you like based on unlimited performance-based analytics and other data, such as database fields. Unlike Reports, which will be actual publishable content, there is no disadvantage to creating extra Views in order to give oneself as complete a picture of a fund or portfolio as possible. Once a View has been created, it can be used multiple times in multiple Reports – and if it needs to ever be changed, the change can be made in the View and automatically propagated to all Reports it links to.

Modules Using Views

All modules in MPI Stylus Pro, except Prospector, have a Views node that works according to the instructions in this chapter. Prospector does have the ability to create select Views, and also adds powerful capabilities to Views that are not present elsewhere in the application; for more information, please see Chapter 5.

View Components

There are three possible components of Views in MPI Stylus Pro:

- Charts, which show visual representations of data
- Tables, which display actual data in columns and rows
- Memos, which are used for text

While Charts, Tables and Memos will have some shared features in the application, they will also have many unique features; therefore, each will be examined individually.

Galleries

It is highly recommended that anyone seeking to create or edit Views use the 'Galleries' approaches listed in this chapter under 'Creating a New View with Galleries' and 'Populating Views with Chart/Table Galleries'. This is by far the fastest and most efficient method for output creation.

Hiding Galleries
You may hide the Galleries sidebar at any time by dragging the bar to the right side of your screen until it is completely hidden, or by double-clicking on the Galleries side bar. You then would need to save your study to capture the changes.

Unhiding Galleries
To unhide your Galleries sidebar, simply drag it from the right edge of your screen until it is visible, and then click 'Save' to capture the changes.

Working with Views

All charts, tables and memos that you create in your Views node will be organized into one or more actual "Views." You may create as many Views as you like, each consisting of as many charts, tables and memos as you wish; however, MPI recommends that the user limit the number of charts, tables and memos in a View to ensure ease of use and optimal performance.

Views Icons in Menu

This series of icons allows you to perform a number of quick tasks related to views. Notice the section labeled 'View'. The options are, left to right:

- Add View (this adds a new View to the Design Tree)
- Delete View (this deletes the currently active View)
- Add blank chart (adds it to the currently active View)
- Add blank table (adds it to the currently active View)
- Add blank memo (adds it to the currently active View)

Creating a New View with Galleries

Galleries provide a simple and quick way to create a new view that is pre-organized and already has chart, table or memo blocks added. This allows you to then simply populate each block with the relevant content (i.e., drag in the Performance analytic block for a given chart).

To create a new View using the Gallery feature:

1. Scroll through the Gallery options to find the design that suits your needs. Remember that you can add or remove individual charts/tables/memos later on.
2. Click your mouse on the view in question and drag it over into the data pane.
3. When you release the mouse button, the new View will be added.

Creating a New View from Scratch

To create a new View from scratch:

1. Go to the Views node on the Design Tree and click the + symbol to be found on the left.
2. Your new view should appear.

Alternately, you may do the following:

1. In Stylus, Allocator or Integrator, click on the "Views" node on the design tree.
2. In the data pane on the right-hand side, click the "New" button. A new View will appear in the data pane, on the design tree under the Views node, and as a new output tab along the bottom of your screen. The View will have an automatically generated name such as View1, View2, etc.
3. To populate the View with charts, tables or memos, see "Editing Views" below.

Renaming Views

If you wish to rename a View for organizational purposes (i.e., change View1 to Performance):

1. Double-click on the name of the View on the design tree. You will now be able to type in a new name for this View.
2. When you have finished typing, hit the Enter key on your keyboard. The View's name will now be changed.

                  Note that the View tab will also reflect the name change.

View names may also be renamed in the data pane when you click on the Views node. Simply double-click on the View name in the data pane, delete the existing name and type in new one. This makes renaming multiple Views a quick process.

Editing Views

The ability to edit charts, tables and memos, as well as the layout of Views, is an important part of the Views concept. There are two ways in which a user can edit a View.

1. By editing the organizational structure of the View, such as adding, deleting or rearranging its component charts, tables and/or memos; or
2. By editing the actual charts, tables and/or memos within the View (this will be discussed later in this chapter.)

Once you have created a new View, you will wish to add one or more charts, tables or memos to the View.

There will be two steps to creating a new chart, table or memo in MPI Stylus Pro. The first step will involve adding a chart, table or memo block to a View. This serves as a placeholder and tells the application what kind of View you wish to display. The second step will be designating the analytic, data or text that will populate the View.
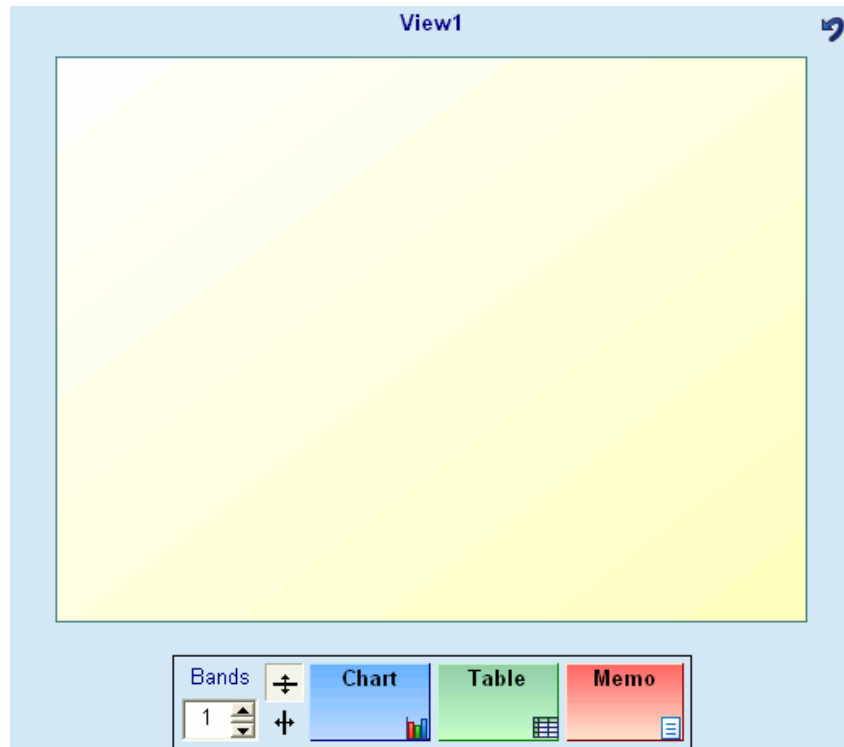
Figure 54

The controls for creating new chart, table or memo blocks and designing your View pane are quite simple and consist of the blocks themselves and band quantity and orientation controls.

Blocks

Chart, table and memo blocks (visible in the picture above) serve as visual placeholders in both Views and Reports, and also tell MPI Stylus Pro what kind of information you need to show in a given View or Report.

Bands

Bands may be thought of as either rows or columns in a View that display one or more charts, tables or memos. There are two controls governing bands in the application.

Band Quantity

The band quantity tool allows you to select how many rows or columns (depending on orientation) you have available for displaying Views.

Band Orientation

The band orientation controls allow you to specify whether you want your bands to appear in a vertical or horizontal format.

Rearranging Views (or Reports)

A variety of options exist for rearranging the order of Views (or Reports) on the Design Tree.

1. Up/Down. You may use the Up/Down buttons in the data pane (when clicked on the Views or Reports node) to rearrange specific Views by first selecting the relevant View/Report and then clicking on Up/Down as is necessary.
2. You may click on a View or Report on the Design Tree and drag it while holding your left mouse button. You may then drop it in the relevant location.

Review Links

The Review Links button will be applicable once you have created Reports and have one or more charts/tables/memos in at least one View linked to at least one Report. Upon clicking the 'Review Links' button, you will see the 'Linked to Reports' interface, with the following information:

- Report – The Report in which the chart/table/memo appears.
- Page – The Page upon which the chart/table/memo appears.
- Name – The Name of the placeholder chart/table/memo space in the Report into which the View chart/table/memo is linked.
- Linked from/Not Linked: This lets you know for all charts/tables/memos if they are currently used in one or more Reports.
- View – This is the name of the View in which the linked chart/table/memo resides.
- Name – This is the name of the chart/table/memo itself.
- Script – Any dynamic script statements that have been applied.
- Force ungroup (PPT) – This ensures that all objects in the PPT document are not 'grouped' together as a larger image (for example, two charts on the same page)
- Never ungroup (PPT) – This ensures that all objects in the PPT document are always grouped together as a larger image (for example, two charts on the same page)

Close

You may use this button to close this window when you are finished with the tool.

Copy to Clipboard

This tool allows you to copy your selections to the computer clipboard for pasting, i.e., into Excel.

Deleting Views

Before deleting a View, please consider whether you are interested in deleting the entire View or just one chart, table or memo within it. If you delete an entire View, all charts, tables and memos within that View will be lost and they will no longer appear in any Report that links to them.

You can delete via drag-and-drop at any time, or use the methods below.

To delete only a chart, table or memo within a View:

1. In the Views node of the design tree, click on the View that contains the chart, table or memo you wish to delete.
2. You may now either delete the chart, table or memo by right-clicking on its name on the design tree and selecting "Delete", or by simply grabbing the block corresponding to the chart, table or memo and dragging it off-screen. It will automatically be deleted.

To delete a View:

1. Click on the View's name under the Views node of the design tree.

2. You may now either right-click and select "Delete" or simply press the "Delete" button on your keyboard.
3. The View has now been deleted.

You may also delete Views from the data pane.

1. Click on the Views node on the design tree.
2. In the data pane, click on the name of the View you wish to delete.
3. Click the "Remove" button. The View will be deleted.

Populating Views with Chart/Table Galleries

Chart/Table galleries are the fastest and most elegant way to populate your Views with charts/tables, incorporating a sleek drag-n-drop interface as opposed to the more traditional bottom-up approach used in earlier versions of MPI Stylus Pro.

Analytic Block Dropdown

The first step to adding a chart/table via Galleries is to select the appropriate Analytic Block from which it is meant to come. This is done by using the dropdown menu at the top of the Gallery pane.

Sample Charts
For each listed Analytic Block category, there will be different sample charts or tables available. Please note that these charts or tables are truly 'samples' and do not reflect the current content of your output based on your manager, benchmark and other selections. These will only be applied once you drag the requested chart or table into your View.

Previewing Sample Charts or Tables
Sample charts or tables may be previewed by hovering over them with your mouse. This will show you a larger version of the image. Again, this is a sample image and does not contain data specific to your output.

Adding a Chart/Table from the Gallery
Once you have selected the correct chart/table you wish to add:
1. Click it with your mouse and drag it into the View pane.
2. Release the mouse button. Your chart or table will add and will contain a version of the requested output, specific to your current study (managers, benchmark, etc.)
3. Please note that you may have to run the study to see the output.

Daily

Subscribers to our High Frequency (Daily) package will have an additional set of charts/tables from which to choose. These are specific to the requirements of daily data.

Themes

Themes allow you to drag-and-drop color schemes on to charts. This gives you a quick method for creating color-matched output that has a complimentary set of colors.

Please note that it is not currently possible to create your own themes in the application.

Aggregation

This option gives you a quick way to change the aggregation/frequency settings for a chart or table. You can choose from five options:

- Single Outcome (one data point, such as 5Y return)
- Rolling Statistics (i.e., 24 month rolling performance)
- Cumulative Results (i.e., growth of $1000 chart)
- Data Every X Periods (i.e., quarterly data for last ten years)
- Multiple Period Data (i.e., 1Y, 3Y, 5Y performance)

Applying an Aggregation Setting

To apply a setting to an existing chart or table:

1. Using your mouse, click on the setting you wish to apply and drag/drop it into the data pane.
2. A Gallery Dialog window will open. This will explain the type of setting you are requesting, and provide you with the Aggregation settings controls to make your change.
3. Once you have made your settings entries, click 'OK' to apply your changes.
4. You may click 'Cancel' at any time to avoid making the changes.

Filter/Sort/Group

This option gives you a quick way to create/edit Filter/Sort/Group options for your output. In version 11.3 an additional level of Filter/Sort/Group was added. This feature gives you a way to Filter/Sort/Group fields, rather than just Managers. More information on these options and their uses is available on our factsheets, demo studies, and the Dynamic Script User guide, available from MPI.

For more information on these options and their uses, please see our Filter/Sort/Group User Guide, available from MPI.

Chart Objects

These options allow you to easily enrich your charts with objects such as labels and date range overlays that would otherwise require the use of macros to create. We recommend you experiment with these gallery items to explore their potential.

Select Gallery Database

This option allows you to select different gallery databases for review. This currently does not apply to most users.

Working with Chart, Tables and Memos

Charts, tables and memos are the three common types of output in MPI Stylus Pro, and may be created in either Views or Reports. The same tools will be used in both cases; therefore, the instructions in this section will focus on performing tasks in Views, but will also be generally applicable to Reports.

New Chart, Table or Memo

The first step to adding a new chart, table or memo to your View will be to select the appropriate block (all three blocks are clearly labeled.)

To create a new chart, table or memo:

1. In the Views node of the design tree, click on the View in which you would like to create a new chart, table or memo.
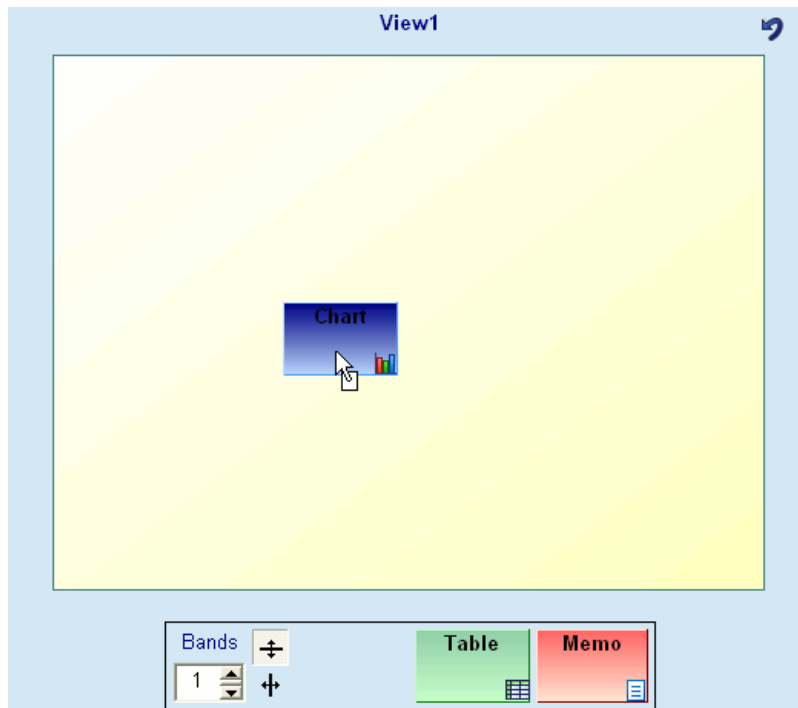

Figure 55

2. In the data pane, use your mouse to select a block (chart, table or memo) and drag it up into the grid section of the data pane. When you release the mouse button, the block will automatically expand to take up all available room in its band, ensuring that it can be viewed in the largest possible format.
3. A default name (such as Chart1) will be generated. You may rename the View by clicking in the name field of the block and typing in the name you wish to use.
   When you press enter, you will notice the new name is also reflected under the Views node on the design tree.
4. You may add additional blocks if you like at this time. Current blocks will resize automatically when you add additional blocks.

Once you have specified the type of output you are looking for, it will be time to design the actual chart, table or memo you have created.

Chart and Table Design

Chart and Table design in Views is quite similar, and therefore will be discussed simultaneously. Memos are very different and will have their own section later in this chapter. It should be noted that each module has its own variations on the Chart and Table designers; for example, MPI Allocator has statistics and charts available that are not available elsewhere in the application. This chapter is meant to cover basic Views and Reporting features on an application-wide level wherever possible; however, it will be primarily be concerned with the MPI Stylus module. Users should refer to module chapters for further information on statistics, charts or other output specific to those modules.

Viewing Chart, Table and Memo Names

You may choose to view your chart, table and/or memo names in Views at any time by toggling on or off the "Show design names as titles" button in each View tab. This will allow you to view each chart, table or memo's name above it in that View. You may also edit the name at that time simply by double-clicking the name and entering new text.

Chart Designer and Table Designer

The chart and table designer screens are the area in the application where charts will be designed. They can be viewed at any time in one of three ways:

1. Clicking on the name of the chart or table in the appropriate View in the Views node of the design tree.
2. Right-clicking on the chart or table in a View tab and selecting "Chart/Table/Memo Designer". This will also work in Reports if you have created the chart or table memo directly in the Report.
3. Right-clicking on a linked chart or table in a Report and selecting Chart/Table/Memo designer. You will then be able to click the "Jump to View" button to be taken to the Chart Editor.

The chart and table designers both consist of three similar sections:

- Analytic blocks. The analytic blocks control the type of statistics & data that will appear in your chart or table. Each block represents either a particular chart type (i.e., Style Map, Scatter) or statistics that may be expressed in either chart or table form (i.e., Performance, Risk, Correlation.)
- Parameters. Chart or Table parameters control time periods, aggregation settings, and data point frequencies. In addition, the table designer has additional controls for layout and date formats.
- Series selection area. This area allows the user to specify which managers, indices, peer groups and statistics (i.e., Distribution) and whether or not the benchmark should be included in the chart or table. The user may specify all, none, or specific items for inclusion.
- Pre-process. This feature allows the user to make additional adjustments to data being computed in the analytic blocks, so as to adjust the information displayed in a chart or table. In tables, Advanced Table Formatting is a more powerful and efficient tool for this purpose, but for Charts it is the only option currently for these additional adjustments.
  The Pre-process feature now also includes an option 'Skip NA and 0' to hide blank bar spaces in a chart in a report. Please note that this option is only present in the Chart Designer. This enables a user to hide resulting analytics which may appear blank in cases where data computes to 0 or NA.

Table Layout

Tables in MPI Stylus Pro make use of a flexible table layout that allows the user to specify the location of data in both rows and columns, and provides a preview of the results.

Edit
The Edit button will open the Flexible Layout box, allowing you to make use of the layout options to best organize your table. This is described in detail below.

Date matrix
This option will be enabled for specific table types where the results may be viewed in a date matrix format. This option will be disabled in cases where data may not be shown in this form.

Dates reversed
This option allows you to reverse the order of dates in your table; for example, dates beginning with 1998 and ending with 2005 may be reversed so that the 2005 column comes first.

Flexible Layout box
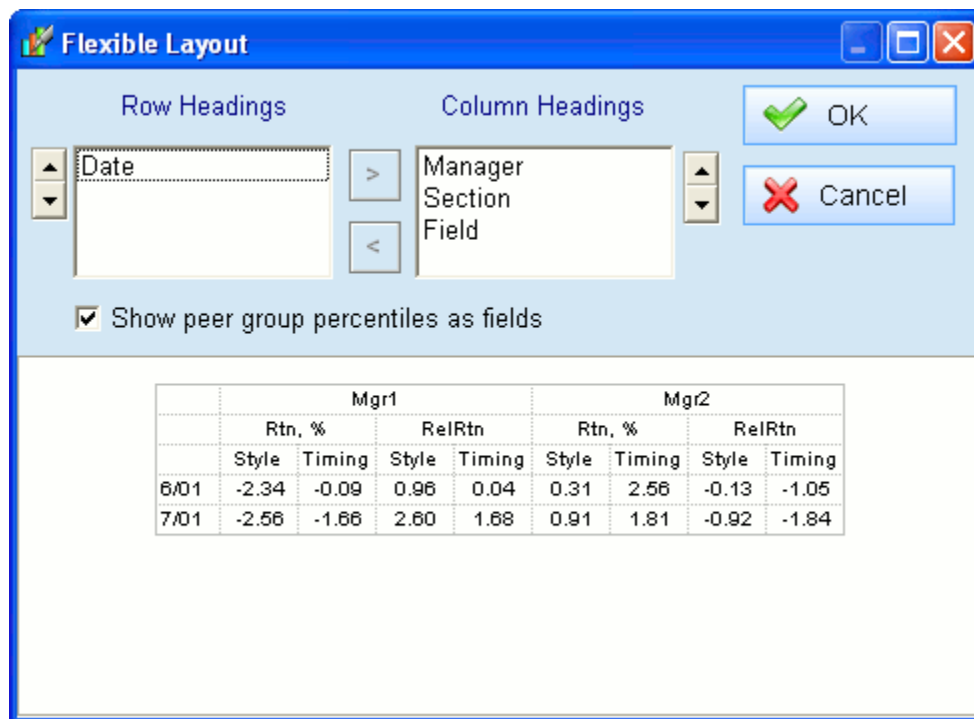
Figure 56

The Flexible Layout box allows you to specify by data heading whether or not this data belongs in a row or a column, and what its relationship should be to other data headings in that row or column structure. The exact effects of each layout control on a given table will depend on its default layout, but generally the following settings apply:

Date
This will represent the time periods displayed in the table. This could either be a range (for an interval or rolling period) or specific periods (such as 2001).
Manager
This will determine the position of all series included in the table, including Managers, Benchmarks, Peer Medians, etc.

Section

Section typically corresponds to the data elements in the drop-down menu of an analytic block. For example, a Performance table might have section options of Return, Annualized Return, etc.

Field

Field typically corresponds to the data elements available as checkboxes in an analytic block. For example, a Performance table might have field options of Excess, Alpha, Style, etc.

Working with Flexible Layouts

To use a flexible layout:

1. First please review the table display shown in the "picture window" beneath the Row Headings and Column Headings controls. This is your table as it would appear if you accept the current settings for which elements are in rows and which are in columns – in the exact order in which they appear. Please remember that you will be able to remove headers and columns in the Attributes Editor, so the key here is to make sure the table logic is correct – even if you will want to remove some elements later.
2. To move an option from Row Headings to Column Headings or vice-versa, click on the option with your mouse and then either drag it to the other Headings area or use the right/left arrows to guide it.
3. You may also use up/down arrows to change the priority of options.
4. Once the table looks correct, please click OK.

Notes

This option provides a report or template designer with a scratchpad to record notes about the design of the chart or table, possibly for use by others to later understand or modify the content. This is a good place to mention any macros used in the design or assumptions about the inputs.

Analytic Blocks

Analytic blocks in MPI Stylus Pro represent groups of statistics or data organized by common type or theme. For example, the MPT Statistics analytic block contains statistics related to modern portfolio theory, such as alpha, beta, and the Sharpe Ratio. These groupings allow the user to quickly locate and implement the exact statistic(s) they require.

Charts and Tables both have analytic blocks available to them, and many of the blocks are identical for both output types; however, the design of charts or tables makes certain types of output only useful for one type or the other. For this reason, not all blocks will be the same for both charts and tables. Please refer to the table below for a listing of available chart and table blocks. Note that additional analytic blocks may be found in other MPI Stylus Pro modules, and that users should refer to module-specific chapters for this information.

Stylus Module Analytic Blocks	Available in Charts?	Available in Tables?
Asset Loadings	Yes	Yes
Asset Map	Yes	Yes
Asset Turnover	Yes	Yes
Correlation	Yes	Yes
Custom	Yes	Yes
CUSUM	Yes	Yes
Database	Yes	Yes
Database Table	Yes	Yes
Dictionaries	Yes	Yes
Distribution	Yes	No
Downside Risk	Yes	Yes
Downside Statistics	Yes	Yes
Gain/Loss	Yes	Yes
Min/Max	Yes	Yes
MPT Statistics	Yes	Yes
Performance	Yes	Yes
Performance Statistics	Yes	Yes
Portfolio Analysis	Yes	Yes
Properties	Yes	Yes
Quantiles	Yes	No
R-squared	Yes	Yes
Risk	Yes	Yes
Scatter	Yes	No
Scenarios	Yes	Yes
SQL	Yes	Yes
Style Drift	Yes	Yes
Style Map	Yes	No
Style Metrics	Yes	Yes
Summary Statistics	Yes	Yes
VaR	Yes	Yes

Figure 57

Multi-section Charts (Combination Charts)

Users of Version 10.0 or greater may use the Multi-section option in the Chart Designer to create multi-section (combination) charts. For more information, please see the 'Multi-section' (Combination) chart section of this chapter.

Working with Analytic Blocks

Most analytic blocks in Stylus come in the same form as the performance block below.

Figure 58

It contains the following sections:

- The title, clearly identifying the block type
- A drop-down menu. Depending on block design, this may contain actual statistics or data, or it may contain features to organize data, such as ranks.
- Select all and select none buttons. These appear to the right of the dropdown menu and affect the check boxes in the block.
- Check boxes. Depending on block design, these may regulate the statistic, calculation type, map or other item to be included in the chart.

There are eight blocks in Stylus where this is not the case. The Scatter, Distribution, Database and Holdings blocks do not require check box functions and instead contain one or more dropdown menus as their only options. The Asset Loadings, Correlation, Style Metrics and Asset Map (in the table version only) blocks work the same as the standard blocks above, but contain an additional feature. Specific features of these blocks will be listed along with their entries below.

Hide Zero Fields

A 'Hide Zero Fields' checkbox exists for many blocks and is located in the upper-right corner of the block itself. When checked, the Chart/Table will not display '0' or 'NA' values, allowing the user to focus on relevant data. For example, the Asset Loadings chart would show only those Assets in its legend that had non-zero data, as opposed to every index in the Design Tree.

Asset Loadings

The Asset Loadings block is used to demonstrate the likely allocation of a fund's assets to different style classes or investment types. The block retrieves any indices listed in the Style Outline node of the design tree, including underlying indices in Style Maps. The user may then select which indices to include in the chart.

Lock check box
The Lock check box in asset loadings charts allows the user to lock all indices present in the block as checked. This is helpful when the user expects to make periodic changes in the indices in the Style

Outline node. When the Lock feature is selected, the block will capture such changes and ensure that all indices are included.

Asset Map

An Asset Map lets you study changes in the asset class exposure in terms of the values of the two coordinates of the corresponding style map. Visually, an asset map is similar to the Asset Loadings chart; however, in terms of specification, it is equivalent to the Style Map chart.
In order to create an Asset Map, you must include at least one style map in the Style Outline.

All style maps listed in the Style Outline display in the chart model. If more than one style map is present in the Style Outline, select the specific map you wish to analyze using the check boxes.
The default Asset Map is a bar chart. Area and line charts are also available.

After dragging the Asset Map icon from the center of Data Pane to the chart area, select the computational option:

Weight
Weight determines the position of any point on the map by portfolio assets allocated to each asset class presented on the map. This is the standard form of the asset map.

Rank
This is a universe ranking of total statistics.

Rescaled Weight
This shows the allocation of assets to a style as a proportion of assets allocated to a specific asset class. Use rescaled weight when the proportion of total allocated assets to all assets on the style map is small, because a regular style map may not clearly show differences in exposure to asset classes.

Rescaled Rank
This is a universe ranking of rescaled weights.

Asset Turnover

Asset turnover measures the level of investment style change in a portfolio. Investment style exposures in Stylus are estimated across style indices over rolling periods. Unlike security-level turnover, where changes in specific holdings are measured, asset turnover deals with changes in exposure to segments of the investment market as represented by style indices.

There are two different ways to look at asset turnover:

- Total
- By Asset

If you select Total, you'll see the total value associated with increases (buys) or decreases (sells) in style exposure. No information about the specific styles to which exposure is being increased or decreased is provided at the Total level.

If you select "By Asset", you can then select the following information:

- Turnover Buys shows increases in style exposure over the period specified
- Turnover Sells shows decreases in style exposure over the period specified.

- Buys vs. Sells shows the net effect of style exposure increases and decreases over the period specified. If the data is not aggregated, then Buys will match Turnover Buys and Sells will match Turnover Sells for each period; however, when the data is aggregated, increases and decreases in the same styles are shown at the net level, with some exposures canceling each other out, rather than accumulating.

  The Buys vs. Sells (By Asset) combination is quite useful because it measures the net effect of increases and decreases in style exposure and is therefore less likely to be affected by noise in style estimation results. In other words, style movement due to noise is more likely to be canceled out with this measure, leading to more reasonable levels of turnover.

  Noise in style estimation should be minimized as much as possible when computing style turnover because much of turnover is attributable to noise. You will find the style estimation results particularly noisy with daily data, and should make an effort to smooth the results as much as possible prior to computing turnover. Jagged edges in the historical style exposure chart are an indication of noise; increasing the window size used to estimate style while decreasing the decay factor should lead to smoother results without compromising the accuracy of your style estimation.

  The Buys vs. Sells (By Asset) chart also allows you to see style changes together, as the chart shows increases and decreases simultaneously. The best type of chart to use for demonstrating this turnover is the stacked bar chart (available through the Attributes Editor.) It should be noted that this analysis becomes more meaningful when analyzed relative to peers than on a standalone basis.
- Annual Turnover (Buys) is annualized Turnover Buys. For periods greater than one year, turnover is divided by the total number of years. For periods less than a year, turnover is multiplied by the number off periods in the year.
- Annual Turnover (Sells) is annualized Turnover Sells. For periods greater than one year, turnover is divided by the total number of years. For periods less than a year, turnover is multiplied by the number off periods in the year.

Correlation

Correlation and covariance are some of the most commonly used statistics. Accurate estimations of these statistics have become a centerpiece of modern finance and of risk measurement systems. Covariance in particular measures the degree to which the returns on assets move together.

If positive and negative deviations from the asset means occur at similar times, the covariance will be a large positive number; if the deviations occur at dissimilar times, the covariance will be a negative number.

Correlation is defined as a standardized covariance, taking the values between positive and negative 1. You may compute correlation/covariance between selected managers, style indices, benchmarks and any other return series.

You have the following options when working with covariance:

- Correlation – measures the extent of a linear association between two variables
- Excess Correlation – measures the correlation of excess returns.
- Covariance – measures the degree to which returns on assets move together
- Annual Covariance – measures the degree to which returns on assets move together annually
- Correlation Rank – requires a peer group. Displays the rank of the correlation value vs. the peer group

- Covariance Rank – requires a peer group. Displays the rank of the covariance value vs. the peer group
- Correlation Order Rank – Correlation order rank provides a true rank of correlations in a peer group; for example, for a peer group of 287 funds, the ranks would be from 1 to 287 with no repeated numbers.
- Covariance Order Rank – Covariance order rank provides a true rank of covariances in a peer group; for example, for a peer group of 287 funds, the ranks would be from 1 to 287 with no repeated numbers.
- Kendall's Tau – This rank coefficient measures the similarity between ranks of values. As with the Pearson correlation coefficient, it is measured on a scale of -1 to 1, with -1 implying perfect disagreement between ranks and 1 implying perfect agreement. Kendall's Tau is a non-parametric measure and does not require a linear relationship between values – nor even that they even be measured in the same units.
- Spearman Correlation – This rank coefficient assesses how well the relationship between two variables can be measured using a monotonic function. More robust than Pearson correlation but less computationally intensive than Kendall's Tau.
- Reflective Correlation – A variant of Pearson's correlation that can be used when the mean estimates of your series are unreliable. Means are assumed to be zero.
- Correlation of alphas
- Correlation of selection returns
- Correlation of Upside (positive) and Downside (negative) returns

Once you have selected the statistic you wish to calculate, you may then select the columns for the correlation matrix you wish to see in the chart. You may add managers, style indices, benchmarks and peer group indices. You may select individual assets, asset groups, or all assets by using the checkmarks.

Custom

The Custom analytic block is only available for use/editing by Advanced Analytics package subscribers. It provides the user in the Stylus module with a powerful set of analytical features and capabilities related to custom creation and manipulation of statistics, ratios and models, and we recommend that anyone interested in using it contact the MPI Support team for assistance in planning out the best workflow solution for your needs.

Note that the Custom block in the Stylus module is not identical to the one in Prospector, which has a separate syntax and use case. For more information on the Prospector version, please see our Advanced Analytics/Prospector User Guide, available on markovprocesses.com.
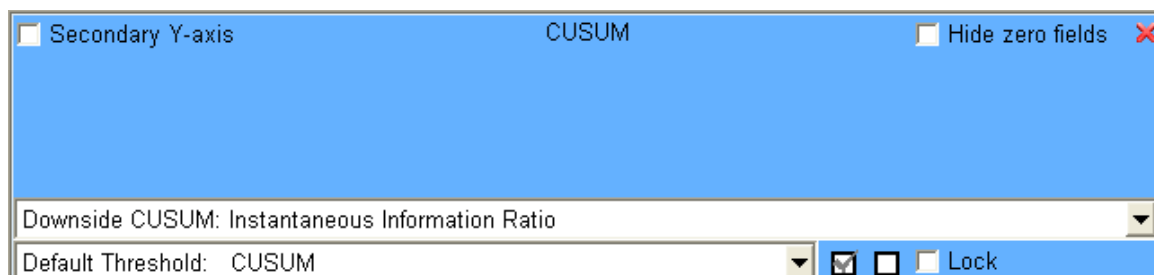
CUSUM

Figure 59

CUSUM (cumulative sum of a series) is used to help monitor manager performance on an ongoing basis. Its primary purpose is not to be a hiring or firing decision-making tool, but rather to initiate investigations.

CUSUM, in and of itself, can be applied to a variety of statistics, but in MPI Stylus Pro, it is calculated off of the Instant Information Ratio statistic, which is the ratio of the log of excess returns to exponentially weighted tracking error. IIR is used because it is more stable than excess returns and directly related to manager skill.

For detailed information on using the CUSUM analytic block and its features, please see the CUSUM User Guide and the associated video, available on the MPI web site.

Database

The database block gives you the ability to bring values from your database into Stylus as data in a chart (or table). For example, if you are using Morningstar as your database, this block would allow you to return the appropriate fields from this database.

When no manager (and thus no database) has been selected, this block will appear only with one dropdown field and will be unable to return information; however, when a database has been selected, a second dropdown field will appear, and this will allow the user to select from any and all fields in the database.

In the picture below, the user has clicked on the second dropdown menu to reveal the available fields from Morningstar. The user may then click on any field that should be included in the chart (this would also work for tables.)
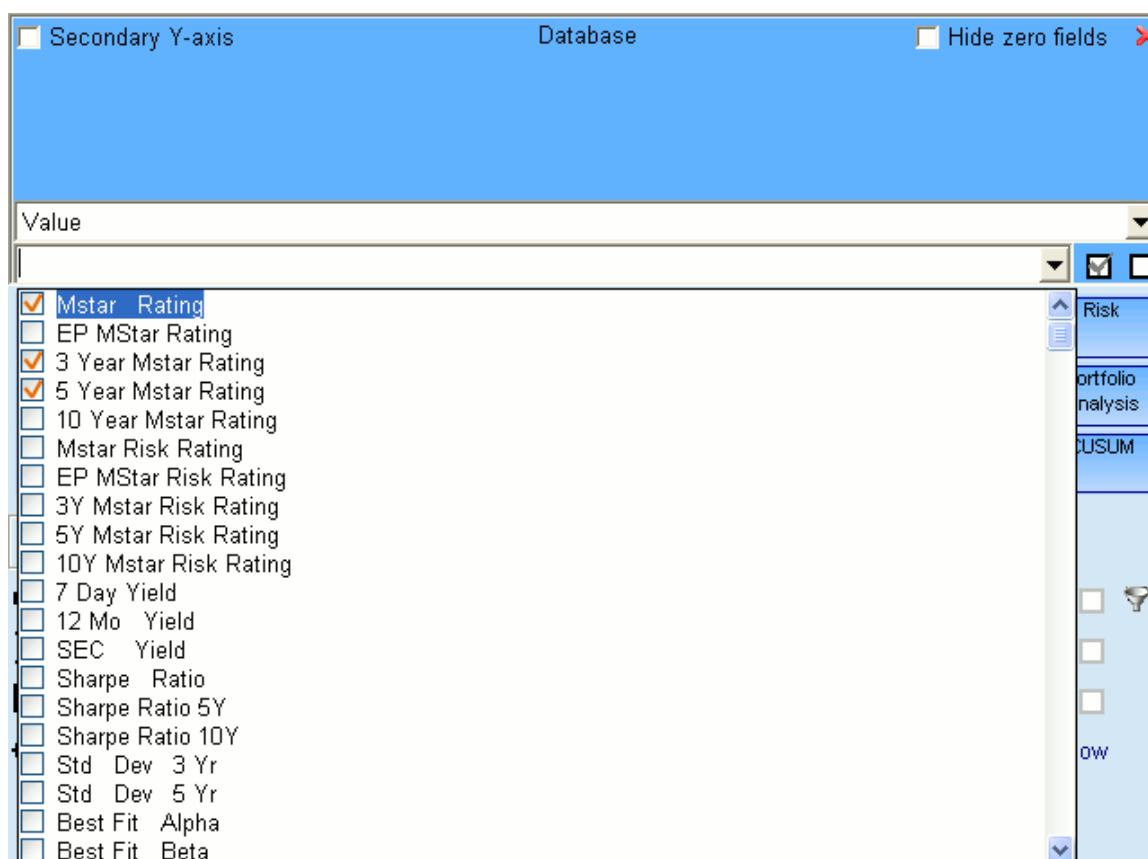
Figure 60

Once the selections have been made, the user can then click back on the dropdown field to have Stylus accept the selections for use in the chart (or table.)

Database Block Parameters

In general, it will not be necessary to fill out parameters for your database block chart or table because they retrieve information directly from the database. Because this information is essentially "frozen," the parameters settings in Stylus will not affect them.

Rearranging Database Field Order for Tables

Most 3rd party providers do not allow their database field orders to be rearranged in MPI Stylus Pro; however, there is a way to use database block functionality to achieve the same effect and to have fields appear in any order in a single table. (For charts, you would use Combination Charts to accomplish this)

The secret lies in using multiple database blocks next to one another in the same table design. For example, imagine that a user wishes to have a table with Sharpe Ratio and Mstar Rating - in that order - from the Morningstar database. This would not be possible with one database block because Mstar Rating comes before Sharpe Ratio.

However, the user could follow these steps to achieve this effect:

1. In the table design area, create a database block and select the Sharpe Ratio as the field to be displayed.
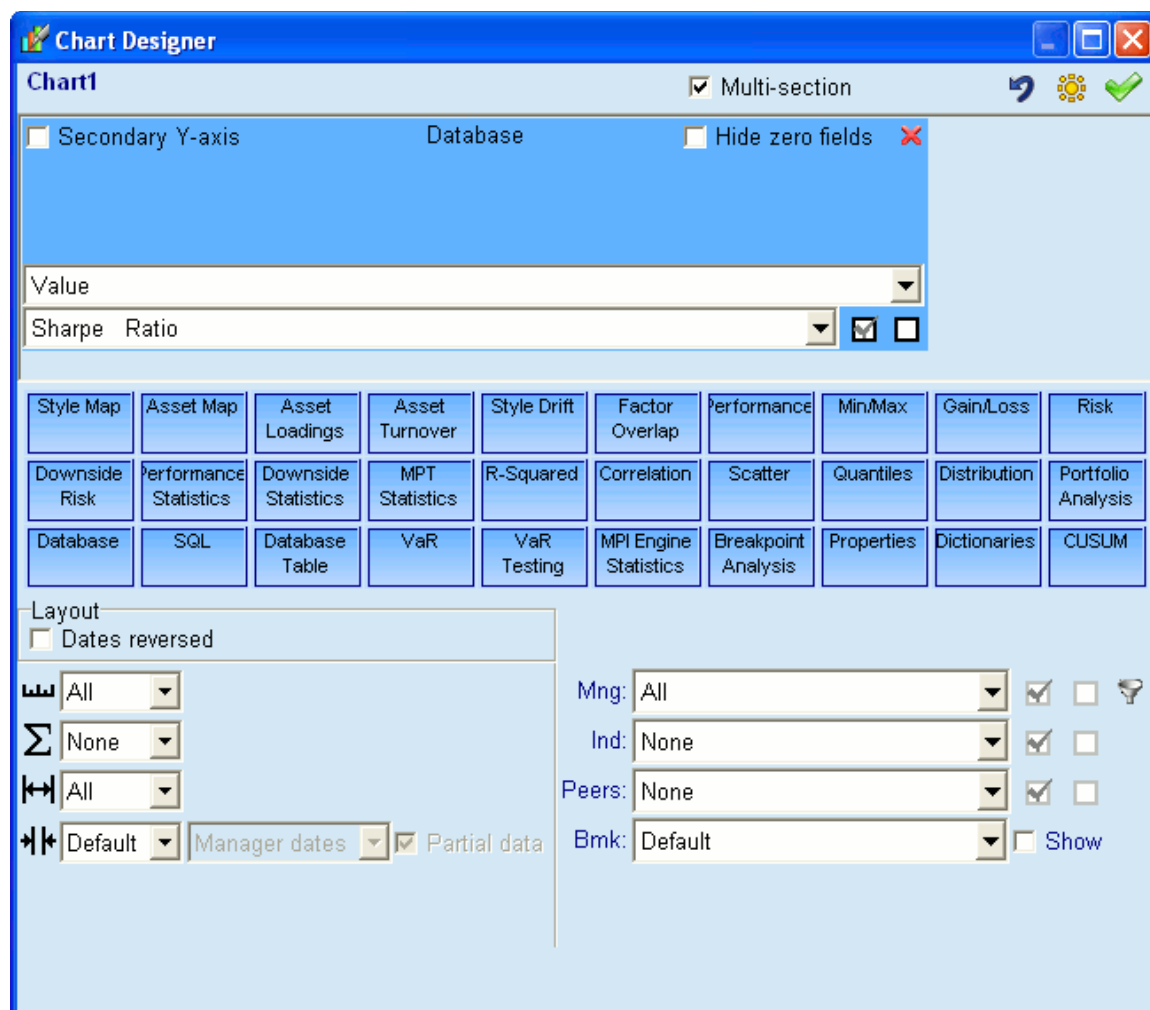
Figure 61

2. Now, use your mouse and select an additional database block, dragging it up to the area to the right of the first block.
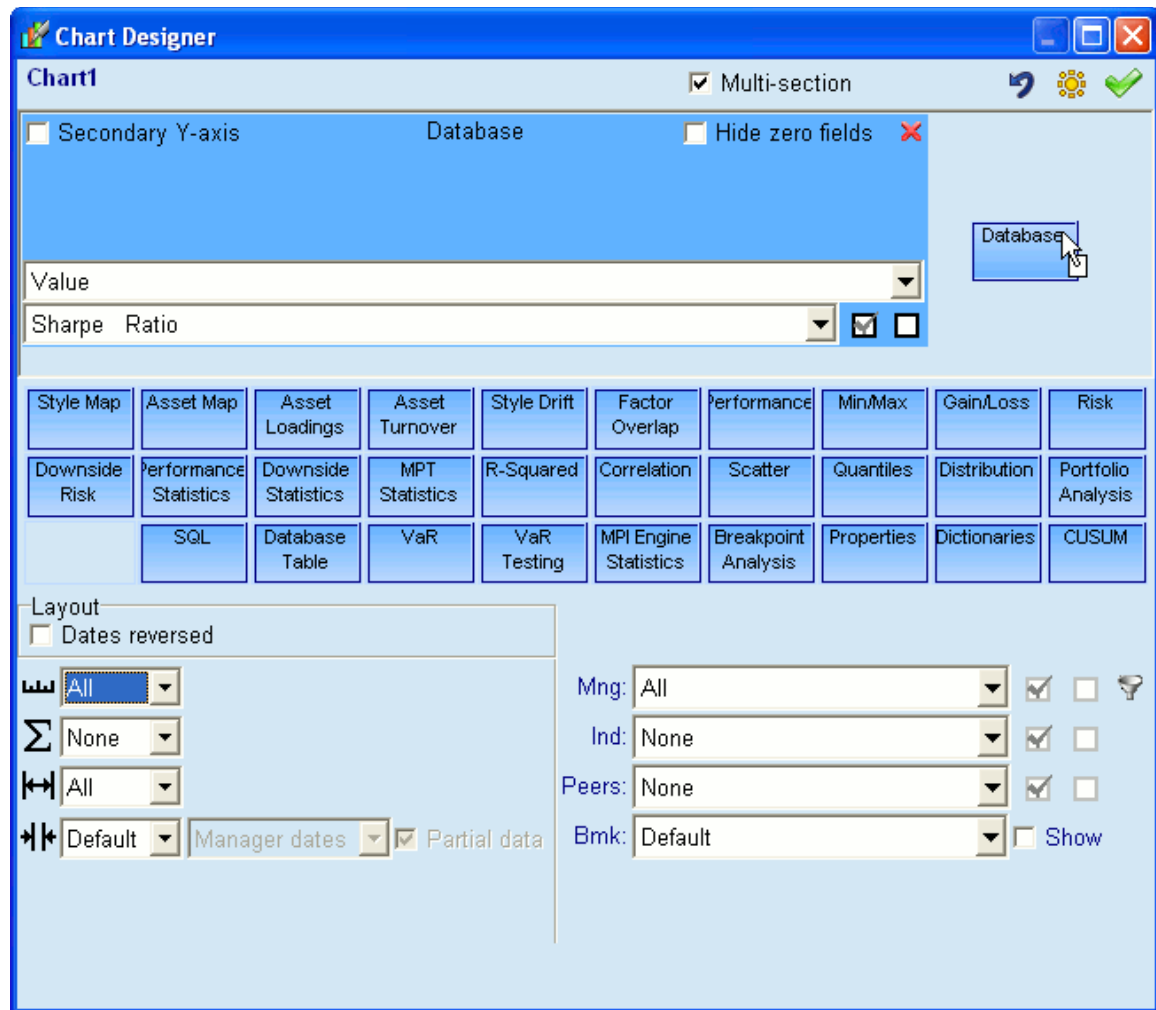
Figure 62

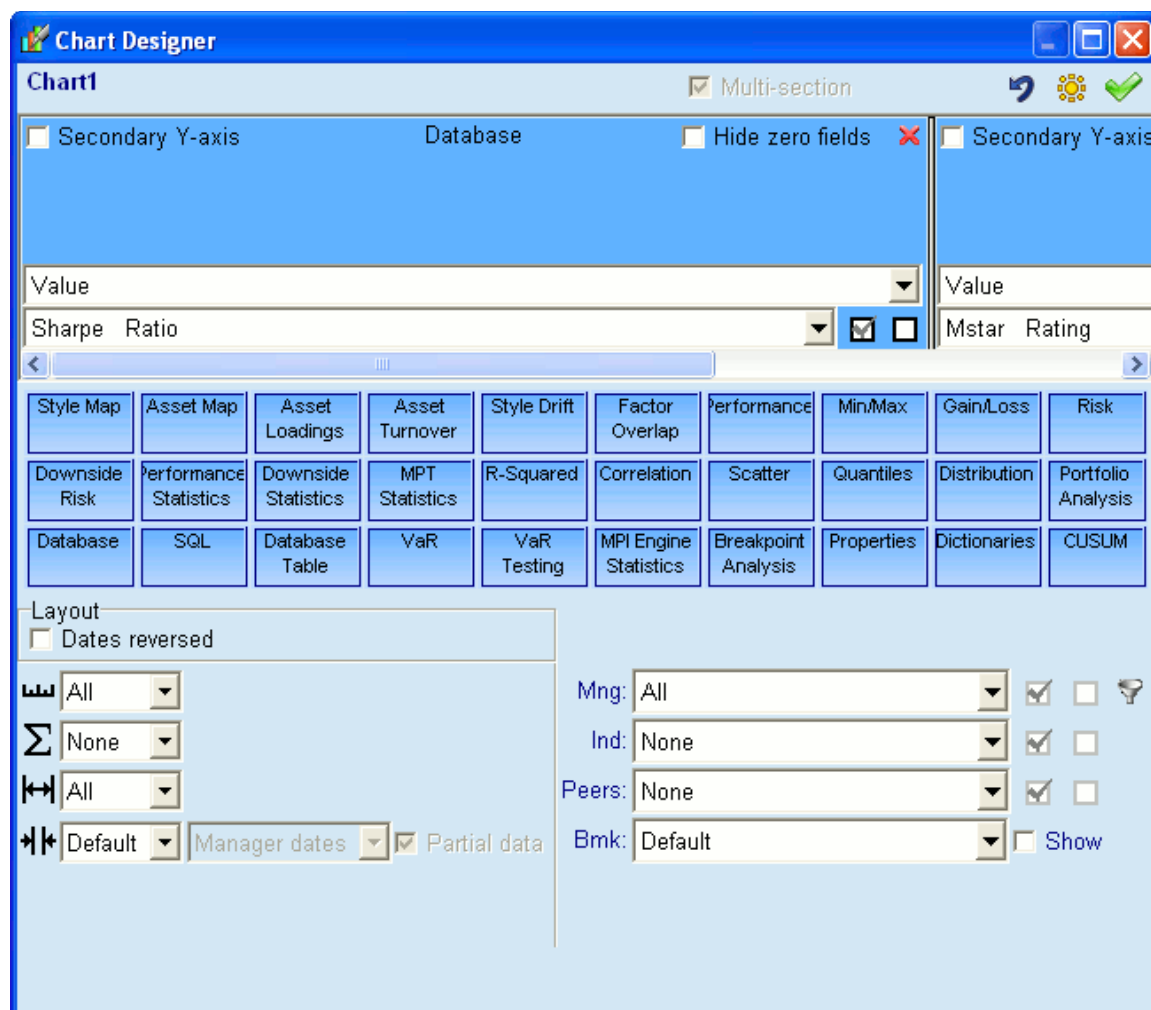3. Drop the block there and select the Mstar Ratio as your field.

Figure 63

This single table will now display (in its output stage) those two values in the specified order of Sharpe Ratio and Mstar Rating.

Database Table

This block enables one to import and manipulate data that could previously only be used through a combination of a database link and SQL code. In MPI Configurator, any of the existing databases already configured can be expanded by attaching additional data which exists outside of Stylus. Database tables are added in Configurator from the shortcut (right-click) menu and may be Excel, MPI or ODL databases. Examples of data that could be added include holdings information, historical assets under management or economic data (such as treasury yields.)

Dictionaries

This block allows the user to access and implement the Dictionaries settings made in the Design Tree. Note that Dictionaries features may also be accessed through other areas of the application, such as the Distribution analytic block, etc.

Distribution

A distribution chart allows you to study a frequency of distribution values of any variable belonging to any of the major calculation groups in the application. In each case, you will be presented with two dropdown menus.

The first dropdown menu allows you to select the variable to be examined. In the example above, the variable would be Asset Loadings: Cash, Weight.

The second dropdown menu indicates the specific unit of measurement to be used in the output.

Note that distribution charts must always be bar charts.
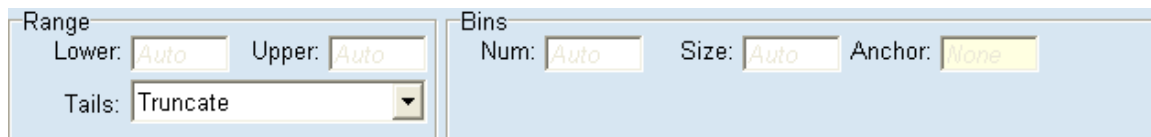
Figure 64

MPI Stylus offers a range of additional controls that allow the user to specify several facets of the distribution's appearance. These Range and Bins controls greatly expand the flexibility of distribution charts in the application.

Range

Lower/Upper
The Lower and Upper range settings allow the user to specify precisely at what point the Tails setting will be applied (at what point truncation or aggregation will occur.)

Tails
The Tails settings give the user three options for how to treat distribution data beyond the Lower and Upper ranges.

- Truncate cuts off distribution tails at the Lower and Upper settings and discards the information beyond those points
- Truncate & Rescale applies the Truncate setting to the distribution tails, but then rescales the distribution to total 100%
- Aggregate applies the Truncate setting, takes the sum of the discarded values and puts the new value in as the last data point on each tail. This may result in a distribution with unusual peakedness at the tails (in addition to the normal distribution peak)

Bins

Num
This allows the user to specify the number of bins/bars to use in a distribution.

Size
This allows the user to specify the range of values to be placed in each bin - in essence, the width of each bar in the chart. For example, a size of 10 would force the distribution chart to break its distribution data up into blocks with ranges of exactly 10 units per block. If the bin size were to encompass the entire range of values, a single bar would appear.

Anchor
This setting allows the user to specify the numerical point all distribution bars are numbered from. For example, if the Anchor were set at 0.5, then the distribution bins would all be adjusted to start their numbering on a data point divisible by 0.5.

Quantile

The Quantile block functions similarly to the Scatter block, but instead plots a single variable against another variable with distributions expressed in terms of decile, quartile or rank value.

The top dropdown menu assigns the statistic to the Y axis, and the bottom dropdown menu assigns it to the X axis. A third dropdown menu allows you to select additional parameters for the two axes:

Quantile-Quantile
The first option is for a Q-Q plot, which is a graphical method of comparing two distributions. The statistics on each axis are ranked by quantile from lowest to highest and plotted among their respective axis, starting at the origin and moving outwards.

The "hypothetical" distribution values are plotted along the x-axis, and the "observed" values on the y-axis. If the two data sets have the same distribution, they should fall approximately along a 45-degree reference line where y=x.

Downside Risk

Downside risk charts are very similar to risk charts. The difference is that Downside Risk calculates risk value as the semi-standard deviation with a zero mean; therefore, it measures volatility of loss, or simply the risk of loss.

Please see the statistical glossary at the end of this manual for specific information on your Downside Risk options.

An alternative measure of risk, semi-variance calculates the expected squared shortfall, or the variance of returns below zero. This differs from standard deviation -- the traditional measure of risk --in that volatility of positive returns is not penalized. Negative volatility remains penalized. Semi-standard deviation is simply the square root of the variance.

Downside Statistics

The Downside Statistics block provides another set of measures of risk-adjusted return, comparable to the Sharpe and Information ratios. In this case, semi-standard deviation is used in the denominator as a risk factor.

Also found here is the Omega Ratio, which uses calculus to assess the probability of returns falling above a given threshold rate, without making assumptions about return distribution.

Gain/Loss

Gain & Loss are simply options for analyzing positive and negative returns separately for a given return stream. Gain Frequency, which can be found on this block, is essentially a batting average with a threshold of 0 instead of a benchmark series. Average gain/loss and Weighted gain/loss give an indication of whether a fund behaves the same way on the right side of the distribution as on the left.

Portfolio Analysis

Formerly known as the Holdings block, the Portfolio Analysis block is used to either demonstrate the breakdown in assets of a fund of funds/portfolio (the function of the original block), or to calculate a variety of analytics regarding these holdings.

Note for Use in Tables

Unlike conventional blocks, only one checkbox at a time may be used for this block. Therefore, to show more than one analytic in a Table, you must drag in the block multiple times.

Transpose Portfolio Block Layout (portfolios as fields)

Starting with 11.3 an option was added when a Portfolio Analysis block is added to the Chart/Table Designer. When this option is enabled, portfolios (.fnd files) become "Fields" while underlying holdings in the portfolio become "Managers". This allows the Portfolio Analysis block to be combined with other analytic blocks (as long as the portfolio underlying assets are in the managers node), as well as apply Filter/Sort/Group to the Portfolio Analytics block.

Names

Please note that in MPI Stylus Pro versions 7.0 and earlier, the names of portfolio assets displayed through this block were taken from the Description field in the appropriate underlying database. As of 8.0 or later, the default field has been changed to the Label field, and users moving from 7.0 to 8.0 may notice a change in names for this field.

Performance (Return) Analytics

All of the return analytics are intended to provide an estimate of each underlying asset's contribution to the total Portfolio's performance. For convenience, the analytics can also be displayed as "standalone" values, providing a reference point for the asset's performance independently. The different options take into account several different methodologies used in the industry for this purpose.

In all cases, the periodic (i.e., Quarterly, Monthly) return contribution is calculated each period by multiplying the Manager return by its weight in the Portfolio at the end of the prior period.

Annual Return (a)

The arithmetic option averages the periodic return contributions and annualizes the result arithmetically. The arithmetic annual return contributions on the Portfolio Analysis block will sum to the arithmetic annual return for the Portfolio on the Performance block.

Annual Return (g)

The geometric option is comparable to the Style Attribution on the Performance Block. The periodic return contributions are compounded geometrically, and then annualized. Please note that, as with Style Attribution, the individual contributions do not sum to the Annual return.

Total Return

The total return option scales the periodic return by the previous period's cumulative return for the Portfolio. The result is that these contributions will sum to the cumulative return for the Portfolio, which is aggregated geometrically.

Scaled Return (a) and Scaled Return (g)

These options rescale the arithmetic (a) or geometric total (g) return contributions to percentages of the total Portfolio. These will sum to 100%.

Risk Analytics

The Risk Analytics are intended to provide an estimate of each of the underlying Managers' contribution to the total Portfolio's risk, as measured by the standard deviation of the Portfolio's returns. Identical to the methodology used in estimating Component Risk on the VaR block, we take the product of the Portfolio's standard deviation and the slope coefficient of the underlying series versus the Portfolio series. The two risk options differ in the series used to represent both the Portfolio and the underlying.

Current Risk

For the Portfolio series, this option takes the Portfolio weights as of the most recent period, and creates a synthetic history with the current weights applied in all periods. This option is more representative of the Portfolio's risk characteristics now (and therefore for the next period), especially if there has been a large change in the underlying assets. The series used for the slope coefficients are the actual (un-weighted) returns of the Portfolio components.

Average Risk

For the Portfolio series this option uses the observed historical returns. This option is more easily interpreted as how each of the underlying series contributed to the total Portfolio risk in the past. The series used for the slope coefficients are the periodic weighted returns described under Performance. The Average Risk contributions on the Portfolio Analytics block will sum to the total Portfolio Standard Deviation on the Risk block.

Scaled Current Risk

This option rescales the current risk contributions to percentages of the total Portfolio. These will sum to 100%.

Scaled Average Risk

This option rescales the average risk contributions to percentages of the total Portfolio. These will sum to 100%.

99% and 95% VaR

These options show the component value-at-risk contribution of each asset to the total portfolio VaR, calculated with either 99% or 95% confidence.

99% and 95% Marginal VaR

These options show the effect of changes in weight of each asset to the overall value at risk of the portfolio with either 99% or 95% confidence.

99% and 95% CVaR

These options show the component conditional value-at-risk contribution of each asset to the total portfolio conditional VaR, calculated with either 99% or 95% confidence. See our VaR reference guide for insight into these computations.

Use Custom Labels
A 'Use Custom Labels' checkbox (Versions 8.0 or higher) allows users to override the default setting of having portfolio asset names taken from the Description field in the underlying database. When this box is checked, portfolio asset names are taken from the Portfolio Editor (in cases where the underlying name has been overwritten.)

Please see the MPI website for our Portfolio Investment Groups user guide, which discusses this analytic block in further detail and expands on the ability to group assets.

Holdings

This area allows you to view the contribution statistics for elements including Benchmark Correlation, Downside Risk, Sharpe Ratio, Tracking error and more.

Min/Max

The Min/Max block provides the user with access to statistics including best and worst periods and drawdown. Included here are so-called 'Pain Statistics' such as the Underwater Index (mean drawdown of a Manager for a given period) and the Underwater Ratio (risk-return measure for comparing Manager performance to the Manager's Underwater Index).

MPT Statistics

MPT Statistics allows you to create charts of selected statistics associated with modern portfolio theory (MPT). Included here are such important measures as alpha, beta, Sharpe Ratio, Modified Sharpe Ratio (incorporating Cornish-Fisher VaR) and Batting Average. It should be noted that arithmetic and geometric (g) calculations are available for many of these statistics; for more information, please see the glossary to this manual.

Performance

The Performance block gives the user access to a variety of common performance statistics, including regular and annualized returns. A complete review of statistics and their formulas may be found in the glossary to this manual.

Performance Statistics

The Performance Statistics block is the key to a variety of performance and distribution-related statistics, including Information Ratio, t-stats, Confidence Intervals, Skewness and Kurtosis.

K-Ratio

The K-Ratio measures a manager's magnitude of wealth against the consistency of wealth generation over time. For the formula, please review our Formula Reference guide in the Tools menu of your application.

Tests

Also found here are three additional tests:

- Kolmogorov-Smirnov normality test (p-value), which is based on the comparison of a series of hypothetical normal distributions. Stylus provides the p-value for the test where a small p-value indicates that the distribution is not normal.
- Jarque-Berra normality test (p-value), which uses the skewness and kurtosis of a series to evaluate a distribution's normality. Stylus provides the p-value for the test where a small p-value indicates that the distribution is not normal.
- Durbin-Watson autoregression test (statistic), which, aside from being a check for regression model specifications such as missing factors, is often used to check for index trends and smoothed fund returns.

A complete review of statistics and their formulas may be found in our formula reference, accessible from the Help menu.

R-squared

The R-square block gives users access to a variety of R-squared calculations, including Predicted Style R-squared. Users are encouraged to review Predicted R-squared and the other R-squared options in detail in order to ensure that each different measure is understood properly. A complete review of statistics and their formulas may be found in the glossary to this manual.

Risk

The Risk block gives the user access to a variety of risk measures for charts and tables, including Standard Deviation. Note that additional Risk measures may be found in other analytic blocks as well. A complete review of statistics and their formulas may be found in the glossary to this manual.

Scatter

The Scatter block gives the user the ability to plot a full range of statistical calculations on the X and Y axis of a standard scatter chart, giving the user a wide variety of charts to create. The top drop-down menu will designate the Y-axis statistic, while the bottom drop-down menu will designate the X-axis statistic. Beginning in version 11.0, you can add an optional third dimension variable that defines the size of the data points, creating bubble charts. These charts are described later in the document.

Beginning in version 11.3 you can color peer groups multiple colors when Distribution is selected in the Aggregation settings. The option for coloring them is located in the top left corner

Style Contribution

This analytic block extends factor attribution to Risk, Tracking Error and the Sharpe Ratio. Each statistic may be broken down into Marginal and Component varieties, assessing the effect of small modifications to factor exposure or of an entire removal.

Style Drift

The Style Drift analytic block includes functionality that allows you to expand upon and address limitations associated with what is traditionally referred to in academic literature as "style drift". Style drift is essentially style dispersion, and only provides part of the decision support story, so it is critical to understand its components and limitations.

In MPI Stylus Pro, style dispersion can be decomposed into two critical components: trend and noise. By partitioning dispersion into these component parts, users can evaluate not only the volatility of an investment product's exposure behavior, but also assess the trend rate (velocity) and direction of the drift.

Detailed information about Style Drift is available in the Style Drift User Guide and associated video, both of which are available on the MPI web site.

Style Map

Style Maps are special scatter charts that are designed to capture the investment style of a financial instrument. This makes them extremely useful visual tools for any user wishing to evaluate the investment style of a manager versus the stated style of their prospectus. A complete review of statistics and their formulas may be found in the glossary to this manual.

Style Metrics

This block allows you to make use of MPI's proprietary, patent-pending Style Metrics measures, which present a style-based measure of fund similarity that is more accurate in many ways than correlation or holdings-based active share. For more information, please see our Style Metrics User Guide.

Summary Statistics

The Summary Statistics analytic block provides a powerful second layer of analysis to time series statistics calculated through other analytic blocks. For example, the block could be used to calculate the average of rolling standard deviations for a given manager. Given the flexibility and power this tool adds to the application, we recommend that users review the available sample study (available from MPI support) for some additional practical examples of this feature.

VaR and VaR Testing

These two analytic blocks allow you to report on top-down, returns-based value-at-risk measures of your managers and portfolios, and to test those models using various distributions. For much more information, please see our VaR User Guide.

Scenarios
This block allows you to perform analysis of exposures to hypothetical shocks/scenarios. The block allows you to pick scenarios to be evaluated from the library of scenarios defined within Stylus Workspace.
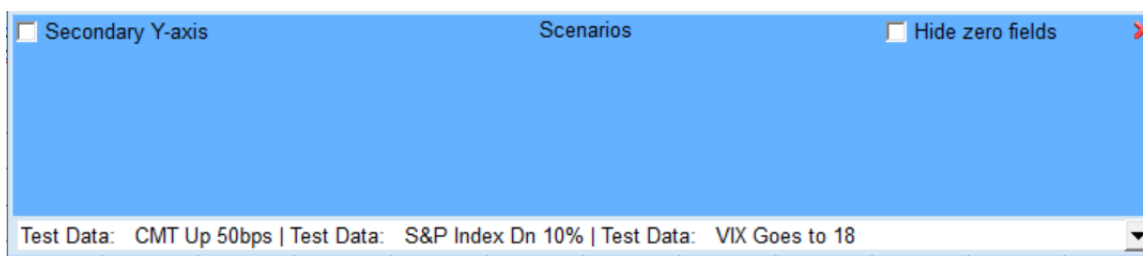
☐ Secondary Y-axis	Scenarios	☐ Hide zero fields ✕

Test Data: CMT Up 50bps | Test Data: S&P Index Dn 10% | Test Data: VIX Goes to 18 ▼

Figure 65

For each scenario the block outputs a single number – theoretical performance due to the specified shock. For more information about scenario analysis, please see our Advanced Risk Analysis Guide.

This block is available for users with Advanced Analytics license.

Multi-section (Combination) Charts

This feature was introduced in Version 10.0 to give users the ability to create powerful, flexible charts that combine multiple analytic blocks. For example, a single chart might display both Return and Standard Deviation, or might display rolling returns and 1,3,5 Y returns. To create these two types of charts, you will use two slightly different approaches.

Creating a Multi-section Chart that uses the same Aggregation Settings

This option is for creating a multi-section chart that uses the same aggregation settings for all statistics. As an example, you might want a chart that shows Total Annualized Return and Total Annualized Standard Deviation for 1, 3 and 5 years.

To create a multi-section chart:

1. In the Chart Designer, click the 'Multi-section' checkbox.
2. You may now drag multiple analytic blocks into the chart, in effect the same way you can put multiple analytics in a table. You would then fill out aggregation settings as need be.

Creating a Multi-section Chart that uses different Aggregation Settings

This option is for creating a multi-section chart that uses different aggregation settings for one or more analytic blocks/statistics. As an example, you might want a chart that shows Total Annualized Return for 1,3,5 years, while providing rolling standard deviation.

To create a multi-section chart:

1. On the Design Tree, right-click on the Chart you would like to turn into a multi-section chart.
2. Click 'Add Section'.
3. You will notice that a 'child' chart is now added to the original chart. In this manner, you can add the appropriate analytic blocks and aggregation settings to each particular chart.

See our Combination Chart Design User Guide for more details, and Stylus' report gallery for example combination charts.

Use Secondary Y-axis

This option, found **with**in Analytic blocks, is an additional way to create multi-section charts. When you click this box, a checked field in the Analytic Block is added to the Y-axis of the chart.

Rearranging Section blocks
When multiple analytic blocks are available, the user may change the order in which they appear (and thus, are displayed in output) by clicking on the small gray arrow next to the 'X' button in a given block in order to move it.

Bubble Charts

Beginning with MPI Stylus Pro 11.0, users have the ability to add a third dimension to scatter plots and other charts that defines the size of symbol of each series. You can use this option whenever a "Bubble-section" checkbox appears at the top of your Chart Designer.

To turn a regular chart into a bubble chart:
1. In the Chart Designer, check the "Bubble-section" checkbox.
2. Drag and drop an additional Analytic Block in the designer. This block will provide the analytic value that defines the symbol size. Note that only one analytic may be selected.
3. Review the chart. You will notice that each bubble will be sized differently.
4. If you wish to make the bubble size the inverse of the analytic you chose (larger values have smaller bubbles)
   a. Open the Attributes Editor for the chart
   b. In the "Style" tab, under Attributes for the chart, click the "Reverse" checkbox.

You will find a number of sample bubble charts in the Stylus gallery.

Parameters – Series Selection Settings

Figure 66

Charts and tables can be designed to include many different combinations of the managers, benchmarks, peer groups and style indices that you have included in the design tree.

Managers (Mng)

The manager selector contains all the series that you added to the manager node of the design tree. Use the checkboxes next to each manager to include them in the chart or table. Checkboxes to the right of the dropdown selector can be used to quickly select or deselect all managers.

Beneath all managers in the list are numeric entries (e.g. (2), (-1)). These are used when you wish to include managers in the chart based on their position in the design tree. For example, check "(2)" to include the second manager in the list, or "(-1)" to include the first from the bottom.

Filter Expression Mode
Clicking this button enables the filter/sort/group functionality, which you can use to create and apply dynamic rules for inclusion, ordering and grouping of the managers. With this option enabled, an ellipsis "…" button is presented. Clicking this button takes you to a dialog for defining the rules. Please reference the Filter-Sort-Group User Guide on our website for further details.

Style Indices (Ind)

You may include style indices in a chart or table for comparison with managers using this control. This selector behaves similarly to the Managers selector. By default, no indices are included.

Note that your selection in this option does not affect which indices are used for style analysis.

Peers

Beginning with MPI Stylus Pro 11.0, each the peer group used in each chart or table can be selected independently; until this release all charts in a study used the same peer group. These selectors allow you to choose which, if any, peer statistics you wish to see and the peer universe that you wish to see them computed for.

The following peer statistics can be displayed. By default, no peer group analysis is performed. Note that including peer statistics, particularly for large universes, can dramatically increase the time it takes your study to generate results.

Distribution

Show the value for each percentile band over the peer universe. Peer bands are defined in the study parameters.

Median
Show the median value for all managers in the peer universe.

Average
Show the simple, equally-weighted average value for the peer universe.

Min and Max
Include the smallest or largest values across all managers in the peer universe.

Size
Display the number of managers in the universe for the period.

Peer selection is achieved using a control similar to managers and style indices. One important difference is that the peer analysis for the chart or table is performed on the *union* of all selected peer groups.

Default Peer Group
Users of MPI Stylus Pro prior to version 11.0 traditionally control the selection of peer groups for the entire study through the design tree. In order to support this behavior and maintain backwards compatibility, charts and tables may opt to select as a peer group all those sets marked as default in the design tree. See chapter 3 for more detail on the design tree feature.

Benchmarks (Bmk)

You may use this selector to choose the benchmarks, if any, that is used in each chart or table. The selector works similarly to the manager selector described above, which a few notable differences.

Like the peers selector, this control defines the benchmark that will be used in all calculations in this chart or table. This is relevant for statistics such as excess return and beta. If you choose no benchmarks, all calculations requiring one will be reported as "N/A". Beginning with MPI Stylus Pro 11.0, you may select multiple benchmarks within the same chart for comparison.

Default Benchmark
You may highlight one benchmark in the design tree as the default benchmark. Choosing "Default" in this selector allows you to control the benchmark used in a chart or table from the design tree.

Show Benchmark
Checking this box allows you to display all selected benchmarks as series in the chart.

MPI_BMKPRIMARY and MPI_BMKSECONDARY
Introduced in version 11.0, these selections allow you to report against a different primary and secondary benchmark for each manager. The values in each benchmark-relative field will be, for each manager, calculated against the benchmark defined in that manager's MPI_BMKPRIMARY or MPI_BMKSECONDARY property. Refer to our sample study available from the MPI website for examples of this feature in use.

Parameters – Chart and Table Aggregation Settings
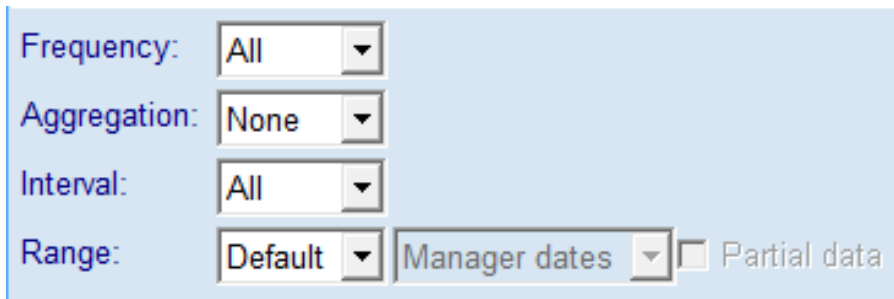
Aggregation Settings

Figure 67

The four aggregation setting controls affect the selection and appearance of data for your output. They are:

- Output Frequency, which controls the specific data points displayed in your chart or table
- Aggregation, which defines how the results of style analysis and performance data are aggregated prior to appearing in output
- Output Interval, which allows you to adjust the date range that appears in a given chart or table (when the required date range is inconsistent with the main range specified in the Parameters node)
- Output Date Range, which allows the user to change the date range assessment made by MPI Stylus Pro about a return stream.

Output Frequency

The Output Frequency control allows you to select specific points to display and the number of points or bars to appear in a chart, the number of rows in a table, and so on. The possible options are:

All
Displays all available data points.

Every
This allows you to show a periodic subset of the available data points. The output is shown in equal increments and the size of the increments is determined by two additional parameters: the period frequency (daily, weekly, monthly, quarterly, and yearly) and the number of these calendar periods. You can also select the Non-overlap check box.

Please note the effect of specifying the same output period using different calendar periods, for example, 2 Quarters versus 6 Months. While the time between consecutive output points is the same in both cases, in the first case the output points are aligned with the end of each calendar quarter (March and June), while in the latter case such alignment does not necessarily occur.

The calendar period on this control cannot be used to exclude the latest point. This point is always included in the output, even if it does not coincide with the selected calendar period.

When working with daily data, the principle of selecting calendar periods remains the same. For example, a calendar period of 5 Days means five business days and, in general, the output points are different from those obtained when the calendar period is 1 Week.

Select the Non-overlap check box to automatically set the size of the window equal to the output period.

Custom
This option gives you complete control over the output. When you select this option and click the (…) button, the Edit Custom Frequency dialog box displays. Please note that in Versions 7.1 or later, selecting this option will automatically select the 'To-date' aggregation setting (Custom and To-Date should always be used together.)

This tool allows you to specify periods of different length and assign custom labels to each period. The available periods are Beginning, Day(s), Week(s), Month(s), Quarter(s) and Year(s).

Custom also allows you to create a chart that shows date periods of unequal length. An example is a chart that shows portfolio returns since the beginning of the year and for the last 1, 3, and 5 year periods. The Beginning option lets you guarantee that the point corresponding to the first available date in the output range is always included in a chart. You can use this feature to calculate the portfolio return since inception and include it in a chart or a table.

Mixed (Tables only)
The Mixed option allows users to format tables with mixed return periods, such as monthly returns followed by quarterly, etc. There are a total of five options from which to choose. In addition, the user may type in any combination of the below letters into the textbox instead of using one of the provided settings.

- MY – Gives monthly returns followed by the annual return
- MQ – Gives monthly returns followed by each quarter return for a 12-month period
- QY – Gives quarterly returns followed by the annual return
- MQY – Gives monthly returns followed by quarterly and then annual
- YQM – Gives the annual return, followed by quarterly and then monthly

Aggregation

The Aggregation control defines how the results of style analysis and performance data are aggregated prior to appearing in the output.

The available options are:

None
This means that no aggregation is performed on the data.

Cumulative
This means that the data are aggregated from the first point forward. This is used in calculating data where wealth over time is being displayed, such as in growth of a dollar charts.

To-date
This means that the data are aggregated from the last point backward. This setting will automatically be switched to when the 'Custom' Output Frequency is used in MPI Stylus Pro Versions 7.1 or later.

Window

This is very effective in suppressing noise in the data. In the case of asset loadings, a rolling window is equivalent to applying a moving average to the output of the computational engine. This simple technique makes the results of some analyses much easier to understand. The rolling window technique is even more effective when applied to daily and weekly data, where the level of noise is somewhat higher.

Total

This is the single (entire) period measurement of the data. This can be accumulation or average, depending on the data

Output Interval

By default, charts and tables display data for all available dates specified in the Parameters node. When the overall date range is inconsistent with the range you would like to show in a specific chart or table, you may change the interval using the Output Interval setting. Please note that you may only further restrict date ranges from the main range in the Parameters node – you can not expand outside of that range in charts or tables.

The Output Interval options are:

All

This captures the entire available timeline specified in the Parameters node.

First/Last

These options allow the user to specify that only the first or last X periods should be used for the chart/table.

Interval

This allows the user to select a different date range than that in the Parameters node (it may not be longer than the date range in Parameters.)

Note that the pushpin button in this section may be used to 'pin' the interval to always adjust to the common end date period.

+fraction

The +fraction option starts the output with the beginning of a calendar period and continues through the latest available date; without such an option, the chart end date would coincide with the end of the most recent calendar period.

Output Date Range

The Output Date Range allows the user to change the date range assessment made by MPI Stylus Pro about a return stream. The Default setting accepts the Limit specified in the Parameters node; however, you have additional options, including:

- Manager Dates
- Common Dates
- Common beg, which stands for Common beginning and holds return streams to a common start date (but not end date.)

- ▪ Common end, which holds return streams to a common end date (but not start date.)
- ▪ All dates

Partial Data
In addition, the user may select to use partial period data in these settings.
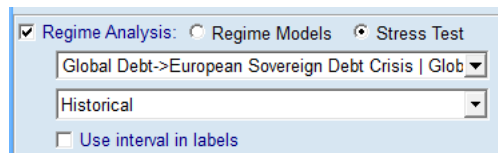
Regime Analysis

Figure 68

Stylus Version 11.4 introduced new ways of grouping / filtering dates for charts and tables used in the views and reports. Regime Analysis option shown in **Error! Reference source not found.** allows user to s elect Regime Models or Stress Tests. Please see the Advanced Risk User Guide for more information on this functionality.

Regime analysis option allows user to select one or more regimes within a single Regime Model.
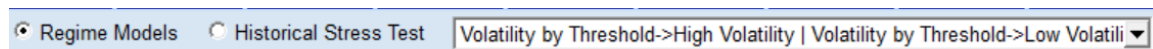
Figure 69

The analysis performed using regime models will assume aggregation setting of "Total" and will produce a number of data points dependent on the number of regimes that exist in the model and are selected by the control. The data points will appear either in alphabetical order or the order specified by special sorting instruction specified in the regime name (e.g. {01}, {02}, etc.).

Historical Stress Tests
This option allows user to select one or more stress tests from multiple stress test groups. Similar to Regime Analysis option the number of output data points will equal to the number of specified stress tests. Total aggregation is assumed. The data points are sorted by the starting dates of each stress tests.

See Advanced Risk Analysis document for more information about Regime Models and Stress Tests.

Memo Design

Memo design in MPI Stylus Pro is significantly different from chart or table design. You will have two options when designing memos – essentially, two modes in which to work. The first mode will be a plain text mode, where you can enter simple text requiring no adjustments. The second mode will be the rich text editing mode, which gives the user far more power to adjust memo content and formatting.

Plain

The plain text memo mode allows you to enter text in a simple format; essentially, what you see is what you get. This allows for the quick creation of memos that have consistent format and easy-to-read content. In addition to regular text, you may also use macros to enhance this section's functionality.

Rich
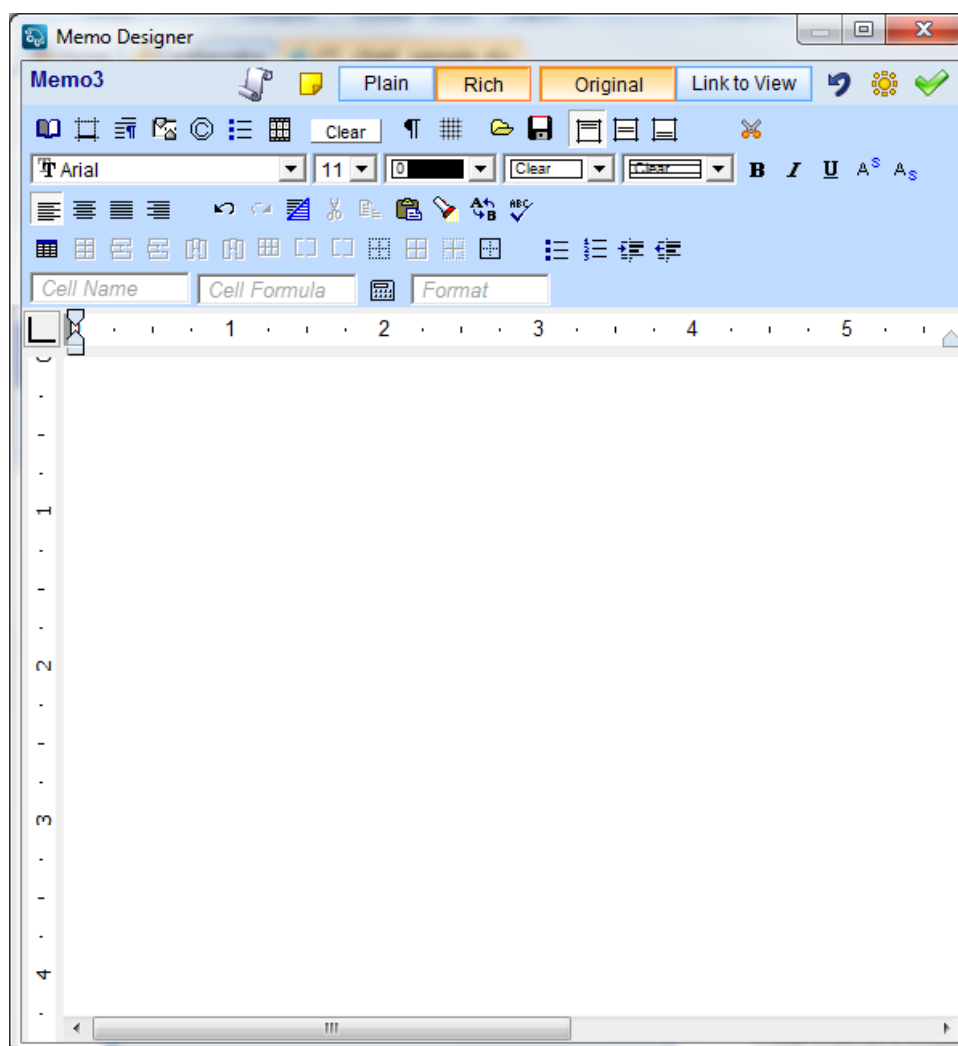
Figure 70

The rich text memo mode is far more powerful than the plain text mode, and gives you word processing powers similar to those found in major word processing applications. In addition to regular text, you may also use macros to enhance this section's functionality.

Most of the features available in the rich text editor should be familiar to users from other word processing applications; however, a few are either unique to MPI Stylus Pro or require additional explanation. Please see below for details.

Table Cell Formula & Formatting Controls

Cell Name	Cell Formula	🖩	Format

Table cell formula & formatting controls present in the Rich text editor give the user additional control over table data and formatting and help replicate some abilities present in spreadsheet data programs.

Cell Name
The Cell Name field allows you to assign a name to a given cell in your table in order to be able to reference that cell. The name may be a number, text string or combination of both; for example, the user may wish to mimic the popular A1, A2, A3, B1, B2, B3… format used in spreadsheet programs.

To assign a name to a cell:

1. In the appropriate table, click inside of the cell you wish to assign a name for.
2. Click in the Cell Name field and type in the desired name of the cell.
3. Once you have typed in the name, you may either press the "Enter" key or click elsewhere in the table to lock in the cell name. You can change the name again at any time by repeating this process and overwriting the old name.

Cell Formula
The Cell Formula field allows you to input basic formulas to adjust the output content of a given cell. This may include the use of basic mathematical signs, such as +, -, * and /. Please note that this cell formula area does not necessarily support conventional Microsoft Excel formula entry parameters; however, you can leverage content from other cells by referring to the names assigned to those cells and using traditional mathematical operators. The formula supports syntax and functions defined by the StylusExpress language (see Stylus Macro documentation.) For example, if you have named two cells "A1" and "A2", and they have values of 10 and 5, respectively, then you can produce the following formula in a third cell: A1+A2. This will lead to the third cell displaying a result of 15.

To enter a cell formula:

1. In the appropriate table, click inside of the cell in which you wish to enter a formula.
2. Click in the Cell Formula field and type in the desired formula. Make sure to avoid common mistakes such as referencing the cell you are using for the output in the equation itself.
3. Once you have typed in the formula, you may either press the "Enter" key or click elsewhere in the table to lock in the cell formula. You can change the formula again at any time by repeating this process and overwriting the old name.

Re-calculate
The calculator button in this section re-calculates cell totals based on changes you made to cell name or formula values.

Format

The format field allows the user to adjust the format of values returned in a given cell in a memo table. This field uses standard MPI Stylus Pro formatting codes. (See "Format Specifiers" in Stylus Macro documentation.)

Restore

When used in memo design, the Restore button will revert the memo to its status when the user opened it for editing.

Notes

This option provides a report or template designer with a scratchpad to record notes about the design of the memo, possibly for use by others to later understand or modify the content.

Reports

Reports in MPI Stylus Pro are the application's actual publishable output. They represent fact sheets, books and other investment documents that can be made ready to share with clients, colleagues and other investment professionals. MPI Stylus Pro offers users a rich and powerful variety of reporting options, and MPI highly encourages users to carefully review this entire chapter in order to ensure that they are getting the most from reporting features in Stylus.

Modules Using Reports

Al modules in MPI Stylus Pro, except Prospector, have a Reports node that works according to the instructions in this chapter. It is possible to use Prospector output through MPI Integrator; for more information, please see the chapter on Integrator.

Working with Reports

Report Icons in Menu Bar

The Report ribbon contains a number of buttons that allow you to accomplish quick tasks. You can see it here in the central spot of the larger ribbon. Left to right, the relevant buttons in the Report section are:

- Create new Report
- Delete Report (affects the currently active Report)
- Report Page (allows you to adjust page controls such as orientation, margins, etc.)
- Add Page
- Delete Page
- Insert blank chart (this allows you to create a new chart or link to one in a View)
- Insert blank table (this allows you to create a new table or link to one in a View)
- Insert blank memo (this allows you to create a new memo or link to one in a View)

Users who do not wish to use these shortcuts may use the traditional methods below.

Creating a New Report

There is no limit to the number of Reports you may create in MPI Stylus Pro; however, you may wish to organize your studies and their Reports in a way that makes them efficient to maintain.

To create a new Report:

1. In Stylus, Allocator or Integrator, click on the "Reports" node on the design tree.
2. In the data pane on the right-hand side, click the "New" button. A new Report will appear in the data pane, on the design tree under the Reports node, and as a new output tab along the bottom of your screen. The Report will have an automatically generated name such as Report1, Report2, etc.
3. To populate the Report with charts, tables or memos, see "Editing Reports" below.

Renaming Reports

If you wish to rename a Report for organizational purposes (i.e., change Report1 to MyReport):

1. Double-click on the name of the Report on the design tree. You will now be able to type in a new name for this Report.
2. When you have finished typing, hit the Enter key on your keyboard. The Report's name will now be changed. Note that the Report tab will also reflect the name change.

Reports may also be renamed in the Reports data pane:

1. Click on the Reports node in the design tree.
2. In the data pane, double-click on the name of the Report you wish to rename.
3. Delete the old text and type in the new Report name.

Editing Reports

There are two ways in which a user can edit a Report.

1. By editing the organizational structure of the Report, such as adding, deleting or rearranging its component charts, tables and/or memos; or
2. By editing the actual charts, tables and/or memos within the Report (this will be discussed later in this chapter.) In most cases, the user will go to the linked Views to edit these charts, tables and memos.

Once you have created a new Report, you will wish to add one or more charts, tables or memos to the Report.

There will be two steps to creating a new chart, table or memo in MPI Stylus Pro. The first step will involve adding a chart, table or memo block to a Report. This serves as a placeholder and tells the application what kind of Report you wish to display. The second step will be designating the analytic, data or text that will populate the Report.

The controls for creating new chart, table or memo blocks and designing your Report pane are quite simple and consist of the blocks themselves and band quantity and orientation controls.

Blocks

Chart, table and memo blocks (visible in the picture above) serve as visual placeholders in both Views and Reports, and also tell MPI Stylus Pro what kind of information you need to show in a given View or Report.

Deleting Reports

Before deleting a Report, please consider whether you are interested in deleting the entire Report or just one chart, table or memo within it. If you delete an entire Report, you will permanently lose all formatting and links for the Report (it will have to be rebuilt from scratch.) If you wish to remove a Report from View as a tab without deleting it, simply uncheck the Report on the design tree – you may then check it again at any time.

To delete only a chart, table or memo within a Report:

1. In the Views node of the design tree, click on the View that contains the chart, table or memo you wish to delete.

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2. If the chart, table or memo is not in a View but in the Report itself (not linked), in the Reports node of the design tree, click on the Report page that contains the chart, table or memo you wish to delete.
3. You may now either delete the chart, table or memo by right-clicking on its name on the design tree and selecting "Delete", or by simply grabbing the block corresponding to the chart, table or memo and dragging it off-screen. It will automatically be deleted.

To delete a Report:

1. Click on the Report's name under the Reports node of the design tree.
2. You may now either right-click and select "Delete" or simply press the "Delete" button on your keyboard.
3. The Report has now been deleted.

It is also possible to delete a Report in the data pane:

1. Click on the Reports node on the design tree.
2. In the data pane, click on the name of the Report you wish to delete.
3. Click the "Remove" button. The Report will be deleted.

WYSIWYG export

This checkbox allows the user to select WYSIWYG export (What You See is What You Get). This option allows text in exported charts to more accurately reflect the way the text looks in MPI Stylus Pro. Reports exported to PPT, PDF, RTF and image (metafiles) often include charts with font sizes that do not match the sizes used in the application itself. Checking this feature will result in a closer match.

Report Formatting Pane
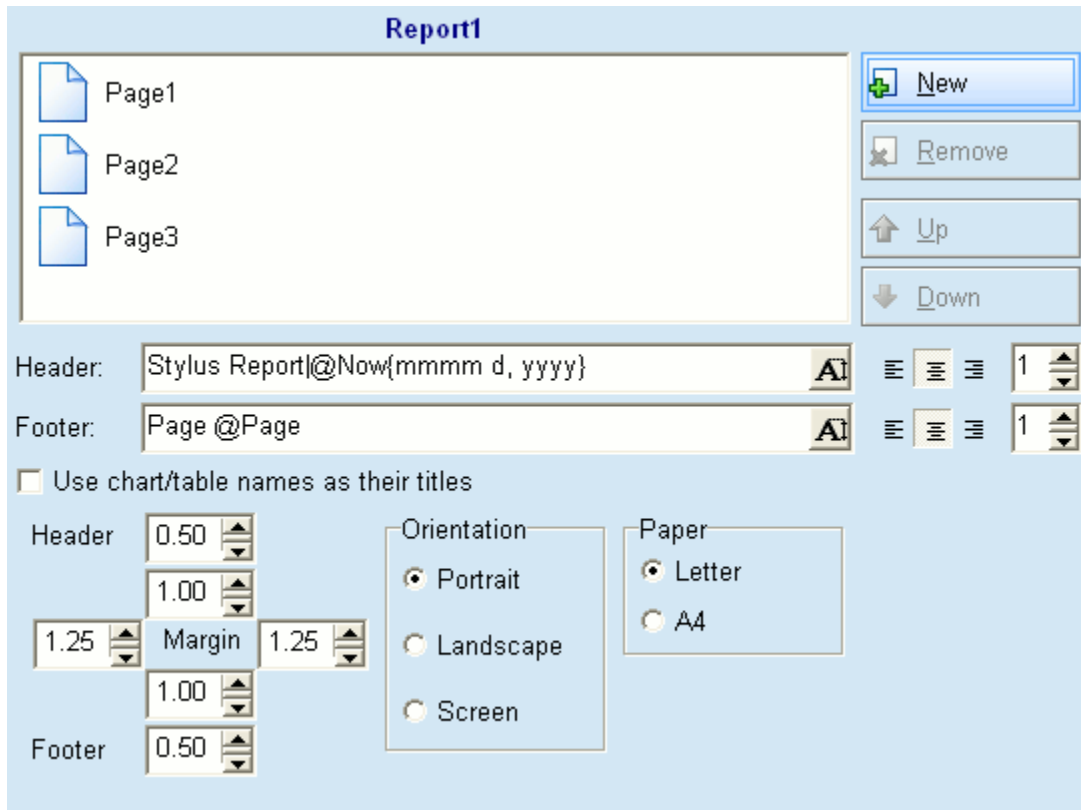
Figure 71

When you create a new Report in MPI Stylus Pro, you will use the Report formatting page to tell Stylus how many pages you want, as well as to specify some basic Report-wide information.

New Page
To create one or more new pages for a Report:

1. Click on the Report name in the design tree. In the data pane you will see the Report Formatting pane.
2. Click the New button once for each new page you wish to create.

Deleting a Page
There are multiple ways to delete a Report page in MPI Stylus Pro – you can either do it on the design tree, or in the Report Formatting Pane.

To delete a Report page:

1. In the Report node on the design tree, click on the Report that contains the page you wish to delete.
2. You may either right-click on the page's listing in the design tree and select "Delete", or you may use the "Remove" button in the Report Formatting pane.

Rearranging Pages in a Report

There are multiple ways to rearrange page order in a Report – you can either do it on the design tree, or in the Report Formatting Pane.

To rearrange page order:

1. In the Report node on the design tree, click on the Report that contains the pages you wish to rearrange.
2. In the design tree, you may left-click on the icon for the page and drag it to a new position within the Report and drop it there. Please note that page names (Page1, Page2) will not change to reflect new position.
3. Alternately, you may go to the Report Formatting Pane and click on the page name there. You may then use the Up and Down arrows to rearrange page order.

Header

The Header is a line of text that will appear near the top of every page in your Report (you may adjust at which page it begins to appear.) This is useful when you wish to enforce consistency across all Report pages, and you may use macros in the header to help improve efficiency.

The default header for a new Report is "Stylus Report|@Now{mmmm d, yyyy}", which generates text that reads "Stylus Report" and gives the current date. This may be changed or deleted in the Header field of the Report Formatting Pane.

The margin settings for a header may be adjusted using the Margins Controls found elsewhere in the Report Formatting Pane.

To add a new header:

1. In the Report node on the design tree, click on the Report for which you wish to make a new header.
2. In the Header field in the data pane, delete any text in the header field and enter the new text you wish to use.

To delete a header:

1. In the Report node on the design tree, click on the Report for which you wish to delete the header.
2. In the Header field, select any text with your mouse and press the "Delete" button on your keyboard.
3. When the Header field is blank, it means that no header will be shown.

Header Fonts and Sizes
You may adjust the font type, style and size for your header by clicking on the font size button at the end of the header line. This will open the Font box and allow you to specify the Font type, the style (bold, italic, etc.) and the size.

Header alignment
You may align your header to the left, center or right of the Report by using one of the three header alignment buttons at the end of the Header field.

Starting page to place header
Users may choose to make their header start at a later page than page 1 of their Reports by adjusting the "Starting page to place header" box.

Footer

The Footer is a line of text that will appear near the bottom of every page in your Report (you may adjust at which page it begins to appear.) This is useful when you wish to enforce consistency across all Report pages, and you may use macros in the footer to help improve efficiency.

The default footer for a new Report is "Page @Page", which generates text that reads "Page" and gives the page number for each page. This may be changed or deleted in the Footer field of the Report Formatting Pane.

The margin settings for a footer may be adjusted using the Margins Controls found elsewhere in the Report Formatting Pane.

To add a new Footer:

1. In the Report node on the design tree, click on the Report for which you wish to make a new Footer.
2. In the Footer field in the data pane, delete any text in the Footer field and enter the new text you wish to use.

To delete a Footer:

1. In the Report node on the design tree, click on the Report for which you wish to delete the Footer.
2. In the Footer field, select any text with your mouse and press the "Delete" button on your keyboard.
3. When the Footer field is blank, it means that no Footer will be shown.

Footer Fonts and Sizes
You may adjust the font type, style and size for your Footer by clicking on the font size button at the end of the footer line. This will open the Font box and allow you to specify the Font type, the style (bold, italic, etc.) and the size.

Footer alignment
You may align your Footer to the left, center or right of the Report by using one of the three Footer alignment buttons at the end of the Footer field.

Starting page to place Footer
Users may choose to make their Footer start at a later page than page 1 of their Reports by adjusting the "Starting page to place Footer" box.

Use chart/table names as their titles

When this option is checked, MPI Stylus Pro will assign titles for each chart and table based on their names.

Margins Controls

MPI understands that many of our users require very specific margins for their Reports in order to be compliant with existing firm or industry standards; therefore, MPI Stylus Pro allows for extremely

powerful margin control measures. The Margin Controls in the Report Formatting Pane are the only place where margins for a Report may be explicitly specified, and once they are specified, the user will be unable to accidentally or intentionally violate the margins in the Report design page without returning to this area to change their settings. This ensures ease of mind when building Reports.

Header and Footer Margins
Margins may be set for headers and footers using the Header and Footer up/down menus in this area. The default settings are 0.5 inches for both the header and the footer. This may be increased or decreased by clicking on the up/down arrows. In addition, the user may manually enter a setting.

Page Margins
Margins may be set for a page using the four up/down menus in this area. The default settings are 1.0 inches for both the top and bottom margins, and 1.25 for the left and right margins. This may be increased or decreased by clicking on the up/down arrows. In addition, the user may manually enter a setting.

Orientation

There are three orientation options for Reports in MPI Stylus Pro: Portrait, Landscape and Screen. It is important to choose the correct orientation because changing an orientation later may result in difficulties with your Report design (if you have already designed your Report at the time of the change.)

Portrait
The portrait orientation is for documents in a vertical layout. It is one of the two recommended formats for hardcopy publishing, along with landscape.

Landscape
The landscape orientation is for documents in a horizontal layout. It is one of the two recommended formats for hardcopy publishing, along with portrait.

Screen
The screen orientation is used specifically for presentations meant to be displayed on a computer screen (such as in a program like PowerPoint.) Computer screens have different dimensions than the landscape format, which is intended for 8.5 x 11 inch paper. Therefore, it is important to do computer presentations in the screen format to avoid adjustments when the document is exported from portrait or landscape to a computer-based program.

Paper

You can adjust your print output size to be consistent with two paper sizes. Please note that these sizes, while quite similar, are not identical.

Letter
This is conventionally sized paper (normal printing paper) for users in the United States or other countries that use the US paper standard.

A4
This is conventionally sized paper for users in Europe or other countries that use the European standard.

Link to View

The Link to View feature represents a key part of MPI Stylus Pro's powerful, flexible reporting capability. By allowing the user to link a chart, table or memo block in their Report to a chart, table or memo in a View, Stylus gives the investment professional the following capabilities:

- The ability to use a single chart, table or memo multiple times in different capacities and in different Reports.
- The ability to organize charts, tables and memos for quick analysis and review, and then to select the most appropriate output for use in a Report without having to recreate it.
- The ability to change a chart, table or memo only one time and have the changes automatically propagate across all use in multiple Reports, avoiding possible errors while enforcing consistency.
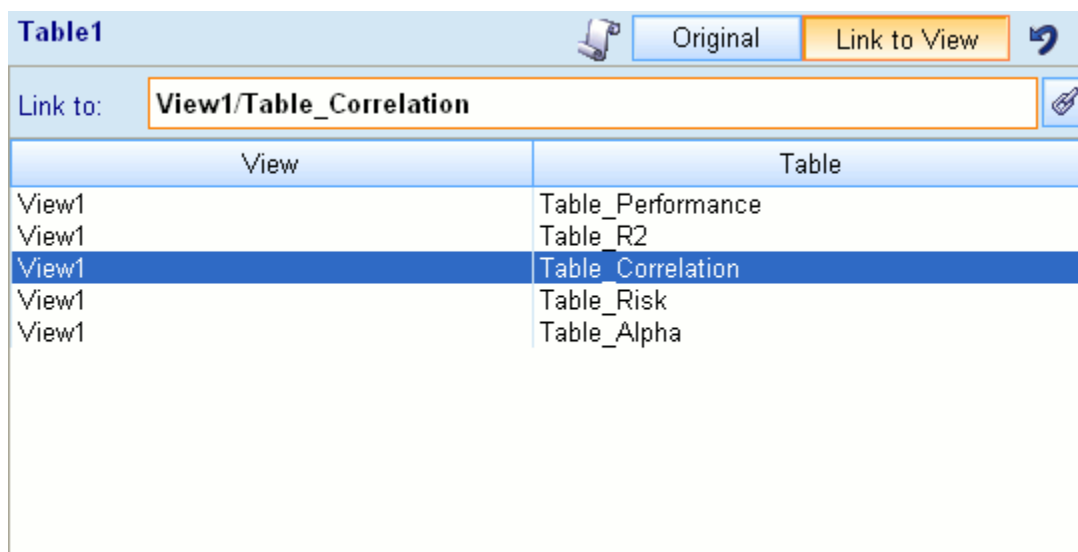
Figure 72

The Link to View concept is simple. Whenever you create a new chart, table or memo in your Reports, you will have the ability to adjust its size and position in the page designer; however, to specify its content you will have to the chart/table/memo's name under the correct Report and page on the design tree.

When you first click on a new chart, table or memo in a Report, you will see the Chart, Table or Memo designer fields just as you would in a View. However, there will be one important addition – the "Link to View" button in the upper right-hand corner of the designer. When you press this button, the Link to View screen will appear, and you will be able to simply link to a chart, table or memo in your Views without having to create a new one. Once you have linked to this View, you will be able to go directly to your Report and view the output. You will be able to make additional aesthetic changes within the Report through the various Report design tools available.

To link to a View:

1. Identify the View tab name for the chart, table or memo you want to link to, as well as the actual name of that chart, table or memo.
2. In the Reports node, click on the page where you want to display this chart/table/memo. If you have not already done so, insert an appropriate block on this page using the Page Designer.

3. Once you click on the appropriate block name in the design tree, you will see the chart, table or memo designer in the data pane. This will allow you to create a new chart as if you were in a View; however, there will also be the Link to View button. Press this button.
4. You are now in the Link to View screen. You will see a list of all available charts, tables or memos (depending on the block type) to which you may link. The View column will tell you the name of the tab/location of each item, and the Table column will tell you the item's name. Click on the appropriate item with your mouse.
5. Your View is now linked to your Report. You may go to the Report output to view your chart, table or memo. Should you need to make any changes to it, you may do so directly through the View.

Reporting Pane

The Reporting Pane contains a few key areas that are very useful in report creation and navigation.

Report Page Navigator

This pane, visible on the left side of your Report output, will allow you to jump between different pages in the Report without having to use the left and right arrow buttons. You may also use drag-n-drop to rearrange Report pages via this pane.

Report Alignment Tools

Snap to grid
This option 'snaps' charts, tables and memos to the grids that sit behind your Report design. This is a helpful way to be sure that your various objects line up well.

Show grid
This option can show/hide the grid behind your Report, allowing you to better design and arrange your Report layout.

Restore
This button undoes your last action.

Report Gallery

The Report Gallery provides many of the same features found in the View Gallery, along with a few that are specific to Reports.

Views

This section allows you to access View tab names via dropdown, in order to decide which underlying charts, tables or memos to bring in to your Report. Using this method will automatically create linked views, as opposed to new charts/tables/memos that exist only in the Report. Note that this applies only to charts/tables/memos you have created; the 'Charts and Tables' section below can be used for adding new charts/tables from our prepackaged set.

Objects

This area allows you to drag-n-drop object types directly into your Report. For example, you might pull in a horizontal and vertical line which you can then adjust using a combination of drag-n-drop and Object Editor features.

Charts and Tables

This section works identically to the Views Gallery, in which you may peruse analytic block types and select from sample charts/tables that may then be included in your Report. These charts/tables are pre-existing and do not have to be manually created by you.

Daily Charts and Tables

Visible to High Frequency (Daily) advanced package subscribers only, this adds an additional set of charts/tables that are useful with daily data analysis.

Themes and Formats

This section allows you to choose between Charts and Tables and to apply color themes or table formats to your Report. This is a quick and easy way to make table gridline formatting or other such elements consistent without using the Attributes Editor or other tools.

Aggregation

This option works identically to the same option in the Views Gallery. For more information, see the Views section of this chapter.

Filter/Sort/Group

This section, visible only to Advanced Database package subscribers, works identically to the same option set in the Views Gallery.

In version 11.3 an additional level of Filter/Sort/Group was added. This feature gives you a way to Filter/Sort/Group fields, rather than just Managers.

For more information on this functionality, please see the Filter/Sort/Group User Guide, available from MPI.

Attributes Editor

The Attributes Editor is one of the most powerful reporting tools in MPI Stylus Pro, and becoming familiar with its features and possibilities will dramatically improve your ability to produce high-quality Reports.

The Attributes Editor is different for charts and tables; therefore each will be examined separately.

The Attributes Editor for charts contains six tabs that govern different areas of a chart's design:

- Style
- General
- Axes
- Zoom
- Text
- Layout

General Features
The Attributes Editor includes a few common features. These are available in the menu in the upper right corner of the dialog.

Copy Attributes
This feature allows you to copy all of the attributes that have been set for the given chart or table so that they can be pasted into another chart or table.

Paste Attributes
This feature allows you to paste in attributes copied from another chart or table.

Edit Notes
You can click this to open the scratchpad editor for notes associated with this chart or table. This same scratchpad can be accessed through the chart or table designer.

Style Tab
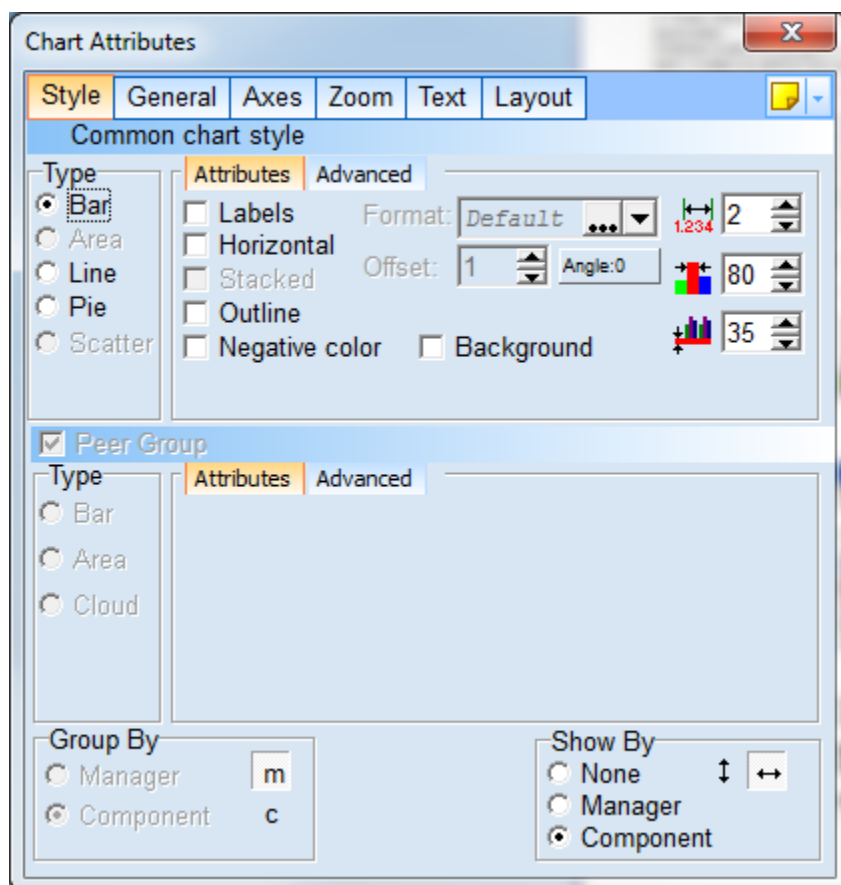
Figure 73

The style tab governs features related to the overall type of chart you wish to create and allows you to select how data on the chart is grouped.

The first set of tools allows you to select the type of chart that is displayed. Some options may not be available for certain calculations, and other options are available only given certain "Show by" criteria. The options available in MPI Stylus Pro are:

Bar chart

Bar charts in MPI Stylus Pro default to vertical in most cases.

Labels

The Labels option will append data labels to the top (or side, for horizontal) of bars.

Horizontal
The horizontal option switches a bar chart from vertical (up-and-down) bars to horizontal (side-to-side bars.)

Stacked
This option allows for bars in a chart to stack one on top of the other, as opposed to side-to-side.

Negative color
Allows for charts to have different colors above and below the x-axis. To preserve compatibility with older versions of MPI Stylus Pro, the default is to have this option checked for area charts and unchecked for bar charts. It is not currently available for line charts.

Offset and Angle

The label offset tool allows you to specify incrementally how far from the top (or side, for horizontal) of the bar the label is. This may be adjusted to positive numbers, which push the label further from the bar, or negative numbers, to place the label inside the bar. The angle of the data labels can be adjusted using the button on the right.

Outline
This check box places an outline around bars themselves to help distinguish their edges; without this option selected, each bar appears as a block of color with no distinguishing outline around it. The outline color is determined by the text setting in the General tab.

Label Format
The format option adjusts the content and appearance of your data labels in your bar chart. The options may be seen in the table below.

Format	Example
%v	8.3
%v%%	8.3%
%n(%v)	S&P 500 (8.3)
%n(%v%%)	S&P 500 (8.3%)

Label Precision
This setting controls the number of digits to the right of the decimal point in chart labels.

Bar Width
This setting controls the width of bars in bar charts. The range is from 0 to 100.

Size of a Group Mark
This setting controls the height of the group mark (the color code assigned to managers at the bottom of a chart.)

Area chart

The "Area" option allows you to make a chart an area chart. There are two additional options:

100%

This feature allows you to rescale displayed data in a chart to 100%. This may be useful when only certain asset classes or holdings of a fund are being displayed, and therefore the data only adds up to a certain percentage of total allocation. Instead of having the data only add up to 65%, for example, it can be adjusted on a relative basis for 100%.

Outline
This check box places an outline around area colors to help distinguish their edges; without this option selected, each area color appears as a block of color with no distinguishing outline around it. The outline color is determined by the text setting in the General tab.

Negative color
This setting allows you to define charts that have different colors above and below the x-axis. To preserve compatibility with older versions of MPI Stylus Pro, the default is to have this option checked for area charts and unchecked for bar charts. It is not currently available for line charts.

Line Chart

The "Line" option allows you to make a line chart. There are three additional options:

Symbols
Symbols are graphical images, such as circles or squares, that display at each given data point on a line chart. The symbol type may be controlled in the General tab. When the Symbol option is not checked, only a line will appear on the chart.

Connect
The Connect option allows you to select whether to have the chart line visible in addition to the symbols. When this option is not selected, only the symbols themselves will appear.

Spread
The spread option is useful in situations where multiple points representing multiple indices on a line chart (using symbols) must be separated to differentiate them without adjusting chart values. For example, in a 1Y, 3Y, 5Y chart, the spread option might visibly separate the points for the benchmark and a fund so they can both be clearly seen.

Symbol Size
This tool controls the size of symbols in charts. The range is from 0 to 20 in 1/10th increments (the arrows adjust to 2/10th increments.)

Line Width
This setting controls the size of lines in line charts. The range is from 0 to 100.

Pie Chart

The "Pie" option allows you to make a chart a pie chart. Your additional options are:

Outline
This check box places an outline around the pie and its slices to help distinguish their edges; without this option selected, each slice appears as a block of color with no distinguishing outline around it. The outline color is determined by the text setting in the General tab.

Format

The format option adjusts the content and appearance of your data labels in your pie chart. The options may be seen in the table below.

Format	Example
%v	8.3
%v%%	8.3%
%n(%v)	S&P 500 (8.3)
%n(%v%%)	S&P 500 (8.3%)

Size

The Size option adjusts on a percentile basis the overall size of your pie relative to the full size of the area it can occupy in a chart. This gives you control for overall pie size.

X-Shift and Y-Shift

These two options allow you to move the pie chart around the chart area, away from the central location.

Label From

The Label From option allows you to determine the lowest acceptable slice size (label amount) for which a label may be shown in your chart. This is useful when you have many small slices that you do not feel are large enough to merit independent labeling, and gives you extra control over chart appearance.

Pie Start Angle

This setting lets you control the start angle of a pie chart so that it does not interfere with other images on a chart. The range is from 0 to 359 degrees. This allows you to adjust any pie chart to any rotation.

Group By

This option allows you to choose between grouping by the manager or component.

Peer Group – Attributes Controls

The controls for peer groups in Attributes Editor give you quick access to several tools that can be used to adjust peer group bands (i.e., quartiles) in charts.

Bar

This option allows you to display peer bands as bars, as you might in a floating quartile chart.

To adjust bar width, you may use the size control next to Bar in this section of the attributes editor. The available sizes range from 0 to 100 and work on a percentile basis.

3D

This option allows you to make bars or other chart aspects appear as three-dimensional.

Area

This option allows you to display peer bands as areas, as you might in a rolling quartile chart.

Outline

This check box places an outline around bars or area colors themselves to help distinguish their edges; without this option selected, each bar or area color appears as a block of color with no distinguishing outline around it. The outline color is determined by the text setting in the General tab.

Quartile Band Controls
The quartile band controls give the user a quick, chart-specific tool for controlling the quartile band colors in a chart. The user simply has to click on each color and adjust it using the drop-down menu. These colors can be specified on a study-wide level in the Color & Symbol tab.

Show By

This option allows you to choose whether to show charts by the default one chart (None), by manager or by component, and to select the alignment of the charts in the cases of manager and component.

Advanced Tab
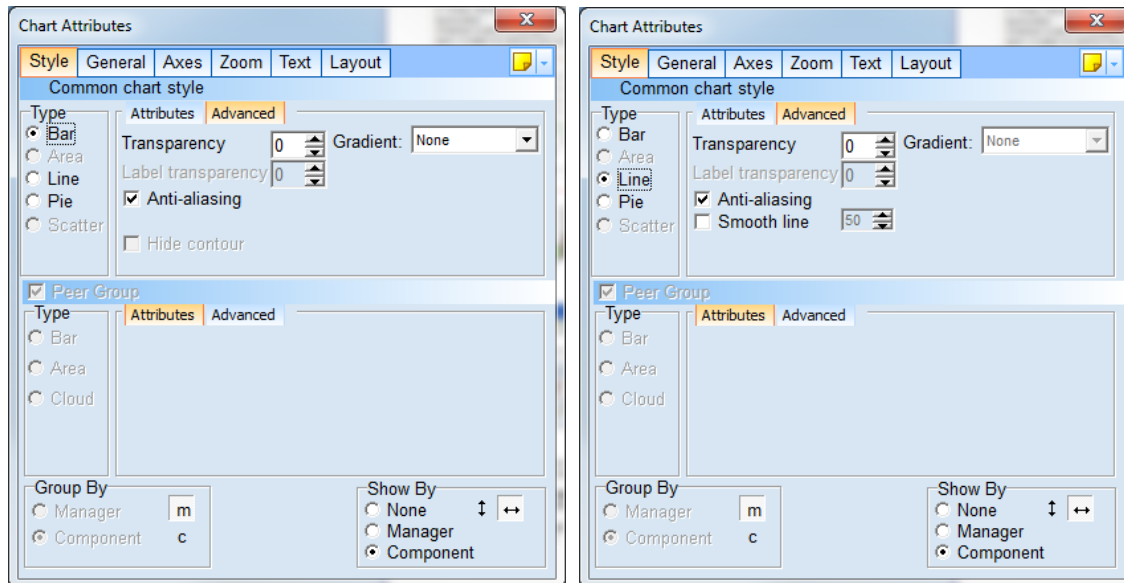
Figure 74

Stylus Pro 11.0 introduced a new graphics engine that allows you to embellish chart elements with gradient colors, transparency and more. These graphics features are controlled through the optional advanced tab found in the common chart style and peer group style sections.

The advanced graphics features are enabled in the General tab, described in the section following this one.

The various advanced graphics settings are described below; the specific settings may differ by chart type. Many of these options are similar to those found in Microsoft Excel and elsewhere.

Transparency
This option allows one to see background objects through the graphics object. Specified as a percentage of transparency, 100% is fully transparent (invisible) and 0% completely opaque such that nothing shows through.

Label Transparency
This option functions as above to control the transparency of the data labels.

Anti-aliasing
This option will smooth out jagged lines and visual distortions that are typical in older graphics.

Smooth line
This option is used in line charts to create a line through a set of database where the emphasis is on the smoothness of the line. Please note that "smooth lines" are not guaranteed to pass through each data point exactly; it is an interpolated line. The line smoothness can be controlled on a rolling scale.

Hide contour
This option allows the user to remove the contour line (similar to a border, but in the gradient color) drawn around gradient objects.

Gradient
Color gradients are a type of fill pattern for graphic objects that represent a progression of colors from some positional focal point. This option enables a color gradient fill and specifies the direction of the color progression.

- Horizontal gradients transition color linearly from left to right
- Vertical gradients transition color linearly from top to bottom
- Diagonal forward gradients transition color linearly from upper left to bottom right
- Diagonal backward gradients transition color linearly from upper right to bottom left
- Path gradients transition color radially from a central point outward in all directions

Position
This option allows you to specify when to begin the gradient color transition. Using a horizontal gradient as an example, a position value of 50 would lead to a solid color half way across the object; the color transition would begin at the center and continue to the right edge. A zero value indicates an immediate transition, 100 is no transition.

Luminance, Saturation, and Hue
These three settings allow you to define the color that you wish to transition to. The base color is the default color of the object. The left controls allow you to increase or decrease the hue, saturation and luminance as a base percentage of the base color to use as the starting color of the transition. The right controls allow you to adjust the ending color.

By default, the starting color is the base color of the graphic object. The default ending color adjusts the luminance by 100% to transition into white. You are encouraged to experiment with these settings. In some organizations these gradient settings will be defined by a graphic artist.

General Tab
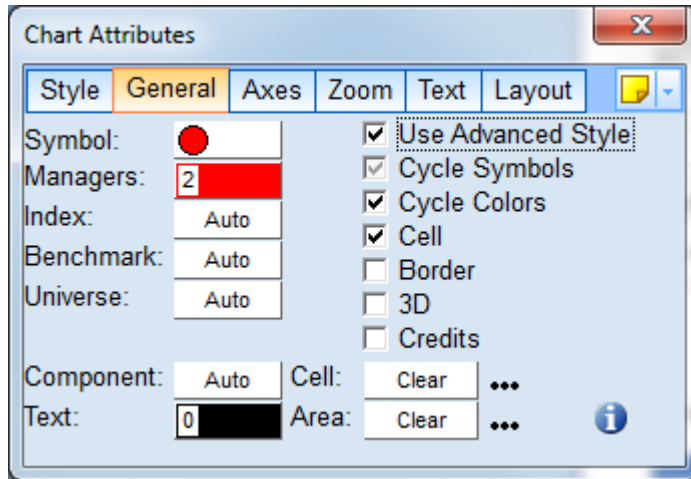
Figure 75

The General tab controls a wide variety of options for your chart's appearance, including many options necessary to achieve detailed design control of Reports.

Symbol

This dropdown menu allows you to select the appropriate symbol for your managers; you can select different symbol variation options with the Cycle Symbol control. The color will be controlled by the Managers dropdown menu, or through the Color & Symbol tab.

Managers

You may use this option to select the color for managers in your chart or table. This may be done on a study-wide basis in the Color & Symbol tab, and those settings overrule Attributes Editor settings.

Index

You may use this option to select the color for indices in your chart or table. This may be done on a study-wide basis in the Color & Symbol tab, and those settings overrule Attributes Editor settings.

Benchmark

You may use this option to select the color for the benchmark in your chart or table. This may be done on a study-wide basis in the Color & Symbol tab, and those settings overrule Attributes Editor settings.

Universe

You may use this option to select the color for the peer universe in your chart or table. This may be done on a study-wide basis in the Color & Symbol tab, and those settings overrule Attributes Editor settings.

Use Advanced Style

You may use this option to enable the advanced graphics features described under the Style tab, including transparency and gradients. Checking this will expose an "Advanced" tab under "Style".

Component

You may use this option to select the color for the component in your chart or table. This may be done on a study-wide basis in the Color & Symbol tab, and those settings overrule Attributes Editor settings.

Text
You may use this option to select the color for text in your chart or table.

Cell
The Cell option allows you to select a customized background for the active part of your chart (the area where data is displayed), either in the form of a color or as an image.

To select a new cell background:

1. Click on the dropdown menu next to cell.
2. You may select another color by scrolling to it and clicking it. In addition, you may also use the "Clear" function to have the cell default to a standard background, or the "Image" function to bring up an image.
3. To use the image function, select "Image". Then, click the ellipsis button (…) next to it to bring up the Select Image tool.
4. Browse to the image you wish to find and click it with your mouse. Then, click the "OK" button.
5. The image should now be imported as your cell background.

Area
The Area option allows you to select a customized background for your entire chart, either in the form of a color or as an image. This may be done in the same manner as with cells (above.)

> *Single Tile - Importing images of varying sizes without rescaling*
>
> As of version 8.0, users may "assign" an image to a chart's 'area' in order to allow them to import multiple images into the application without having to rescale them. For example, if a user wants to bring an image in based on certain criteria, and a second image based on other criteria, they would no longer need to have the same size in order to avoid being distorted by sizing controls.
>
> To do this, use the Area function to select an image and then make sure to select 'Single Tile' in the control. This will bring the image in once at its correct size.

Scale
The Scale option controls the changes in the size of the symbols in style maps and scatter charts. When this option is selected, symbols will vary in size dependent on the time period they represent (larger symbols represent more recent data).

Credits
When this option is checked, a credit line appears for compliance purposes in the form of "Created with MPI Stylus." With certain data providers, the data source may also be indicated.

Border
This option allows you to display a border around the chart. This may also be controlled on an application-wide level from Configurator.

Cycle Colors
This feature allows you to control the colors of managers and components. Cycling the colors lets MPI Stylus Pro determine which colors should be used for all managers and components other than the primary entry in both cases (which would be selected by the tools above.)

There are three settings for this check box:

- Black checkmark on white background (checked). This setting assigns all series a unique color, starting with the selected color(s) in the above tools.
- Dark gray checkmark on light gray background (checked). This setting allows color sharing by series in the same class; for example, all managers use one color, all indices the next color, and so on.
- No checkmark. All series use the same color.

These options are overruled by the Color & Symbol tab.

Cycle Symbols
This feature is for Scatter charts only (it will be ignored by other chart types) and lets MPI Stylus Pro determine which symbols should be used for all managers other than the first one in the design tree, which would be controlled by the Symbols tool.

There are three settings for this check box:

- Black checkmark on white background (checked). This setting assigns all series a unique symbol, starting with the selected symbol in the Symbols tool.
- Dark gray checkmark on light gray background (checked). This setting allows symbol sharing by series in the same class; for example, all managers use one symbol, all indices the next symbol, and so on.
- No checkmark. All series use the same symbol.

Fill
This feature is for Scatter charts only (it will be ignored by other chart types) and lets MPI Stylus Pro determine how to fill symbols.

There are three settings for this check box:

- Black checkmark on white background (checked). This fills symbols with a color and establishes a border around them.
- Dark gray checkmark on light gray background (checked). This fills symbols with a color but does not establish a border around them.
- No checkmark. This puts an outline around a symbol's shape but does not fill it with a color.

The border settings are based on the Text color setting, but the Attributes Editor must be closed for changes to be reflected in certain cases.

3D
This changes a bar, line, area or pie chart to 3D; however, this setting cannot be used with scatter charts. Depending on the nature of your data, there may or may not be a substantial difference in appearance between 2D and 3D charts.

Cell
This option allows you to "turn off" the display of a chart, and is helpful when you only want to display a chart legend, and not the chart itself – for example, when you have several charts on a page with the same legend, you can use this option to display the legend for one chart and omit it for other charts through the Layout tab.

Axes Tab

The Axes tab may be used to specify the characteristics of a chart's axes, including gridlines, label orientation and tick marks, etc.
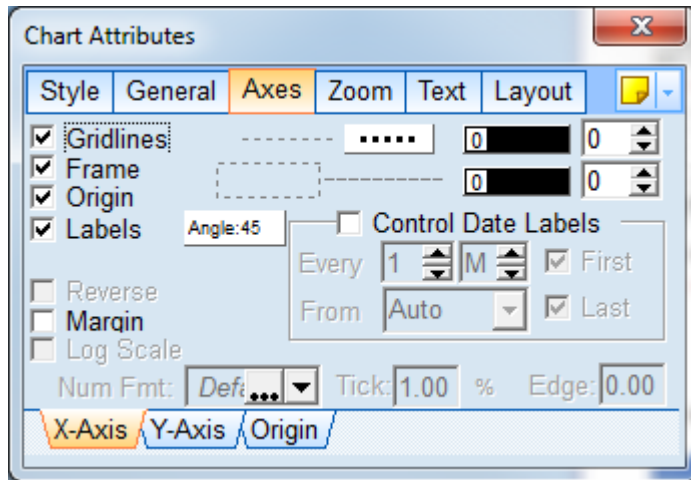
Figure 76

X-Axis and Y-Axis tabs

Many of the controls for the X and Y axis tabs will be the same; however, a few slight differences will exist due to design and functional issues.

Gridlines
Gridlines appear by default in charts in MPI Stylus Pro. To remove gridlines from a particular axis, simply uncheck this option.

Gridline Type
A dropdown menu linked to the Gridlines option allows the user to specify the type of line they would like for their gridlines. The three options are a solid line, a dashed line (long dashes) and a dashed line (short dashes.)

Gridline Color and Size
Following the gridline type dropdown menu are two menus that regulate gridline color and size. The color dropdown menu works as any other color menu in the application, and the size menu allows the user to scroll up (from a baseline of zero) to select larger gridline sizes.

Frame
Frames appear as lines along your X and Y axis, but may not always be visible because they often coincide with the chart origin. This check box allows you to remove or add frames to your chart.

Frame Color and Size
Following the frame check box are two menus that regulate frame color and size. The color dropdown menu works as any other color menu in the application, and the size menu allows the user to scroll up (from a baseline of zero) to select larger gridline sizes. This will always be the same as the Origin color and size.

Origin

This check box allows the user to choose whether or not to show the origin. In some cases, the origin may not be apparent because the line coincides with a frame or another line; therefore, checking or unchecking this option can appear to do nothing in certain cases.

Origin Color and Size
Following the origin check box are two menus that regulate origin color and size. The color dropdown menu works as any other color menu in the application, and the size menu allows the user to scroll up (from a baseline of zero) to select larger gridline sizes. This will always be the same as the Frame color and size.

Labels
This option allows the user to control whether or not labels for axis ticks appear on their charts. To hide labels, simply uncheck this box.

Label Angle
This option allows the user to adjust the angle of the labels that appear in the chart. A dropdown provides a number of predefined angles, or you may select a custom angle.

Margin
This option is used when a chart shows peer statistics or ranks in the form of floating bars. It shifts the graph relative to the vertical access to give the quartiles a more traditional appearance.

Log Scale
This option allows the user to scale the axis, using the logs of term values.

Control Date Labels
This option is specific to the X-axis and allows the user to control the frequency of date labels on the axis. When this option is not selected, its sub-options will be grayed out and inactive.

Tick
The Tick option allows the user to specify (Y-axis only, except for Scatter charts) the frequency of ticks by setting the amount of points between them. For example, a tick mark of 5 would place ticks at 0, 5, 10, 15, etc.

> *% button*
> When this button is pressed, the tick-value entry applies on a percentage-basis, not as an absolute number.

Edge
This option is for Scatter charts only and allows you to guarantee the minimal distance between data points and the chart's top and right edges. This is often used when only one data point is shown on a chart. In such cases, automatic axes scaling usually places the data point in the upper-right corner of the chart's cell. Using the edge control, the user may prevent this from happening and instead make sure the data point is reasonably positioned inside the chart. This option has no effect if Zoom for the axis is not automatic (i.e., min/max are set to specific values.)

Origin tab

This tab allows the user to specify the return series or coordinates to use for the origin in a chart.

Auto

This option uses the default origin for the chart, which may be any number of return series types, depending on the chart type.

Peers Median
This option uses the peer median for the statistic as the origin for the chart.

Benchmark
This option uses the benchmark values as the origin line for the chart.

Custom
This option allows the user to specify a custom origin line on both X and Y coordinate points.

Zoom Tab
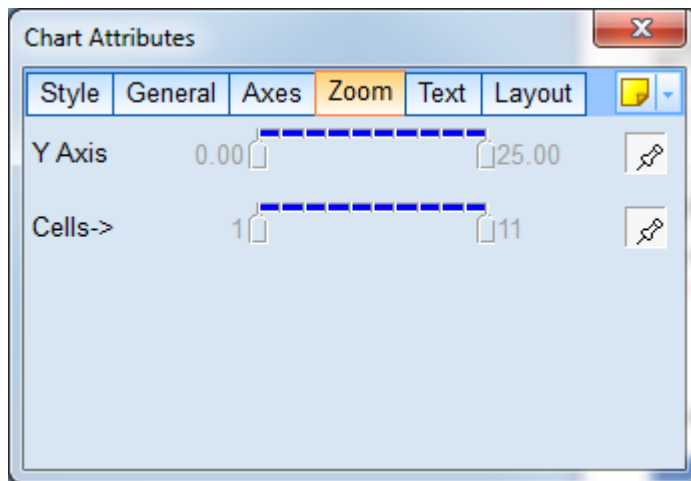
Figure 77

The Zoom tab allows you to change chart dates and axes ranges to any range you choose.

By default, the Dates and Axes sliders will be set to the maximum range so all available information appears in the chart; however, you may change this by unlocking the ranges for editing. To do this, simply click the pushpin buttons to make the ranges active.

Dates
As you move the date range, the chart default subtitle will also change to reflect your new range.
Axes
When you activate the Axes ranges to adjust zoom, arrows will appear at both ends of the range to allow you to control the amount of data displayed in the chart.

Cells
When "Show by Component" or "Show by Manager" has been selected in the Style tab of the Attributes Editor, a "Cells" option will also appear in the Zoom tab. This allows you to control which components or managers appear in the chart.

Text Tab
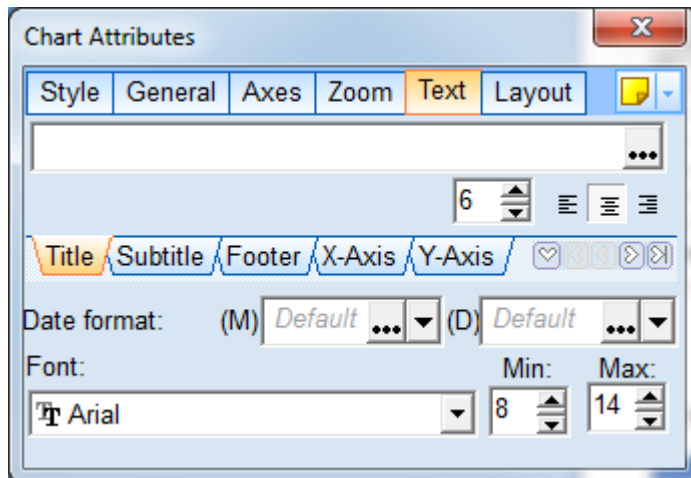
Figure 78

The Text tab allows you to modify the text for the Title, Subtitle, Footer, X-Axis, Y-Axis and control information for the Legend, Label and CellTitle information.

Each area can be modified using its own sub-tab in the Text tab. You may scroll through the sub-tabs using the arrows provided in the application.

When you first create a chart, MPI Stylus Pro assigns default values for all text options as follows:

Title
Title regulates the actual name of the chart in your View and Report. The default will be the name of the chart (i.e., Asset Loadings) or the computational option (i.e., Total Annualized Return).

Subtitle
Subtitle allows you to include additional information about a chart below its main title. The default is the range of return data as defined in the Parameters node.

Footer
Footer allows you to place additional information below a chart. The default is the window (i.e., 24-month centered window.)

X-Axis
This allows you to select the title for your X-axis. The default is the value assigned to this axis in the program.

Y-Axis
This allows you to select the title for your Y-axis. The default is the value assigned to this axis in the program.

Legend
This allows you to adjust the chart legend information and format.

Tick Labels
This feature gives you control over the size of your chart tick labels.

Cell Title

This feature allows you to control whether Cell Titles for charts are on the top or bottom of the charts, and also to adjust the size of text and distance from the chart content.

Modifying Text
To modify text, you can simply input new text in the field for each text type. The chart will update when you press the Enter button on your keyboard, or click elsewhere on the tab. You may also use a vertical bar (|) to enter multiple lines within one text field. When all text is deleted from a tab, defaults will automatically be restored. To avoid this, please use the – sign described in "Deleting Text Tab Information."

Deleting Text Tab Information
To delete text in a tab in the Attributes Editor, type in a dash sign (-) and press Enter. This informs MPI Stylus Pro that you do not need any title and deletes it. The chart size will adjust automatically.

Date format
This feature allows the user to choose from dropdown menus for both month and year, and to select from a wide variety of date formats. In addition, users may also entered "quoted text" to be displayed as-is in addition to the date string. For example, the input string:

'Fiscal: 'YYYY'' would return the display: Fiscal 2015 (or the current year).

Additionally, it is possible to use conditional formatting as needed to achieve particular layouts. For more information, and a more complete summary of Date format specifiers, please see the Macro Reference Guide available in your software via Help-> Macro Reference.

Font
This option allows the user to specify the font type for the text in the chart (all chart text will share font type.)

Min/Max
The Min/Max font size options allow you to specify minimum and maximum acceptable font sizes. This is a very useful feature because of the relative way in which Views in Stylus are sized. By specifying minimum and maximum font sizes, the user may be certain that font sizes in charts remain in relatively acceptable sizes to one another, ensuring consistency throughout Report design.

Layout Tab
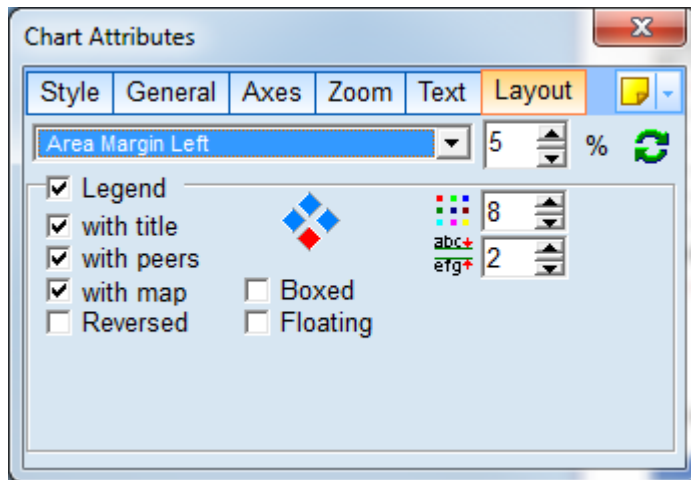
Figure 79

The Layout tab lets you modify a variety of settings for a chart's margins and legend.

Layout Tab Dropdown controls

There are a variety of settings controlled through the dropdown menu in the layout tab:

Area Margin Settings
The area margin settings allow you to adjust the amount of space taken up by the area (as opposed to the cell, which is the active part of a chart) – and thereby, to increase or decrease how much space in a given chart is populated versus white space. This will include the title, subtitle, footer, legend, etc. (in contrast to the Cell Margin Settings, which change only the active part of the chart.)
- Area Margin Left will adjust the left side of the area, using the increments available in the numerical dropdown menu.
- Area Margin Right will adjust the right side of the area, using the increments available in the numerical dropdown menu.
- Area Margin Top will adjust the top side of the area, using the increments available in the numerical dropdown menu.
- Area Margin Bottom will adjust the bottom side of the area, using the increments available in the numerical dropdown menu.

Cell Margin Settings
The cell margin settings allow you to adjust the amount of space taken up by the cell (as opposed to the area, which covers the whole chart) – and thereby, to increase or decrease how much space in the active region of the chart (where data can appear) is populated versus white space. This will *not* include the title, subtitle, footer, legend, etc. (in contrast to the Area Margin Settings, which do include those segments.)

- Cell Margin Left will adjust the left side of the cell, using the increments available in the numerical dropdown menu.
- Cell Margin Right will adjust the right side of the cell, using the increments available in the numerical dropdown menu.
- Cell Margin Top will adjust the top side of the cell, using the increments available in the numerical dropdown menu.
- Cell Margin Bottom will adjust the bottom side of the cell, using the increments available in the numerical dropdown menu.

Other Cell Settings
These additional settings provide further control for chart cells. They become more useful when you use the "Show By" feature under the Style tab to present multiple chart cells within a single chart.

- Cell Wrap Titles allows titles in Cells to wrap when a certain length is reached.
- Cell Horizontal Gap Scale (%) allows you to control the horizontal space between cells.
- Cell Vertical Gap Scale (%) allows you to control the vertical space between cells.
- Cell Frame All Sides, when set, places a border around all four sides of a cell frame. By default, borders are drawn only the left and bottom sides of a cell.

Legend Settings
The legend settings will allow you to adjust various size and placement features of your chart legend.

- Legend Maximum Width (%) allows you to specify in a percentage the maximum area width for the legend. A fixed legend size may be specified by setting both Legend Maximum Width and Legend Minimum Width to the same percentage.
- Legend Minimum Width (%) allows you to specify in a percentage the minimum area width for the legend. A fixed legend size may be specified by setting both Legend Maximum Width and Legend Minimum Width to the same percentage.
- Legend Maximum Height (%) allows you to specify in a percentage the maximum height for a legend.
- Legend Minimum Height (%) allows you to specify in a percentage the minimum height for a legend.
- Legend Indent Left shifts the legend along a virtual X-axis to the left or right. The default will be at or near the 0 mark, and by shifting to lower/negative numbers, the legend may be moved incrementally to the left, whereas by shifting to higher/positive numbers, the legend may be moved incrementally to the right.
- Legend Indent Top shifts the legend along a virtual Y-axis up or down. The default will be at or near the 0 mark, and by shifting to higher/positive numbers, the legend may be moved incrementally towards the bottom of the chart, whereas by shifting to lower/negative numbers, the legend may be moved incrementally to the top of the chart.
- Legend Symbol Scale (%) adjusts the size of the symbols in the legend as a percentage of their default size.
- Legend Symbol Outline allows you to enable or disable the outline of the legend symbols.
- Legend Wrap if Longer allows you to limit the width of the text in the legend, wrapping longer legend labels onto multiple lines. Words are not broken with this setting.

Axis Margin Settings
The margin settings allow you to control the amount of space surrounding the chart object.

- X-Axis Extra Right Margin can be set to 1 to include extra margin space on the right-hand side of a chart.
- X-Axis Margin allows you to control the margin size for the X-axis, and is only applicable when the Margin check box is selected in the X-axis section of the Axes tab.
- Y-Axis Margin allows you to control the margin size for the Y-axis, and is only applicable when the Margin check box is selected in the Y-axis section of the Axes tab.

Axis Label and Tick Settings
The axis label settings allow you to control how axis labels and ticks are presented.

- X-Axis Label Spacing (%) provides fine control for the distance between the ticks and the labels on the X-axis. The higher the distance, the fewer labels will appear.

- Y-Axis Label Spacing (%) controls the label spacing as above for the Y-axis.
- Y2-Axis Label Spacing (%) controls the label spacing as above for the secondary Y-axis.
- X-Axis Tick Size (%) can be adjusted as a percentage of the tick label font size. You may set a negative value here to shift the tick to the inside of the chart.
- Y-Axis Tick Size (%) controls the tick size as above for the Y-axis.
- Y2-Axis Tick Size (%) controls the tick size as above for the secondary Y-axis.
  X-Axis Tick Label Shift can be utilized to shift axis labels to the right or left of the tick. By default (value = 0), tick labels appear directly beneath the tick. Setting this value to -1 will shift the tick label to the left, +1 will shift the label to the right of the tick.

Other Special Settings
The settings below provide additional control for certain types of charts.

- Pie Chart Label Distance
- Pie Chart Leader-Label Distance
- Map Corner Symbol Scale (%)
- Map Corner Label Scale (%)
- Symbol Scale Min Factor (%)
- Symbol Scale Max Factor (%)
- Negative color (palette index)
- Spaces between Bars

Legend Controls

There are several specific controls (in addition to the Legend width and indent controls in the drop-down section above) that control legend location, appearance and content.

Legend
The Legend check box allows you to display or hide the entire chart legend. It is useful to hide a chart's legend when you wish to show several charts on one page that all have identical legends, and want to show the legend only one time.

with title
This check box allows you to display or hide the title for the chart legend. Depending on the type of chart, this may be the name of the fund, or the type/degree of calculation (i.e., Total.)

with map
This check box allows you to display or hide the content of the style map in a chart legend. Depending on the Style Outline for the chart, this may say the name of the map or be a content description, such as "Russell Indices."

with peers
This check box allows you to display or hide the peer group name in a chart legend.

Boxed
This check box allows you to display or hide a box around the legend. You may then also change the background color of the box by clicking the white color band next to box to reveal a color dropdown menu.

Floating
The Floating option allows you to make legend position independent of chart position, giving you maximum control over your chart's appearance. When the floating option has been selected, the chart will be able to take up the entire cell area and will not be constricted by legend position. You may then

use the various legend dropdown menu tools (discussed previously) to precisely locate your legend in your chart.

When Floating is checked, two additional tools appear in the Layout tab. They are up/down menus that allow you to move the legend without using the dropdown options (such as Legend Indent Left.) These two options are explained in further detail below as X-shift % and Y-shift %.

Legend Position Diamond

The Legend Position Diamond allows you to specify the general region of the chart where your legend should be located. By clicking one of the four smaller diamonds, you may select whether your legend will be based at the top, bottom, left or right of your chart. Your selection may adjust legend appearance (vertical vs. horizontal); therefore, you may wish to use the legend indent controls to adjust your legend location if you wish to preserve a vertical or horizontal legend appearance but are unable to do so with the diamond.

Reversed
This check box allows you to reverse the order in which items in the legend appear. This is done by legend section – for example, if you were displaying a manager and a benchmark, these would reverse; however, if you were displaying peer quartiles, a manager and a benchmark, the peer quartiles would reverse – but still remain ahead of the manager/benchmark section.

Max Legend Rows
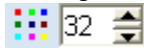
This allows the user to specify the maximum number of rows to display in the legend, and is most useful when a large number of indices are shown.

Spacing
The Spacing tool for legends can be used to incrementally change the spacing between legend rows/entries in your chart. Note that increasing spacing will generally enlarge the overall size of your legend – in other words, the text will also grow larger.

X-shift %
This feature will only appear when the Floating option is selected. This allows you to move your legend incrementally to the left or right using the up/down arrows, or entering a positive or negative number manually and pressing the Enter key.

Y-shift %
This feature will only appear when the Floating option is selected. This allows you to move your legend incrementally up or down using the up/down arrows, or entering a positive or negative number manually and pressing the Enter key.

Objects – Object Editor & Stationary Objects

There are two tools in MPI Stylus Pro that work with "objects" – the Object Editor and Stationary Objects controls. These may seem quite similar at first, but there are important differences between them.

Basically, you would use:

- Object Editor when you want to add a *chart-specific* object to your Report. This may be a line pointing to a data point, or a simple note, or some other kind of information.
- Stationary Objects when you wish to add *page-specific* or *Report-specific* content to your Report. For example, this is the tool for bringing in a logo that you want to appear on every page, or a solid color line for design purposes, etc.

Due to their similarities, most of the features will be covered under Object Editor.

Object Editor
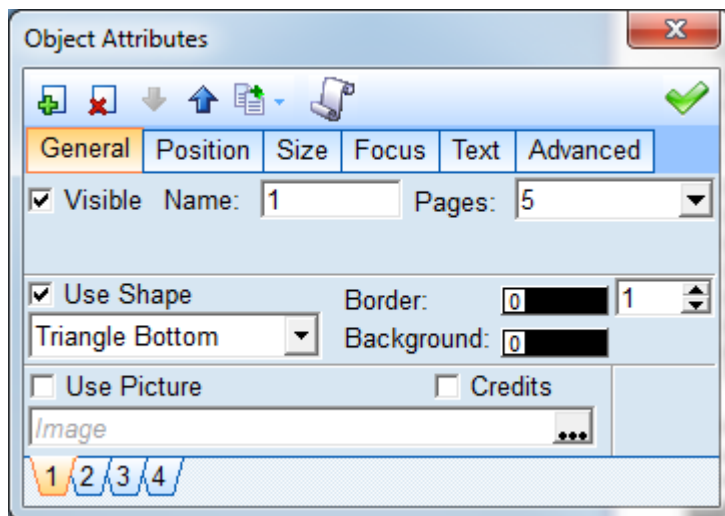
Figure 80

You will use the Object Editor to add chart-specific content to your Report. To reach the Object Editor, you may either click on the icon above in your Report while selecting the correct chart, or right click on the chart and select "Object Editor."

Adding a New Object

To add a new Object:

1. Right-click on the location/data point where you wish to create an object. Select the "Object Editor."
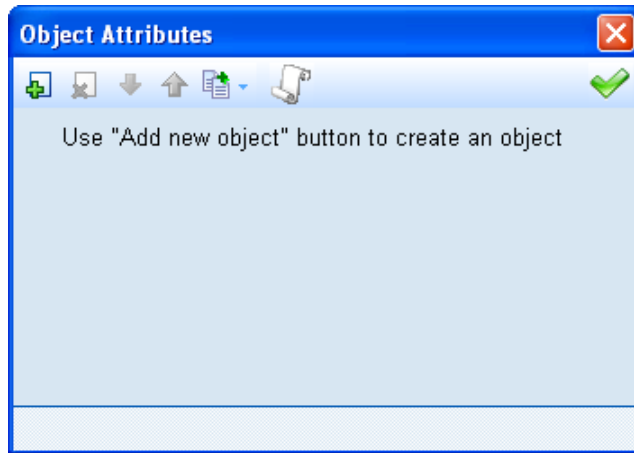
Figure 81

2. Click the "Add New Object" button in the Object Editor.
3. You will now be able to define the various Object parameters (for more information, see below.)

Renaming an Object

Objects are automatically assigned numbers as names. You may rename an Object by clicking on the General tab in the Objects Editor and typing in the new name in the Name field.

Moving an Object

To move an Object's position on the Object tab list:

1. Go to the Object Editor.
2. Select the tab representing the Object you wish to move.
3. Click the Up or Down arrows to move the Object's position relative to other Objects in the tab list.

Deleting an Object

To delete an Object:

1. Go to the Object Editor.
2. Click on the tab representing the Object you wish to delete (there will only be multiple tabs if there are multiple Objects.)
3. Press the "Delete Object" (X) button. MPI Stylus will ask you if it should delete the Object. Click OK.
4. The Object is now deleted.

General Tab
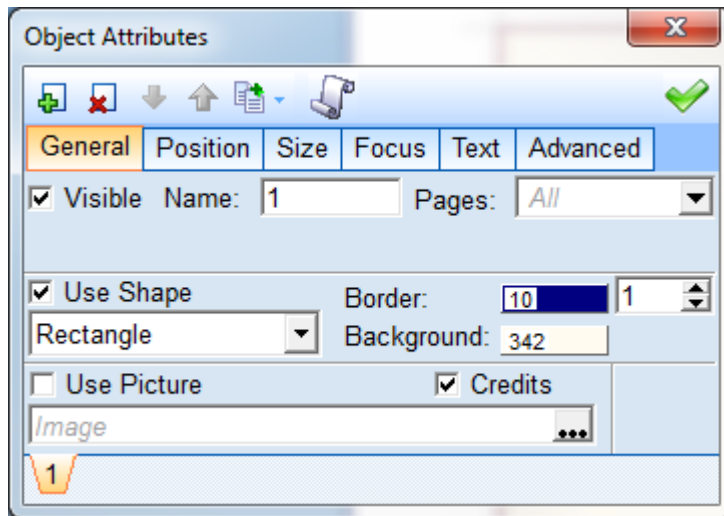
Figure 82

The General Tab may be used to change the shape, background color and border color of any Object, as well as to assign the Object name.

Visible
This check box allows you to make an Object invisible. This would be useful when you are trying to draw lines on charts (for more information, see Focus.)

Name
This field allows you to rename the Object by overwriting the default numerical name given an Object when it is created. This name will be reflected on the tab identifying the Object in the Object Editor.

Layer
This selects the layer for the Object in the chart. Objects in the Top layer cover the chart and legend. Objects in the Middle layer are above gridlines but below such elements as data points, bars and lines. Objects in the Bottom layer cover only the chart background.

Use Shape
This section controls the shape options available for an Object. You may select Rectangle (default), Ellipse or Rounded Rectangle. The ellipse option may be adjusted to a circle using the Size tab to modify the shape.

Border
The border option allows you to select the color of the shape border.

Border Width
You may adjust the border width by using the up/down control next to Border.

Background
The Background option allows you to select the color of the shape background (fill).

Ellipse Angle

When the Shape is set to Ellipse, an up/down control will appear next to Background that will allow the user to adjust the angle of the ellipse's line/curve.

Use Picture
Users may choose to insert a picture as an Object instead of using a shape. When you click on the browse button (…), a navigation window will appear and allow you to locate graphic files on your system. The default folder will be your Stylus installation folder (i.e., C:\Stylus). You may select the Images folder to view graphics included with MPI Stylus Pro, or navigate to another folder to select your own images.

Importing images of different sizes without rescaling
As of version 8.0, it is possible to bring in images of different sizes to the same space/object without having to rescale them. This is useful for automated templates where the image you wish to import may vary based on other criteria. This will not be done through Stationary Objects, but rather through a chart's Attributes Editor. For more information, please see "Single Tile" in the Attributes Editor section of this chapter.

Position Tab
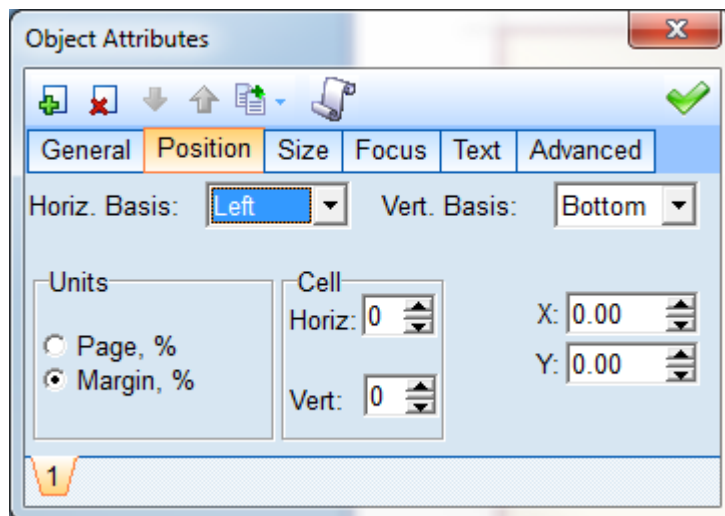
Figure 83

The Position tab is used to define the position of an Object.

Horiz. Basis & Vert. Basis
These two controls allow the user to specify the origin of the Object. By default, the basis will be the bottom left of an Object. These options allow the user to change the basis of an Object to other parts of the Object.

<u>**Units**</u>

Unit settings control the position of an Object when the size of the chart changes.

Absolute
This sets the position by using the specified number of pixels. The position of the chart is relative to other elements of the chart and changes every time the size of the chart changes; this means that you should not use the Absolute option when you expect to print the chart, as the size of the chart on the screen and printout will be different.

Area Size, %

This specifies the position of the Object relative to the horizontal and vertical dimensions of the total area of the chart. This is the default setting, which ensures that the object is resized and repositioned correctly when the chart is resized.

Cell Size, %

This specifies the position of the Object relative to the chart cell.

Axes

This gives the user another way to control the position of the Object when the size of the chart changes. This option lets the user anchor to a point with specific coordinates along the X and Y axes of the chart.

Cell Horizontal/Cell Vertical

When you select Cell Size or Axes and the chart contains multiple cells, you must specify to which cell the Object will be linked. To select the cell, use the appropriate up/down control. The first cell will be assigned 0; the second cell will be assigned 1, and so on. When a cell number is selected for a cell that does not exist, the Object disappears from the chart.

X-axis & Y-axis

These up/down controls specify the coordinates of an Object. The interpretation of these two values depends on the selected method of determining the Object's position and units of measurement.

Zero-Origin

This dropdown allows the user to change the position at which the origin is identified. By default, this is zero – the default measure for an origin. That said, the origin can be 'pinned' to certain series, locations, etc. For example, the 'M' in the dropdown would pin the origin to a Manager.

Size Tab
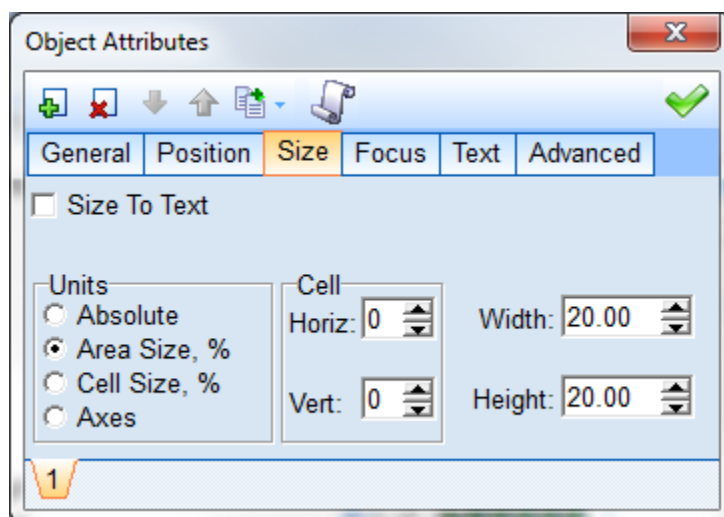
Figure 84

The Size tab is used to modify the size of an Object. By default, an Object uses the Width and Height fields to determine the Object size.

Size to Text
This feature resizes the label to match the text entered on the Text tab. When this setting is used, other settings on this tab disappear and the following message is displayed: "Object is sized automatically based on the current settings under the "Text" tab. Uncheck to control the size manually.

Units

Unit settings control the position of an Object when the size of the chart changes.

Absolute
This sets the position by using the specified number of pixels. The position of the chart is relative to other elements of the chart and changes every time the size of the chart changes; this means that you should not use the Absolute option when you expect to print the chart, as the size of the chart on the screen and printout will be different.

Area Size, %
This specifies the position of the Object relative to the horizontal and vertical dimensions of the total area of the chart. This is the default setting, which ensures that the object is resized and repositioned correctly when the chart is resized.

Cell Size, %
This specifies the position of the Object relative to the chart cell.

Axes
This gives the user another way to control the position of the Object when the size of the chart changes. This option lets the user anchor to a point with specific coordinates along the X and Y axes of the chart.

Cell Horizontal/Cell Vertical
When you select Cell Size or Axes and the chart contains multiple cells, you must specify to which cell the Object will be linked. To select the cell, use the appropriate up/down control. The first cell will be assigned 0, the second cell will be assigned 1, and so on. When a cell number is selected for a cell that does not exist, the Object disappears from the chart.

Width/Height
These specify the width and height of the Object. The font is determined by the size of the Object, the length of the text and size of the margins. (See the Text tab.)

Focus Tab
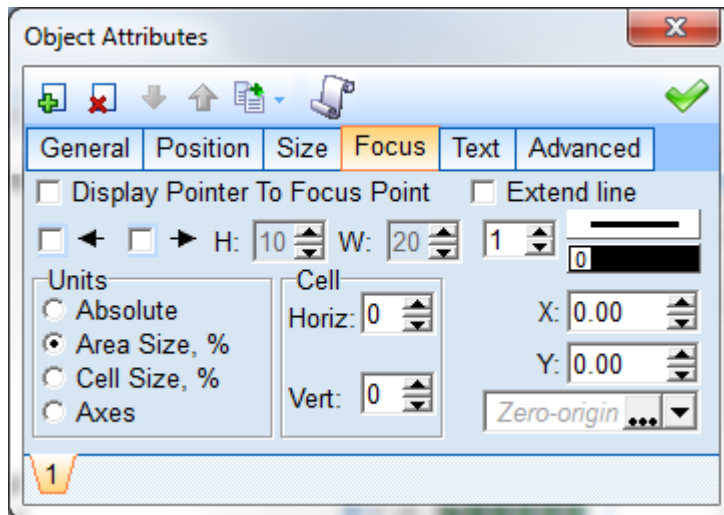
Figure 85

The Focus tab creates lines on the chart. Each time a new Object is created, MPI Stylus Pro creates an invisible line connecting the basis (origin) of the Object with a point called the focus. You may change the position of the line associated with an Object by modifying either the position or the coordinates of the focus.

Display Pointer to Focus Point
This check box allows you to display a line in the chart. When you enable this line feature in Stationary Objects only (not other Objects), controls on other tabs relating to shapes, including pictures and text, are disabled.

Extend line
This checkbox may be used to extend the line you have created past the default end point for 'display pointer to focus point.'

Units

Unit settings control the position of an Object when the size of the chart changes.

Absolute
This sets the position by using the specified number of pixels. The position of the chart is relative to other elements of the chart and changes every time the size of the chart changes; this means that you should not use the Absolute option when you expect to print the chart, as the size of the chart on the screen and printout will be different.

Area Size, %
This specifies the position of the Object relative to the horizontal and vertical dimensions of the total area of the chart. This is the default setting, which ensures that the object is resized and repositioned correctly when the chart is resized.

Cell Size, %
This specifies the position of the Object relative to the chart cell.

Axes
This gives the user another way to control the position of the Object when the size of the chart changes. This option lets the user anchor to a point with specific coordinates along the X and Y axes of the chart.

X-axis & Y-axis
These up/down controls specify the coordinates of an Object. The interpretation of these two values depends on the selected method of determining the Object's position and units of measurement.

Text Tab

The Text tab is used to specify the text that appears in an Object. The text settings on this tab are used when you select the Size to Text check box in the Size tab.

Show Text
This check box allows you to hide the text in the Object. This setting lets you use the text as a tool to control the Object size, even though the text is not displayed.

Proportional Font Size
This control only works when the Size to Text option is selected in the Size tab. The font size of the Object's text will be based on the size control of the Text's page. When this check box is not selected, the control which defines font size defines it in points, whereas it defines it in relative points when the check box is selected. Text defined in points never rescales; therefore, when the chart is resized, all fonts inside the chart scale to new dimensions, but the text stays the same size. When relative points are used, the font will scale with other text objects in the chart.

Font Settings
This tab uses standard font controls found in most Word Processing applications.

Horizontal Margin, %
This determines the amount of space between the text and the Object's edges on the sides.

Vertical Margin, %
This determines the amount of space between the text and the Object's edges at the top and bottom.

Stationary Objects

Stationary Objects are used to add borders, backgrounds, logos or other design elements to your Reports. They may be used only in Report tabs, and, once defined, appear in all Report pages.

For the most part, Stationary Objects controls are identical to Object Editor controls, and therefore they are covered in the Object Editor section; however, there are a few minor differences. The Focus tab is available for use in Stationary Objects that are not using 'shape' features. When the 'display focus line' setting is checked, the 'Use shape' controls become disabled. In addition, there are the following additions:

Credits
The Credits check box (General tab) allows you to place the standard Stylus credit below a defined Object. The credit line displays when you set the Vertical basis on the Position tab to Bottom and adjust the Y-axis until the line displays.

Page, %

This may be found in the Position and Size tabs. This setting specifies that all dimensions are percentages of the page width of the whole page width or height.

Margin, %
This may be found in the Position and Size tabs. This setting specifies that all dimensions are percentages of the page area inside the page margins.

Page Designer
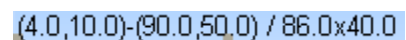
The Page Designer is the area in Reports where users can "rough out" the actual design of their page – in other words, they can specify where charts, tables and memos will be shown, and tweak their position and size as necessary throughout the design process.

This section looks similar to that used to create new charts, tables and memos in Views; however, there are important differences. The Page Designer is a spatial tool only – it does not designate which charts, tables or memos will be in your Report. It only regulates how many there will be, and where they will be placed. In addition, when you drag and drop a new chart, table or memo to your Page Designer, it will not adjust to fill all available space. Charts, tables and memos cannot overlap in Views, but may in Reports.

To add a new chart, table or memo:

1. In the Page Designer, click on a Chart, Table or Memo block with your mouse and drag the block up into the cross-hatched field.
2. Drop the block in the approximate area where you would like a chart, table or memo to appear in your actual Report.
3. You may use your mouse to resize the block and reposition it within the page. Please note that if you drag any block more than 50% outside of the red lines around the Page Designer field and then release your mouse button, the block will be deleted automatically.

You may rename any block in your Page Designer by clicking on the block name, deleting the text and entering new text. Macros may be used in this field as well.

Block coordinates and dimensions

(4.0,10.0)-(90.0,50.0) / 86.0×40.0

Each block in the Page Designer will have a series of coordinates at its bottom to specify its location within the page and dimensions to specify its size. This helps users align multiple blocks perfectly as well as to ensure that multiple blocks are the same sizes (if needed.) Coordinates and dimensions are divided by a single slash (/)

The first number in each coordinate series represents the left and right sides of the block along the X-axis, respectively. The second number in each coordinate series represents the top and the bottom of the block along the Y-axis, respectively.

The first number in the dimension series represents width, and the second number represents height.

Restore button in Page Designer
When the Restore button is used in the page designer, the design will revert to its position when the page designer was first opened/clicked on. Once the user navigates away from the page designer, the state of the page designer at that time will become the default for the next session.

Chart/Table/Memo Designer

The Chart/Table/Memo designer in Reports may work in one of two ways, depending on whether or not the Reports node is being used to construct actual charts, tables and memos, or if they are being linked in to the Report from Views.

If there are charts, tables or memos being constructed in the Report itself, this will work just like the Chart Designer or Table designer would in Views; however, MPI recommends using the Link to View feature instead.
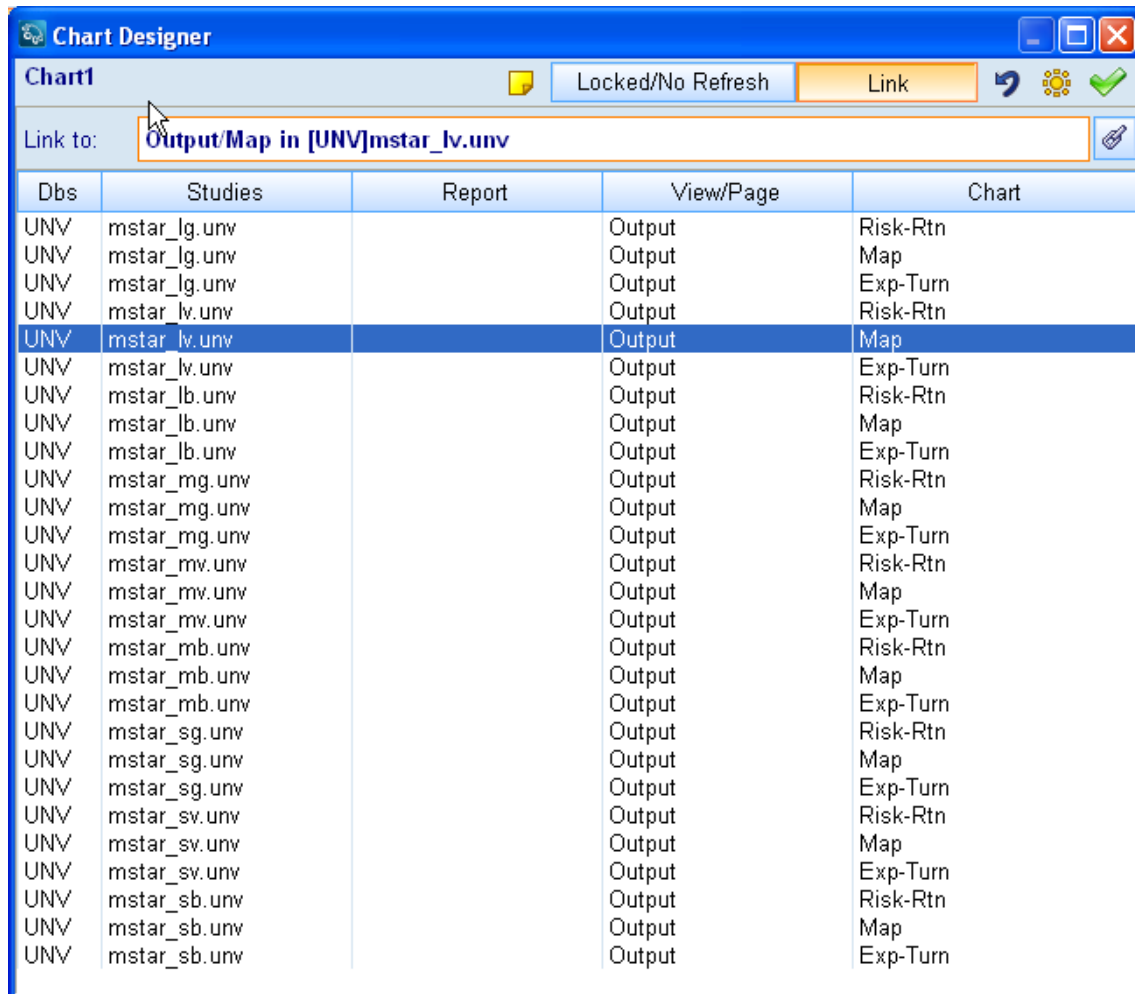
Figure 86

Original
The Original button allows the user to see the Chart or Table designer and design charts or tables in Reports.

thin Link to View
The Link to View button allows the user to select an existing chart, table or memo from their Views and display it in this area of the Report. There will be two columns displayed here:

- View, which tells the user the name of the View where the chart, table or memo may be found. Note that this will be the same name as the tab along the bottom of your screen where this chart, table or memo may be viewed.
- Chart (Table)(Memo), which will tell the user the name of the particular chart, table or memo within that View. This allows for easy identification of the appropriate item for selection.

Once the correct View has been identified, the user may select it with the mouse and then press the green checkmark to display the View in the Report.

Jump to the Linked Chart Design

This option allows the user to jump to the Chart Designer, Table Designer or Memo Designer in the Views node on the design tree in order to make adjustments to the View. Because this is a linked View, any changes made will automatically be updated and reflected in the Report.

Create Label

The Create Label tool is a special feature that allows the user to quickly add an object to a chart without using the Object Editor (which will be used to edit the label if necessary.) When you use Create Label, an object is automatically created for you in the place where you have clicked to create the label.

The content of a label will depend upon the chart type as well as the location of data within a chart. For example, an information ratio chart may have some data that is considered "Excess" whereas other data would not be; therefore, labels created for data above the base line would contain the word "Excess" in addition to the data point value, whereas labels for data below the base line would not.

To create a label:

1. A label will be created with its upper left-hand corner matching the area where you click (the data point). This may be adjusted later with the Object Editor.
2. To create a label, mouse over the data point you wish to feature in a label. After a moment, you should see a floating box containing the value of the data point.
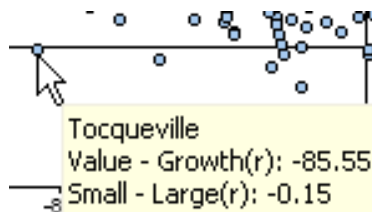
3. Once the floating box is showing the info for the data point you wish to feature, right-click and select "Create Label."
4. An object will automatically be generated with that data point's information. You may adjust label appearance and position through the Object Editor.

To delete a label:

1. Because all labels are objects, you will always delete a label by right-clicking on it and selecting the Object Editor.

2. Each object in the object editor will have a tab with its name. Click on the tab of the label you wish to delete.
3. Once you have clicked the tab, press the "Delete object" button.
4. Your label will now be deleted.

Export

MPI Stylus Pro gives users several export options from both Views and Reports in order to help make content from the application more useful in situations where final reporting will take place outside the program. The following options exist when exporting out of Views and Reports.

Output Node	Option
Views	Bitmap to Clipboard
Views	Metafile to Clipboard
Views	Image to file
Views	Text to Clipboard (tables)
Views	Text to file (tables)
Reports	To PDF file
Reports	To PowerPoint
Reports	To RTF file
Page	Same three options as Views for images
Area	Same three options as Views for images

Figure 87

Please note that when a chart/area is exported to the clipboard as an image or saved as an image file, its elements will no longer become active; in other words, specific elements of the chart will not be editable through another data program, such as Excel.

To export:

1. Right-click on the chart, table or memo you wish to export (or that is on the page you wish to export).
2. Select Export-> and then the option you would like to use.
3. If you select to Export to a clipboard, the information will be automatically stored temporarily on your computer's clipboard and may be copied into other applications.
4. If you select to Export to an image to file, you will be given the option of where to save the image, and in what format.
5. If you select to export to PDF, you will be given the option of where to save the PDF file.
6. If you select to export to PowerPoint, the PowerPoint file will open automatically. You may save it at this time.
7. If you select to export to RTF, you will be given the option of where to save the RTF file.

Print

Print options are different for Views and Reports because of the nature of what you are trying to print. In a Report, the Print feature will open your basic Windows print utility, allowing you to select the printer and other standard choices. In Views, however, the user is given a certain level of control as to how a particular chart, table or memo should appear.

Page Setup
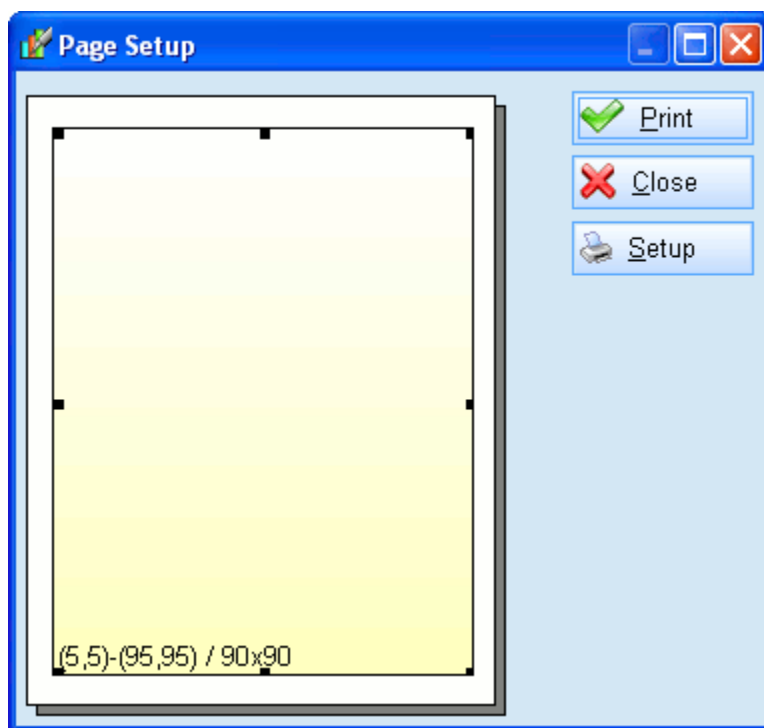
Figure 88

The page setup utility is opened whenever you press the Print button while in a View tab, or when you right-click on a chart, table or memo in the Views node and select "Print."

The page setup utility allows you to control the size of your chart, table or memo on the hard copy, as well as to adjust printer setup by clicking on the "Setup" button. This will open the standard Windows print utility.

The yellow rectangle visible in the page setup utility allows you to adjust the size of the chart, table or memo as you would in the Page Designer, with the block coordinates and dimensions also visible for comparison when the user wishes to make printouts of multiple charts, tables or memos in the same dimensions.

Propagate Chart Style To…

The Propagate Chart Style To… tool allows the user to quickly propagate one or more styles from a chart to every other chart of its kind in a Report. This avoids the tedious process of formatting each chart separately and allows for a great deal more control, consistency and efficiency in chart design.

In some cases, MPI Stylus Pro has features that have been developed that more explicitly allow for study-wide control of these options – for example, the Color & Symbol tab. It is recommended that the user be aware of all options for enforcing consistency on a study, in order to make use of the most efficient tool for any situation.

There are five screens for the Propagate Chart Style To… feature, and the user is given a high degree of power and control in selecting precisely which features of a chart to propagate. These screens each correspond to settings controlled through the Attributes Editor.

Peer Bands…
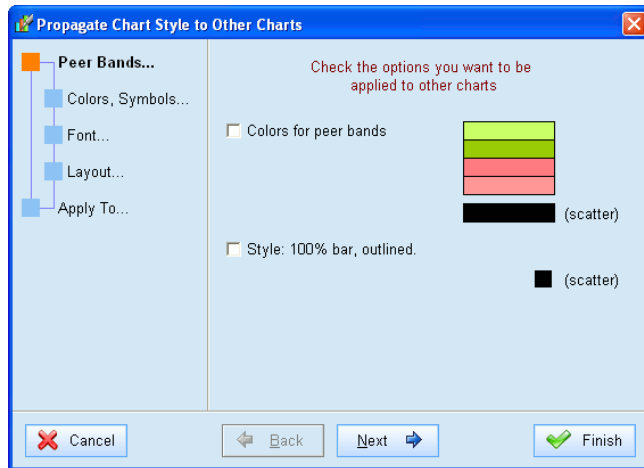
Figure 89

This screen allows you to propagate peer color bands and scatter chart colors, as well as chart types and styles, to other charts. Peer color bands may also be specified in the Color & Symbol tab of a study, which would avoid the need to use the propagate feature in this case.

Colors, Symbols…
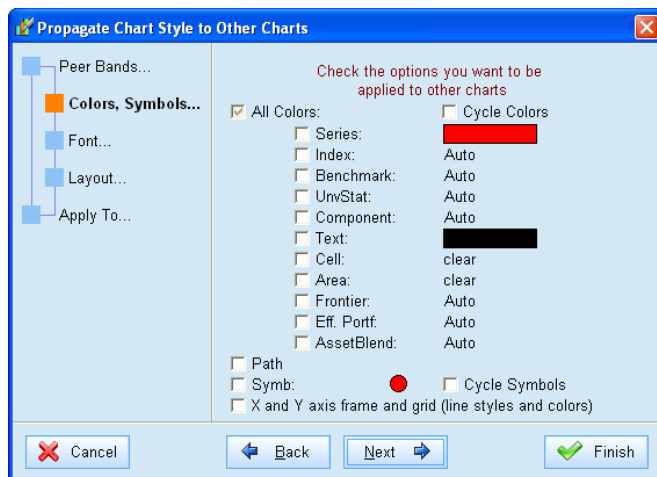
Figure 90

This screen allows you to choose which series and other chart colors to propagate, as well as whether or not to propagate gridlines. Path and symbol propagation may also be found in this screen. Note that this screen takes color data from the Attributes Editor of a chart; if color data has been assigned in the Color & Symbol tab, it will have priority over any Attributes Editor assignments.

Font…
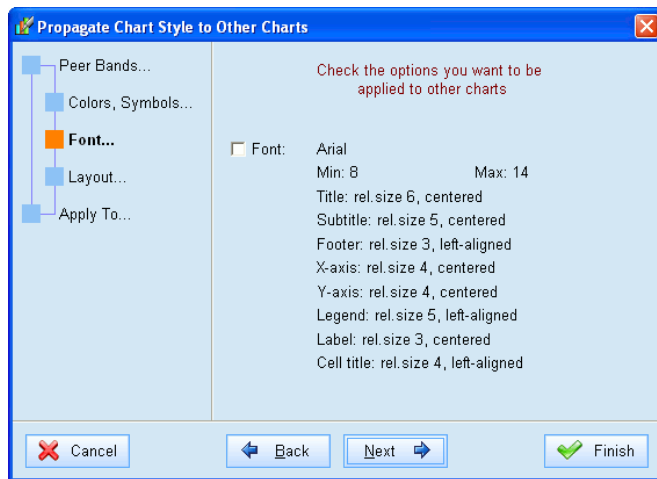
Figure 91

This screen allows you to propagate font sizes, types and alignments.

Layout…
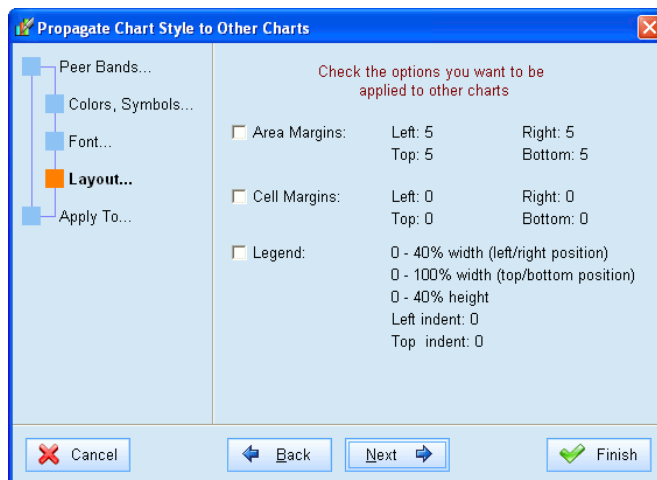
Figure 92

This screen allows you to propagate area and cell margins, and legend position, to other charts.

Apply To...
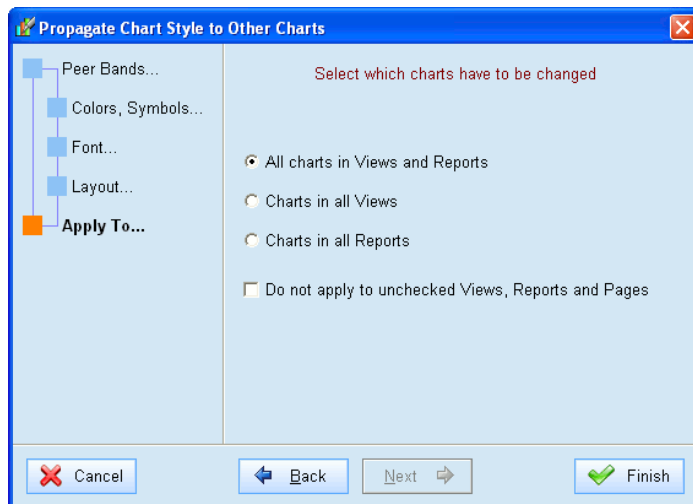
Figure 93

This screen allows the user to decide whether to propagate changes to all charts, or whether to propagate only to charts in Views, charts in Reports, and/or only checked charts. This gives the user more control over how the propagation works throughout their Views and Reports.

Troubleshooting Views and Reports

Q: I have seen a chart in another study that I want to create in my study, but I don't know how to design it. What should I do?
A: One of MPI Stylus Pro's reporting advantages is in its design system that allows any user to reverse-engineer charts, tables or memos from other studies into their own study. There are several ways to accomplish this. You can use the right-click menu to copy an entire View or specific chart, table or memo from one study and paste it into another; or you may simply use the Chart/Table/Memo designer for any View to examine the precise elements of its design, which you may then recreate in your own study.

Q: What is the advantage of creating my tables/charts in the Views Node as opposed to just creating them in a Report?

A: There are several advantages to this, and this subject is discussed in detail earlier in this chapter; however, the main advantages are that it allows you to efficiently organize your output during the analysis phase without having to reorganize it later, and that you may reuse the same chart, table or memo multiple times in multiple Reports, as well as have any changes made to your Views propagate automatically to all Reports where they are used.

Q: I would like to make a chart or table of a particular statistic but don't know where to find it.
A: Please see the Analytics Glossary at the end of this manual for descriptions of statistics.

Chapter 6

MPI Prospector

Overview

MPI Prospector allows you to create and edit peer groups, populate them with unlimited performance-based analytics, and use its powerful analytical and visualization capabilities to visually explore relationships in the data and conduct manager searches.

Chapter 6

MPI Prospector

Introduction to MPI Prospector

The MPI Prospector module adds several important and powerful capabilities to MPI Stylus Pro, but it may be thought of first and foremost as serving three key purposes:

- Creating and editing peer universes
- Conducting manager searches
- Leveraging visualization capabilities in data analysis

Getting Started in MPI Prospector

MPI Prospector makes use of the design tree and data pane setup, allowing new users to quickly and comfortably orient themselves within the module right from the start. Though the nodes of MPI Prospector's design tree are different from those of other modules, they may be navigated in the same manner and have most of the same tools available in them.

An important feature of MPI Prospector will be the ability to filter data and examine it through the use of interactive scatter charts, distribution charts and data tables. These dynamic views allow you to examine the relationships between data for the same fund(s) across a wide array of analytics, significantly increasing your analysis power.

Reporting capabilities exist starting in Stylus 11.3. These reporting features will be similar to reporting in Stylus or Allocator, though the only charts/tables available in the reports will first need to be created in a View. This new feature will allow users to create a printable report explaining the filter process, and even show steps and where certain managers get removed along a process.

Understanding Prospector Data

It is important for users to understand that MPI Prospector output data behaves differently than data in other modules in MPI Stylus Pro. Whereas with Stylus, Integrator and Allocator, data only "exists" when a particular study is open (and therefore studies must be run when opened to view data), Prospector data continues to exist even when a study is closed. This allows you to use peer groups (Prospector data) in other modules without requiring the actual underlying Prospector study to be open. In addition, whereas a Stylus study (.sty) file is entirely self-contained, a "run" Prospector study creates additional files to store data.

This is important to remember when using features such as the Dynamic Peer function in MPI Prospector, which changes the paradigm for MPI Prospector. Whereas Prospector data is normally "stored" – that is to say, the most recently created data is maintained – the Dynamic Peer option causes the data to automatically update. For more information, please see "Dynamic Peer" further in this chapter.

Working with Prospector Studies

The same basic rules apply when working with MPI Prospector studies (signified by their .unv extension) as with all other studies in MPI Stylus. For general information on creating, opening, saving or deleting MPI Prospector studies, please see Chapter 3 of this manual.

It is important to note that Prospector studies, in addition to being the studies with which you will create or edit peer groups in MPI Stylus, will also serve as the peer groups themselves in the other modules.

Dynamic Peers

The Dynamic Peer check box option, located in the Properties tab of the Study Node, is a special feature for users who bring Prospector studies into other modules as peer groups. This feature changes the fundamental appearance and functionality of the underlying Prospector study, and therefore should only be used when the sole purpose of the Prospector study is to supply data to another module.

When the Dynamic Peer option is selected, MPI Stylus Pro will ignore all analytics and output filters, instead only applying Source filters present at the time when the data is requested. This is useful because it allows the .unv file to automatically receive new data when the user runs database updates.

Prospector Study Changes for Dynamic Peer

When the Dynamic Peer option is selected, the associated Prospector study will undergo extensive changes in order to support its new function as a pure data tool, and all nodes with the exception of the Source node will disappear from the Prospector study.

To restore a Dynamic Peer study to its full version, you will have to uncheck the Dynamic Peer check box, save the study and reopen it.

Note to Advanced Analytics/Advanced Prospector users

Please note that you should not attempt to use the Dynamic Peer option if you are an Advanced/Enterprise Prospector user and are working with analytics in any form (i.e., in a ratings system.) Dynamic Peer only conducts source filtering and discards all other aspects of MPI Prospector.

To make a Prospector study a Dynamic Peer:

1. In the Prospector study, go to File-> Save As.
2. In the Save as Study box, click on the Properties tab.
3. Check the "Use as a dynamic peer group" check box.
4. Save the study.

Use as Prospector Database (formerly Prospector DB)

The 'Use as Prospector Database' option (formerly called Prospector DB), is located in the Properties Tab of the Study Node and allows users to make a study available as a database/source in other modules in the application. The Prospector study remains available for normal use as a peer universe, but it also appears as an available database (like Morningstar or US Equity) from which any of its funds/portfolios can be selected. This provides users with a convenient way of organizing and accessing a specific group of funds. For example, by specifying certain peer group filters, the user can be confident that any fund available in the Prospector DB passes required criteria.

MPI recommends that the Prospector DB option only be used when it is absolutely necessary to use a Prospector study as a database; too many databases linked to Stylus may affect performance, especially in database selection screens where information from all databases are retrieved.

To make a Prospector study a Prospector DB:

1. In the Prospector study, go to File-> Save As.
2. In the Save as Study box, click on the Properties tab.
3. Check the "Use as Prospector Database" check box.
4. Save the study.

Alternately, you can simply go to the Properties tab directly at any time, check this option and save the study.

Show DBId in Output

This option, also located in the Properties tab of the Study Node, allows you to include a column in your Output table showing the database ID for funds. This can be useful for a variety of reasons, especially when multiple databases are being used simultaneously in MPI Prospector.

Prospector Design Tree

The MPI Prospector Design Tree is similar in appearance to that of the Stylus module, but there are notable differences between the two.

To quickly summarize these differences:

- Instead of a Managers node, Prospector starts off with a Source node in which the user specifies one or more databases from which to work.
- The remaining Input Nodes from the Stylus module design tree are found lumped together as subsections of the Analytics node in Prospector.
- An additional Input Node, Composition, may be found in Prospector.
- The Views for examining data in charts and reports are located inside the Source, Output and Views nodes, and may be used to review the appropriate data in both source databases and as the final screening and processing result.
- Additional Views and Reports may be added for workflow purposes. Tables/Charts will need to first be created in Views, and can then also be displayed in Reports. Views are unique to each other and can each have their own set of filter criteria applied to them, based on the original filters set in the Source.
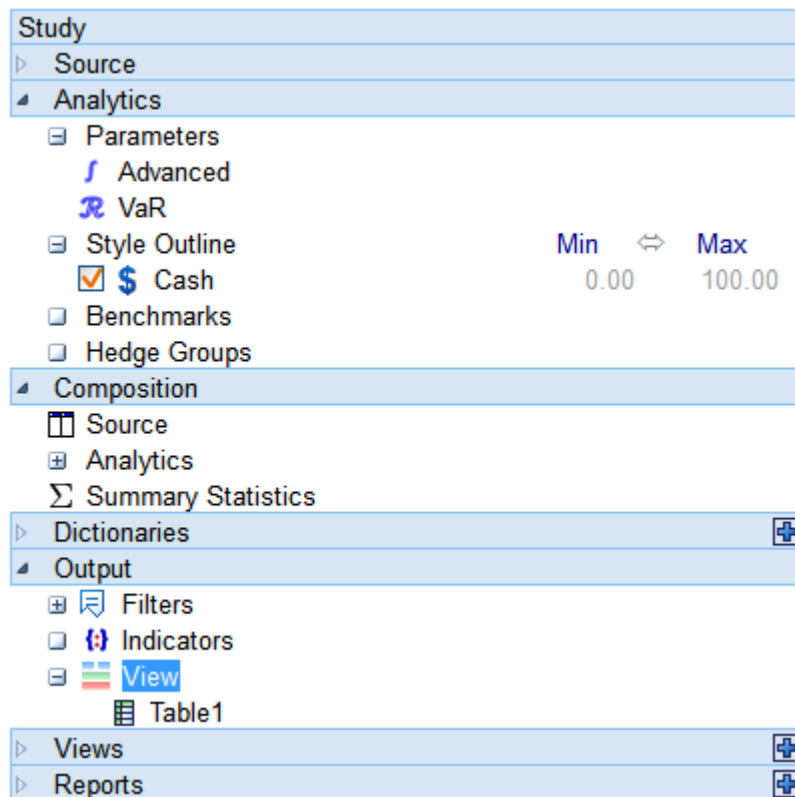
Please take a moment to examine the Prospector design tree above. Note that there are two populated elements here that are defaults for any new Prospector study: Cash in the Style Outline, and Table1 in the View. When a source is selected, an additional (and different) Table1 will be generated in the Source node as well.

As will be the case in all MPI Stylus modules, the Design Tree is made up of nodes. **Nodes** represent specific concepts, input or output requirements, or groupings of information that will figure in the

character of your analysis, and are represented in MPI Stylus by black circles with a single yellow letter in them. The nodes in the Prospector module may be categorized as input nodes and output nodes:

Node Symbol	Description	Function
Input Nodes		
	Source	Specifies one or more data sources that will be used in the study.
	Analytics	Controls the Parameters, Style Outline, and Benchmark nodes (Input Nodes from the Stylus module.)
	Composition	Allows the user to select which data from the Source should be copied to the Output, and to calculate additional performance-based statistics.
Output Nodes		
	Output	Controls the composition and appearance of your output.
	Views	Optional node for creating additional output screens for charts beyond the ones selected in the Output view. May also be used to create additional tables sourced from checked items in the Composition node.
	Reports	Optional node for creating a printable presentation that will include tables and charts coming from the various Views created.

In addition to the four nodes listed in the table above, there is also the **Study** node at the top of the design tree. The Study section governs a variety of study-wide settings, including automation. For more information about the Study section, please see Chapter 3 (MPI Stylus Basic Interface Structure & Elements.)

When designing your analysis, you will move down the list of Design Tree nodes to input the information necessary, and then to create, view and organize the output. In the sections below, we will take a close look at how to get the most from each node.

Input Nodes

Input Nodes in Prospector represent information you will be providing the application in order to structure your analysis. The Design Tree format allows you to quickly create your analysis in a familiar format.

Source Node

The Source node in Prospector is somewhat comparable to the Managers node in Stylus, in that it represents the area of the Design Tree where you select which data you will analyze. In the case of Prospector, you may choose from any return series database in Stylus, and you may select multiple sources.

The actual format of the Source node data pane should be familiar to Stylus users, as it is the same format as that of the Managers node in the Stylus module. It may be operated in precisely the same way; for more information on using this data pane, please see Chapter 3.

Once a source has been selected, there are several options available to filter the source and indicated the fields you are interested in studying further. For more information, please see below.

ID/Records Column

The ID/Records column is similar to many areas of the MPI Stylus application that tell you how many records are available for a given data source. If a source's entry in this column is blank, it generally means that you have not attempted to access this data yet, and therefore MPI Stylus has not loaded this information. In addition, if you are using the "Delayed Open" option in MPI Configurator for a database, the number of records will not be available by default because MPI Stylus Pro will not have accessed this database yet. You must select the database as a source to have Stylus retrieve, update and display the number of records.

Considerations for Using Multiple Sources

MPI Prospector will allow you to choose multiple sources for analysis in a single Prospector study; however, there are several considerations that users should keep in mind when using more than one source per study.

- Not all sources have identical or even similar data fields. For example, Morningstar provides quite a lot of quantitative fields that would be absent from many other data streams. This will affect the ability of some funds to appear on given charts, or to have useful data (as opposed to N/A) available in given columns within a table. If a chart in Prospector is not populating at all, it may be because its design is based on another source with different data headings and types.
- Keeping this in mind, some templates in Prospector may have been built with a given source in mind, i.e. Morningstar, and therefore may display the names of fields and/or charts irrelevant to other data sources.
- Sources may not agree on how to calculate a given statistic. Please use care when determining which statistic you are using, and its parent source.

Indicators

Advanced Analytics package subscribers will see an additional option, 'Indicators', in the Source and the Output nodes. For more information on using this feature set, please see the Advanced Analytics user guide on our website, or contact us at support@markovprocesses.com.

Working with a Source

Once you have selected your source, it will appear on the Design Tree under the Source node. By default, it will appear with a red plus sign next to it. The sign next to a given source is important because it regulates how MPI Prospector populates the output list of funds. These sign options give the user the power of applying extremely complex filtering rules to a database by selecting it multiple times, adding or removing funds for each instance and applying separate filters.

This plus sign may be changed by clicking on it with the mouse to any one of the following options:

All Funds Included
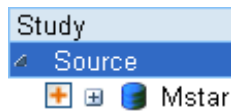
When a red plus sign appears next to the source, it means that all the underlying funds will be added to your output list.

Exclude All Funds
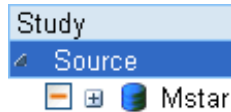
When a red minus sign appears next to the source, it means that any funds included in this source will be removed from the output list. Therefore, if multiple databases are being used as sources, and there is a "minus" database before a "plus" database, the "minus" database will have no effect because there will be no list from which to remove funds.

Ignore Source
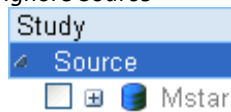
By clicking once more with your mouse, you can change the red minus sign to an empty box, which tells Prospector to ignore the source altogether. This is the equivalent to deselecting something on the design tree, meaning that it will not be included in any analysis, but you will have the option to add it in again later.

Once you have decided how to treat your source, you can click on the + symbol next to the source name to expand its design tree menus.
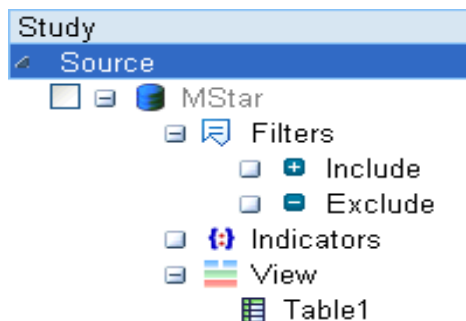
Figure 94

Source Sections

Each source will be assigned two distinct sub-sections: Filters and View. These will assist the user in preparing the source for further analysis for manager searches, or in adjusting the peer universe to necessary specifications.

Filters

Filters are an extremely powerful and important part of MPI Prospector because they allow you to customize data source streams to meet very specific needs. The Source node will be one of two areas

within the module where filters may be applied. Please see the "Working with Filters" section in this chapter for complete information on Prospector filters.

Indicators
Subscribers to our Advanced Analytics package will see an entry here for Indicators, similar to the one in the Output node. For more information on using this and associated features, please see the Advanced Analytics User Guide, available on the MPI website or from support@markovprocesses.com.

View
The View element of the source node is very similar to the Views node in the Stylus module, but in this case regulates the initial source view upon which filters may be applied. By default, any time a new source is brought into Prospector it receives a View with one table (Table1) automatically populated to display the source's data fields. This table may be viewed by clicking on the name of the data source (for example, Morningstar.)

You may create additional tables and/or charts in this view precisely the same way as you would in the Stylus application; however, the only two types of charts available in MPI Prospector are scatter and distribution charts.

Analytics Node

The Analytics node is composed of three of the input nodes from the Stylus module design tree – Parameters, Style Outline and Benchmarks. Please note that the Peer Groups node is not necessary here because we are in the peer group file itself.

When you click on the Analytics node itself, you will see a brief summary screen that will inform you of your basic parameters, including your selection of a benchmark (if any.)

```
Parameters
----------
  Interval:      12/1/1975 - 10/31/2005
  Window:        36 months / 359 computations, moved monthly
  Frequency:     used common monthly frequency
  Holdings:      long only

Advanced
--------
  Model:         CAPM
  Win Position:  centered
  Calculations:  predicted R2, first point, last point
  Weights:       half life is 1.00 of window size

Benchmark
---------
  Not used.
```

Figure 95

These elements may all be changed within the Analytics node itself.

These four nodes operate precisely as they do in the Stylus module, so we will not cover them again in this section. For more information, please see Chapter 4 (MPI Stylus Module.)

Composition Node

The Composition Node helps manage the various analytics that will be available for use in the output section of your Prospector study. There are two different types of analytics to consider here:

- Source: analytics/fields that are being brought in from the source database(s).
- Analytics: analytics that are calculated by the user through the analytic blocks available in the Composition node.

When you click on the Composition node itself, your data pane will be split into two "Summary" fields, displaying the various analytics available from each source.
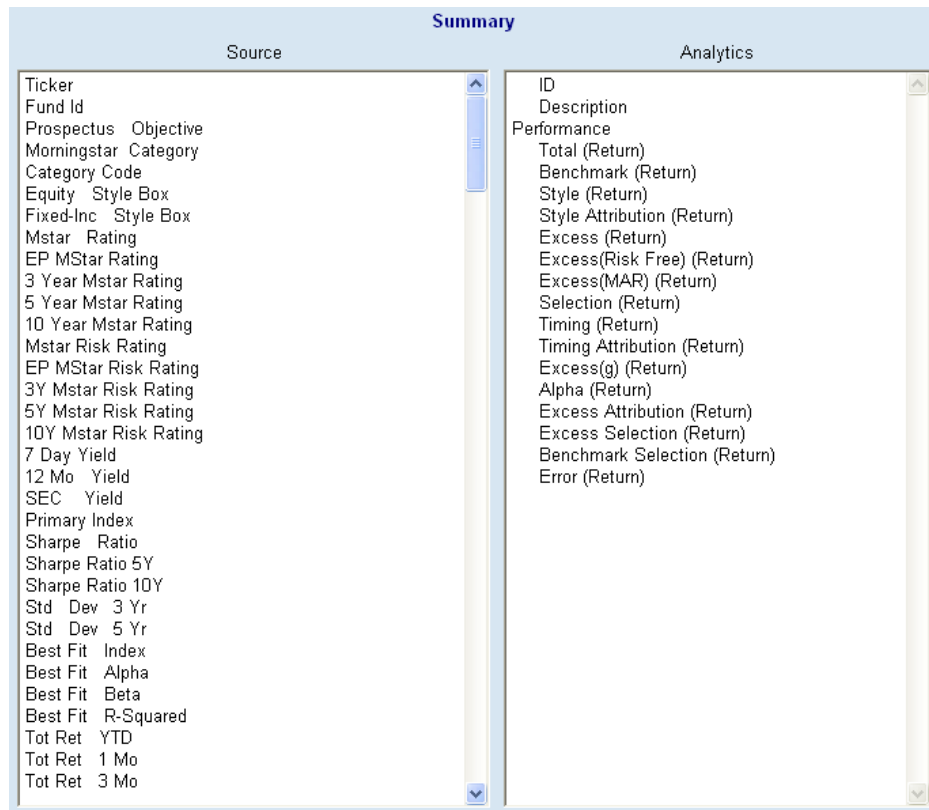
Figure 96

Source Summary Field

The Source field will list every data field selected for display in your output table. If no data appears in this field, then no columns from your data source are currently selected.

To add/change/remove data fields from the Source Summary field:

1. Click on "Source" in the Composition node on the design tree.
2. You will now see a check box list that is similar to that of Table1 in the Source node of your design tree. This check box list may be operated in precisely the same manner, selecting or deselecting the fields that interest you.
3. When you have finished making your selections, please press the run button to see them reflected in your Prospector study.

Remove Duplicate Series

The "Remove Duplicate Series" options in the Source section of the Composition node are useful when multiple sources are being used. The output list in MPI Prospector is created based only on fund ID, and normally if there is the same fund ID record in multiple sources, the output record will only be created once. These options give the user the ability to remove duplicates.

Analytics Summary Field

The Analytics field will list every analytic (by type) that has been created in the analytics section of the Composition node. The "ID" and "Description" fields are added automatically by the program and will be present regardless of whether or not any analytics have been created. For more information on using Analytics in Prospector, please see the section "Working with Analytics" later in this chapter.

Using Analytics

The process of creating and using Analytics is quite similar to the chart/table design process in other modules. When you click on the Analytics node, you will be able to add table design blocks and then adjust them via the interface.

It should be noted that you will be able to check/uncheck analytic blocks on the Design Tree (version 9.0 or later). This allows users to 'turn off' a calculation without having to delete it from the Design Tree. Advanced Analytics package users who are using Custom blocks should take notice that turning off a calculation may affect other calculations built off of the calculation being disabled.

Summary Statistics

Stylus now has the ability to calculate universe statistics in Prospector. To access this feature, user will have to check/ click on the Enable option at the top of the Summary Statistic feature by going to Prospector Study-> Expand 'Composition' node and selecting 'Summary Statistics'. Codes can be used to specify the analytic that the user would like to use on the universe group output. For instance, the code DISTR with Par 1 set to 0 will provide all percentiles specified for the study (which is defined under parameters). In order to use these computed statistics as 'Filters' in the prospector output, user needs to specify the 'Use as Filter' option. Users will also have the option to rename their Statistics as a Custom Field by selecting one of the 2 options Prepend and Replace. Using Replace will allow user to specify their own custom field title and using Prepend will allow the user to write their own Field followed by a Stylus specified ID.

Output Node

The Output node in Prospector has several important functions, some of which borrow from the output-type nodes (i.e. Views) from other modules, and others of which are unique to Prospector. The essential functions of the Output node in Prospector are:

1. To allow for an additional level of filtering within a study and the use of calculated statistics (analytics) for filtering.
2. To allow the user to make use of dynamic charts and tables to visually explore data relationships.
3. To allow the user to export data to external applications or other modules in the application.

When you click on the Output node itself, the table you are seeing is regulated by the View section of this node (by default, it will generally be called Table1.) This is not the same table as appears in the Source node of the program, though it may look similar and operates in the same fashion; therefore, you may have some fields selected in the Source node that you choose not to select in the Output node, or vice-

versa. To edit the fields visible in this table for the Output node, please click on the table name on the design tree under the View section. Because Prospector allows you to export to outside formats, such as Microsoft Excel, being able to control the Output table view columns allows you to configure your table so that only columns you require are exported.

Filters
The Filters section of the Output node works precisely the same as the Filters section of the Source node, thus adding an additional layer of filters to user capabilities. For more information, see the "Working with Filters" section later in this chapter.

Indicators
Subscribers to our Advanced Analytics package will see an entry here for Indicators, similar to the one in the Source node. For more information on using this and associated features, please see the Advanced Analytics User Guide, available on the MPI website or from support@markovprocesses.com.

View
The View section allows you to add additional tables and/or charts to your Output view. This is especially important for users wishing to use Prospector to conduct manager searches, as the dynamic view capabilities of the module make this easy and intuitive. This View section works just like any View element in MPI Stylus, but as was the case with the Source node View section, you may only create scatter and distribution charts.

Output Tab
The relationship between the Output node and the Output view tab are slightly different than that of the Views/Reports nodes to their respective nodes in the Stylus module. In the case of Prospector, the table that you see when you click on the actual Output node is the same table you will see when you click on the Output tab, and therefore if you are only using the one table in your Output view, you need not necessarily work from the tab to engage additional filters. In fact, you can export the table data directly from the data pane itself.

The Output tab becomes important when you wish to make use of additional tables and/or charts and capitalize on Prospector's powerful dynamic views abilities. For a complete guide to using Views in the Output tab, please see the "Working with Output Tab Views" section later in this chapter.

Views Node

The Views node in Prospector allows you to create additional View tabs with charts and tables, in order to give you more visualization power when doing research in Prospector. As with other modules in Stylus Pro, these Views are highly customizable. For information on using this section, please see the chapter in this manual dedicated to Views & Reports.

Reports Node

The Reports node in Prospector allows you to create a printable report including information about filters included in a run, and various charts/tables that were created in any of the Views mentioned above. As with other modules in Stylus Pro, these Reports are highly customizable. For information on using this section, please see the chapter in this manual dedicated to Views & Reports.

Working with Filters

Filters in MPI Prospector give the user a great deal of power and flexibility in exercising both of the main functions of the module: to create/edit peer groups and to conduct manager searches. Filters allow users to create very specific groups of funds based on criteria related to any quantitative or qualitative field in a source, and/or based on numerous performance-based statistics.

In order to give our users the greatest degree of choice in how they went about performing these functions, the opportunity to place filters upon one or more data sources occurs at both the initial stage of source selection, and at the output stage as well.

There are two main different types of filters that you can potentially put on a data source in Prospector. They include:

1. Data Field Filters – A filter placed on a particular data field to restrict the group as a whole to funds fulfilling a given requirement, such as funds with r-squared values greater than 90, or funds with manager tenures longer than 5 years.
2. Include/Exclude Filters – Source-specific filters that include or exclude one or more given funds, regardless of their level of acceptability given other filters. These filters can be created by picking specific funds in both the Source and Output nodes. In addition, the user can populate these filters directly through the View based on visual data exploration and the right-click menu.

The picture below illustrates how the filters might be reflected in the Source node of the Design Tree. For a given source, you can see that Include and Exclude filters are presented first, and then a list is made of each data field filter currently applied to the data source. The user may choose to check or uncheck these at any time to temporarily remove them from the study or add them back again.
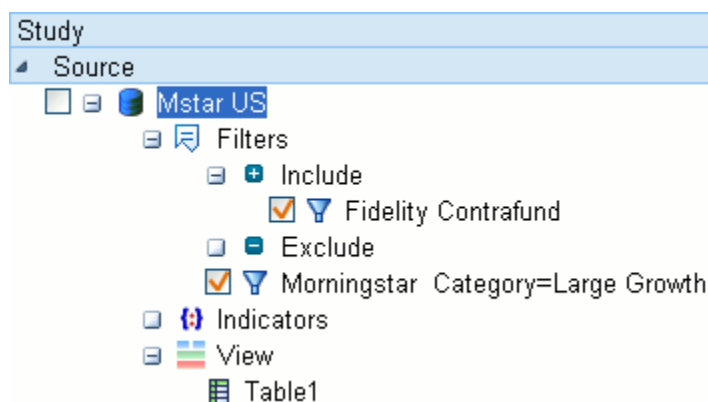
Figure 97

Data Field Filters

Data Field filters are imposed by the user on a given data field to restrict the peer universe to only those funds fulfilling a given set of requirements. This capability is given to the user at two points in MPI Prospector. Firstly, the user may set filters on the source database in the Source node itself, allowing for the creation of a basic set. Secondly, the user may impose further filters on the output table, allowing for more detailed analysis of a given set of funds.

All data field filters are conveniently located out of a blank field just below the column heading for their respective data fields, as may be seen in the example below.

Figure 98

Each yellow field represents a filter being applied to the given column. In the first case, a drop-down menu accessed by clicking on the blank space underneath the "Morningstar Category" heading has allowed the user to select the "Large Growth" category. In the second case, the user was able to type in ">4" in the Mstar rating to filter out any fund with a rating of four or lower.

Numerical Filters
MPI Prospector gives you several options for filtering numerical data. These options work off of simple logical operators that may be familiar to most users. These operators are:

Logical Operator	Function
>	Greater than
<	Less than
=	Equals
<>	Is Not Equal to
>=	Greater than or equal to
<=	Less than or equal to
|	or
&	And
<na>	Only "NA"s selected
!<na>	"NA"s excluded

Figure 99

These filters may often be used in conjunction with one another to produce desired results that may not be achievable through a single expression. Some examples might include:

Combination	Function
>2 & < 15	Would return numbers between 3 and 14
>3 & <>10	Would return all numbers greater than 3, except for 10
>5 | =1.7	Would return numbers greater than 5, or any field with a value of 1.7

Figure 100

Please always make sure to check your field after filtering to ensure that you have achieved the correct effect. You may click on the column heading to sort the field numerically, which should help you to quickly audit the data.

Text-based Filters/Non-Numerical Filters

It is also possible to filter based on non-numerical data (text strings). This generally requires a careful attention to detail, as (for example) a misspelling will cause the user to not find the results they require.

The following filter codes may be used:

Filter	Function
=	Starts from
==	"exact match"
~	Match any part of string
!~	Do not match any part of string
<, <=, >=, >	String comparison
<>, !=	Not equal to
<blank>	Empty string
!<blank>	Not empty string

Figure 101

Special Note on Usage of &

When using the & symbol with text strings, it is important to remember that this may also occur naturally as a part of a string, and must be accounted for. To give a very obvious example, suppose that a user wished to search for an index beginning with the term S&P:

- By simply typing S&P, the user will be telling Stylus to find text strings beginning with the letter S and beginning with the letter P also; and as no text string can separately begin with two characters, no results are returned;
- By typing in S&&P, the user invokes a 'mask' that turns off this functionality, allowing for a search for this string properly.

FILTERING OUT "N/A" OR "NA"

The NA expression in a Prospector table stands for "Not Available." There are several factors that can influence whether or not data will be available for one or more funds in your source, including, but not limited to:

- Study-level parameter settings that exclude certain funds. For example, if your study is looking at a 10-year period of time, and your performance analytic default parameters are "All, Total, All", then any fund with less than 10 years of return history will not have data available.
- Missing data. Some data sources contain certain fields that are optional, manager-reported, etc., and may have no data available.

When NA appears in an output table, Prospector does not interpret it as a conventional text string and therefore a text string filter for "NA" will not work. Instead, there are two ways of filtering on "NA" for

any column: either using special "NA" filters (described below), or by placing any regular filter on a column. Prospector automatically removes NAs from any column that is using any filter.

To filter on NA directly:

1. The filter field for the column you wish to filter will either use the drop-down menu to allow you to select filters, or allow you to type a filter directly into the field.
2. If it is a drop-down menu, the NA filters will be found at the bottom of the menu (the last two options.) Use one of the two filers listed below.
3. If it is a text entry field, type in one of the two filters below and press the "Enter" key on your keyboard.

<na> = Select any fund with "NA" in its field for the column.
!<na> = Filter out any fund with "NA" in its field for the column.

Drop-down Menu Filters
Some text-based fields in certain databases are programmed in Prospector to have drop-down menu options as opposed to filter fields. This allows the user to simply click one or more check boxes, instead of going through the laborious process of entering each necessary filter expression. To determine if a field utilizes a drop-down menu, simply click in the relevant filter field. If the drop-down menu does not automatically appear, then the field requires text or number entry for filters.
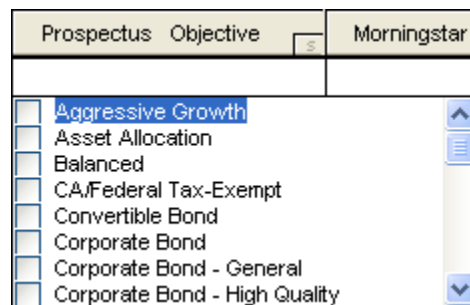
Figure 102

To use a drop-down menu:

1. Click on the filter field below the appropriate column heading. The drop-down menu should automatically appear.
2. You may use your mouse to select or deselect options as you see fit. Selecting more than one option will be the same as using an "OR" operator.
3. When you have made all of your selections, click again in the filter field. The filters will be applied (this may take a few moments.) When a filter is being applied to a column, the field will appear highlighted in yellow.

Include/Exclude Filters

The Include and Exclude filters give users the power to specify individual funds, indices, etc., that should either be included in or excluded from a given peer universe, regardless of any other filters and constraints placed upon the universe. Include and Exclude filters always override any other filters in the Prospector module.

As was the case with data field filters, users are given two opportunities to use include/exclude filters. Firstly, they may be entered directly on the source, and secondly, they may be used in the Output node as

an additional level of filtering. In the case of Views in both the Source and the Output nodes, this may be accomplished either with the first set of instructions below, or with the right-click method described afterwards.

Force Include Filter
The "Force Include Filter" option allows the user to mandate that the Include filter be respected regardless of commands in the application that would normally contradict it – for example, an attempt to use the Exclude filter on any fund already listed in the Include filter option.

To include/exclude one or more funds:

1. In either the Source node or the Output node of your design tree, expand the Filters option (you must have a source selected for this option to appear in the Source node.)
2. Click on either Include or Exclude.
3. You will now see a list of funds in the source database. Please double-click (or click the check box for) any fund you wish to select for this filter. You may select as many funds as you wish.
4. If you select a fund in error and wish to remove it, simply uncheck the fund in your data pane or click on it on your design tree and press the "delete" key on your keyboard. Alternately, you could uncheck it on your design tree to temporarily remove it from your analysis without the fund disappearing from your design tree.

To include/exclude one or more funds using the right-click option:

1. In the Source or Output node Views, select one or more funds with your mouse from any chart or table.
2. Right-click with your mouse and select the "Filter" option. You may then use any one of the four options in the table below.

Filter Option	Result
Exclude Selected	Adds selected funds to the Exclude filter.
Include Selected	Adds selected funds to the Include filter.
Clear Exclude	Clears the Exclude filter.
Clear Include	Clears the Include filter.

Figure 103

Working with Analytics

In addition to making use of data fields brought in directly from a source database, MPI Prospector users have the ability to calculate numerous performance-based statistics from data return streams in order to give them additional analytical power in working with peer universes and conducting manager searches. These analytics are created and edited through the Composition node, and unlike the Stylus module, the Prospector module does not create unique tables or charts for each analytic, instead adding them as additional columns to your master table in your Output tab.

Stylus module users will recognize many of the analytic blocks in Prospector from the Stylus module. These blocks contain a variety of analytics that will be available as:

1. Columns in your output table, capable of being filtered by standard data filtering techniques.
2. Data for inclusion in dynamic scatter or distribution charts in your output tab.

Temporary (Do Not Store to Output)

This checkbox allows an analytic block's calculation to be performed without the output being displayed in the Output table or as an option for display in charts. This is primarily useful for multiple period output that is used as the basis for other calculations but whose underlying output is not necessary for viewing/filtering purposes. The same goal may also be achieved by adding the suffix "_temporary" to any Prospector analytic. These will be easily identified because they will become grayed out on the Design Tree.

Creating a New Analytic

Creating new analytics is quite simple, and will be very familiar to users of the Stylus module as well, as it will make use of drag-and-drop analytic blocks similar to those used to create charts and tables.
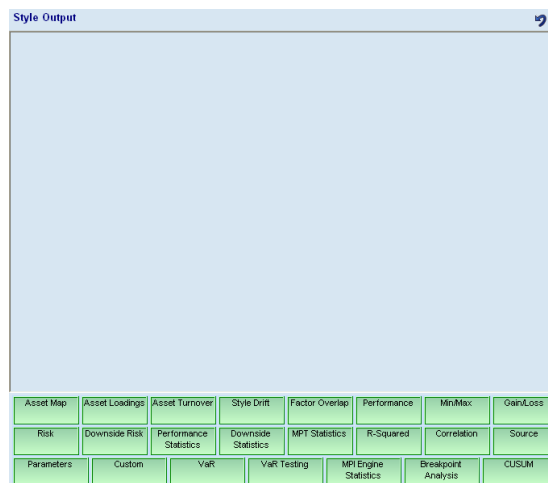
Figure 104

When you click on the Analytics section of the Composition node, you will see a blank data pane with all available analytics blocks to be found at the bottom. As you create each analytic, they will be arranged automatically in a vertical row, with the newest analytic always on the bottom. If you create more analytics than can be viewed on screen, a scroll bar will automatically appear and you will be able to scroll down to see the newer analytics.
To create a new analytic:

1. Click on the Analytics section of the Composition node.
2. Using your mouse, click on any of the green blocks at the bottom of the data pane and drag it to the top part of the data pane. The block will automatically adjust to be the entire width of the data pane, and the newest analytic will always appear at the bottom of the screen.
3. Using the drop-down menu, check boxes and parameter settings in the analytic block, design the analytic you require.
4. The analytic will now also appear on the design tree in the Composition/Analytics section. Click on the analytic's name on the design tree to view its default parameter settings.
5. The analytic also now appears as a column in your Output table, and will generally have been assigned a descriptive name (such as Total AnRtn for a "Total Annualized Return" Performance analytic.) Like all columns in the output table, you will be able to filter based on analytic results.

Working with Views in Prospector

Views in MPI Prospector may be found in the Source, Output and Views nodes, and constitute an area of the module that allows for very powerful filtering options and manager search capabilities. Dynamic charts and tables give the user a visual appreciation for the data, and a variety of export options add to the experience by allowing users to take the results of their work and move them to the Stylus module, or export them to outside applications for further use.

There are three basic steps to working with Views in MPI Prospector:

1. Designing the Output
2. Working with the Output to further your understanding of the data.
3. (Optional) Exporting your results to the Stylus module or an outside application.

Important Note – Running Your Prospector Study

Because MPI Prospector works with large quantities of data, changes made in the "Input" part of the study (i.e., Source databases, filters, analytics, etc.) will not be reflected in the "Output" part until you run the study again – even if the "run" arrow appears green. If you are unable to see the results of a change you have made, please try running the study by clicking on the green arrow. In order to help your studies run faster, we suggest that you always start any new Prospector study by applying any filters you may have, in order to reduce the size of your working data set.

Designing Your Output

The first step to making full effective use of the output tab will be to understand the options you have available. By default, an entirely unpopulated Prospector study still comes with an output tab partially built, including a View section with a table in it called Table1. This table is meant to be your master table in the output stage, and the data that populates it is controlled in two areas of the application:

1. The "Source" element of the Composition node regulates which fields from the source will be available for display within the table. By clicking on Table1 on the Design Tree, you will then have the option of choosing whether or not to further pare down the fields for your table; however, to add any fields to Table1, you must first add them to the Source element.
2. Any analytic created in the "Analytics" section of the Composition node will be available in your table.

Output Tools

It should be noted that many of the same output tools that are available in the Stylus module – such as the Attributes Editor, etc. – are available in MPI Prospector, and may be used precisely as they are in other modules.

Create Linked Indicator
Advanced Analytics package subscribers will see this feature in their usage of Prospector output. For more information on using this feature, please see our Advanced Analytics user guide, available on our website or from support@markovprocesses.com.

Themes

Please note that users of Version 10.0 or later will have access to 'Themes' in this section. For detailed information on 'Themes', please see the 'Views & Reports' chapter of this manual.

Charts

In addition to table data, Prospector allows you to create two types of charts to add value to your analysis: scatter and distribution charts. In each case, you will be able to use any chartable field available from your source database or from your analytics. Scatter charts in Prospector are automatically dynamic and linked to all other scatter charts and to all tables, allowing each chart to reflect your interests more usefully. Distribution charts in Stylus are not dynamic because they explore data relationships for the group as a whole, as opposed to for a given fund or funds.

The Value of Multiple Dynamic Scatter Charts

Scatter charts in MPI Prospector are dynamic, meaning that when you make a selection in an output table or another scatter chart, the same selection will appear highlighted in all other tables and scatter charts. This allows you to explore visual relationships between data.

For example, consider the following screenshot. The user has created an output tab with four scatter charts, one distribution chart, and a table underneath.
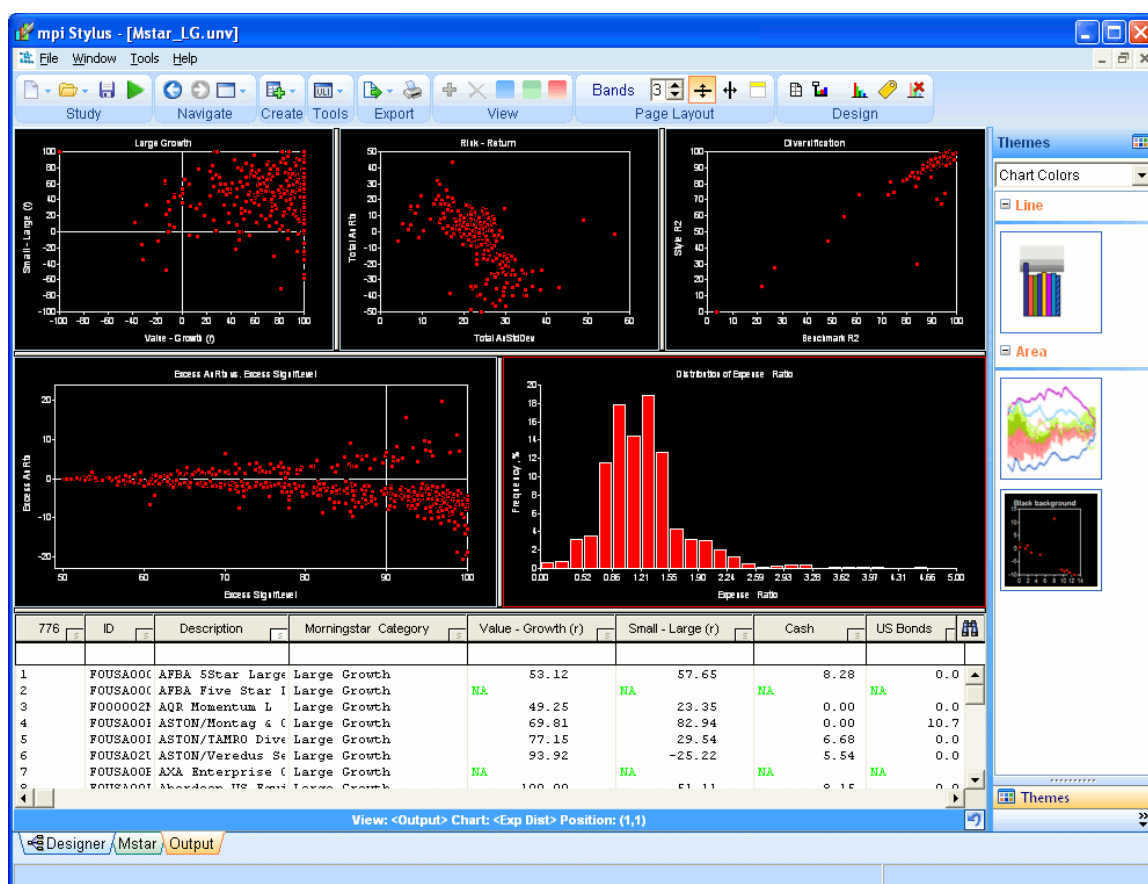
Figure 105

Through this process, the user is able to explore visual relationships between different segments of the data; however, suppose that this user notices that several of the charts contain outliers. The user may

wish to find out more information about these outliers, and using their mouse, decides to select those outliers on one of the charts. Their selections may be seen in the picture below.
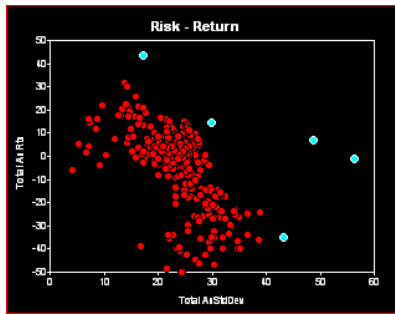
Figure 106

This by itself would give them some limited information; for example, the user could right-click on this chart and choose to send these managers to a Stylus study (for more information, see the "Exporting from Prospector" section later in this chapter). However, when used in conjunction with many other views, the value of having multiple dynamic view charts becomes readily apparent.
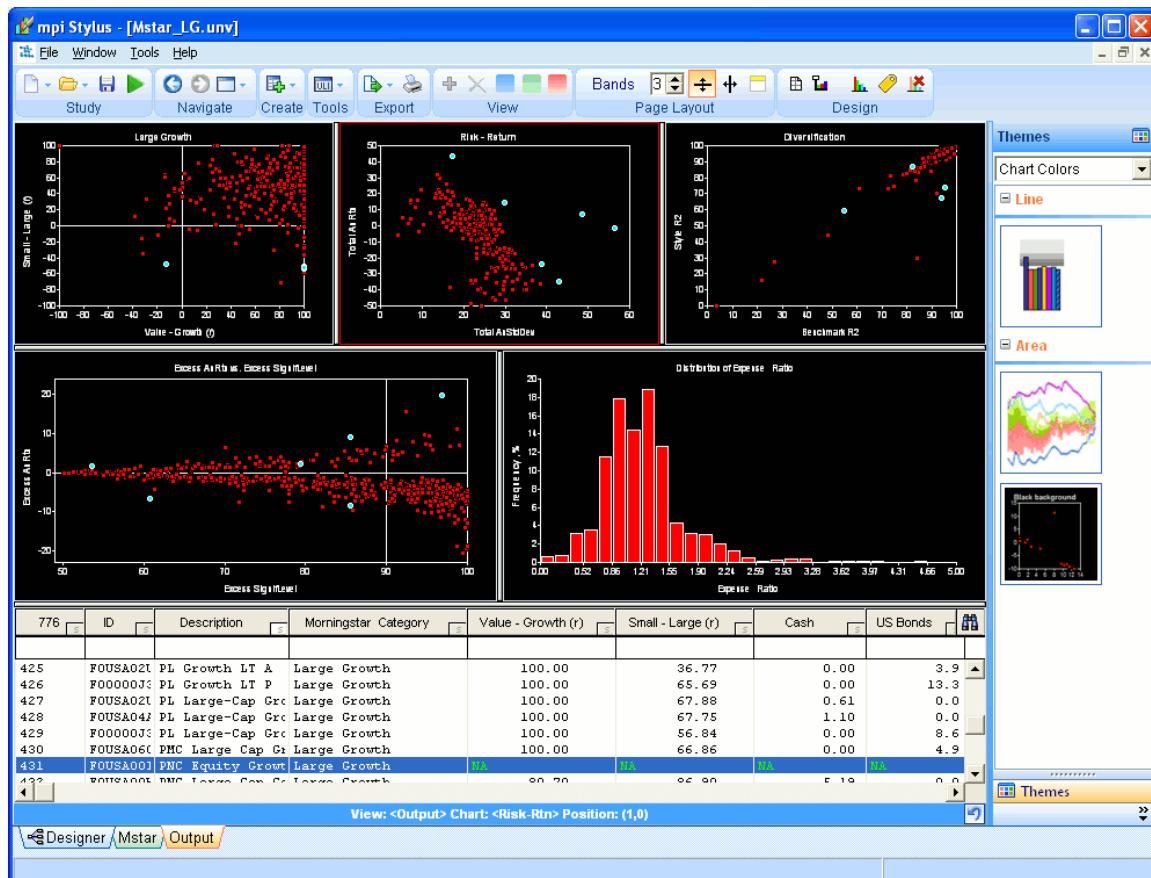
Figure 107

Note only is this data available for study in the table at the bottom of this view screen, but the other scatter charts have automatically highlighted the same funds selected in the first chart. This lets the user learn more about these outliers and make a more informed decision on how to proceed with analysis. It should be remembered that the table is dynamic too – clicking on one or more funds in the table will

automatically highlight those funds in all scatter charts. Note that the distribution chart is not dynamic because it is displaying information describing the data as a group, as opposed to on a fund-by-fund basis.

Using Dynamic Scatter Charts
There are several important techniques that will help a user get the most out of dynamic scatter charts in Prospector. Obviously, many of these tips may be combined for the most effective possible analysis.

MANAGER IDENTIFICATION
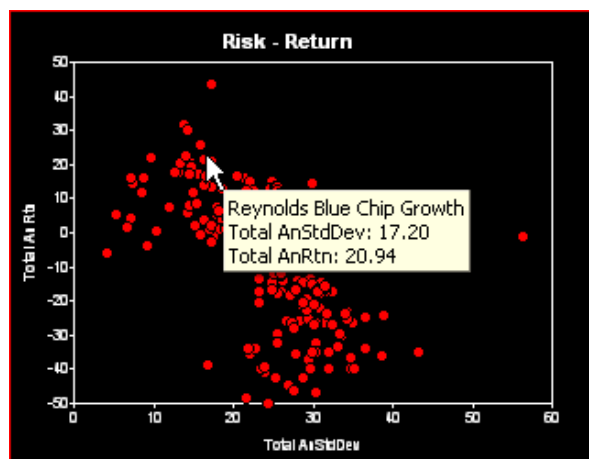
Figure 108

When you place your mouse cursor over a given point in a scatter chart (without clicking), a floating box will appear telling you the name of the fund represented by the point, as well as its data values. The inherent structure of scatter charts means that some data points can sometimes be partially or totally obscured by other points; therefore, it is suggested that you always double-check that you have the correct manager name for a given point. One way to do this is to highlight the point by clicking on it, and then seeing if its dot appears more clearly in another chart where you can verify that it is the fund you are interested in.

SELECTING ONE OR MORE MANAGERS

Clicking on one or more managers on a given scatter chart will highlight them on all scatter charts and in any tables in your Output tab. The techniques you use for selection will vary depending on how many managers you want to select, and where in the chart they appear.

Shift and Ctrl (Control) Keys in Selection
The "Shift" and "Ctrl" (Control) keys on your keyboard both have important functions in the scatter chart manager selection process, and learning the differences between these functions will help increase your power when working with Prospector.

Holding down the "Shift" key while you make selections allows you to use all of the selection techniques below without losing any of your selections. For example, if you would like to click on a few managers specifically, draw several boxes with your mouse, etc., you can do so. Any manager you select will automatically stay selected as long as you hold the shift key down. Once you release the shift key, do not left-click on the chart again or you will lose your selections (you may still right-click to access menus.)

Holding down the "Control" key also allows you to make multiple mouse choices without losing past selections, but adds an extra level of control. When you hold down the Control key and make selections, each time you click on a particular data point, its status will change – this includes if it is part of a box drawing. This allows you to quickly define specific areas of the data or somewhat unconventional shapes.

This technique is only necessary when you need to select multiple managers on a chart that are not in the same geometric area of the chart.

To select multiple managers in the same location in a chart:

1. On the scatter chart in question, click and hold-down your left mouse button and use your mouse to draw a box around the area of managers that you wish to select. This box can range in size from one manager to the whole screen, and if you wish to draw multiple boxes, you may do so by holding down the shift or control (ctrl) keys.
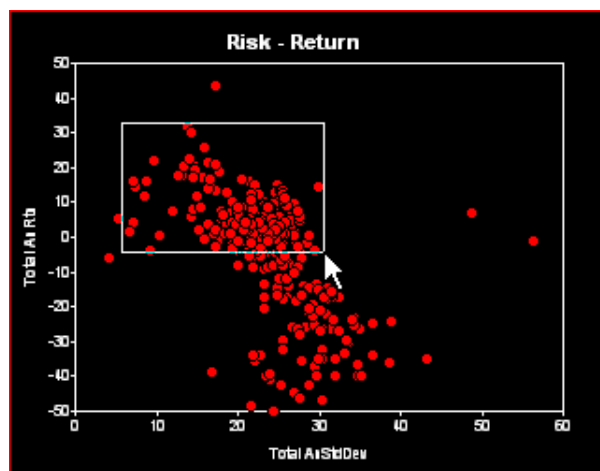
Figure 109

2. When you release the mouse button, your selection will now appear highlighted – both on the chart itself and in all other scatter charts and tables in your Output tab.
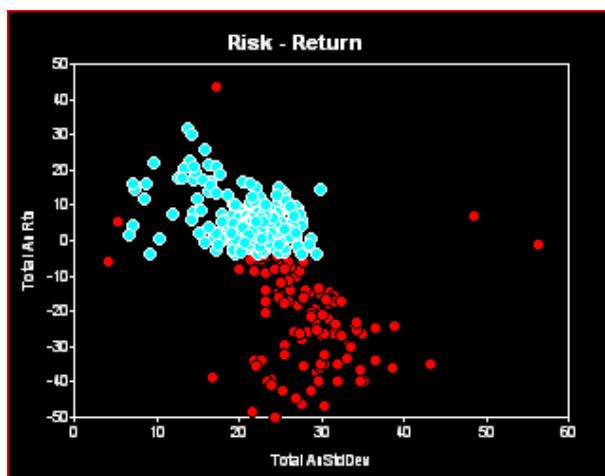
Figure 110

3. You may use other selection techniques to make further selections from the chart.

To select multiple managers in different locations in a chart:

1. On the scatter chart in question, you may use any combination of the following techniques:
   a. Clicking on managers dot-by-dot, using the shift or control keys to allow multiple selections.
   b. Drawing one or more boxes with your mouse button. If you wish to draw more than one box, use your shift key or control key to maintain your previous selections.
   c. You may make additional selections through tables.

Exporting from Prospector

There are two types of data you can export from Prospector: chart output and table data. MPI has made every effort to make Prospector output available in a wide variety of useful ways. Users should make themselves familiar with these basic options in order to ensure that the results of their Prospector analysis may be applied to further ongoing areas of analysis.

Exporting Data

Data available in any table in Prospector may be exported in several ways, including to Microsoft Excel spreadsheets. This is an easy and fairly common way for getting the entire contents of a given data source into Excel for further analysis. That said, data in Prospector tables may also be sent to Stylus, turned into sets, etc. Therefore, it is reasonable to think of data exports in two ways in Prospector – data exported into other parts of the Stylus application, and data exported to external sources.

Exporting Data

You can export data in Prospector from tables onto your computer's clipboard, or to any of the four following formats:

Extension	File Type
.txt	Text file
.xls	Excel file
.dbf	DBF file
.sql	SQL script

This exporting may be done from the data pane of any of the following locations in Prospector:

- The source database name in the Source node.
- Any table in the Source node View.
- The source database name tab.
- Any table in the Output tab or Output View.

These options should cover most uses of the data external to the application. Please note that you may need updated versions of associated non-Stylus programs, such as Microsoft Excel, to read your export

files properly. In addition, MPI does not support applications external to Stylus; please refer questions or problems with these applications to their vendors.

To export data from a Prospector table to one of the file types above:

1. Adjust the table to reflect all of the data you wish to export – use filters to weed out data you do not require.
2. Right-click on the table and select "Export" and then either "Text to Clipboard" or "Text to File" with your mouse. If you select "Text to Clipboard," please continue to the next step. If you select "Text to File," please skip to step 4.

Figure 111

3. Once you select "Text to Clipboard," the table contents will automatically be stored on your computer's clipboard. This will probably be a large set of data, so it is recommended that you paste it into a desired application quickly. You are now finished with the Export process and may skip the remaining steps.
4. Once you select "Text to File," the "Save As" browse menu will open, allowing you to choose where on your computer to store the file, what to name it, and which file extension to use. When you have made these selections, press "Save." The file should now be available for use on your computer/network.

Column Order

It should be noted that it is not currently possible to change column order in Prospector. Therefore, users wishing to change column order should do so in external applications, such as Microsoft Excel, after exporting their data.

Exporting Data for Use in Stylus

There are several ways to make Prospector data available in some form for use in other modules of the MPI Stylus application. First and foremost, a Prospector study file is the same thing as a peer universe file, and therefore any Prospector study may be brought into another module as a peer group. In addition to this option, though, there are ways within the Prospector module to choose specific sections of data for export to other modules.

Create Set

Sets in MPI Stylus are special grouping files that serve a very useful purpose. Though they generally work like Prospector studies, and may be brought into another module as a peer universe, they allow the user to create small groupings of specific funds that might be otherwise impossible, or at least very tedious, with the Prospector filtering system.

For example, suppose that a user is working within a particular database and is making use of dynamic views in Prospector to conduct their analysis. As can be seen in the chart below, they have made numerous selections in their dynamic chart views in order to study a specific group of funds that fail to meet certain criteria the user had hoped to establish for the peer group or manager search. In this case, the user has selected funds for further analysis based on two major criteria:

1. Any fund with a Style R2 or Benchmark R2 of less than 80 (see the Diversification chart.)
2. Any fund that the user considers an outlier on any of the four charts.

As may be seen, these choices are also reflected in the table below the charts. Now, the user wishes to take this information and bring it in to MPI Stylus to use like a peer group in order to judge various funds against this segment of the peer group to better understand its impact on their overall analysis. To reproduce this list by applying Prospector filters would be a very difficult task, and take a lot of unnecessary time. Instead, this user may take the data and create a set based on these live selections.
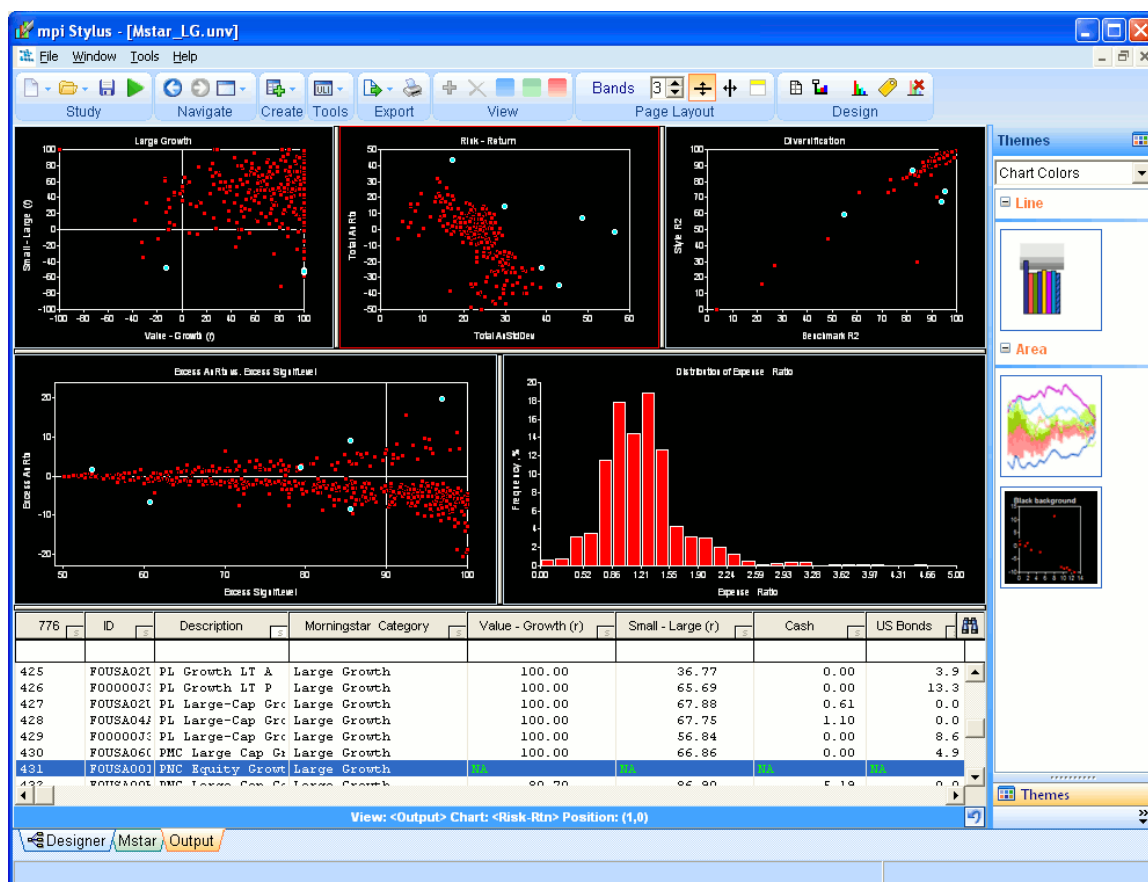
Figure 112

To create a set:

1. Once you have made the necessary selections, right-click on any dynamic chart, or on the table, and select "Create Set."
2. The "Peer Group Edit" menu box will now appear. Basic information on filling out such a box may be found in Chapter 3 of this manual. By default, the Description will indicate the name of the Prospector study from which a given set was created – it may be wise to keep this information for further reference, as you may not open a set later in Prospector the way you can a true Prospector study.
3. It should be noted that this same box will be the only way to edit this particular set in the future; therefore, you may wish to make sure that the set you are creating is correct, and that you will not need to make major changes at a later time.
4. Click "Save" once your set is prepared. You may now access this file through "Peer Groups" nodes in other modules by browsing to the appropriate database. You may make unlimited sets from a single Prospector study.

Create Portfolio
This option may be used to automatically open a new instance of the Portfolio Editor with all selected funds listed as assets. This allows you to create your own weighted portfolio, fund of funds or blended benchmark directly from your Prospector research.

Create Map
This option may be used to automatically open a new instance of the Map Editor with all selected funds listed as points available for plotting on the map. This allows you to use Prospector to identify factors for style analysis and then create maps immediately following your research.

Send To
This option allows you to take a given number of selected funds and send them to other modules for further use or analysis.

There are four 'locations' to which selected funds may be sent:

- New Stylus study (template)
- New Allocator study (template)
- Existing Stylus study (note: existing studies must be open in order to send funds to them)
- Existing Allocator study (note: existing studies must be open in order to send funds to them)

Please note that funds sent to the Stylus module can be sent to the Managers node or Style Outline, and funds sent to Allocator may be sent to the Assets node or Series node.

To Send Funds to a study:

1. Right-click on any chart or table and select the "Send To" option. If you would like to send the managers to a new Stylus study, skip to step 3. If you wish to send managers to a Stylus study you already have open, please continue to the next step.
2. When you use the "Send To" option, any Stylus study you have open should appear in your list of studies to send to. In this case, the user has a study open called "noname.sty" (in other words, they have used a template or blank study and not saved it yet. By selecting that study name, the managers will automatically be added to the Managers node of the Stylus study in question – *along with any managers already added by the user to the study's Design Tree.*
3. When you use the "Send To" tool and select the "New Style Study" option, the "Select Template" menu from the Stylus module will open, and you will be able to select any of the templates available for this module. The template you select will open in the Stylus module with the managers populating the design tree Managers node.

Troubleshooting MPI Prospector

For more Frequently Asked Questions (FAQ), please visit our web site at
http://www.markovprocesses.com.

Q: I can't see data fields/columns for my table or my entire table comes up empty. Why?
A: The answer probably has to do with the selections made in one of two places in the design tree. Please click on the tables in the View section of your Source node, and click on the "Source" section of the Composition node. The selections in these areas determine what columns are shown in tables and what analytics are available for use in charts.

Q: One or more of my Prospector charts is blank or incomplete. Why?
A: An entirely blank chart usually means that one or both analytics used to plot the chart are not present for the data you are using. This is often because you are using one or more data sources that do not contain the fields that the chart is looking for.

Q: I am using a large peer universe and should have lots of funds available, but very few funds show up on my charts. Why?
A: This is usually because many of your funds are being disqualified from appearing because they have no information available (NA) for a given statistic used in the chart. This may be because the manager of a fund has provided no data to the data source company, but is more likely to be because of parameter restrictions on your statistics.

Chapter 7

MPI Integrator

Overview

MPI Integrator is the perfect solution for professional, application-wide reporting in MPI Stylus Pro. By allowing users to create one or more reports from Views in unlimited Stylus, Prospector and Integrator studies, MPI Integrator rounds out MPI Stylus Pro's strength as a powerful, flexible reporting package. Additionally, Integrator is the perfect solution for users looking to run and update multiple studies simultaneously.

Chapter 7

MPI Integrator

Introduction to MPI Integrator

The MPI Integrator module gives users increased flexibility in their research and reporting solutions by allowing for easy integration of multiple studies from all Stylus Pro modules (except Configurator) into one or more reports. Integrator's primary function is to combine views from multiple Stylus, Prospector and/or Allocator studies into a single "library" in order to allow MPI Stylus Pro users to generate reports that are not possible in any other single module. For example, a user could generate a report with a Stylus chart and a Prospector chart on the same page.

MPI Integrator is also the perfect tool for users who wish to be able to run and update multiple studies simultaneously. By linking all of those studies into a single Integrator study and pressing the "Run" button once, a user can save a lot of time compared with manually running the studies. This does more than simply save time - MPI Integrator is a powerful production and publishing solution, capable of creating books that pull pages from multiple reports from throughout the MPI Stylus Pro application.

Getting Started in MPI Integrator

You may navigate Integrator's main menu, design tree, data pane and view tabs exactly as you might in any other module in the application.

Working with Integrator Studies

Integrator studies function the same way as other studies in MPI Stylus Pro when it comes to opening, closing, saving or deleting them. For more information on these basic steps, please see Chapter 3 of this manual.

Why Aren't Integrator Templates Available?

Unlike other MPI Stylus Pro modules, Integrator is entirely dependent on the studies and ultimate reporting goals of the individual user. An Integrator study's content will be determined exclusively by the studies a user wishes to reference, which makes it impossible to anticipate on any meaningful level what a majority of users will want to create. Therefore, MPI is unable to supply Integrator templates.

MPI Integrator does allow users to create their own templates using the "Save As Template" feature in the module. This is a standard feature available for all modules and is discussed in Chapter 3 of this manual.

Understanding the Relationship Between Integrator Studies & Other Studies

To use MPI Integrator effectively, it is essential to understand the relationship between Integrator studies and other studies in MPI Stylus Pro. To use an Integrator study you must first have at least one study available in another module to bring into Integrator. Because Integrator studies make use of actual studies from other modules, it may be necessary to run those studies in order to populate charts and tables. Integrator allows the user to launch any and all studies in their respective applications and run them manually or automatically. For instructions on launching a study from Integrator, please see "Editing a Study" later in this chapter.

When MPI Integrator is run it will copy the underlying data for precalculated charts, tables and memos. This allows users to share the Integrator study even with users who lack the underlying studies (though they will not be able to run or update it.)

Binder Tab & Integrator

The Binder Tab may have special applications for users who choose to utilize MPI Integrator. We highly encourage you to learn more about the Binder Tab (Chapter 3) in order to make the best use of this feature.

Integrator Design Tree

The MPI Integrator design tree is similar in appearance to that of other modules, though shorter, and contains only the elements necessary for efficient use of the application.
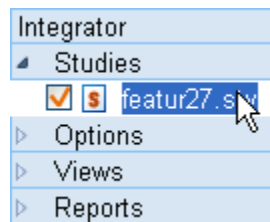
There are a few important notes to consider about the Integrator design tree:

- The Studies node. Instead of brining in a manager, source or asset, you are bringing in one or more studies created in other MPI Stylus Pro modules.
- No Parameters node. Though some basic, study-level controls do exist in the Options node, parameters for charts, tables and memos will continue to be governed by the underlying studies in which they appear.
- Views and Reports nodes. Integrator is a reporting application, so these will be the key areas of the module. Because Views and Reports in Integrator work somewhat differently from those in other modules, we recommend users familiarize themselves with these features specifically from this chapter if there is a need for Integrator.

In addition, please note that the traditional input vs. output designations for nodes do not apply in Integrator – the whole module is built to facilitate output. Users may therefore consider "Studies" the only real input node.

Studies Node

The Studies node allows you to bring one or more studies into Integrator. It is the only true "input" node in Integrator because the only thing the module needs to know is which studies from other modules you wish to use as a basis for your new report(s).

Study-level inputs, such as peer groups, benchmarks, assets, charts and tables should be designed in their respective Stylus, Prospector or Allocator studies. Please note that Integrator will not automatically adjust all studies to a common benchmark, peer group, style outline, etc. – views from each study will continue to follow the parameters of that underlying study.

Adding a Study

MPI Integrator allows you to add studies from different modules together into a single reporting solution. For example, imagine that a user has created a fact sheet template in the Stylus module, and then saved forty different versions of that template into forty studies, each one for a different fund they offer. They would be able to use the Stylus module's reporting solutions to examine a performance graph for any of these funds individually, but suppose that the user also had to put together a single report showing a performance graph for each fund. They would be unable to do this without a great deal of copying, pasting and tedious exporting of images into a third-party application. However, if they used Integrator, they could simply create a report with numerous charts per page, with each chart linking to a different study.

To add a study to the Studies node:

1. Click on the Studies node on the design tree.
2. The data pane for study selection follows the same format used for manager selection in the Stylus module and Source selection in the Prospector module. Simply click the check box next to each study you wish to add (you may also double-click the study name) and the study will be added to your design tree. You may also use the ellipsis button (…) to browse to the correct database.

Editing a Study

When you click the name of any study on your design tree, you will see in your data pane an inactive version of the study's main page from the appropriate module. To edit a study, you will have to launch the study in its appropriate module and make changes there.

To edit a study:

1. In the "Studies" node on the design tree, click on the name of the study you wish to launch.
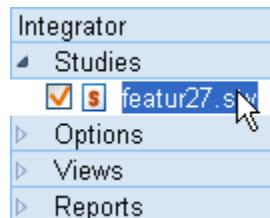
2. In the data pane, you will see a grayed-out version of the opening page of the study as it would appear in its module. In the upper right-hand corner will be an "Open" button. Click this button to launch the study.
3. The study will launch in its module. Depending on your Options node configuration and the study's automation settings, any startup script associated with the study may run at this time.

Options Node

The Options node contains a few different features that may be used to help automate the Integrator process. It should not be thought of as a replacement for the absent Parameters node, as it has extremely different functions. Parameters for charts and tables must be adjusted through their underlying studies.

Figure 113

There are four sections to the Options node, each based around steps the Integrator module must take whenever an Integrator study is run. The four sections are:

1. Open Studies
2. Run Studies/Execute Startup Script
3. Refresh Links
4. Close Studies

Open Studies

The Open Studies section concerns any study that is present on the design tree in the Integrator study. When the user runs the Integrator study, one of the following three options can occur:

▪ Open all studies. This will automatically open all studies on the Integrator design tree, regardless of whether or not they are currently checked.
▪ Open checked studies. This will only open studies on the Integrator design tree that are currently checked.
▪ Do not open studies – use already opened. This option will not launch/run any studies on the Integrator design tree. Only studies the user has already opened will be considered.

Run Studies

The Run Studies option allows you to adjust how studies on your design tree are run. You have three options:

▪ Run Stylus/Allocator studies. When you run the Integrator study you are working in, all associated Stylus & Allocator studies will be run as well. Any Prospector or Integrator studies associated with the master Integrator study you are running will not be run, because both

modules preserve data output and do not have to be re-run whenever charts need to be refreshed.
- Run all opened studies. When you run the Integrator study, any study that is also already open in any Stylus module will run as well.
- Do not run any studies. When you run an Integrator study, its underlying studies will be prevented from running.

Only open studies can be run in MPI Stylus Pro; if a study is not open, the run function will not be performed.

Execute Startup Script

Some studies make use of automation options that automatically run a given script every time a study is opened. Depending on the script design, the effects of this could range from the simple populating of a Stylus study's design tree to the automatic printout of hundreds of reports. Therefore, it is important to always know the specifics of any study you bring into Integrator, as several scripts running back-to-back may temporarily affect your computer's performance.

If you do have one or more studies on your Integrator design tree that have startup scripts, the Execute Startup Script functions will allow you to decide on what level to control these scripts in order to prevent scripts from running when you do not need them to. Of course, scripts can only be executed in currently open studies; if a study is not opened, its script will not be run.

The options are:

- For all studies. This runs any script in any study on the Studies node, regardless of whether or not the "Run on startup" box is checked in the underlying study.
- For checked studies. This runs any script in any study that is checked on the Studies node, regardless of whether or not the "Run on startup" box is checked in the underlying study.
- Only if study is marked for auto-run. This runs any script in any study in the Studies node that has the "Run on startup" option selected, regardless of whether or not the study is checked in the Studies node.

Execute Binder

Some studies make use of the Binder tab in order to accomplish quick, simple report combination options. This can result in the creation of PPT or PDF files of output in the relevant studies.

If you have one or more studies on your Integrator design tree that use the Binder tab, this area will help you decide whether or not to run the Binder for those studies when the Integrator study is run.

The options are:

- For all studies. This runs the Binder in any study where it occurs.
- For checked studies. This allows you to select for which underlying studies the Binder tab may be run, assuming it is populated in those studies.
- Do not execute Binder. This allows you to prevent the Binder tab from being run in all underlying studies.

Refresh Links

In Integrator, your views will be linked to views in given studies. When these other studies are open, you have the option of changing views that are being linked into Integrator, such as a chart or table. Integrator will need to reflect these changes, and gives the user two options for how this is done:

- Refresh charts linked to open studies. This option allows Integrator to refresh itself whenever it detects that you have refreshed a chart in another study that its Integrator study links to.
- Do not refresh linked charts. This option prevents Integrator from refreshing every time you change a linked view, unless you manually run the study.

Close Studies

When you run an Integrator study, it may open certain linked studies (depending on your specifications in the above options) to accomplish its necessary sequence of tasks. The Close Studies tool allows you to specify whether or not Integrator needs to keep these studies open after running them, or may close them again when it is finished with them.

- Do not close opened studies. This option prevents Integrator from automatically closing a study that it has opened as part of its run process. The advantage to this is that it allows you to know which studies Integrator has used.
- Close opened studies. This option allows Integrator to automatically close a study it has opened as part of its run cycle when it has finished running the study.

Redirect warnings and errors to log file

An Integrator study can rely on a great deal of information, including but not limited to data sources, specific funds, benchmarks, indices, peer groups, chart and table names and locations, and data source naming conventions and pathways. Any change to one or more of these pieces of information could cause an error or warning to appear in Integrator if it is unable to perform a given task or access a necessary file. Examples of common problems could include a fund that is no longer active and therefore has been removed from a database, a peer group that has been renamed or a chart that was deleted from its underlying study.

In MPI Stylus Pro, it is generally the case that users receive error or warning messages via a pop-up box that informs the user of the problem at the time it occurs.

This ensures that the user is aware there is a problem requiring further action; however, this can be problematic in the case of large studies, or with errors and warnings that the user may find acceptable. Therefore, to smooth automation, users have the option of specifying that errors and warnings be written directly into a log file, as opposed to onscreen.

If you select this option, you may access this log file at any time through this process:

1. Go to your computer's file management system, such as My Computer. This needs to be done outside of the MPI Stylus Pro application.

2. Browse to your Stylus root directory (for example, C:\Stylus).
3. Locate the file called "Stylus.log" in this directory. This is the log to which Stylus events, including errors and warnings, are written. This is a text file, and may be opened through any basic text program such as Notepad, Wordpad, or Microsoft Word.
4. Once the log file is open, you should be able to review all logged information.

Changing the Log File Name and Location

Users may change the name and/or location of the log file to meet their needs. This will be unnecessary for all users except those who have a specific reason for the change.

Views and Reports

Most features of Integrator's Views and Reports nodes work as they would in the Stylus or Allocator modules; however, there are some changes that are based on Integrator's specific uses for reporting from multiple studies. A quick summary of these may be found below, followed by more detailed explanations in the Views Node and Reports Node sections of this chapter.

- There is no option to create new charts or tables (you may create new memos.) Charts and tables must be linked to other studies.
- Unlike with the link option in other modules, you can "lock" the link function for any view in Integrator. This prevents accidental data refresh when you are trying to archive particular views/screens for certain dates or periods.
- The Chart/Table/Memo designer screen has been expanded to include new information, such as the underlying study in which a given chart, table or memo may be found.

Views Node

Although it is not possible to create new charts or tables in Integrator (you may create memos), it is possible to create and organize new views. This helps you to structure your Integrator study by creating a working library of charts, tables and memos from your underlying studies that you need for your reports. You may then link directly to charts, tables and memos in underlying studies from your report, or link to those studies in your new View tabs.

View Link Screen

Figure 114

The View data pane screen in Integrator is specially created to help users efficiently manage their links to charts, tables and memos in underlying studies. Because of the number of underlying studies possible in Integrator, and the number of possible Views per study, it is obviously helpful to tell the user more than just the name of the particular chart, table or memo and its particular view; therefore, Integrator adds three additional columns to the traditional View link data pane screen:

- Dbs – This "database" column will tell the user the database in which a given study is saved.
- Studies – This column tells the user the file name of the study in which a given view is stored.
- Report – This column tells the user the name of the report in which a given view may be found in a study. It should be noted that views located in the Views node of a given study will have no entry for the Report column. In addition, a view that has been added to a report in an underlying study will appear as both a View entry and a Report entry, but may have different titles/appearances based on the study design.
- View/Page – This column tells you the name of the View, or the page in a Report, on which the chart, table or memo is located.
- Chart/Table/Memo – This column will tell you the name of the charts, tables or memos in the underlying studies. Note that the column title will reflect the type of object you can link to (i.e., if you are using a Chart block, you will only see the title 'Chart', and only charts will be shown from underlying studies.)

Reports Node

The reports node will largely be the same as that of other modules in MPI Stylus Pro; for more information, please see Chapter 5 (Views and Reports.)

Starting with version of Stylus 11.3, a user also has the option to share all the underlying studies in an integrator study to another recipient, rather than attaching each study one by one. A user can do so by going to MPI Stylus Pro-> Help-> Send Current Study to MPI Support.

Troubleshooting MPI Integrator

For more Frequently Asked Questions (FAQ), please visit our web site at
http://www.markovprocesses.com.

Q: I am getting an error message saying that a manager, peer universe, benchmark, set, or other item cannot be found. Why?
A: This is a common error that can occur whenever Integrator looks to an underlying study for a file and is unable to find it. This can happen because a manager ID is no longer found in a database, a file has been moved or deleted, or because a file is located on a network or drive to which the user no longer has read permissions.

Q: Every time I run an Integrator study, my computer publishes or prints content or reports I was not expecting/don't want. Why?
A: This usually means that one of the underlying studies you are using has a script in it that is designed to run whenever the study is opened. Scripts of this kind will normally run when Integrator runs their studies, unless the user has designated in the Options node in Integrator that the script should not run automatically.

Q: My Integrator study takes quite a long time to run. Is this normal?
A: The chart refresh action in MPI Integrator is slow by nature, and this will especially be true when you link Integrator charts to charts/tables inside Stylus reports (as opposed to Views.) To optimize your Integrator solution, try the following:

- Remove all unused charts and tables from the underlying studies.
- In your Integrator study, do not link to charts/tables/memos in reports in your underlying studies; instead, link to the charts/tables/memos in the views themselves.
- Delete any unused reports from your underlying studies.
- Redesign your Stylus views so that they have one chart or table per view.

Q: What's the fastest way to replicate a Report page in Integrator if I already have such a page in my Stylus or Allocator study?
A: You can copy the page in your Stylus or Allocator study by right-clicking on the page's listing on the design tree and selecting "Copy." Then, go to your Integrator study, right-click on the design tree where you wish to insert the page, and select "Paste." All appropriate information will be carried over to the Integrator report – from page design to chart/table/memo links. If the study is not yet associated with the Integrator study, it will also be added automatically.

Q: Do I always have to build reports in Integrator when I need to merge a few reports from my Stylus or Allocator studies into one?
A: No! This is actually a very inefficient way to achieve this. Reports should only be built in Integrator when you need to mix charts, tables and memos from different Stylus, Prospector and Allocator studies (or report on Prospector.) It is generally better to use automation to merge PDF reports from pages created in multiple studies or during several "runs" of the same study. In Stylus, this would be done using the EXPORTREPORT statement with PDF output.

Chapter 8

MPI Allocator

Overview

MPI Allocator is Stylus Pro's asset allocation/optimization module, and provides Stylus users with a whole new level of research and reporting power, as well as access to Monte Carlo simulations.

Chapter 8

MPI Allocator

Introduction to MPI Allocator

Allocator is MPI's portfolio optimization tool. It allows users to create asset allocations using mean-variance optimization and project future portfolio values using Monte Carlo simulation. For those wishing to optimize relative to a benchmark, or implement an allocation across funds, the Allocator module also includes benchmark tracking capabilities.

Getting Started in MPI Allocator

Allocator has its own design tree, data pane and view tabs, just like all other modules in MPI Stylus. Some of the nodes on the Design Tree, such as Benchmark, Views and Reports, are familiar from other modules; others, such as Efficient Portfolios and Asset Blends, are unique to MPI Allocator.

Working with Allocator Studies

The same basic rules apply when working with MPI Allocator studies as with all other studies in MPI Stylus. For specific information on opening, saving or deleting studies please see Chapter 3 – the instructions for any other Stylus module apply here. It is helpful, however, to note the file extensions associated with MPI Allocator. They are:

File Extension	File Type
.ast	Allocator study
.att	Allocator template

Allocator Design Tree

Like all other MPI Stylus modules, Allocator has its own Design Tree, and while it does follow the basic Design Tree concept, its content is significantly different from that of other modules' trees.

Notable elements unique to the Allocator Design Tree include:

- The Assets node. This allows you to bring in any index or style map as an asset
- Estimates, Groups and Simulations sections added to the Parameters node
- Series, Efficient Portfolios and Asset Blends nodes

Note that the Views and Reports nodes are present, which means that Allocator is both a research and a reporting tool. Before jumping into the precise uses for each node, we can still summarize Allocator in terms of input and output nodes:

Node Symbol	Description	Function
Input Nodes		
	Assets	Controls assets added to the study.
	Liabilities	Used for asset liability modeling.
	Parameters	Governs date ranges, asset class forecasts, etc.
	Benchmark	Lets you assign a benchmark.
	Series (formerly Portfolios)	Allows the user to include previously created portfolios or other series in the study.
	Efficient Portfolios	Allows the user to add or delete efficient portfolios (points that reside on the efficient frontier.)
	Asset Blends	Allows the user to add or delete asset blends (non-optimal, user-defined asset mixes.)
Output Nodes		
	Views	The same as the Views node in the Stylus module.
	Reports	The same as the Reports node in the Stylus module.

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In addition to these nodes, there is also the **Study** node at the top of the design tree. The Study section governs a variety of study-wide settings, including automation (for users subscribed to the optional Automation package.) For more information about the Study section, please see Chapter 3.

When designing your analysis, you will move down the list of Design Tree nodes to input the information necessary, and then to create, view and organize the output. In the sections below, we will take a close look at how to get the most from each node.

Input Nodes

Input nodes in Allocator represent information you will be providing the application in order to structure your analysis. The Design Tree allows you to quickly create your analysis in a familiar format.

Assets Node

The Assets node allows the user to select the assets used in the optimization. Assets can come from any data source you have available in MPI Stylus Pro, and would be done the same way one selects a Style Outline in Stylus.

Viewing Asset Details
Click on the name of any asset on the design tree to view its specific information in the data pane. This feature will be familiar to users of the Stylus module, as it is the same as viewing manager details in the Managers node.

Assets Min & Max Feature (Individual Asset Class Constraints)
In order to help users work more efficiently in Allocator, a Min & Max (short for Minimum & Maximum) feature has been made available for each asset on the Allocator design tree. This assists the user by providing individual asset class constraints that specify how little or how much of a given asset must be present (in percentage terms) in any "optimal" portfolios on the efficient frontier.

For example, if a user decided that any acceptable efficient portfolio would contain between 10% to 25% cash, he or she could then set the Min. to the lowest acceptable percentage (10%) and the Max. to the highest acceptable percentage (25%), with the assurance that all resulting portfolios would meet these specifications. The default is a Minimum of 0% and a Maximum of 100% for all asset classes, which is considered an "unconstrained" optimization.

To change the Min or Max setting for an asset:

1. On the Assets node of the design tree, click on the blue number that you wish to change in the Min or Max column. It should become activated as per the image below.

2. Now type in the percentage amount that represents the minimum (for the Min column) or maximum (for the Max column) desired percentage for the asset in question, for any possible efficient portfolio. For example, in this case the user has decided that 10% is the lowest acceptable cash allocation, and would therefore type in a "10" in this space. They would then do the same for the Max column, with "25." No percentage sign is required in either case. When the correct number has been entered, press the enter key to set the number. To enter +/- infinity, clear the corresponding edit box and hit Enter.
3. The columns should now display the correct numbers for the Min & Max constraints.

Grouping Assets
As is the case in the Style Outline node throughout MPI Stylus Pro, it is possible to create 'nested' groups of Assets here in order to provide you with more control over totals of component representation. To do this, simply drag and drop new assets on to an existing asset name on the Design Tree.

Liabilities Node

The Liabilities Node is used for those wishing to do asset liability modeling in MPI Stylus Pro. As with the Assets node, users may go in and select specific 'liabilities' to include here.

Users should note that, if conducting a liability analysis, the 'Mean-Surplus' model type should be used in the Parameters node.

Parameters Node

The Parameters node in Allocator is significantly different from this same node in all other MPI Stylus modules, and deserves special attention. While it still performs some of the same functions as in other modules, asset allocation-specific settings have been added to improve the user's experience with the program.

Model Type

There are two basic model types available for users in MPI Allocator: Mean-Variance MVO (mean-variance optimization), and Mean-Benchmark Tracking MBO (mean-benchmark optimization.) Additional model types may be available to subscribers of our Advanced Analytics package. For more information, please see our Advanced Allocator documentation, available from MPI.

Mean-Variance MVO
The mean-variance optimization (MVO) model was pioneered by Nobel Laureate Harry Markowitz in the 1950's in his Modern Portfolio Theory, and is widely associated with asset allocation and portfolio diversification. The MVO model is also the industry standard for performing asset allocation optimization and analysis.

The foundation of Modern Portfolio Theory is that risk can be quantified, in this case as volatility or "standard deviation", and that, all things being equal, investors will seek to avoid risk wherever possible. Working from this concept and using forecasts for each available asset class (expected return, standard deviation and correlation coefficients – the degree that each asset class moves in relation to every other asset class), the MVO model constructs an "efficient frontier" on which every possible "optimal" portfolio combination resides. "Optimal" or "efficient" portfolios are theoretically expected to offer the maximum possible return for each given level of risk, or conversely, the minimum level of risk for each level of return.

The general theory hinges on the concept that any correlation between asset classes that is less than one must reduce the overall risk characteristics of potential portfolios; therefore, MVO will always be looking for ways to diversify away risk by finding low correlation relationships between asset classes.

Of course, everything in such a model is contingent on user forecasts or "inputs" for future asset class performance. Inputs and constraints (optional) will entirely define the efficient frontier and its portfolios.

Mean-Benchmark Tracking MBO
The Mean-Benchmark Tracking (MBO) model runs a mean-variance optimization relative to a benchmark, deriving an efficient frontier that contains all "optimal" portfolio combinations from the minimal tracking error portfolio to the maximum excess return portfolio. MBO is most often utilized for "fund optimization" or "fund implementation" where one has a target asset allocation or index and then wants to find optimal combinations of managers to fulfill the allocation. In this case, the target allocation or index becomes the "benchmark" and one's managers are included as the "Assets."

Mean-Surplus MSUR

The Mean-Surplus model is used when conducting asset liability modeling in Allocator and replaces standard deviation with surplus standard deviation in the optimization (versus Mean-Variance).

Objective

The Objective allows you to choose between four Objective types:

- *Return*, which is the standard (default) for all Allocator studies
- *BL Implied Return,* which uses the Black-Litterman model. Please note that more Black-Litterman options are available through our Advanced Allocator package. For more information, please contact us at support@markovprocesses.com.
- *BL Combined Return*. Please see directly above for getting information on this feature.
- *Yield.* While this is present by default in some of our templates, it is really meant to represent an objective that can be created via the Groups node.

Date Range Settings

The date range settings in MPI Allocator generally work the same as they would in the other MPI Stylus modules; however, an important change has been made that should be noted by users. Whereas other modules have the date scrollbar, the date range, and a limit drop-down menu, MPI Allocator has replaced the limit menu with an Estimation Range tool.

Estimation Range

MPI Allocator generates asset class forecasts for the optimization from historical data. This section allows you to choose what historical time period will be used for those forecasts.

Common
A common time period will be used for calculating expected returns, standard deviations and correlations. This time period will be determined by the asset class with the shortest amount of historical data. The "Pros" of this are that all asset classes will be exposed to the same time period, avoiding unintended biases that can occur when using asset classes that have experienced different economic conditions. The "Cons" are that by utilizing a common time period, one may end up with a very short historical period that ignores very relevant and important periods for making long-term forecasts.

Common for correlations
A common time period will be used for calculating correlations. The time period will be determined by the asset class with the smallest amount of historical data. A separate time period will be used to calculate standard deviations and expected return, as specified by the date settings slider.

All
All available data will be used in estimating the expected return and standard deviation for each asset class, as well as the correlations between each asset class. The advantage of this feature is that it will incorporate relevant historical data for longer-lived asset classes, and thus will be less sensitive to new data. The disadvantage is that potential biases may exist that may favor or punish certain asset classes simply because some indices didn't experience a bear or bear market (or vice-versa.)

Use Common Estimation Frequency

Allows you to choose the frequency of the historical data used to estimate the optimization inputs. When you uncheck "Use Common Estimation Frequency," you may then choose the frequency (or no frequency) to suit your needs.

This setting works in tandem with the Allocation Frequency setting just below it.

Use Default Allocation Frequency
By default, optimization inputs (expected returns, standard deviations and correlations) are stated in the frequency of the historical data used to estimate them. This option allows lets you convert the historical estimates to a different frequency.

If you're using monthly historical data, for example, you could express the estimates on an annual basis by selecting Annual in this section.

Use Individual Bounds
Allows you to select the behavior of individual asset-level constraints from the following options:

Long Only
Minimum and maximum constraints on all asset weights will be 0% and 100%, respectively. The minimum and maximum holdings in the design tree are disabled.

Individual
Constraints may be set at the individual asset class level, by entering a minimum or maximum holding next to any asset in the design tree.

No Constraints
Constraints are set to +/- infinity.

Initial Investment

The initial investment tool allows you to specify a given initial investment value (in dollars, or any other currency) for your portfolios, as well as the specific date on which this investment was made. Portfolio wealth forecasts and other "growth-of-a-dollar" charts will start on the date indicated, at the dollar amount entered.

To change the initial investment value or date:

1. Click on the push pin button (to raise it) located to the right of the item you wish to change. When the push pin is pushed down, study default settings will be used.
2. In the Value box, the initial investment value of the portfolio.
3. In the Date box, click the calendar icon to bring up MPI's scrollable calendar feature. Navigate to the correct date and then click on it once to activate it.
4. If you push the push pins down again, values will return to study defaults; however, if you ever click the push pin buttons again to raise them, they will return to the last stored custom values.

Return targets

This tool allows you to specify Target Returns (for a given frequency) that you are interested in achieving over the course of time. These may then be viewed in specific charts and tables. The frequency will adjust

to the allocation frequency in order to clarify the units in which target returns should be entered. For example, if the title says 'Target Returns (annual)' then returns should be entered in terms of years.

Wealth targets

This allows you to specify Wealth Targets in dollar amounts for use in forecasting.

Currency

As in all MPI Stylus parameters nodes, this is where you may set the currency for the study.

Cash

As in all MPI Stylus parameters nodes, this is where you can set the cash proxy on a study-wide level.

Inflation

Allows you to pick the historical inflation rate series used in the study. This inflation series is used when adjusting future cash flows and/or simulating future inflation rates when running a Monte Carlo simulation.

As of version 9.0, users also have the capability to do Inflation-Adjusted forecasts in real or nominal terms.

Hist. risk free

Allows you to specify a specific instrument to be used as the historical risk-free rate, as opposed to using the Currency as a stand-in.

Estimates

The Estimates section of the Parameters node controls the three required inputs to the optimization:

- each asset's expected return
- each asset's expected standard deviation
- expected correlation coefficients between each pair of assets

Inputs will be based on historical data by default, over the time period selected in the Parameters node. Estimates based on historical data will be shown in gray. Estimates entered manually will appear in black.

To override a historical estimate, simply click on it and type in your new estimate. To remove a manually-entered estimate, simply highlight and delete the value and the historical estimate will return. Estimates for the Benchmark (if one is selected) and for inflation are also shown and may also be replaced with manual values.

The frequency of all estimates in this section is the same as the Estimation Frequency selected on the Parameters page. When entering a manual estimate, make sure the value entered reflects the Allocation frequency. When the Allocation frequency is changed, manually entered values are converted to the new frequency, just as historical estimates are.

When entering values in the covariance matrix, you might see a warning message stating the covariance matrix is non-positive semi-definite. This means that the covariance matrix is internally inconsistent. For

example, three assets that are perfectly negatively correlated will cause the non-semi definite warning, since it is impossible for three assets to have returns that all move in opposite directions.

Importing Estimates from External Sources

Version 11.0 allows you to include capital market estimates defined in Microsoft Excel workbooks. This feature allows for easier sharing of estimates defined centrally by a research team throughout an organization.

Allocator requires the estimate data for be formatted a specific way in the Excel. The simplest way to get started is to export the default estimates to Excel and modify that file with your own estimates. From the Estimates node, select a set of estimates to review. Click the icon in the upper right corner of the data overview table, select Export to File…, and provide a location to write the new Excel document.

Groups

In the Groups node you can create a constraint that involves more than one asset, such as the constraint that the holdings in one asset be greater than those of another. The Group selected as the allocation objective under Parameters will be highlighted on the Design Tree with a special blue icon (just like a default benchmark would be.)

To add a Group to the optimization:

1. Select the Groups node in the design tree.
2. Click the Add button. A new group will appear in the Groups node in the design tree.
3. Add in assets by clicking on a cell in the Assets or Group column, which opens a drop-down box
4. Enter the coefficient for each asset in the Coefficient column
5. Enter the minimum and maximum values for the constraint in the Design Tree.
6. To set the minimum/maximum to infinity, delete the existing value, and with an empty edit box, hit Enter.

Use all assets
Use this option to add all assets to the group or constraint.

Set all values to
Use this option to give all assets the same coefficient.

Advanced

The Advanced section of the Parameters node allows you to choose between arithmetic and geometric average historical returns, as well as to customize the percentiles displayed in any wealth or return forecast.

Expected Return Estimation Method

Arithmetic Mean
This option will use the arithmetic average for historical returns.

Geometric Mean

This option will use the geometric average for historical returns.

Covariance Matrix Exponential Weighting

Beginning with MPI Stylus Pro 11.0, you may apply exponential decay to the covariance matrix to weight recent return periods more heavily. You control the weighting by specifying either the half-life in months or a decimal decay factor.

Half-life (months)
Use this option to specify the half-life of the exponential weighting. The decay factor will be derived from this value.

Decay factor
Use this option to provide the exponent value to the weighting function.

CVaR
Subscribers to our Advanced Analytics package will see a number of settings here for use in conjunction with CVaR (component value at risk). For more information, please contact MPI or visit our website for our CVaR User Guide.

Projection Percentiles

This allows you to enter the percentiles to be displayed in wealth and return forecasts. The defaults will generally be "5 25 50 75 95" but these may be changed easily. You may enter up to two decimal places for your projections.

To enter your own projection percentiles:

1. In the Projection Percentiles field, enter each percentage breakdown you would like.
2. To separate two breakdowns simply put a space in between them. Please do not use other characters (such as commas) to separate them. You will also note that percentage signs are not necessary in this field.

Enable multiple frontiers

Users with the Advanced Analytics package subscription have the option to show multiple frontiers on a single efficient frontier chart. For more information, contact MPI Support.

Enable resampling

Advanced Analytics users may contact MPI to learn more about our proprietary resampling methodology. You may also download our Resampling User Guide on the MPI website.

Simulations

This section sets the parameters for the Monte Carlo simulation; namely, the number of portfolios to simulate performance for, the number of future time periods to simulate, and future portfolio cash flows.

To enable Monte Carlo simulation, select the check box at the top of the data pane in the Simulations node. Simulations are run every time the study is run.

Simulation options

Use Monte-Carlo Simulations for Projections
Checking this box enables Monte-Carlo Simulations, and will automatically activate the remaining options and fields in the Simulation section.

Number of Paths
This sets the number of portfolios to simulate performance for.

Number of Periods
Determines for how many future periods performance is simulated. The period length is determined by the Allocation frequency.

Max Paths on Chart
This limits the number of Monte Carlo-simulated portfolios displayed on a chart or table when the "Paths" option is selected.

Run for Benchmark
Check this box to simulate performance for the Benchmark.

Run for Series
Check this box to simulate performance for any portfolios you've added into the study from your Funds database. (These appear under the Series node of the design tree.)

Repeatable
The Repeatable option freezes the random numbers generated in a Monte-Carlo simulation, which is helpful for consistency and demonstration purposes.

Distribution type
By default, a LogNormal distribution is used in Allocator. However, users may switch to the Downside LogStable option if they want to instead use a distribution approach that can include so-called 'fat tail' events.

For more information on Fat Tail distributions, please see the User Guide and associated video on the MPI web site.

Cash Flows

To enter a cash flow, click the Add button, and enter the following items in the table below. Please note that for cash flow min/max values, automatic adjustments will occur if nonsensical values are entered. For example, a Min of 5% and a Max of 3% would automatically adjust to 3% for both.

Field	Description
Name	Description of cash flow

Type	Specifies inflow or outflow
Period Start	Beginning of the cash flow. The date may be specified as a calendar date, entered as mm/dd/yyyy or yyyymmdd, or as an offset from the Initial Investment date: 12M, 4Q or 1Y, for example.
Period End	The end of the cash flow, entered in the same format as the Period Start. This value is optional. If period end is entered as an offset, it is an offset from the period starts, or in other words, determines the period length.
Installment Frequency	The period between two cash flows, entered as 3M, 1Q, etc.
Value Type	- Money Amount: A specific amount in the currently chosen currency % of initial portfolio value: A percentage based on the Initial Investment defined in the Parameters node. % of the most recent: A percent of portfolio value on the most recent allocation date. If the installment date coincides with the allocation date, portfolio value *prior* to all cash flow adjustments is used in the computations. If the installment date is later than the allocation date, the portfolio value *after* all cash flow adjustments (if any) is used in the computations. % of current: A percent of the portfolio value on the installment date. Portfolio value prior to all cash flow adjustments is used in the computations. % of Moving Avg: A percentage based on the Moving Average.
Averaging Window	Defines the trailing window size if the Value type is set to % of Moving Avg.
Minimum	Sets the minimum distribution amount. If a Maximum value is entered, a simulated valued is drawn from a uniform distribution
Maximum	Sets the maximum distribution amount. Works in tandem with the Minimum setting to simulate random distributions.
Present or Future	Indicates whether the first installment should be adjusted to inflation. If "Present" - adjusted, "Future" - not adjusted. Makes sense only when "Value Type" is set to "Amount" or "% of initial portfolio value".
Inflation Adjust	Indicates whether all subsequent installments should be adjusted to inflation. Makes sense only when Value Type is set to Amount or % of initial portfolio value.
Inflation Rate Type	Indicates how the inflation rate should be computed. - Simulated Inflation Rate: A random inflation rate is drawn each period, based on the risk/return characteristics of the historical inflation series defined in the Parameters node. - Fixed Inflation Rate: The inflation rate is fixed each period at whatever value is entered in the Inflation Rate column.
Inflation Rate or Premium	Used as the inflation rate when Inflation Type is set to Fixed. If inflation is simulated, this value is added to the simulated inflation rate. This allows the user to specify cash flows that grow at some premium above the inflation rate.

Figure 116

Benchmark Node

The Benchmark node in MPI Allocator should be familiar and easy-to-use for anybody familiar with MPI Stylus, but it should be noted that Allocator only allows the user to choose an existing index/fund as a benchmark – style and peer universe benchmarks are not an option.

The benchmark is required when running a Mean-Benchmark Tracking optimization (MBO), but is optional in other cases. The benchmark is used when calculating a portfolio's Excess Return or Tracking Error.

Series Node (formerly Portfolios Node)

Allows you use previously created series or portfolios in your Allocator study. Portfolios that you add here are not included as assets in the optimization, but can be added to risk/return charts, wealth forecasts, etc., using their historical average performance.

Any portfolio in Allocator (a portfolio on the efficient frontier, for example) can be saved to a fund database. To do this, create a Portfolio Loadings table in a view, right-click on the table and choose Export – Loadings as Portfolio.

Efficient Portfolios Node

Here you can create a single portfolio or set of efficient portfolios. These efficient portfolios can then be used, for example, to show the different asset allocations along the frontier, or the estimated future wealth values across a set of investment options.

For example, you can create:

- A single portfolio, such as a proposed portfolio with a target expected return.
- A set of portfolios evenly spaced across the frontier from least risky to most risky
- A set of portfolios at specific intervals, such as a set with expected returns of 6%, 8%, 10% and 12%
- Display the critical points along the efficient frontier.

To create a new set:

1. Click on the Efficient Portfolios node in the design tree
2. Click on the Add button in the data pane.
3. Select the newly-created area below.

In the data pane, chose from the following statistics:

Critical Points
Critical points are the points on the efficient frontier where an asset is added to or dropped from the mix, or a point where a constraint becomes binding.

Objective
This varies, dependent on the currently-selected objective in the Parameters page.

Risk
Varies, depending on the currently-selected Model Type in the Parameters page.

Return

Sharpe Ratio
Risk Tolerance
Excess Return
StDev of Return
Tracking Error
Information Ratio
Any objective/constraint appearing in the Group node, including Yield, Objective and Turnover
Additional options may be available for Advanced Analytics subscribers.

You can create a set of Efficient Portfolios using the following methods (note: you do not have these options if Critical Points are selected):

Set
A specific number of points evenly spaced across the frontier according to the statistic you've chosen.

Value
Finds one point on the frontier by a specific value. For example, the point with a standard deviation of 10%.

Range
Finds a set of portfolios along a segment of the frontier.

First/Last
Defines the beginning and end of the range. If Auto is chosen, the range is defined by the number of values and the interval between them.

Number of Values
Determines the number of portfolios in the set. If Auto is chosen, the number is determined by the starting value and the interval between them

Interval
Defines the interval between each portfolio. If Auto is selected the interval is determined by the number of points chosen.

Minimum
Finds the portfolio that minimizes the portfolio statistic selected

Maximum
Finds the portfolio that maximizes the portfolio statistic selected.

Asset Blends Node

An Asset Blend is a fixed-weight portfolio made out of the assets in the optimization. An asset blend must be entered in percentages, and must have weights totaling 100%. Any Asset Blend can be plotted on the efficient frontier for example, or used to forecast future wealth or return values.

To create an Asset Blend and use it in a table or chart:

- Add a node under the Asset Blend section in the design tree
- Select the blend, and enter the blend's weights (totaling 100%) in the data pane
- In the Chart/Table/Memo designer, select the blend from the Blends drop-down box

It's important to note that one asset blend can be designated as **Current**. A Current blend is required if the optimization has portfolio turnover as a constraint or as an objective. To see the current blend, click on the Asset Blends node, and look for the checked box in the Current column in the data pane.

Output Nodes

The output nodes in MPI Allocator will be familiar to users of the Stylus module, and work precisely the same way. It is recommended that users refer to both Chapter 4 (Stylus module) and Chapter 5 (Views and Reports) for complete information on using the Output nodes in MPI Allocator.

This being the case, MPI Allocator gives the user access to numerous new charts and statistics unavailable elsewhere in MPI Stylus. Therefore, this section will focus on understanding and making good use of these new options.

Chart Designer

The chart designer in MPI Allocator will be notably different from that of the Stylus or Prospector modules, highlighting the variety of new options available to MPI Stylus users. The Allocator chart designer comes with 10 chart blocks; some of them, like "Scatter" and "Style Map," will be familiar to Stylus module users; others are entirely new.

A complete breakdown of chart blocks may be found in the appendices to this manual; however, a brief introduction to each block is in order here.

In addition to analytic blocks, there are three other notable differences in Allocator's Chart/Table/Memo Designer. First there is a different method of selecting the items to be included in the Chart or Table. Below the set of analytic blocks are four drop-down menus:

- Assets
- Portfolios
- Eff. Portf.
- Blends

These correspond to the four nodes in the design tree with the same names. To display an item on a chart or table, simply select it in the relevant drop-down.

Groups of controls that appear on the left side of the bottom area of the chart designer are different for different types of analytic blocks. There are 3 types of analytic blocks in Allocator. They are:

1. Blocks that display information about the efficient frontier, such as
    - Frontier
    - Frontier Assets
    - Frontier Statistics
    - Frontier Style Map
    - Frontier Asset Map
2. Blocks that display information about portfolios and their underlying assets:
    - Estimates
    - Portfolio Assets
    - Portfolio Statistics
    - Portfolio Map
3. Blocks that display future wealth or return forecasts (projection blocks):
    - Projections

- Simulations

The chart designer displays a different set of controls depending on the type of analytic block chosen, as described below:

1. For efficient frontier blocks you will see:
   a. A frontier check box beneath the four drop-down boxes. Selecting this box overlays an efficient frontier line on the chart, in addition to the individual portfolios.
   b. *Base Axis* - Switches the x-axis,, for example, from risk to return.
   c. *Base Points* - Changes the number of points (displayed as bars) that the efficient frontier is broken into.
2. For portfolio blocks, no additional controls are displayed
3. For projection blocks you will see controls to:
   a. Select the dates
   b. Select the output frequency
   c. Select the output interval
   d. Change whether percentiles are displayed as lines or bands

Frontier

The Frontier block works the same as the Scatter block in both Stylus and Prospector – it can plot almost any fields on the X or the Y axis. The Scatter block is used, for example, to create an efficient frontier chart, by selecting **Objective (Return)** and **Risk (StdDev Rtn)** along the X and Y axes, respectively. Any Efficient Portfolios or Blends you've created can also be displayed on the scatter plot.

The "Frontier" check box adds the efficient frontier to the scatter plot as a smooth line.

Frontier Statistics/Portfolio Statistics

These two blocks contains data items that apply to portfolios (efficient portfolios, non-efficient blends, or previously-created portfolios from a fund database).

Available statistics include, but are not limited to:

- Expected return
- Standard deviation
- Sharpe ratio
- Information ratio

Charts created using the **Portfolio Statistics** block appear as standard bar charts, showing only the portfolios you've selected. Charts created using the **Frontier Statistics** block appear slightly different:

- the bars in the chart are spaced apart as they would be along the efficient frontier.
- To include the rest of the points from the frontier in the background of the chart click the "Frontier" check box
- To change the number of bars in the Efficient Statistics chart, de-select the "Use default base axis and number of points" check box and change number of base points.

Frontier Loadings/Portfolio Loadings

These two blocks let you create a chart of the asset loading (portfolio allocation) for efficient points, any other portfolios, or for a fund. For any chart, you can choose which assets' loadings you'd like to show in the check boxes.

The Frontier Loadings chart separates the portfolios as they would be separated across the efficient frontier, and gives you the additional option to display the asset loadings for all the points across the frontier in the background, by checking the Frontier check box below the Blends drop-down box.

To view an asset's loadings as portion of the entire portfolio, select Weights from the drop-down. To view an asset's loadings as a percentage of a subset of a portfolio, select Rescaled Weights. When Rescaled Weights is selected, each asset's holdings is expressed as a percentage of the total holding of the assets selected in the chart.

Estimates

This block is unique to Allocator and contains the estimates used in the optimization, as well as the historical averages. In the drop-down box chose between the Optimization Input and the Historical value, and select which statistics (return, standard deviation) the chart should contain in the check boxes.

Frontier Style Map

This block displays a scatter plot of the holdings along the efficient frontier, as represented by the Style Map used in the study. The block works the same in Allocator as it does in Stylus module. For more information, please see Chapter 4 of this manual.

Frontier Asset Map

This block displays a bar, line or area graph of the holdings along the efficient frontier, as represented by the Style Map used in the study. The block works the same in Allocator as it does in Stylus module. For more information, please see Chapter 4 of this manual.

Frontier Portfolio Map

This block displays a bar, line or area graph of the holdings of specific portfolios, as represented by the Style Map used in the study. The block works the same in Allocator as it does in Stylus module. For more information, please see Chapter 4 of this manual.

Groups & Constraints

This block (tables only) displays the constraints used in each frontier. With Allocator supporting multiple frontiers, each of which may contain multiple constraints, this table serves as a quick summary section for all constraints used across a study.

Projections

The Projections block (which also contains the content of the old Simulations block) may be used to view the distribution of future portfolio wealth or return values. You have two different options: Parameteric and Simulations.

Parametric

Projections are parametric, based on a portfolio's risk and return, and assume that return distributions are lognormal. Projections are not simulated and therefore do not include cash flows.

Projections are based on the Initial Investment – Value and start as of the Initial Investment – Date entered in the Parameters node.

Available data items include:

- Return – shows the distribution of the portfolio's geometric average return, expressed in the frequency of the underlying optimization inputs.
- Total Return – shows the distribution of the portfolio's cumulative return at any point in the future
- Wealth – shows the distribution of the portfolio's future wealth values, based on the Initial Investment entered on the Parameters node.
- Annual Return – the portfolio's geometric average return, but expressed on an annual basis. If the optimization inputs are annual, this will show the same data as the Return data item.
- Quarterly Return – the portfolio's geometric average return, but expressed on a quarterly basis.
- Monthly Return – the portfolio's geometric average return, but expressed on a monthly basis.

The set of distribution percentiles can be modified Parameters – Advanced node, in the Projection Percentiles box.

Simulations
This displays a portfolio's simulated future wealth and return values. Future portfolio values may be simulated with the option to include cash flows, as defined in the Parameters – Simulations node. The number of portfolios simulated is also defined in that node, which is described in more detail previously in this document.

The following data items are available in the drop-down:

- Total Return – the portfolio's geometric average return, expressed in the frequency of the optimization inputs.
- Excess Return – (real or nominal)
- Total Excess Return – (real or nominal)
- Wealth – the portfolio's future wealth values, based on the Initial Investment entered in the Parameters node
- Excess Wealth – (real or nominal)
- Total Return (include cash flows) - the portfolio's geometric average return, net of cash flows, expressed in the frequency of the optimization inputs
- Wealth (include cash flows) – the portfolio's future wealth values, net of cash flows, based on the Initial Investment entered in the Parameters node

The check boxes enable you choose the following items in the distribution table or chart:

1. The percentiles displayed
2. The portfolio's average value (this is not the same as the 50th percentile because the underlying lognormal distribution is skewed)
3. The individual portfolio paths, i.e. their wealth or return values over time.

Portfolio Risk
Frontier Risk

These two blocks allow the user to verify not only which asset is the riskiest in and of itself, but also to analyze that risk within the context of a portfolio as a whole. For example, it could be that a given asset has the lowest marginal risk of all assets, but also has the highest contribution to the portfolio's risk and/or tracking error. These blocks make use of excess return, expected return, standard deviation, tracking error, the covariance matrix and efficient portfolio weights in order to calculate relevant statistics. Users may decide whether to use Standard Deviation or Tracking Error as the definition of risk by using the dropdown menu in the blocks.

Table Designer

As with the chart designer, the table designer in Allocator varies heavily from other modules and contains blocks specifically geared to Allocator's special functions. A complete breakdown of table blocks may be found in the appendices to this manual; however, a brief introduction to each block is in order here.

Some analytic blocks available in the Chart Designer are not available in the Table Designer. For example, the efficient frontier block is not present in the table designer. (For more details, there is a discussion of the types of analytic blocks available in Allocator in the Chart Designer section of this manual).

Analytic blocks containing data about Portfolios and Wealth Projections are available as tables, but blocks of different types cannot be simultaneously selected into one table. If one of the portfolio blocks (say, Portfolio Assets) is selected into a table, Projection or Simulation blocks cannot be selected into this table, and vice versa.

Estimates
This block is unique to Allocator and contains the estimates used in the optimization, as well as the historical averages. In the drop-down box chose between the Optimization Input and the Historical value, and select which statistics (return, standard deviation) the table should contain in the check boxes.

Frontier
This block is used to create an efficient frontier.

Portfolio Assets
This block contains the holdings for efficient points, any other portfolios, or for a fund. For any chart, you can choose which assets' loadings you'd like to show in the check boxes.

Portfolio Statistics
This block contains data items that apply to portfolios (efficient portfolios, non-efficient blends, or previously-created portfolios from a fund database).

Available statistics include, but are not limited to:

- Expected return
- Standard deviation
- Sharpe ratio
- Information ratio

Portfolio Map
This block displays the holdings of specific portfolios, as represented by the Style Map used in the study. The block works the same in Allocator as it does in Stylus module. For more information, please see Chapter 4 of this manual.

Projections
Use this analytic block to view the distribution of future portfolio wealth or return values. Projections are parametric, based on a portfolio's risk and return, and assume that return distributions are lognormal. Projections are not simulated and therefore do not include cash flows.

Projections are based on the Initial Investment – Value and start as of the Initial Investment – Date entered in the Parameters node.

Available data items include:

- Return – shows the distribution of the portfolio's geometric average return, expressed in the frequency of the underlying optimization inputs.
- Total Return – shows the distribution of the portfolio's cumulative return at any point in the future
- Wealth – shows the distribution of the portfolio's future wealth values, based on the Initial Investment entered on the Parameters node.
- Annual Return – the portfolio's geometric average return expressed on an annual basis. If the optimization inputs are annual, this will show the same data as the Return data item.
- Quarterly Return – the portfolio's geometric average return expressed on a quarterly basis.
- Monthly Return – the portfolio's geometric average return expressed on a monthly basis.

The set of distribution percentiles can be modified Parameters – Advanced node, in the Projection Percentiles box.

Simulations
This block displays a portfolio's simulated future wealth and return values. Future portfolio values may be simulated with the option to include cash flows, as defined in the Parameters – Simulations node. The number of portfolios simulated is also defined in that node, which is described in more detail previously in this document.

The following data items are available in the drop-down:

- Total Return – the portfolio's geometric average return, expressed in the frequency of the optimization inputs.
- Wealth – the portfolio's future wealth values, based on the Initial Investment entered in the Parameters node
- Total Return (include cash flows) - the portfolio's geometric average return, net of cash flows, expressed in the frequency of the optimization inputs
- Wealth (include cash flows) – the portfolio's future wealth values, net of cash flows, based on the Initial Investment entered in the Parameters node

The check boxes enable you choose the following items in the distribution table:

- The percentiles displayed
- The portfolio's average value (this is not the same as the 50th percentile because the underlying lognormal distribution is skewed)
- The individual portfolio paths, i.e. their wealth or return values over time.

Target Probabilities
The Target Probabilities block was discontinued as of version 9.0, having been replaced with functionalities via the Target Return and Target Wealth analytic blocks. More information is available under those respective headings.

Target Return
Formerly a part of the old Target Probabilities block, the Target Return block contains the following components of the old block:

- Total Return (Parametric)
- Total Return (Simulations)
- Total Return (Simulations + Cash Flows)
- Total Excess Return (Simulations)
- Annual Return (Parametric)
- Annual Return (Simulations)
- Annual Return (Simulations + Cash Flow)
- Annual Excess Return (Simulations)
- Additionally, for each of the outputs above, the user will be able to:
    - Specify probabilities Above Target or Below Target
    - Consider returns in Real terms or Nominal terms

Target Wealth
This analytic block contains functionality split out from the old Target Probabilities block. It should be noted that the input Target Wealth may be found in the Parameters node. The block functionality includes:

- Wealth (Parametric)
- Wealth (Simulations)
- Wealth (Simulations + Cash Flow)
- Excess Wealth (Simulations)
- Additionally, for the outputs above, the user will be able to:
    - Specify probabilities Above Target or Below Target
    - Consider returns in Real terms or Nominal terms

Chapter 9

Stylus Workspace

Overview
Stylus Workspace offers a place to organize various objects (Funds, Models, Templates) and to provide different workflow for analysis of funds.

Chapter 9

Stylus Workspace

Introduction

Stylus Workspace offers a place to organize various objects (Funds, Models, Templates, etc) and to provide different workflow for analysis of funds.

At the very basic level Stylus Workspace provides user with ability to automatically select factor model, benchmark and peer groups for a manager specified in the Stylus study.

Stylus Workspace also allows users to create custom lists of managers that can be used to quickly review various analytics. Each manager can use a model that is automatically assigned to it.

Basic Usage.

When selecting a manager for analysis within a Stylus study, users can now click on "Automatically apply model" checkbox. If the checkbox is checked before selecting the manager then when adding the manager to the study, it will populate Style Outline, Benchmark and Peer Group assignment for the manager. In order for the automatic assignment to work, the manager must be part one of the mapped databases.

Fund Lists

Stylus Workspace also provides users with the ability to set up custom fund lists that can be used to monitor and analyze different groups of funds. These lists can use multiple view templates also configurable by the user. Each fund in the list can have a model automatically assigned to it or it can be configured manually by the user.

Models

A model is a combination of Style Outline, Parameters, Benchmarks and Peer Groups. The basic use of the model is to provide a set of factors that can be used in Style Outline.

Templates

Templates provide a way to customize the views of the fund lists. Templates consist of columns from source databases, custom attributes and analytics.

Mapped Databases

Stylus Pro software (version 11.3 and above) is shipped with default category and model mapping for several fund databases. The list of databases is dependent on the user's license. Stylus Workspace also includes a set of generic categories and models that can be mapped into custom user databases.

Regime Models

Stylus Pro software (version 11.4 and above) is shipped with a library of Regime Models defined by MPI's research team. This section of Stylus Workspace allows user to review and modify existing models as well as define their own.

Stress Tests

Stylus Pro software (version 11.4 and above) is shipped with a library of Historical Stress Tests defined by MPI's research team. This section of Stylus Workspace allows user to review and modify existing stress tests as well as define their own.

Scenario Analysis

Stylus Pro software (version 11.4 and above) is shipped with a library of theoretical scenarios defined by MPI's research team. This section of Stylus Workspace allows user to review and modify these scenarios as well as define their own.

Proxy Library

Stylus Pro software (version 11.4 and above) provides framework for creating proxies that can be used to extend the analysis of managers with short track records. See Proxy Handling document for more details.

Advanced Features

Advanced features provide a way to create custom attributes, categories and database classification mappings.

Automatically Applying Model
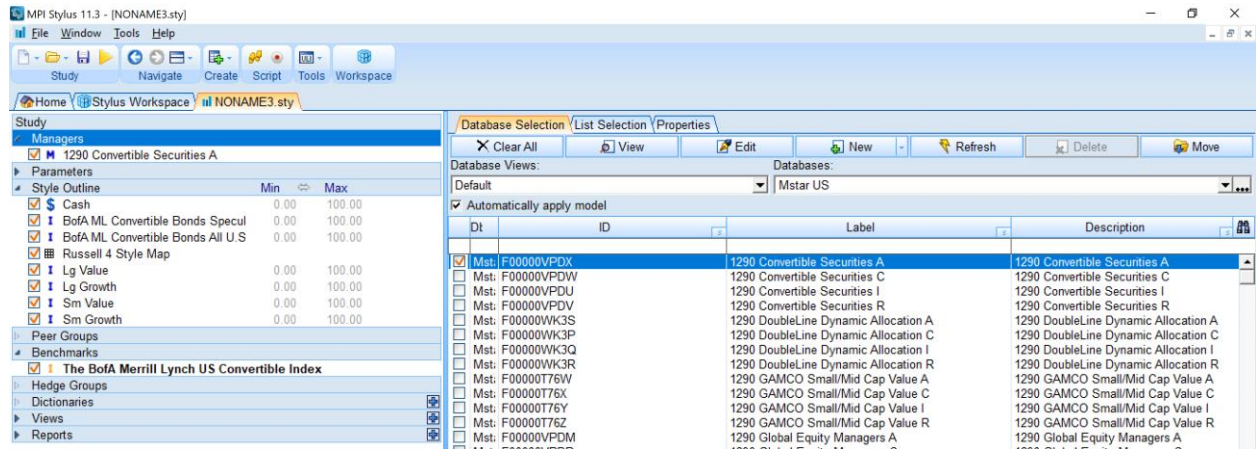
Figure 117

To automatically populate Style Outline, Benchmarks and Peer Groups, check the "Automatically apply model" checkbox **before a** manager is added to the study. Please note that any factors that are already in the study's Style Outline will be replaced.

New Source for Manager Selection

Stylus now provides an additional tab for selecting managers. In addition to **Database Selection**, there is now the **List Selection** tab. This allows user to select a manager from the fund list previously set up by the user (Figure 118).
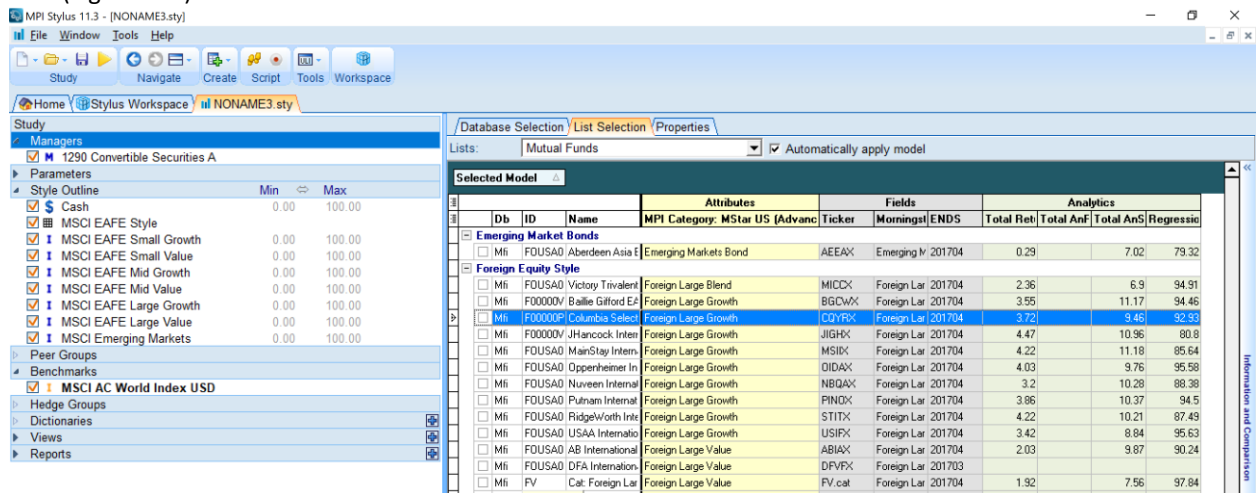
Figure 118

The List Selection view provides the same flexible grid as the fund list view (see below).

Stylus Workspace
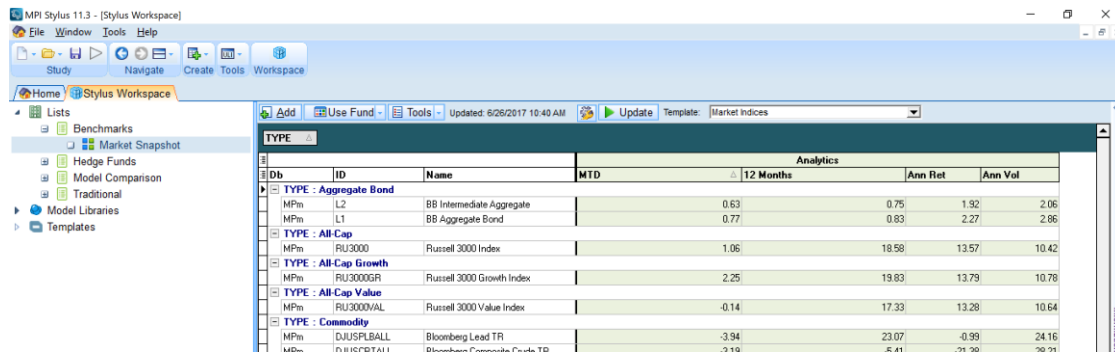
Figure 119

Stylus Workspace can be opened by clicking on Workspace icon in the main application toolbar. The workspace consists of the navigation tree on the left and the main panel on the right. By default, the navigation tree has three primary nodes: Lists, Model Libraries and Templates.

Lists

Lists node is a place to organize funds into logical groups that can be used to monitor, compare and analyze funds. Lists are grouped by List Types which represent the node level just below the Lists node.

Adding List Type

Right click on "Lists" in the try and select "Add List Type". This would add a new List Type in the tree with the automatically generated name in the format of "ListTypeX". The user can rename List Type by double clicking on the list type node and typing a new name.

Deleting List Type

Right click on List Type in the tree and chose Delete List Type. All Lists within the specified type will be deleted.

Adding Lists to List Type

There are two ways of adding a list to a List Type.
1. Right click on List Type node in the navigation tree and click "Add List".
2. Click on List Type and then click "Add" button in the main panel (Figure 120)
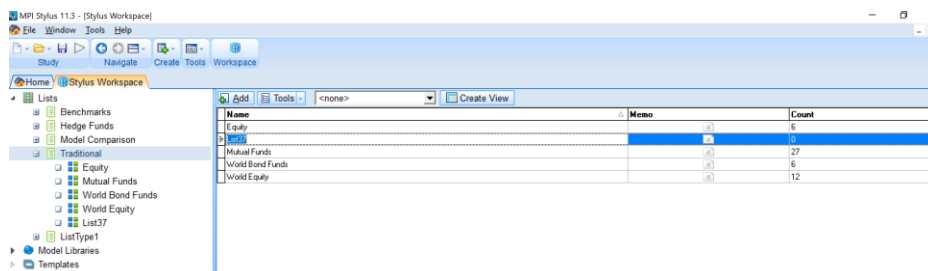
Figure 120

Clicking on the name of the list in the grid allows user to rename the list.

Editing Lists

Clicking on the name of the list in the navigation tree brings the user to the list view in the main panel (Figure 121).
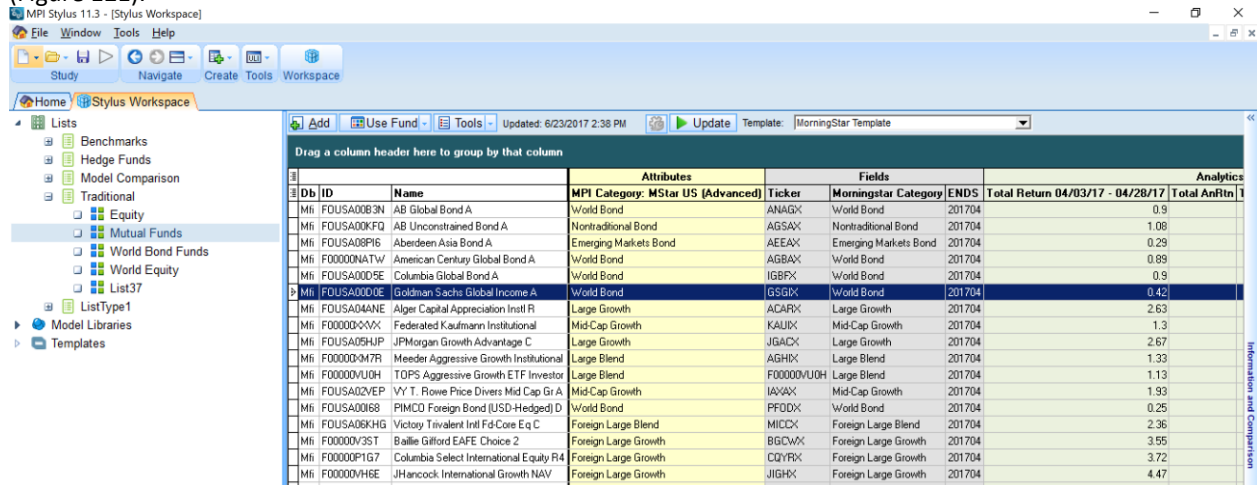
Figure 121

Adding Funds

Adding funds to the list is accomplished by clicking on the "Add" button. This would invoke the fund selection interface familiar to Stylus users (Figure 122).
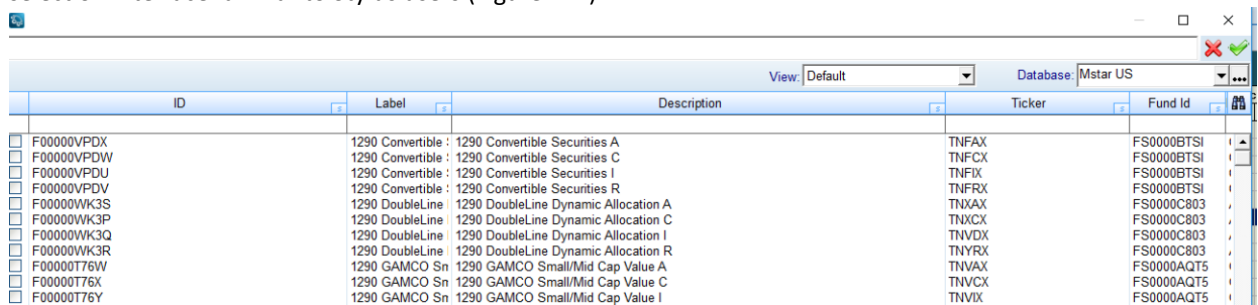
Figure 122

Deleting Funds

To delete a fund or group of funds, highlight the funds in the grid, right click and then click "Delete Record".

Using Funds

Using a fund or multiple funds in a Stylus study, select the funds, right click and chose "Use Funds" and select one of the four options:
1. Add to Managers in Study (with model) – This will add managers to study in the same manner as adding manager from the study itself (as described in Automatically Applying Model)

2. Add to Managers in Study – This will just add managers to study without populating any of the model defaults.
3. Add to Style Outline in Study – This will populate Style Outline only but will not add managers to the study.
4. Add Benchmarks to Study – This will populate the Benchmarks in the study but will not add managers to the study.

All four options will let the user select either an open existing study or a new study. Same options are available by clicking on "Use Funds" button on top of the main panel.

Updating Results

Clicking Update button at the top of the main panel will update information for all funds in the list. The update will pull necessary information from the databases as well as run any calculations specified in the Analytics section of the currently used template.

Changing the View

When a fund list is created, it is first assigned a template that is set as default in the Templates node (see Templates). The user, however, can change the template assigned to the fund list by selecting one from drop down on top of the main panel. It is sometimes necessary to also right click and select "Clear Formatting" to update the columns shown in the grid.

Creating Additional Views

While every list gets a default view, it is possible to create multiple views assigned to each list. For example: one view can be used to display basic statistical information and another view may contain fields regression to regression analysis.
In order to create a new view for an existing list, the user needs to:
1. Click on the appropriate list type in the navigation tree.
2. Select the list for which the view is being created.
3. In the main panel, select a template from the drop-down list
4. Click on Create View button.

The view will appear as a child node under the fund list name in the navigation tree.

Figure 123

There is one special type of a view that is available in the view drop down. It is called Model Comparison and is described in the **Error! Reference source not found.** section.

Overwriting Selected Model

Stylus Workspace is designed to provide automatic model selection. The mechanism used for automatic model assignment is described in the **Error! Reference source not found.** section. In some cases, h ower, users may want to overwrite the model that was automatically assigned or specify a model when no automatic assignment is possible due to mapping configuration. To assign a model manually, users can double click on the cell in Selected Model section and then select a model from the dropdown.

Grouping

Information in the grids can be grouped by dragging any of the column headers to the dark green section on top of the grid. Information can be grouped using multiple columns.
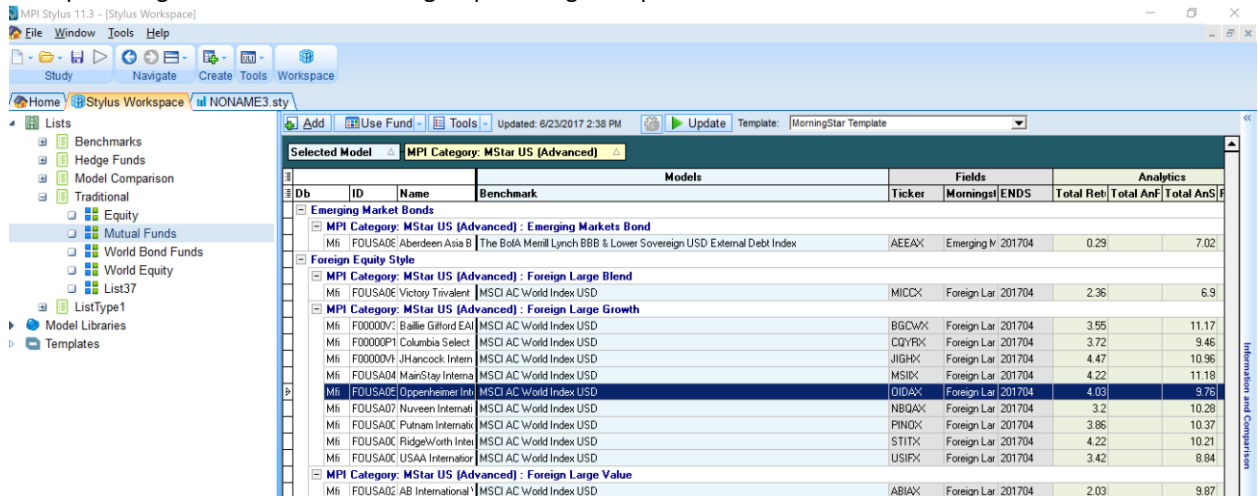
Figure 124

Changing Column Width

The user can change column width manually by dragging column borders to the right or left. The user can also elect to auto-adjust column widths by right-clicking anywhere in the grid and choosing "Best Fit (all columns)" option.

Hiding Sections / Columns

The user can hide columns by simply dragging the column headers outside of the main application window. The user can also click on the section icons on the left part of the column headers (Figure 125).

Figure 125

Clicking the bottom icon (column header level) will bring the dropdown of individual columns that can be hidden or be visible by tagging the checkmark next to column name. Clicking the top icon allows the user to do the same for the entire section of columns.

Resetting the View

Any changes in layout can be reset by right clicking anywhere in the grid and selecting Clear Formatting option.

Copying List Contents
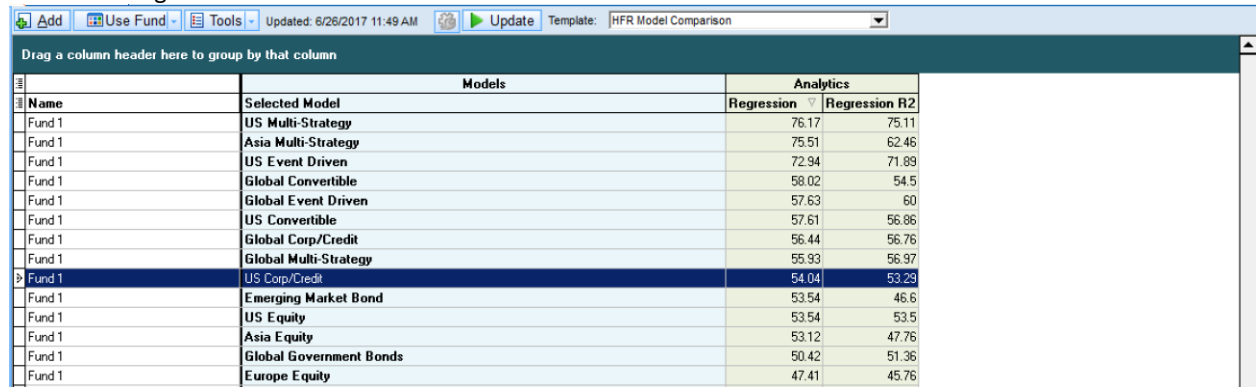
To copy funds from one list to another:

1. Select funds in the source list
2. From Tools dropdown on top of the grid, select "Copy"
3. Select the target list.
4. From Tools dropdown on top of the grid, select "Paste"

Do not use regular Ctrl-C/Ctrl-V combination.

Model Comparison

Model Comparison is a special type of view that allows the user to quickly review the fit of various models for a single manager. While general fund list contains many managers and results of calculations using single selected model, the Model Comparison shows results of calculations using many different models for one manager.
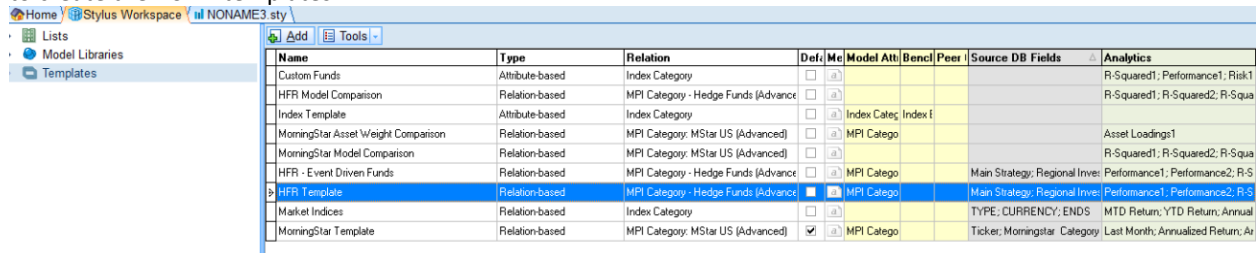
Figure 126

The most common application for this feature is finding the model that provides the best explanatory power for the manager. The typical template for model comparison would show R-squared statistics over one or multiple periods. Clicking on the analytics header allows the user to quickly sort data by R-square and to find the best fitting model.

Templates

Templates provide the user with the ability to customize the view for each fund list. Stylus Workspace ships with default summary and model comparison templates for each mapped database. Users are free to create their own templates.

Figure 127

Adding Templates

To add a template, click "Add" button on top. Templates can be renamed by clicking on Name column in the grid and typing the new name.

Deleting Templates

Templates can be deleted by right clicking on the row and clicking on Delete Record.

Template Attributes

Name	Template name

Type	Attribute -based/Relation based. See **Error! Reference s ource not found.**
Relation	Attribute -based/Relation based. See **Error! Reference s ource not found.**
Default	Specifies how funds are matched.
Memo	Notes about the template
Model Attributes	List of fields from the selected model.
Source DB Fields	List of fields from source database
Analytics	List of Analytics to be calculated

Figure 128

Model Libraries

A model is an object that describes how the fund analysis should be performed with respect to factor sets, regression parameters, and possibly peer groups and benchmarks. Models are grouped into Model Libraries for ease of use and maintenance.

Creating Model Libraries

In order to create a new Model Library, the user needs to right click on Model Libraries node in the navigation tree and then click Add Library.

Renaming a Library.

Libraries can be renamed by double clicking on Library name in the navigation tree and then typing new name.

Deleting a Library

Libraries can be deleted by right clicking on library name in the navigation tree and then clicking Delete Library.

Adding New Model

Adding a new model is accomplished by selecting a model library in the navigation tree and then clicking Add button on top of the main panel. The user is then presented with the screen shown in Figure 127.
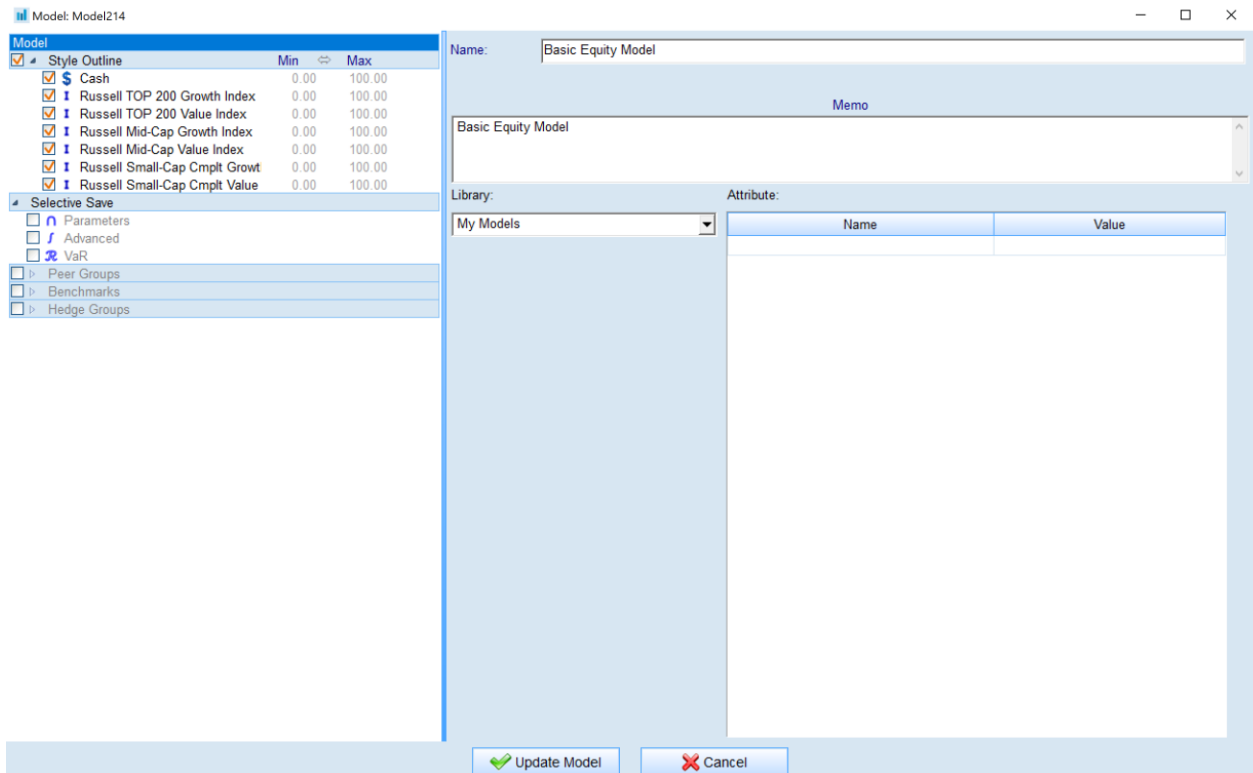
Figure 129

The main feature of the model object is the Style Outline. Users can set up the Style outline section of the model in the manner similar to updating the Style Outline of the Stylus study. (Figure 130)
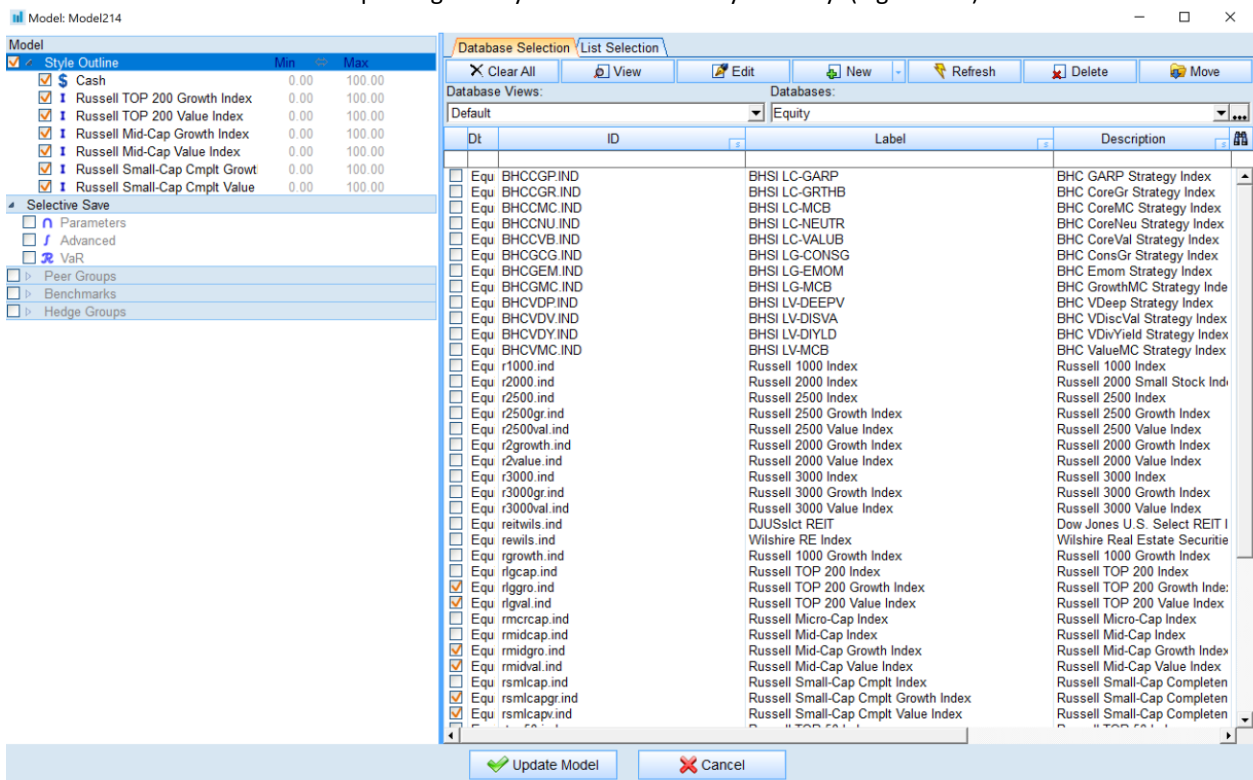
Figure 130

Users can also populate Parameters, Peer Groups, Benchmarks and Hedge Group sections of the model. It is worth noting that while the Style Outline section of the model can be applied across different databases, Peer Group assignments may not. It is therefore recommended that Peer Group assignments are configured separately (see advanced features).

Model Attributes

Models can be assigned various attributes (such as Region, Asset Class etc.). These attributes are used primarily for model matching purposes using Attribute-based matching (see advanced features).

Model Overwrites

Models can inherit properties of another model and enrich the parent model with additional features. The most common use case for this is the ability to quickly change parameters such as use of Sharpe/LWR vs MPI / Dynamic model or the use of Long Only constraints. While it is possible to do it in every model within the specific library that process would be tedious. A better approach is to specify these parameters in Selective Save/Parameters section in the parent model and then have all (or group) of model within a library inherit from this model. This set up would make it easy to apply any parameter changes across all models easily. We recommend storing parent/parameter models in separate Parameter Library (see Figure 131 for example).
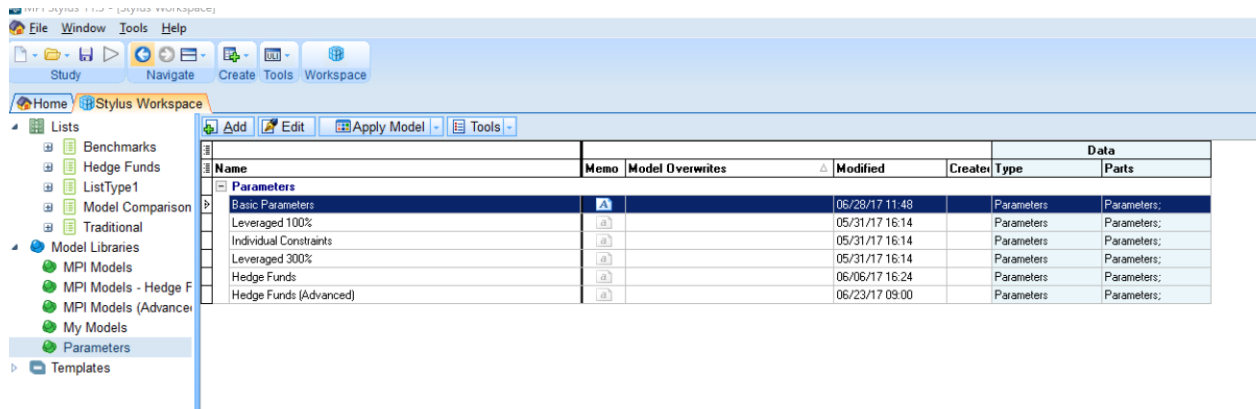
Figure 131

Basic Parameters library shown above specifies only Parameter section:
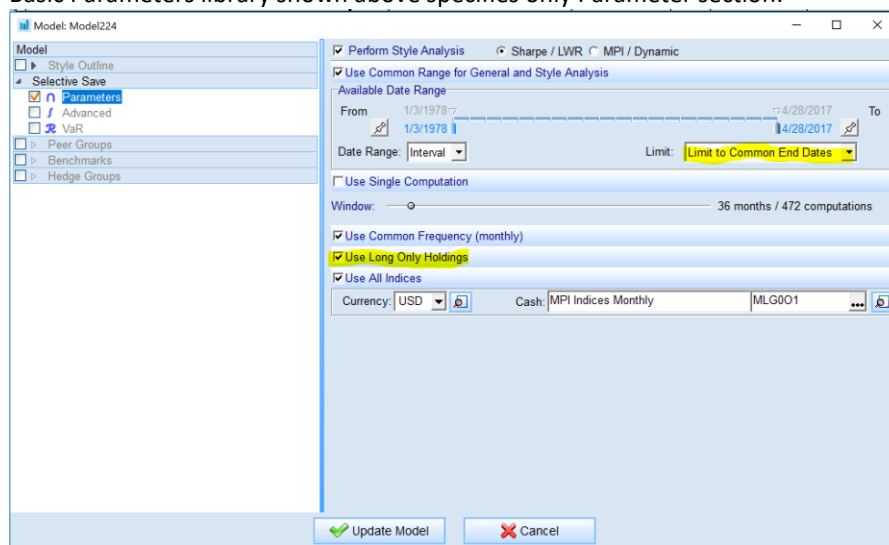
Figure 132

Now models in My Models library can use Basic Parameters library as a parent.
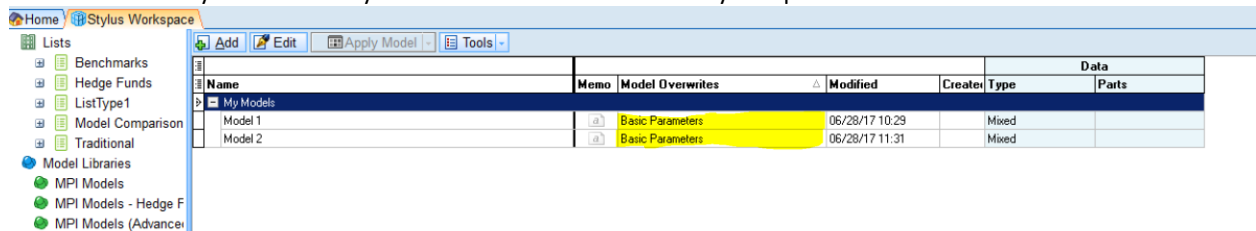
Figure 133

Copying Model

Users can copy a model to a new model by selecting a model record from the grid in the main panel and then using Right-Click/Clone Record option. This will create a new model named in the format of [Original Model Name] – Copy.

Deleting a Model

Users can delete a model by selecting a model record from the grid in the main panel and then using Right-Click/Delete Record option.

Model Assignment

Usually funds obtained from vendor or custom user databases will have certain classification attributes assigned to them. These attributes can be mapped to internal category attributes set up by the user or shipped with software. These category attributes can be assigned to have a default model and benchmark. Model selection, in this case, is straightforward.

1. Determine the value of the classification attribute based on the fund's database.
2. Map classification attribute to internal category attribute.
3. Use the model assigned to that internal category.

Example in Figure 134 shows default model assignment based on internal category attribute called MPI Category.

Attribute: MPI Category	Default Model	D
Allocation Funds	Asset Allocation	
Asia Equity	Asia Equity(I)	
Asia ex Japan Equity	Asia Equity Ex Japan	
Bear Market	Bear Market(I)	
China Equity	China Equity	
Commodities	Commodities	
Convertible Bonds	Convertible Bond	
Corporate Bonds	Convertible Bond	
Currency	Currency(I)	
Diversified Emerging Markets	Emerging Market Equity(I)	
Emerging Market Bond	Emerging Market Bonds(I)	
Europe Stock	European Equity	
Global Allocation	Global Allocation	
Global Bond	Global Bond	

Figure 134

It is possible to create more granular mapping by assigning additional attributes to each category and specifying models based on each attribute. See **Error! Reference source not found.** sections.

Regime Models

The node is only available to users with Advanced Analytics license.

This node allows user to manage a list of regime models. Stylus version 11.5 ships with a list of regime models developed by MPI's research team. Users can view the list of the models in the navigation tree and also review a quick summary of each model.
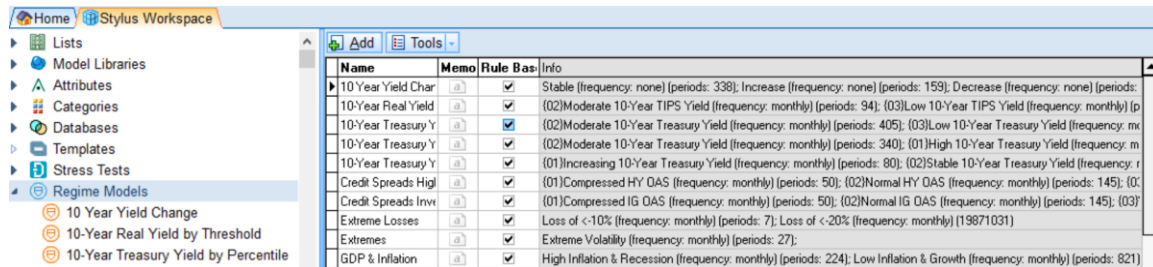
Figure 135

Users can add a new model by either clicking on "Add" button or right clicking on the "Regime Models" node. Clicking on a model name in the navigation tree will enable user to review and edit the selected models.
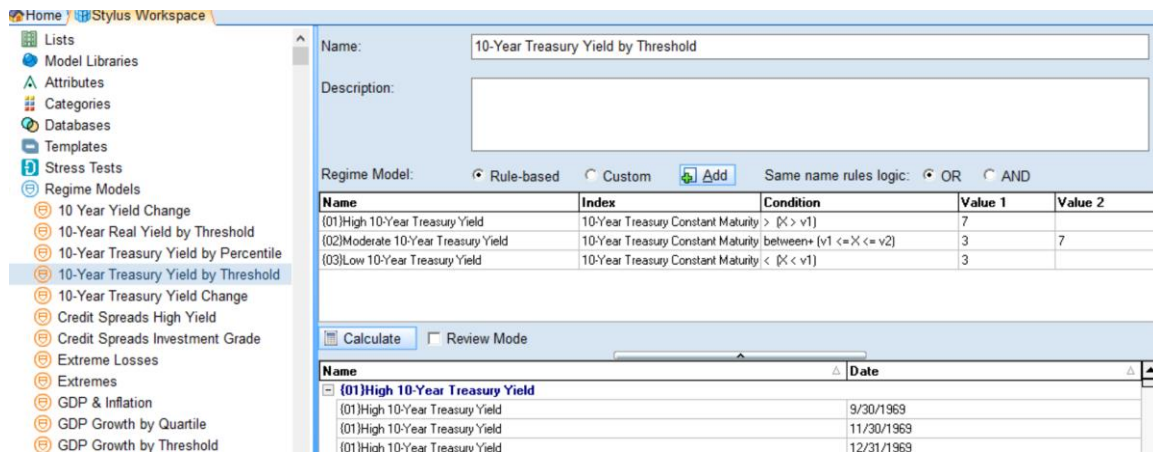
Figure 136

Regime Models can be specified in two ways:
- Rule Based – Under rule-based analysis, regimes are identified based on performance / level properties of various risk factors. Some examples may include:
    - Up Market / Down Markets – Regimes based on the performance of S&P 500 Index
    - Volatility Regimes – Regimes based on level of CBOE VIX index (e.g. <20, 20-35,>35)
    - Growth vs. Value regimes – Regimes based on difference of performance of Russell 3000 Value and Russell 3000 Growth indexes
- Custom – Regimes may be identified by a collection of user supplied dates. These dates don't need to represent continuous time intervals.

Rule Based Models

In order to set up a rule-based model, the user needs to select the "Rule-Based" mode and add one or more rules by clicking the "Add" button.
A grid like the one in Figure 149 will appear on the screen. This grid is not shown when the "Custom" mode is selected.

Name	Index	Condition	Value 1	Value 2
Regime Model: ● Rule-based ○ Custom ⊞ Add		Same name rules logic: ● OR ○ AND		
{01}High 10-Year Treasury Yield	10-Year Treasury Constant Maturity	> (X > v1)	7	
{02}Moderate 10-Year Treasury Yield	10-Year Treasury Constant Maturity	between+ (v1 <= X <= v2)	3	7
{03}Low 10-Year Treasury Yield	10-Year Treasury Constant Maturity	< (X < v1)	3	

Figure 137

Column	Description
Name	Name of the regime. When viewing regimes in the tables and charts the name is used for alphabetical sort. Users can override the sort order by specifying an order prefix in the form {XX} before the name. Example shown Figure 149 demonstrates that Moderate 10-Year Treasury regime should appear in between High and Low regimes (ignoring alphabetical order). The prefix is not shown in charts and tables.
Index	Index used as a reference. Users can select by clicking on the cell and picking an index that either appears in a drop down or by clicking on the "add" item in the drop down and selecting any series from any of the databases available to the user.
Relation	Users need to specify a relation used for the particular rule. Possible choices are: 1. < (X < v1) 2. <= (X <= v1) 3. > (X > v1) 4. >= (X >= v1) 5. Between (v1 < X < v2) 6. Between+ (v1 < x <= v2) 7. Outside (X < v1 or X > v2) 8. Outside+ (X <= v1 or X >= v2) 9. Percentile range (v1 < X <= v2%) In all of the above cases, v1 and v2 refer to Value 1 and Value 2 columns.
Value 1 Value 2	These columns specify the values against which the condition is checked. Either column can be entered as a numeric value, or they can be used to specify an Index/Series. If the series is specified, then the rule checks the value of the Series specified in the Index column versus the value of the specified series at each data point.

Figure 138

The name of the regime specified in each row does not need to be unique. Combinations of multiple rows can be used to construct more complex rules. Multiple rows specifying conditions for the same regime

name can be combined using either "AND" or "OR" operators as specified in "Same name rules logic" section. Here are two examples of using these operators.

Example 1: "AND"

Name	Index	Condition	Value 1	Value 2
High Growth High Inflation	Industrial Production Index, Total	> (X > v1)	5	
High Growth High Inflation	CPI YoY	> (X > v1)	3.5	
High Growth Low Inflation	Industrial Production Index, Total	> (X > v1)	5	
High Growth Low Inflation	CPI YoY	< (X < v1)	1.5	

Figure 139

In this example we are focused on four possible regimes:

	High Inflation	Low Inflation
High Growth	1	2
Low Growth	3	4

For reach regime we specify two rows:
1. Based on Industrial Production Index
2. Based on CPI YoY index

Example 2: "OR"

Name	Index	Condition	Value 1
Extreme Volatility	S&P 500 Index	<= (X <= v1)	-8
Extreme Volatility	CBOE Volatility Index: VIX	>= (X >= v1)	30

Figure 140
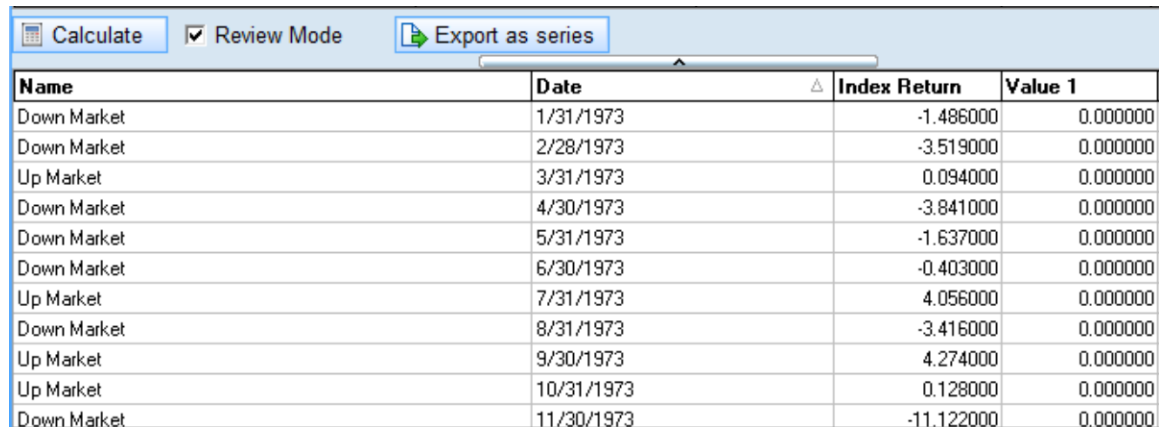
In this example we want to specify Extreme Volatility regime when:
1. S&P 500 Index loses more than 8% (monthly)
2. OR VIX level exceeds 30

Please note that it is necessary to click "Calculate" button in order for the regime model to be useful.

Review Mode

By default, when the regimes are recalculated using "Calculate" button, the bottom grid will display a concise view of regime history grouped by each regime. Users can click on the Review Mode checkbox to see a more detailed view

Name	Date	Index Return	Value 1
Down Market	1/31/1973	-1.486000	0.000000
Down Market	2/28/1973	-3.519000	0.000000
Up Market	3/31/1973	0.094000	0.000000
Down Market	4/30/1973	-3.841000	0.000000
Down Market	5/31/1973	-1.637000	0.000000
Down Market	6/30/1973	-0.403000	0.000000
Up Market	7/31/1973	4.056000	0.000000
Down Market	8/31/1973	-3.416000	0.000000
Up Market	9/30/1973	4.274000	0.000000
Up Market	10/31/1973	0.128000	0.000000
Down Market	11/30/1973	-11.122000	0.000000

Figure 141

In this view, users can see all regime data points in chronological order (not grouped by regime) and check the actual value of the index versus values specified in Value 1 and Value 2 columns. Please note that when two or more conditions are specified for each regime (as described above), the Review mode will only show the Index Return column for the last index specified.

Export Series

While in Review Mode, it is possible to extract the history of the regimes as Stylus manager files by clicking on the export series button. Each series will be stored as ".mng" file in the database location specified by the user (Figure 142). Users can also modify Series ID and Series Description columns.
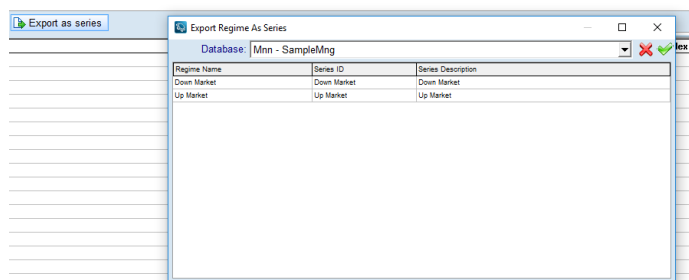
Figure 142
Each series will be extracted as level series showing 1 for each data point within regime and 0 for data points outside of the regime.

Custom Models

Sometimes it may be necessary to specify a regime model that cannot be calculated using the mechanism described above. For example, a user may have their own regime model based on some Bayesian analysis. Other users may want to look at aggregate index performance over certain time periods (e.g. Up /Down Market by Year).
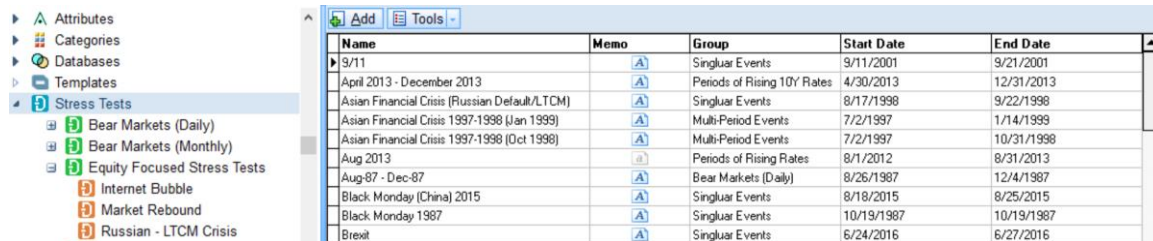
Figure 143

Using the custom mode, users can edit the grid shown in Figure 155 directly or paste values from the clipboard (e.g., excel). When pasting values please construct your spreadsheet to have three columns corresponding to Name, Start Date and End Date columns shown in Figure 155.

Stress Tests

The node is only available to users with Advanced Analytics license.

This node is used to maintain lists of historical stress tests. Stress Tests are grouped into logical Stress Test Groups.

Figure 144

Users can add a new group by right clicking on "Stress Tests" node and a new stress test by right clicking on individual group or clicking "Add" button. Clicking on individual stress test will prompt the definition screen.

Figure 145

Scenario Analysis

The node is only available to users with Advanced Analytics license. Please see Advanced Risk Analysis document for detailed discussion of Scenario Analysis.

Chapter 10

Introduction to Macros & Automation

Overview

MPI Stylus Pro's macro and automation capabilities significantly enhance the application's power and help position it as a premier research and reporting facility. In this chapter, users will learn about the power of macros and be introduced to the concept of scripting.

Chapter 10

Introduction to Stylus Automation

Automation capabilities in MPI Stylus Pro represent one of the most powerful aspects of the program because they give the user the ability to create and publish complex reports with the push of a button.

There are three major kinds of automation tools in MPI Stylus Pro: macros and scripts represent true automation and carry with them a great deal of power and flexibility, but a third option, the Binder Tab, provides an alternate option for users with simple automation needs or those who do not subscribe to the Automation advanced package. The Binder Tab is discussed in detail in the Basic Interface chapter of this manual.

Macros are core components of the application available to all users, and most of this chapter will focus on them. Scripts, on the other hand, are part of the Advanced Automation package and are extensively covered in additional documentation available from MPI. We present a brief introduction to them in this chapter for the benefit of users who are not subscribed to the Advanced Automation package, but would like to get a sense for how scripts can help them reach their publishing goals.

No matter which level of automation you are using, it is important to remember that automation can be extraordinarily convenient and time-saving, and though it may look intimidating, it is actually very easy to produce once a few key concepts have been mastered. In addition to the information in this manual, you may also view our more complete macro and script reference guides in PDF form. Simply browse to your Stylus directory in My Computer or Windows Explorer, and go to:

Automation Type	File Location
Macros	Stylus\docs\macroref.pdf
Scripts	Stylus\docs\autoref.pdf

Macros vs. Scripts – What's the Difference?

There are many important differences between macros and scripts, and they are used to accomplish very different goals. For the benefit of new users, however, the basic differences may be summarized as follows:

- Macros are simple codes used to substitute a piece of information into a report
- Macros are part of MPI Stylus Pro's core product and are available to all users
- Scripts are more complex codes used to populate studies and publish reports automatically based on preset criteria.
- Scripts are part of the Advanced Automation package. For more information, please contact your MPI sales associate.

Macros

A macro is a specially formatted, simple code which will be substituted with another value when a report is populated. By using a macro, you not only can avoid entering the same piece of information repeatedly, but you have a simple means for changing the information should the need ever arise. It should be noted that macros are not limited to reports – they may also be used inside of StylusScript statements, for example.

Example #1 – The Macro Concept

To understand just how MPI Stylus Pro views a macro, consider the following example.

Imagine that you need to produce a single fact sheet 500 times (once for each of 500 funds that your group analyzes). The fact sheet will have the name of the fund across the top, as well as its relevant ticker listed below.

Normally, you would have two options. One would be to have 500 files - one for each fund - and update them each individually once per quarter with new risk and return information. The other option would be to have one file, and go in and change the information 500 times. Neither of these options is remotely scalable, and both open themselves up to frequent opportunities for data entry error.

With a macro, you have only one copy of the fact sheet, and at the top - where the fund name is - you simply put in a code. That code - @MNG{} - is telling MPI Stylus Pro to check the Design Tree and put in the relevant information. If you have Mutual Fund A on the Design Tree, then that fund name will appear on your report. If you switch to Mutual Fund Z, your report will switch automatically. This means that you can run quick scripts or batch processes, and know the information will be correct each time.

Why use a macro?

There are many reasons why you might want to use a macro, including:

- Saving time. Macros may be defined quickly and then used again as often as you like. You will also save time when it comes time to change the value of a macro, as you can avoid having to make the change numerous times after hunting through your report.
- Reducing human error. If you did not use a macro, you might have to make the same change ten times throughout a report – and missing one time could affect your report's accuracy.
- Enforcing consistency in your reports. The text from a macro will appear the same no matter where it is used, avoiding slight variations that may be confusing to your report users.
- Retrieving information from MPI Stylus Pro or external data sources automatically.

Parts of a macro

Consider the following macro:

@MacroName={Show This Text}

This and all macros will consist of four basic parts:

Macro Part	Function
@	The "@" symbol identifies this as a macro.
MacroName	This is where the name of your macro will go. This must be unique; you may not use the names of macros that come predefined with MPI Stylus Pro. For a complete list of these macros, please see the macroref.pdf document mentioned at the start of this chapter.
=	The equal sign separates the macro name from the output.
{Show This Text}	There will always be opening and closing brackets for macros {}, and you may often enter additional information inside these brackets, such as the output for the macro. For more information, please see the macroref.pdf document.

Figure 146

The macroref.pdf document contains information on all available display options for existing MPI Stylus Pro macros, as well as how to program your own new macros.

Please note that the Global Macros interface in Configurator allows you to simplify the design process by entering only the macro name and the value; for more information, please see below.

Global Macros

Global macros are macros that have been assigned on an application-wide basis and will work identically anywhere in MPI Stylus Pro. There are two types of global macros:

- MPI macros, which come pre-defined with MPI Stylus Pro and cannot be changed.
- User-defined global macros, created in the Configurator module.

For information on creating a new macro, please see "Creating a New Macro" later in this chapter.

Common Global Macros

There are numerous MPI macros defined for application-wide use, and the full list may be found in the macroref.pdf document discussed at the beginning of this chapter; however, for convenience we present a few of the most popular global macros in the table below. *Additional formatting options for the listed macros are available in the macroref.pdf document.*

Macro	Function
@NOW{}	Current date
@MNG{}	Name(s) of manager(s) checked in your design tree.
@UNV{}	Name(s) of peer group(s) checked in your design tree.
@BMK{}	Name of the selected benchmark.

Report Macros

Certain global macros have been defined for specific use in reports, and will not work in views. These include various page-related macros to help the user change automatic page numbering. For a complete list of these macros, please see the macroref.pdf document.

User-defined Macros

MPI Stylus Pro allows users to define their own macros on either a global level (through MPI Configurator) or directly in a single study. This gives users a high level of flexibility in using macros to accomplish their diverse automation goals.

The most important constraint on user-defined macros is that they may not use the name of an MPI-defined macro; for example, a user may not create a new @MNG{} macro because this is a global MPI macro. All macros must have unique names.

Working with Macros

Creating a New Macro

Users have the option of creating new macros in Configurator (global macros) or in an individual study; the steps will be somewhat different, and therefore we will examine each method separately.

To create a global macro:

1. Go to File-> Configure in MPI Stylus Pro's main menu. The Configurator module will open.
2. Click on the "Global Macros" section listed under the "Default" node on the design tree.
3. In the Name field, enter the name of the macro you wish to create. This may be any word(s) not currently used by another macro. For example, if you wanted to create a macro for the name of your client, you could name the macro ClientName.
4. In the Value field, enter the text string you want MPI Stylus Pro to display wherever the macro is used.
5. Save Configurator. Your macro should now be ready to use. For information on using the macro, please see "Using a macro" below.

To create a single-study macro:

1. Open the study in which you wish to create your macro and click on the "Study" node at the top of the design tree.
2. Click on the "Macro" tab in the data pane. Please note that studies created in earlier versions of MPI Stylus Pro may have macros in the Memo tab; while this still works for macros, we recommend that the Macro tab be used for all new macros.
3. Enter the new macro you wish to create in the following form:

    @MacroName={MacroValue}

4. If you wish to enter an additional macro, please use the Enter key to place it on a new line.
5. Your macro should now be ready for use. For information on using the macro, please see "Using a macro" below.

Using a Macro

Once a macro has been defined, it is important to know how to use it in the study to get the results you want. There are many places where defined macros may be used, including:

- ▪ Memos
- ▪ Chart text (titles, subtitles, etc.)
- ▪ Table text (Advanced Table Formatting)
- ▪ Objects & Stationary Objects

To use a macro, you need to know the macro name. While you had to define the macro when it was created (unless it was an MPI global macro), to use it you only need to reference it.

To use a macro:

1. Go to the field where you want to enter the macro. This is the field in your view or report where you want the macro's value to be displayed; for example, if you had a @ClientName{} macro, this field is where you would want the actual name of the client (the value) to be displayed.
2. Enter the following parts of the macro: the @ symbol, the macro name and the brackets with nothing in between them. Examples would include: @MNG{}, @ClientName{}, @MacroName{}, etc.
3. Go to the actual view or report output. Your macro should have been replaced in the output with its value. For example, if you had typed @MNG{} in a memo's design, you should see the actual manager name (i.e., Fidelity Contrafund) in the memo output.

Changing a Macro

Changing the value of a macro is easy:

1. Go to the area where you defined the macro (Macro tab or Configurator).
2. Change the macro value (between the {} brackets) from the old value to new value.
3. If you are doing this in Configurator, save Configurator.
4. Go to your output. Your macro should now be changed to reflect the new value. This will be the case wherever the macro is used.

Deleting a Macro

Great care should be exercise when deleting a macro – you must delete not only the macro's definition (in the Macro tab or in Configurator), but also every instance where you used the macro in your view(s) and report(s). Otherwise, once a macro is removed, any place where the macro is referenced will show as straight text.

For example, imagine that you had a macro called @ClientName={Markov Processes Int'l}, and you used it in a report to produce the following sentence:

> We recommend to our client, Markov Processes Int'l, that they invest in…

If you deleted the macro itself in the Macro tab or Configurator but did not remove it in the view or report, the following sentence would be generated:

> We recommend to our client, @ClientName{}, that they invest in…

Obviously, this is problematic. Therefore, it is always recommended that you review carefully your full report whenever you have deleted a macro.

Scripts

Scripting is part of the Advanced Automation package for MPI Stylus Pro; however, we present here an introduction to scripting for the benefit of users who wish to get a better understanding of its functions and capabilities within the application. We recommend that those who do not subscribe to our Advanced Automation package review the Binder Tab functionality in the Basic Interface chapter of this manual.

Scripting in MPI Stylus Pro is designed to help turn the application from an interactive desktop research tool to a powerful production system. Essentially, it allows users to leverage MPI Stylus Pro as a massive report-generating system, for generating web site support material, as an engine for analytical database feeds, or other uses.

StylusScript™

The StylusScript language is the core of scripting in MPI Stylus Pro. It is a very simple language, and most statements represent actions which may be performed manually by users themselves, such as adding one or more managers to the design tree. By combining these actions in sequence and executing them simultaneously, MPI Stylus Pro can act as a batch processing machine, performing complex and extensive tasks without human intervention.

In simple cases, scripts may be written by the user and executed inside a study in very little time. This is often used to simplify repetitive tasks in approved, proofed studies – for example, design tree population. In more complex cases, StylusScript can be generated by separate software modules. For example, user input in proprietary databases could generate script that is then passed on to MPI Stylus Pro for execution.

Script Tab

Scripts in MPI Stylus Pro will be run out of the Script tab, which may be reached through the Study node on the design tree. The script tab allows you to enter and edit your script, as well as to choose to run it manually by using the "Run script" button or to have it run when you open the study by using the "Run on startup" button.

Integrator and Scripts

MPI Integrator users should keep a few things in mind when working with studies that contain scripts. Integrator contains a variety of options to control whether or not scripts in underlying studies will be run on startup or will be suppressed and run only on instruction from the user. For complete information, please see the chapter on MPI Integrator.

Troubleshooting Automation & Scripting

The following frequently asked questions (FAQ) refer to basic macro situations and should not be considered comprehensive. Users are encouraged to refer to MPI's forum and the existing reference documentation on macros and scripts for more information on these features. In addition, users may reference our FAQ on our web site at http://www.markovprocesses.com.

Q: I am trying to use a macro, but instead of seeing my output I am seeing the macro text itself. For example, instead of seeing "Fidelity Contrafund" I am seeing @MyStudy={}.
A: The macro is either not properly defined or is entered incorrectly. Please make sure that the format for the defined macro follows this pattern: @MacroName={MacroContent} and that the format for the macro used in your text is @MacroName{}.

Q: I would like to find out if a macro already exists to perform a function. Is there a way to find out what macros exist?
A: Yes. Please refer to the macroref.pdf file located in your Stylus/docs folder. This file may also be downloaded from the Support-> Materials area of our web site.

Q: I would like to find out more about scripts in MPI Stylus Pro. Do I have the advanced automation package? How can I determine if I have it? How can I get it?
A: Please go to Help-> About in your main MPI Stylus Pro menu. If the word "Automation" appears in the Packages section, your firm subscribes to this package. If you are unsure, please contact your key user to find out if you have the advanced automation package. For users who do not currently subscribe to the advanced automation package, MPI will be able to refer you to your MPI sales associate.

Chapter 11

Helpful Stylus Tools

Overview

This chapter covers additional utilities which may be helpful to MPI Stylus Pro users. For more information, please contact MPI.

Chapter 11

Helpful Stylus Tools

MPI Stylus Pro has several additional utilities available to assist users in performing functions related to data acquisition and updating, and batch processing/publishing. In some cases, these utilities may be available only as part of an advanced package, such as Automation. The most important tools are presented here along with a brief description on their function. More information may be found on our web site at http://www.markovprocesses.com, or directly through MPI.

MPI Updater

The MPI Updater is a utility that allows users to efficiently run their periodical updates to data streams (such as the MPI Basic Indices package, or 3rd-party databases.) It may be accessed in MPI Stylus Pro through the Tools-> MPI Updater option.

Detailed information is available in the Database Updates User Guide, available from MPI via our web site.

MPI Publisher

MPI Publisher is a part of the Advanced Automation package and allows for batch processing of studies using the MPI Stylus Pro reporting features. This feature will be especially helpful to users with high volume publishing demands. A reference guide for MPI Publisher is available on our web site in the Support -> Materials section.

For more information about getting MPI Publisher, please contact us at support@markovprocesses.com.

MPI PDF Merge Utility

MPI PDF Merge Utility is a part of the Advanced Automation package and allows the user to quickly merge multiple PDF documents generated by MPI Stylus Pro (or from other sources) into a single, larger PDF document. This allows for ease in creating institutional-wide books and combining reports for different purposes, while maintaining the flexibility to produce PDF documents for single studies, asset classes, etc. Reference guides for the MPI PDF merge utility are available on our web site in the Support -> Materials section.

For more information about getting the MPI PDF merge utility, please contact us at support@markovprocesses.com.

MPI Stylus Utilities

From time to time, MPI may release additional utilities specific to a particular data vendor, study or report type, or formatting issue. These utilities affect only a small percentage of MPI Stylus Pro users, and support for these utilities is available through reference documents issued at the time of their creation, or directly through MPI. If you are a client using an additional utility and require assistance, please contact us at support@markovprocesses.com.

Chapter 12

MPI Learning Program Resources

Overview

MPI has a variety of learning program resources available to assist users in getting the most from MPI Stylus Pro, including our Help Menu, web page and user training options.

Chapter 12

MPI Learning Program Resources

MPI has a variety of learning program resources available to assist users in getting the most from MPI Stylus Pro. For more information on any of these resources, please see our web site at http://www.markovprocesses.com, or contact us at support@markovprocesses.com. You will need your user name and password to access these materials.

MPI Stylus Pro Help Menu

MPI Stylus Pro's Help Menu may be accessed directly through the application using Help-> Topics. The Help Menu contains much of the information present in this manual, and provides users with a fast and convenient way of looking up information while using MPI Stylus Pro. Please note that in many cases, additional information on Advanced packages, formula calculations, etc., may be available in the Support area of our web site. For more information, please see the "MPI Support Materials" section below.

Help Center

The Help Center, accessible via the Home Module, contains quick access points to our various Support channel options, as well as direct links to some of our most commonly requested documents. In addition, MPI produces ongoing support materials for all MPI products and makes them available in the Help Center/Support/Training sections of our web page at http://www.markovprocesses.com.

Highlights include:

- MPI User Forums (more information below)
- Database updates and release schedules
- Back issues of MPI's corporate newsletter, *The Pilot*
- MPI Stylus Pro templates
- Presentations and materials from MPI conferences and seminars
- Advanced package documentation
- Case studies

MPI User Forums

MPI's forums provide users with an excellent reference for how other financial professionals use MPI Stylus Pro, as well as with opportunities to get quick answers from MPI support specialists. There is a Wish List forum for sharing product suggestions directly with MPI developers, and all forums are fully searchable, which means that users can often find the answer to their question right away without having to submit their question.

Please visit the MPI forums at:

http://www.markovprocesses.com/phorum/index.php

You will need your MPI user name and password to log in.

Chapter 13

MPI Configurator – Configuring MPI Stylus Pro

Overview

In this section, you can find all the information you need to configure MPI Stylus using the Configurator module. This will allow you to adjust global application settings and arrange to bring new database sources into Stylus.

Chapter 13

MPI Configurator – Configuring MPI Stylus Pro

MPI Configurator is a special module in MPI Stylus Pro that allows users to add, edit or remove elements that affect the application on a system-wide level, including databases. Whereas other modules in the application are used for research, reporting and/or organization, MPI Configurator lets you:

- Maintain or link to new databases containing portfolio returns, indices, style maps, peer groups, completed studies, etc.
- Specify default values for new studies in other modules.
- Define various settings and options that affect MPI Stylus Pro's functionality, features and appearance.
- Create global macros. This will be covered more extensively in Chapter 9 (Introduction to Automation & Scripting.)

Accessing MPI Configurator

To access MPI Configurator, click on File-> Configure in your main MPI Stylus Pro menu.
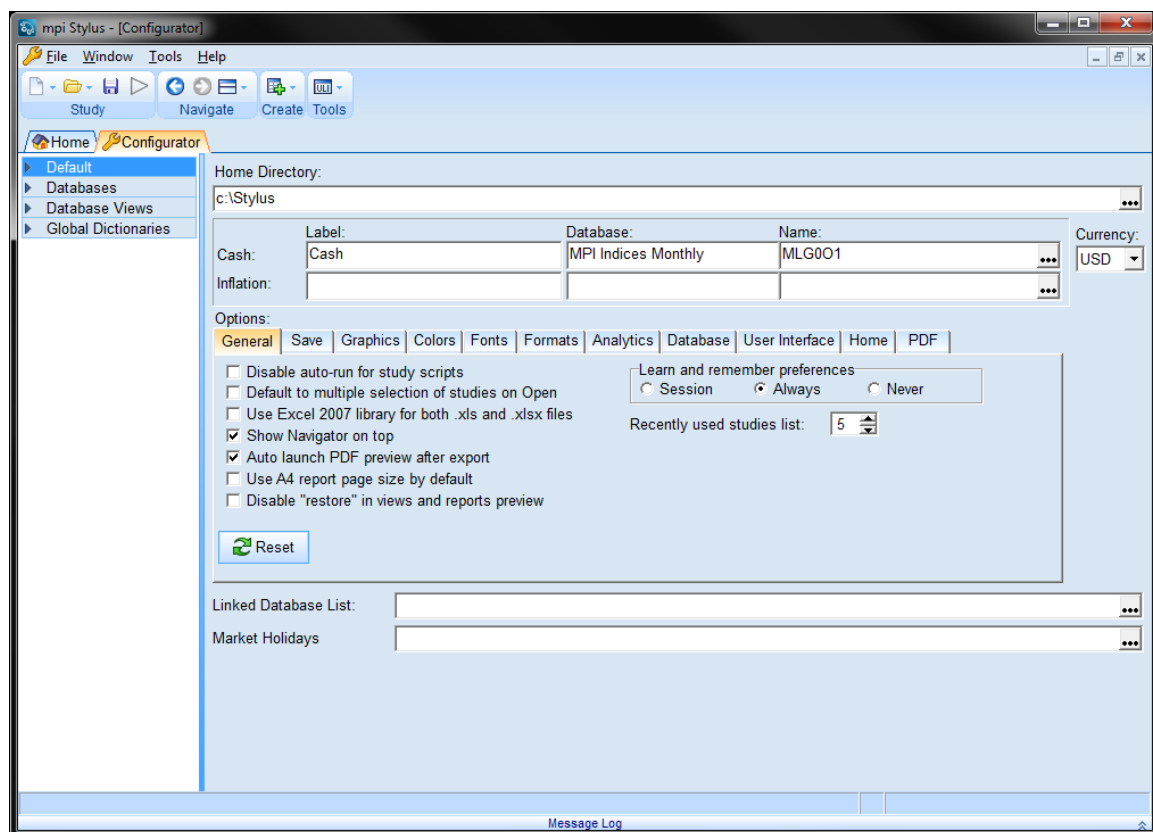
Figure 147

Despite the obvious differences between Configurator and other MPI Stylus Pro modules, the first thing you may notice when opening Configurator is that its basic setup is the same as all modules, including the presence of the design tree and data pane. This helps Stylus users comfortably navigate Configurator as they would any other module.

Configurator Design Tree

MPI Configurator's design tree contains nodes specific to its special functions within the application. It contains only two nodes: Default and Databases.

Default Node

The Default node controls a variety of global settings that may be of interest to MPI Stylus Pro users, as well as specific sub-sections on palettes and global macros. Most users will never have to change the default settings in this node.

Home Directory

The home directory allows you to generalize path descriptions in MPI Stylus Pro by defining the locations of databases and folders relative to a central (home) location. This is typically the folder on your computer or network where MPI Stylus Pro is installed. To use this relative reference, you would simply enter the <home> prefix when entering a new database location.

If the home directory field is blank, Stylus is considering the <home> folder to be the folder from the application is being run.

If you specify a different home directory folder, MPI Stylus Pro uses that folder to find all databases using the <home> designation in their location path. This allows you to change the home directory folder and the location of all databases using this relative feature.

It should be noted that the absolute path name must be used when referencing any database not located in the home directory.

To specify a new home directory folder:

1. In MPI Configurator, click on the Default node on the design tree.
2. Click on the ellipsis button (…) at the end of the Home Directory field to open the "Browse for Folder" tool.
3. Locate the folder you wish to specify as your new home directory.
4. Click on the folder and then click "OK."
5. The specified path should appear in the "Home Directory" field and is now your <home> directory.

Cash

This section allows you to specify the default cash proxy for all MPI Stylus Pro studies you create. You may change the label, database location, index and currency of your cash proxy in this section.

The default cash proxy in MPI Stylus Pro is the 3-month T-bill Total Return Index; however, you may change this to any index or return stream available to you in MPI Stylus Pro. Please note that Cash Proxy may also be changed manually in a given study, and that a study-level setting for cash will overrule the global setting; therefore, never assume your global cash proxy is the proxy used in a given study.

To change a cash label:

1. Delete the text in the "Label" field. The default text in this field is "Cash."
2. Type in the word(s) you would like to appear in all MPI Stylus Pro studies, wherever the cash proxy is used.
3. Save your Configurator settings.

To change the database and/or index set for cash:

1. Click on the ellipsis button (…) at the end of the "Name" field for Cash to open the browse feature.
2. The browse feature will open in the database where the currently specified cash proxy is located (the default will be the US Fixed database). To select a different fund in this database, skip to step 4. To switch to a different database, use the ellipsis button (…) located next to the database field in the upper-right hand section of the browse feature.
3. Scroll to the appropriate database name and select it with your mouse. Click the green checkmark in the upper right-hand corner of the browse feature. To cancel without changing databases, click the red "X" button.
4. Once you are in the appropriate database, use your mouse to select the index you wish to use as your cash proxy. You may use the standard MPI Stylus Pro search and sort features to assist you with finding the correct index.
5. Select the index with your mouse and click the green checkmark in the upper right-hand corner of your browse menu.
6. The new index/database should now appear in the Cash fields.

Currency

The default currency in MPI Stylus Pro is the United States Dollar. To change a currency, please use the drop-down menu under "Currency" to scroll to the appropriate world currency. Please note that currency may also be specified in a specific study in the Parameters node, and that study-specific currencies overrule global currency settings.

All major global currencies are available in MPI Stylus Pro.

Inflation

This section allows you to specify the default inflation tracking index for all MPI Allocator studies. You may change the label, database location, and name of this index in this section. This may also be done on a study-level setting in MPI Allocator.

To change the Inflation index:

1. Click on the ellipsis button (…) at the end of the "Name" field for Inflation to open the browse feature.
2. The browse feature will open in whichever database holds the currently specified inflation index (the default may be no index, in which case this section would appear blank). To select a different fund in this database, skip to step 4. To switch to a different database, use the ellipsis button (…) located next to the database field in the upper-right hand section of the browse feature.
3. Scroll to the appropriate database name and select it with your mouse. Click the green checkmark in the upper right-hand corner of the browse feature. To cancel without changing databases, click the red "X" button.

4. Once you are in the appropriate database, use your mouse to select the index you wish to use as your inflation index. You may use the standard MPI Stylus Pro search and sort features to assist you with finding the correct index.
5. Select the index with your mouse and click the green checkmark in the upper right-hand corner of your browse menu.
6. The new index/database should now appear in the Inflation fields.

OPTIONS TABS

The Options tabs contain a variety of default settings that you may adjust as necessary to fit specific global needs. In general, you will not need to change these settings from their preset defaults. In addition, note that changes in settings will not go into effect until you have saved your Configurator settings.

Reset Button

You may use the Reset button at any time to restore the settings in any Options tab to their defaults. This will only affect the active Options tab and will not affect settings in other tabs. Not all tabs will have the Reset button available.

GENERAL TAB

Disable study scripts

This feature automatically disables all start-up scripts in your installation of MPI Stylus Pro. This overrules the "Run on Startup" feature that may be assigned in a particular study.

Default to multiple selection of studies on Open

This feature allows you to specify that the "Select Study" menu that is used to open studies in any module (File -> Open…) defaults to the "Allow multiple selection" mode. This allows you to specify more than one study to be opened at the same time.

Use Excel 2007 Library for both .xls and .xlsx files
This option allows the user to specify that the Excel 2007 library is to be used when these file types are referenced (including the .xls file type, which is pre-2007).

Show Navigator on Top
This option allows the user to move the Navigator pane from its default position (left side) to the top, giving the program more of a 'tabbed' feeling that is familiar to users of some web browsers.

Use A4 report page size by default
This option allows the A4 paper size to be the default option for report-making. This is helpful to European clients and others who use an A4 paper standard.

Disable "restore" in views and reports preview
This option disables the recording of report design changes needed to support the undo functionality. This may lead to performance improvements for some users with networked installations or mirrored local disks.

Learn and Remember Preferences

This control allows you to specify persistence for certain preferences throughout the application. This includes many small details such as the size and position of popup windows, column widths in the Portfolio Editor, Database Selection field, etc.

There are three options for Learn and Remember:

Session
This option will learn and remember your preferences for your current session of MPI Stylus Pro only. All preferences will be lost when you close the application and defaults will be in place the next time MPI Stylus Pro is opened.

Always
This option allows you to keep your preferences in place even when MPI Stylus Pro is closed and reopened at a later time.

Never
This option always reverts to defaults and does not "remember" your preferences.

Recently used studies list

This feature allows you to control the number of recently used studies that appear in the main MPI Stylus Pro file menu below "Exit." This feature allows you to access studies you use often without having to locate them repeatedly in the Open menu. The maximum number of studies is 20.

SAVE TAB

The Save tab contains a number of useful controls that allow user control over auto-save and work recovery options. It is important that users understand the scope of each control in order to ensure no issues arise from lost work.

Automatically save open studies every X minutes
This feature authorizes MPI Stylus Pro to automatically save all open studies at a user-defined time interval. You may specify any increment between 1 and 600 minutes. The auto save option creates a backup version of the study with a modified extension that is saved at a given period, with the file deleted when the study is explicitly saved by the user.

Automatically save Recovery file every X minutes
This feature authorizes MPI Stylus Pro to automatically save the recovery file every X minutes.

On save, maintain study revisions for recovery
When this option is checked, MPI Stylus Pro will save recovery versions of a study on any study save. Checking this option will enable the two sub-options listed below, detailing how many revisions to keep and for how many days a revision should be kept. It should be noted that when both of the features below are checked/activated, they will both be observed; in effect, this keeps the most possible number of revisions so long as they meet one or the two criteria.

> *Keep only the last X revisions*
> This option allows the user to decide how many revision copies of a study should be maintained. The user may specify a number between 1 and 600. When a revision is no longer one of the X newest, it will be deleted automatically.

> *Keep only revisions for the last X days*
> This option allows the user to decide for how many days of revisions may be kept. For example, if the user specifies 10 days, then revisions that become 11 days old will be deleted.

Recovery storage

Allows the user to specify the location where recovery files are stored. Useful when the default location is a network location that incurs speed penalties.

Temporary file location
Similar to above, but for temporary files.

GRAPHICS TAB

Avoid using hatched brush when printing
This setting allows you to avoid having elements such as benchmarks print in hatched-line form. These may continue to appear in this form in MPI Stylus Pro, but will not be hatched upon printing. This may be important for users who wish to print to PDF, as that format does not support hatched printing well.

Avoid using hatched brush in metafiles
This setting removed the hatched lines from bar charts when a report is exported to a metafile format, including .wmf, .emf or .ppt. These lines will continue to appear in MPI Stylus Pro, but will not be hatched upon export.

Avoid using dashed line
This setting changes the line used for benchmarks on line charts from a dashed line to a solid line.

Force frame in charts when exporting from views
This setting forces a border to appear on all charts when they are exported from views.

Do not use advanced styles defined in charts and objects
This setting allows the user to disable the use of gradients, transparency and other advanced graphics introduced in version 11.0 that may be incompatible with the printing or exporting environment. This overrides settings used in studies.

Monitor image in cache via time-stamp
This setting is enabled by default to improve performance of image caching and should be disabled only in rare circumstances.

Axis Margin %
This setting allows you to specify the default margin percentage that will be enacted in charts when "Margin" is selected in the Axis tab of the Attributes Editor for the given chart.

COLORS TAB

Several settings in this editor may be set on a chart-by-chart basis in the Attributes Editor and/or Color & Symbol tab of a given study; however, making these changes in Configurator allows you to set global appearance settings without having to indicate them every time you create a new study.

Peer Group

This section allows you to set several peer-group specific settings, including chart type, bar width and quartile settings. All of these settings may be done in a given study on the specific chart level through the Attributes Editor.

Bar vs. Area

This setting allows you to specify whether your charts using peer group statistics, such as distribution, appear in the default as a Bar or an Area chart.

Bar Width Setting
This feature allows you to specify the relative default width of bar charts. The default setting of 100% means that all bars in a chart will be touching one another edge-to-edge.

Outline
This setting controls whether or not the bars/boxes for peer groups in a chart will have outlines around them.

Scatter
This allows you to set a default color and symbol for peer groups in scatter charts.

To change a default color or symbol:

1. Click on the current color or symbol selection. This will bring up a scroll menu with all available colors or symbols.
2. Use your mouse to scroll through the available colors or symbols. When you find the color or symbol you would like to use as your default, click it with your mouse.
3. The new color or symbol should now appear as the current color selection.

Quartile Color Picker
This feature allows you to specify on a global level the four default colors in which you would like quartile peer bands to appear. The default settings are two green and two pink colors. You may also choose to overrule your default color settings on a chart-by-chart or a study-by-study basis.

Color Pickers – Manager through Asset Blends
This feature allows you to specify particular colors to be associated by default with specific indices or various other chart elements. Colors may be assigned on a more detailed level in a given study through the Color & Symbol tab. The default setting for most colors will be "Automatic", which bases a color on its relationship to the MPI Stylus Pro color palette and to other color elements. When certain colors are changed (i.e., default Manager color), all automatic color settings will adjust as well. To override this, simply choose a default color for all options.

To assign a particular color to a given item:

1. Click on the appropriate dropdown menu. This will bring up the scrolling menu of available colors.
2. Using your mouse, scroll to the desired color and click it once.
3. This color should now be your default color setting.
4. You must save Configurator before your changes will be reflected.

Cell & Area Options

These tools allow you to specify the default background color for a chart cell or area. The "cell" is the region that may be occupied by data points on a chart (i.e., the area inside the axes in a bar chart.) The area is the entire area of the chart including the region outside the cell.

Please note the following images illustrating the difference between cell and area. In the Cell image, the cell has been colored green – notice that only the active area of the chart is affected (the part where data points may be seen.)

In the second image, the cell has been changed back to clear and the area has been colored green. Notice how the entire chart is affected, including the cell region (unless it is set to a different color, in which case it would appear distinctly.)
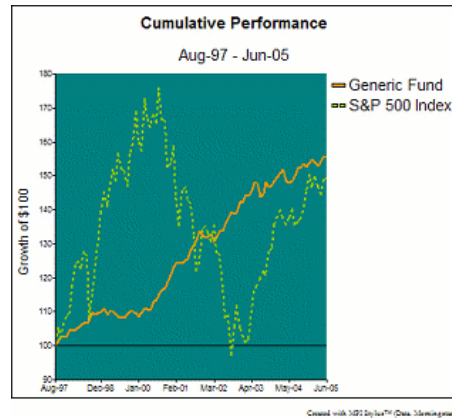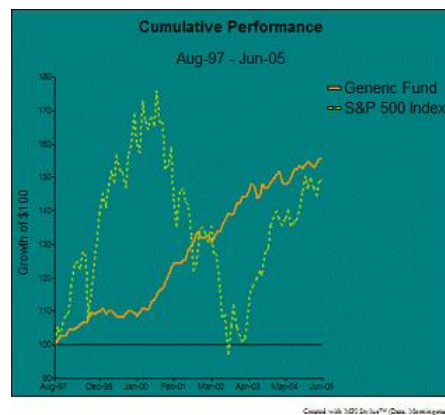
Cell

Figure 148

Area

Figure 149

The default for both cell and area colors is "clr" for clear, which defaults to the Stylus background color of gray for views and white for reports.

To change cell or area color:

1. Click on the appropriate dropdown menu. This will bring up the scrolling menu of available colors.
2. Using your mouse, scroll to the desired color and click it once.
3. This color should now be your default setting.
4. You must save Configurator before your changes will be reflected.

You may also choose to bring in a particular image to be the background of your cell or area. The following image types are supported in MPI Stylus Pro:

File Extension	Image Type
.bmp	Bitmap file
.gif	GIF file
.wmf	Metafile
.emf	Metafile
.jpg	JPEG
.png	PNG
.xls	Picture in Microsoft Excel

To import an image as a cell or area background, please see "Stationary Objects" in Chapter 5 (Views and Reports) for information on using the "Select Image" tool.

Path
This feature controls lines on Monte Carlo simulations and affects only MPI Allocator studies.

Prospector
This special set of tools allows for specific color selection for certain traits related only to Prospector studies.

Background
Sets the background color for charts in Output.

Text
Sets the default text color for chart labels, axes, etc.

Symbol
Sets the default symbol color and shape for charts. Note that shape only applies to scatter charts.

FONTS TAB

The fonts tab allows you to specify the default font type and size for charts and tables throughout MPI Stylus Pro, as well as set the option to embed fonts when exporting PDFs from within MPI Stylus Pro.

Use in Charts/Use in Tables
You may specify the default font for a chart or a table in MPI Stylus Pro by selecting a font from the dropdown list. MPI strongly recommends that users select clear, traditional and well-established fonts such as the Arial class of fonts in order to ensure clear reports that can easily be shared with other users.

Min/Max
The Min/Max controls allow the user to set a font size range for text in charts and tables. This allows the program to automatically adjust text size within a given range whenever other changes are made to a chart or table. MPI Stylus Pro's reporting features are designed around a relative scaling system that allows the user to change the size of one item in a chart and have the remaining elements of the chart adjust to be in harmonic sizes with the changing element. This helps to improve general consistency throughout reports.

Use the "Min" setting to indicate the minimum acceptable font size, and use the "Max" setting to indicate the maximum acceptable font size.
Use in script editors
This control allows you to specify the default font to use in macro and script editors in the application.

Embed fonts when using MPI PDF engine

This option allows you to automatically embed all fonts in a report into a PDF file whenever you export it from MPI Stylus. This ensures that other users can view a report in the fonts you intend, even if the other users do not have that font installed on their computers. Please note that embedding one or more fonts in a PDF file may result in a dramatic increase in overall file size because the files associated with that font on your computer are included in the PDF file size.

It is important to note that this option only works for MPI's PDF writer within MPI Stylus Pro; for Adobe or other PDF drivers, their own settings should be used.

FORMATS TAB

The formats tab regulates global settings for how dates are displayed for data periods in return streams.

Dates for daily and weekly data
The same control governs the default date setting for both daily and weekly data.

Dates for monthly data
This control governs the default date setting for monthly data.

Dates for quarterly data
This control governs the default date setting for quarterly data.

ANALYTICS TAB

This tab governs several important factors for global analysis controls. Most of these settings may also be changed in individual studies, and generally these defaults in Configurator do not need to be changed.

Min Observations for Standard Deviation
This function allows the user to set the minimum number of data points required to calculate standard deviation. The default setting (and minimum) is 3 observations and the maximum is 50 observations (as a minimum for calculation.) The user may either manually type in the minimum number of observations, or may use the scroll feature to select a number.

Initial investment value for accumulation
This setting allows the user to specify the initial investment value for a portfolio or fund and is used in cumulative growth/wealth-related charts. MPI Stylus Pro automatically appends the dollar sign to any number entered into this field. Positive or negative dollar amounts may be used in this function.

Number of trading days in a year
This option allows the user to specify how many days in a year should be considered 'trading days'. Users may specify a number between 200 and 300.

Default location for computation logs
This allows you to set the appropriate folder destination for computation logs generated by the software.

Confidence Level
This setting allows the user to set the confidence interval for Performance Statistics. The default is 90%.

Min Rank Value

This setting affects all ranking options in MPI Stylus Pro and allows the user to specify if a ranking system begins at "0" or "1".

Peer group percentiles
This allows you to set the peer group percentile thresholds used in the software. By default, they are 5 25 50 75 95, but users may change these values as they see fit.

CFA Institute compliant Sharpe Ratio
The CFA Institute compliant Sharpe Ratio uses the manager's standard deviation in the denominator; the MPI Sharpe Ratio uses manager-cash standard deviation in the denominator.

Population Standard Deviation and Covariance
Standard Deviation is the square root of variance. Population variance takes the arithmetic average of the sum of the squared differences. Sample variance divides by (n-1) instead of *N* to produce an unbiased estimate of population variance.

Exclude the beginning partial period in aggregations with non-overlapping window
This option allows users to decide whether or not to exclude the beginning partial period data for aggregated calculations that use the non-overlapping window.

DATABASE TAB

The Database tab allows control over several database-related features.

Performance Optimization

Use Cache for:
This feature specifically affects the Database analytic block, improving the speed with which Views/Reports featuring this block are loaded and populated. You must specify the number of records to cache and the expiration time (for how long they should remain cached.)

ASCII databases (studies, templates, maps…)

Use Cache:
This feature likewise allows for the use of caching, which can improve speed.

Preload on startup for up to X seconds
Allows you to control preloading time on program startup, which can likewise reduce loading times during use of areas of the application.

Do not maintain sort order for more than X studies/templates
For those who anticipate using very large numbers of studies/templates, this allows you to control how many are subject to using sort order. This can assist with performance in these cases.

Show returns in Portfolio View/Edit
This option allows the user to decide whether or not they wish to see underlying returns in the Portfolio Editor tool. Users may decide to do this Always (default), Never or only when editing an existing Portfolio.

Force "Delayed Open" for all databases
This option allows the user to specify that all databases used in an MPI Stylus Pro installation use the 'delayed open' feature. When this is checked, no database will be 'opened' unless a user explicitly attempts to access it.

Use default database views when available
This option specifies that when a default database view is available for a database, it should always be used. Users may switch explicitly to another view, if available.

Disable dynamic series adjustments
This feature allows administrators to disable user privileges in adjusting dynamic series. This is helpful in cases where it is crucial to ensure that individual users are not making changes to return series.

Close all databases daily at
This feature allows administrators of network installations to schedule automatic updates without them being blocked by open instances of MPI Stylus Pro. The specific action performed by this tool is to put all databases in the same state as they would be in if 'Delated open' were checked and the database had not yet been accessed by the user in the current session. Thus, users are not denied access to their databases *per se*; instead, a database would need to be explicitly opened to be active. This action takes place on a daily basis and is governed by the time specified in Configurator. All installations sharing a given configuration file will be affected, and the time specified will be based on the time of the PC clock on which MPI Stylus Pro's .exe file is running. Please note that a user trying to access a database during an update would experience an error.

Fixed (non-scrollable) columns in selection pane
This allows you to decide how many columns (beginning with the left-most) remain fixed in place when you scroll through columns in a selection pane (such as in the Data Pane of the Managers node

USER INTERFACE

This tab was formerly known as the "Level" tab and is an organizational tab used by MPI Stylus Pro and certain power users supporting large user groups.

Level
This may be used to specify the user level for an instance of MPI Stylus Pro. The four levels are "Experimental," "Power User," "Lite" and "Template designer/Stylus.WEB." Each level may have certain features enabled/disabled as a result of its nature. Virtually all MPI Stylus Pro users will have no reason to ever use or change these settings. Please note that level changes will not be reflected until after MPI Stylus Pro has been closed and restarted.

Gallery database location
Through this setting the user can locate an alternative gallery database. Not commonly used.

Chart/Table Designer: use dropdown when more than X fields in a section
This option allows the user to decide at what point a given number of fields in a Chart/Table analytic block should be expressed as a dropdown list. The available range is from 2-999.

Mouse-activated drag-drop, move and resize in report preview
This option allows the user to enable mouse-based adjustments in the Report preview space.

Use extra columns for assets in Portfolio Editor

This allows the user to decide whether extra columns will appear for assets in the Portfolio Editor. The 'Edit' button supplied allows the user to add or review columns.

Use timestamp in log messages
This allows the user to decide whether log messages will carry timestamps.

HOME TAB

Show Home module on startup
This option allows the user to turn on/off the Home module for when they initially open an instance of MPI Stylus Pro. The module may separately be opened or closed while using the application, via the main menu.

Show "Online Resources" page
This feature allows the user to view some information from the MPI website directly in the module. While this may be useful to some, we generally recommend to instead visit the website directly in order to avail yourself of the full suite of resources there. When visiting the website, your user name and password will be your case-sensitive Stylus Pro serial number, viewable through Help-> About in the software menu.

Do not use the Database Update Monitor
This allows you to opt out of using the Home screen monitor of database update information. This might be useful if updates are pushed to you automatically by your firm, meaning that you do not need to monitor them yourself.

Do not use MPI Portal connection and panel
This allows you to opt out of viewing the MPI Portal panel, and its connection to news feed updates.

Default startup Home page:
This allows user-level control of which page of the Home module is shown on startup. For example, a user may decide that it is more useful for the 'Recent' studies pane to show, than for the Welcome screen.

Thumbnail size
This allows the user to control thumbnail sizes for reports, and to thus have more or less information on their screen as fits their preferences.

EXPORT TAB (Formerly the PDF Tab)

Automatically select Standard or Alternative (XPS) PDF engine
In Stylus Pro 11.0, a second PDF creation mechanism was created to support the advanced graphics capabilities, while leaving the legacy engine in place for full backwards compatibility. Through this setting, the user can instruct Stylus to choose the appropriate engine based on attributes of the study, such that older studies will use the legacy export mechanism.

When this feature is checked, the 'Use the following PDF engine on export' option is grayed out.

Automatically delete intermediary XPS file when Alternative (XPS) PDF engine is used
Should the user not choose to let Stylus choose the appropriate engine, one can use this setting

Use the following PDF engine on export
Should the user not choose to let Stylus choose the appropriate engine, one can use this setting to choose the method for creating PDF files. This feature is disabled when the 'Automatically select Standard or Alternative (XPS) PDF engine' feature is enabled.

Auto launch PDF preview after export
This feature has been added for the convenience of users who wish to see their final PDF output automatically once it has been created.

Show individual ungroup options for PowerPoint
This feature allows the user to view individual ungrouping options for exporting to PowerPoint.

ULI Tab

This tab controls features relevant to the User Level Interface (ULI) tool.

Default location for jobs, queues, reports
These folder settings provide users with the ability to customize the locations of their User Level Interface inputs and outputs.

Prevent running reports with warnings
This option allows the user to specify that ULI reports that generate warnings cannot be run; thus, the user's attention is brought to the matter.

LINKED DATABASE LIST

The linked database list allows you to build and maintain a common set of Stylus databases for all of your Stylus users. Without such an option, one user would have to enter identical database entries on all local (desktop) user configuration files (Stylus.ini.) Though this is possible to do, it is an inefficient solution because any change to these settings would have to be manually propagated to all users. The linked database list saves you this trouble.

Before you can create a set of databases for all Stylus users, you must create a new .ini file that contains the individual database information.

To create a new .ini file for selection in the Linked Database List field:

1. Print this topic so that you have the instructions available when you create the .ini file.
2. If MPI Stylus Pro is running, please close it.
3. Using Windows Explorer, go to your Stylus folder.
4. Make a copy of the existing stylus.ini file and name it something else, such as "common.ini."
5. In Stylus Shortcut Properties, temporarily point to this new .ini file.
6. Launch MPI Stylus Pro and go to Configurator.
7. In Configurator, create access to the databases that you would like users to have in common. Make sure all linked paths are available to all users on the network.
8. Once these links are built, save Configurator and exit MPI Stylus Pro. You have now created a common .ini file.
9. In Stylus Shortcut Properties, replace the common.ini file with your original .ini file (Stylus.ini.)
10. All users should now select the common.ini file in the Linked Database List field.

To view the list of linked databases, highlight the Linked Databases node on the Configurator design tree.

Please note that database IDs for linked databases must be unique; if some databases in the linked list have conflicting IDs, they will be shown in gray and ignored by MPI Stylus Pro. For example, in the event of a conflict such as the same database ID used in the linked .INI file and in the user's .INI file, the user's file will take precedence.

MPI Stylus extracts only database information from the linked .ini file and ignores all other configuration information.

MARKET HOLIDAYS

MPI provides a file (holidays.MPI in your Stylus root directory) with market holidays automatically programmed in. If you have a need to change these for any reason, please use the following instructions; however, MPI strongly recommends not making adjustments to this file, as it is updated automatically through our program downloads.

The .MPI file is a text file with a different extension, and may be opened in any basic text editing software, such as Notepad.

The file begins with the following lines:

ADD
200

These should not be changed for any reason.

To add a new market closure date:

1. Open the file in a text editor.
2. Enter the new date for the holiday, and the holiday name, in the following format:

    YYYYMMDD   // Event

3. Save the file, preserving the .MPI extension.

Palettes

The Palettes section regulates the global color and symbol palettes in MPI Stylus Pro and allows you to import new colors (using RGB codes) and new shapes (using metafiles). You may also reorder the MPI Stylus Pro color and symbol palettes as you see fit, returning to default settings at any time.

Standard Color and Symbol Palettes

MPI Stylus Pro comes with standard (default) color and symbol palettes that cannot be changed by users. Any changes to these palettes will be in the form of a separate "custom" palette, and the standard palette may be used again at any time by switching back to the standard settings.

Custom Color and Symbol Palettes

Any palette changes made in MPI Configurator will result in the use of a custom palette. This will include any case where a user enters a new color using the RGB code function.

To create a custom palette:

1. Select the Custom circle above the palette.
2. You can now add, delete, or move the order of colors or symbols in the palette. You may also switch back to the Standard palette at any time, and if you switch to Custom palette again thereafter, you will find your Custom palette will represent its last saved configuration.

COLORS in MPI STYLUS PRO

In order to provide meaningful, customizable reporting solutions to our clients, MPI Stylus Pro has been outfitted with a powerful color palette system that enables users to locate and use colors based on recognized systems, such as RGB codes. That said, in versions 8.1 and later, we also implemented a color order recognition system that is of great assistance in making correct color selections on the fly. This is done by giving each color in your color palette a unique number based on its order in the palette. In other words, the first color (black in our default palette) will have a unique number of zero, and each successive color will have a higher number based on its relative order. This allows you to quickly make use of these reference points in design; for example, knowing that you always wish to use color 54 for table headings. In cases where a Custom Palette is added, color numbers may change but used colors will not. For example, if a color is #10 in the Default palette, and you switch to a Custom Palette in which this color occurs in position #50, the same color will be used and the new number shown (as opposed to switching to whatever color is #10 in the new palette).

ADDING COLORS

There are two ways to add colors to MPI Stylus Pro's custom palette. You may either use the "Add" function, which opens a color browse utility, or you may use the RGB code entry function.

Add
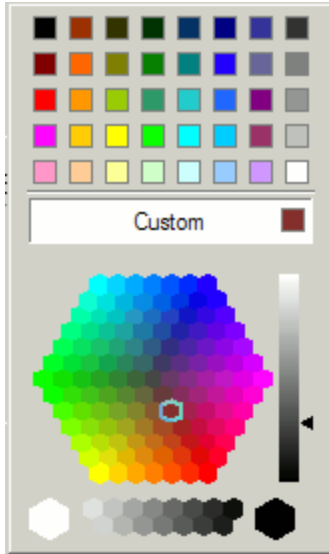
The "Add" button for colors opens a color picker utility that allows the user to browse through a whole range of colors based on tint or shade. There are several components to this tool, including a range of standard colors that may be selected immediately, a custom color setting that reflects the color selected in the color honeycomb, and the honeycomb tool itself.

To select a Custom color from the honeycomb tool:

1. Using your mouse, adjust the black arrow to the right of the vertical shade bar. This will cause all of the colors in the honeycomb tool to become darker or lighter, depending on how much black or white has been included.
2. Once the honeycomb reflects the appropriate tints and shades of the color you wish to select, you may click directly on that color in the honeycomb to select it. It will automatically be added to your custom palette.
3. You may also choose to select either pure white or black at the bottom of the screen, or select from various shades of gray between them.
4. In addition, you may also select from forty standard color squares across the top of the add utility.

RGB

In addition to using the color add function, users may also manually specify the RGB color code for a color they wish to use in MPI Stylus Pro. This is especially helpful when colors must exactly match corporate color schemes or other approved colors.

RGB (Red Green Blue) is an internationally recognized setting system combining incremental elements of the three primary colors to form any necessary new color. Values for each of the three colors may range from 0 (black) to 255 (white). Users may either adjust the RGB settings for colors already in their palette, or create new colors for adjustment.
To create a new color using RGB codes:

1. Locate the position on the color palette where you wish to create the new color. You may then add to that location either any new color (using the color add tool) or choose to adjust the color currently present at that location. For instructions on using the color add tool, please see above.
2. Once you have added or selected the color to change, click on it on your palette. Its current RGB color codes will be reflected in the RGB tool.

3. You may now either manually enter codes for red, green and blue, or you may scroll through each color to find the perfect shade. As you scroll, you will notice your selected color block on the palette incrementally adjust to the selected colors.
4. Once you have the correct color in your color block, save Configurator.

ADDING SYMBOLS

Add

Users have three options for adding symbols to their custom symbol palette. The user can:

- Add an image (metafile) as a symbol
- Add an empty space between symbols
- Add an existing symbol in a new location (as opposed to moving the existing symbol from its old location.)

To add an image as a symbol:

1. Click the Add button in the Symbols section and select "Custom…"
2. Use the Select Image browse tool to navigate to the appropriate metafile image and select it.
3. Click "OK" to import the symbol.

To add an empty space between symbols:

1. Click the Add button in the Symbols section and select <empty>
2. This will insert a blank space to the right of whichever symbol you have clicked on in the Custom palette.

To add an existing symbol one or more times:

1. Click the Add button in the Symbols section and select one of the available symbols. It will be added to the Custom palette.

Moving Colors & Symbols

Users may move color or symbol positions on their Custom palettes through the following steps:

1. Click on the color block or symbol you wish to move.
2. With your mouse button still held down, move your mouse to drag the color or symbol to a new location in the palette.
3. When you reach the desired location, release the mouse button and your color or symbol will appear in its correct spot.

Reset

The Reset button will restore your Custom palette to being an exact duplicate of the Standard palette, and you will lose any new colors or symbols you have created/imported, as well as any position changes you have made. Please do not hit the Reset button unless you are certain you wish to reset the colors or symbols, as MPI Stylus Pro will not ask for confirmation before resetting the palette to the default settings.

For this reason, it is recommended that the user temporarily switch back to the Standard palette when they require it, instead of resetting their Custom palette.

Monitor symbol image in cache via time-stamp
This control simply relates to enabling the time stamp monitoring for symbols defined as images in the Symbols palette. This relates to our internal image caching/storage, and is not applicable to most users; it is recommended to keep it off unless needed.

Global Macros

The global macros feature allows you to add custom macros that you would like to make automatically available to all MPI Stylus Pro studies. Please note that any standard pre-defined MPI Stylus Pro macros (such as @MNG{}) are already global macros by default and do not need to be specifically entered as global macros.

For complete information on creating and using global macros, please see Chapter 9 of this manual.

Databases Node

The databases node in the Configurator module is where all of your data sources for MPI Stylus Pro will be added, modified or deleted – *except for any portfolio or return series you create yourself in a specific MPI Stylus Pro module*. Those portfolios and series will be stored in MPI Stylus Pro folders/databases that come automatically configured with the application.

Simply creating a folder in your Stylus directory through Windows file management systems is not sufficient for brining information into MPI Stylus Pro; it must be configured correctly in order for the application to be able to accurately read the information.

Most of the database headings under the Databases nodes are defaults that come automatically configured with MPI Stylus Pro and should not be changed without reason. This includes all of the databases that are study or template-based. Please see the table below for recommendations on Database modifications.

Database Node Section	Modifications Recommended?	Description
Style Studies	No	Stylus folder
Style Templates	No	Stylus folder
Prospector Studies	No	Stylus folder
Prospector Templates	No	Stylus folder
Integrator Studies	No	Stylus folder
Integrator Templates	No	Stylus folder
Allocator Studies	No	Stylus folder
Allocator Templates	No	Stylus folder
Publisher Studies	No	Stylus folder
Manager Series	Yes	3rd Party Databases
Index Series	Yes	Stylus-included series
Portfolios	No	Stylus folder
Style Maps	No	Stylus folder
Peer Group Sets	No	Stylus folder
Currencies	No	Stylus folder

Adding, Changing and Deleting Databases

For the most part, making additions, changes and deletions to this section is done through the same manner. Therefore, this will be covered first and then each particular sub-section will be examined with any specific instructions on using unique features.

Adding a New Database/Database Folder

To add a new database or database folder in MPI Stylus:

1. Click on the relevant Sub-directory (i.e., Integrator Templates or Manager Series) on the Configurator Design Tree under the "Databases" node. If you do not see any sub-directories under Configurator, you may need to expand that section by clicking the plus sign next to the word "Databases."
2. In the data pane, click the "Add" button. This will bring up a numerically named new database heading in both the data pane, and on the Configurator design tree under the appropriate sub-directory heading (you may have to expand the sub-directory to see it.)
3. Click on the new numeric database name under the sub-directory on the design tree. The data pane will change to show you the available design and configuration elements for this database/database folder.
4. The ID code should be a unique case-sensitive letter/number combination of 3 characters that uniquely identifies the database. Most users do not need to remember these IDs, but in some cases they might be required (for example, to refer to a database in a macro or the SQL block of a table designer.) The name and description you may fill out as needed in order to clarify the content of this database/database folder. Please note that the name will appear on the Configurator design tree and be used by MPI Stylus to identify the database/folder in all MPI Stylus modules.
5. To map your database file/folder into MPI Stylus, click the ellipse button at the end of the "Location" line to bring up a file browse tool. Locate the appropriate file or folder on your computer or network, and then click "OK."
6. You do not need to make changes to the default mask setting.
7. Save Configurator.

Editing an Existing Database/Folder

MPI does not recommend making changes of any kind to folders that have a "No" value for "Changes Recommended?" in the table above. However, to edit the basic information for any of the folders or databases associated with MPI Stylus:

1. Click on the database name under the appropriate Sub-section on the Configurator design tree.
2. Simply delete the content of any field and change it accordingly.
3. To change the location of a folder/database, use the "Location" ellipse button to map to the new location on your hard drive or network.
4. Save Configurator.

Deleting an Existing Database/Folder

Deleting any database/database folder that came with MPI Stylus is highly discouraged, and may result in loss of data & software malfunction. In addition, please note that deleting said folder in Configurator does NOT delete this folder or any of its files on your hard drive or network. This deletion should be done separately outside of MPI Stylus using Windows Explorer or another file management program.

1. Click on the appropriate Sub-section that contains the database/folder you wish to delete from MPI Stylus Configurator.
2. In the data pane, click on the name of the database/folder to select it.
3. Press the "Delete button" at the top of the data pane.
4. Configurator will ask you to verify that you wish to make this deletion. Click "Yes."

Database Node Subsections

Style Studies
The Style Studies sub-section links MPI Stylus to three specific folders in your Stylus directory where you are likely to store studies you create or work with in MPI Stylus. The sub-section names and their corresponding folders in your Stylus director in Windows are as follows:

Sub-section in Configurator	Links to Folder in Stylus directory
StyleAccounts	Study\sample
Daily Studies	Study\daily
My Studies	Personal\mystudy

Style Templates
The Style Templates sub-section links MPI Stylus to two specific folders in your Stylus directory where MPI Stylus templates are stored. The sub-section names and their corresponding folders in your Stylus director in Windows are as follows:

Sub-section in Configurator	Links to Folder in Stylus directory
Sample Templates	template\sample
Daily Templates	template\daily

Prospector Studies
The Prospector Studies sub-section links MPI Stylus to three specific folders in your Stylus directory where MPI Prospector studies are stored. The sub-section names and their corresponding folders in your Stylus director in Windows are as follows:

Sub-section in Configurator	Links to Folder in Stylus directory
Prosp Study	Pstudy
My Prosp Studies	Personal\mypstudy
EPS	Pstudy\e_pstudy

Prospector Templates
The Prospector Templates sub-section links MPI Stylus to one specific folder in your Stylus directory where MPI Prospector templates are stored. The sub-section names and their corresponding folders in your Stylus director in Windows are as follows:

Sub-section in Configurator	Links to Folder in Stylus directory
Prosp Templates	ptemplat

Integrator Studies
The Integrator Studies sub-section links MPI Stylus to two specific folders in your Stylus directory where MPI Integrator studies are stored. The sub-section names and their corresponding folders in your Stylus director in Windows are as follows:

Sub-section in Configurator	Links to Folder in Stylus directory
Integrator	Integrat\sample

My Integr Studies	Personal\myintegr

Integrator Templates

The Integrator Templates sub-section links MPI Stylus to one specific folder in your Stylus directory where MPI Integrator templates are stored. The sub-section names and their corresponding folders in your Stylus director in Windows are as follows:

Sub-section in Configurator	Links to Folder in Stylus directory
Integrator Templates	itemplat

Allocator Studies

The Allocator Studies sub-section links MPI Stylus to one specific folder in your Stylus directory where MPI Allocator Studies are stored. The sub-section names and their corresponding folders in your Stylus director in Windows are as follows:

Sub-section in Configurator	Links to Folder in Stylus directory
Allocator Studies	Allocate\sample

Allocator Templates

The Allocator Templates sub-section links MPI Stylus to one specific folder in your Stylus directory where MPI Allocator templates are stored. The sub-section names and their corresponding folders in your Stylus director in Windows are as follows:

Sub-section in Configurator	Links to Folder in Stylus directory
Allocator Templates	Atemplat\sample

Publisher Studies

The Publisher Studies sub-section does not come automatically setup in MPI Stylus, and is affiliated entirely with the MPI Publisher add-on available at additional cost to MPI Stylus users. Please refer to MPI's Publisher documentation for more information on this item. Users who do not have MPI Publisher do not need to worry about this sub-section, and it will have no effect on any of your MPI Stylus usage, studies, templates or exporting.

Manager Series

The Manager Series sub-section contains the configurations for any 3rd party databases to which you may subscribe, as well as configurations for the SampleMNG & MyManagers folders. MPI strongly discourages changing any settings for these databases, as they may cause the particular data stream to become unusable in MPI Stylus.

Configuring a New Manager Database in MPI Stylus

There are several steps to adding and configuring a new manager series for use in MPI Stylus, and they may depend on what kind of information you would like to bring in. Options may change for each kind of manager series; therefore, instructions are provided by type of series you wish to add. However, in all cases, the first three steps are the same:

FOR ALL MANAGER SERIES TO BE ADDED:

1. Click on the Manager Series sub-section under the Databases node on the design tree.
2. In the data pane at right, click on the "Add" button.

3. Select the new Manager Series name on your Design Tree (located under the Manager Series sub-section) to bring up the edit options in the data pane.
4. Decide what type of database you are trying to add/configure.

Choosing a Database Type

There are ten database types available for configuration in MPI Configurator. Many of them have very specific functions and specialized options available; therefore, each will be addressed in turn in this section.

Native Databases

A Native database is a set of specially formatted ASCII files located in one folder (usually within your Stylus folder on your hard drive or network.) It can contain files of the following types:

MPI ASCII Files – MPI ASCII keeps a series of returns and descriptive information in a special ASCII format. It contains a block in the beginning of the file that contains descriptive information that improves performance of the software. This information allows you to extend functional capabilities, improve performance and provides compatibility with future versions of MPI Stylus Pro.

MPI Link – A link to a spreadsheet file. This link allows you to keep (and update) all managers' performance data in separate spreadsheets, independent of MPI Stylus.

MPI Stylus allows you to work with its own single-series (native) databases and any number of external databases (i.e., 3rd party) within the same study.

Import Databases

An Import database is one in which a file in ASCII format has been placed with return series data. When a database is defined as Import in Configurator, MPI Stylus can read the information and use them in any analysis, but certain parameters such as country, currency, frequency, etc., can not be specified.

Formatting an ASCII file as an Import database:

The correct format for an Import database is shown below:

<center><date><separator><return></center>

The <date> field may be in one of the following formats: MM/DD/YY, MM/YY, YY/MM, YYMM, or YYMMDD, where YY is the last 2 digits of year (for example, 99 for year 1999), MM is the month number from 01 to 12, and DD is the day number.

The <separator> field can be one or several spaces or tabs.

The <return> field can be specified as percentages (5 for 5%) or as fractions (.05 for 5%).

Metastock Database

This setting is used to import data from the Metastock databases.

MPI DB

MPI DB is a good general format used for brining databases into Stylus, and many standard and subscription-based databases come into Configurator through this tool. When adding an MPI database, you don't enter the mask, but you do need to specify the names of both the Header file and the Returns file.

An MPI DB usually (but not always) contains two files in the DBF format. The first file, the header, contains descriptive information about all returns series in the database. The second file contains the actual returns data.

The MPI DB format can be used to store daily, weekly, monthly and quarterly return series.

Spreadsheet
This special database type lets you link to all manager (or custom index) series, including attributes, from a spreadsheet, so that you don't have to link to each series individually.

Wiesenberger
This setting is used to import data from the Wiesenberger databases.

Lipper
This setting is used to import data from the Lipper databases.

OLE DB
This setting may be used for linking to relational database systems through an OLE DB driver, which must be installed on the user's machine.

Excel DB
This setting allows users to import return series from Excel spreadsheets. This allows for the easy import of proprietary database data, manager series, etc.

Creating an Excel Database to be used in Stylus

Creating an Excel database for use in MPI Stylus is fairly straightforward, and is a skill that MPI Stylus users would greatly benefit from learning, as it opens the door for you to bring in a great deal of data in addition to that already available in Stylus.

To import data from an Excel spreadsheet:

1. As the first step in creating an Excel Database, three rows/columns need to be created in the spreadsheet – an ID row/column, a Name row/column, and the first of your Date and Return rows/columns. Either row or column format can be used in this excel spreadsheet – all of the information applied to columns in this section may be similarly applied to rows.
2. The ID column represents the unique identifier which will be used within stylus to identify this fund. The Name column is the name of the fund as it will appear within stylus on the Manager's list and anywhere where the fund needs to be labeled (for example, within the legend of a chart.) The last column or set of columns will consist of dates and their relative returns. The date format for these columns is most commonly seen as such – MM/DD/YYYY.
3. Any columns after the ID and Name columns will be considered qualitative ("static", i.e., not time-series) information and will be detected in Stylus as such. These columns may include additional information such as ratings, manager names, etc.
4. Two additional columns may be used within the qualitative information section (however they are not required):

    - Currency - to define the currency in which this fund's returns are represented in.
    - Fraction - to determine whether the returns are represented as decimals or fractions.

Your working version of the excel spreadsheet should look something like this:

Figure 150

Now, you will need to label the information in your spreadsheet for Stylus to properly understand it. In Excel, this is done using the "Name" feature.

5. Select the area you wish to name, using the pictures below for reference.
6. Click on the text box in the upper left hand corner.

Figure 151

7. Type in the name that you want to associate with this selection.

Figure 152

8. Hit Enter. You have now named the selection.

There are five required and two optional selections which must be named for Stylus to properly read from this spreadsheet:

- MPIID will be used to name the ID column.
- MPINAME will be used to label the Name column.
- MPIHEADER will be used to label the entire qualitative information section including both ID and Name.
- MPIDATE will be used to label each of the date column headings.
- MPIRETURN will be used to label the entire set of cells which contain in them returns.

Optional selections are as follows:

- MPICURRENCY will be used to label the currency column.
- MPIPERC will be used to explicitly specify the use of percents. While this is the default, it removes the need for Stylus to 'guess' this information.
- MPIFRAC will be used to specify returns as fractions. Unless this setting is used, Stylus will automatically assume percentages.
- In addition, you may use one of the five options to force the interpreted frequency of returns:
  - MPIANNUALLY
  - MPIQUARTERLY
  - MPIMONTHLY
  - MPIWEEKLY
  - MPIDAILY

By carefully following these steps, you can ensure that your Excel files will be easily and correctly read by MPI Stylus. For convenience, we include below examples of how column selections for each of the labels might be made using our example working spreadsheet from the images above. Obviously, MPI Stylus can handle much larger and more complex spreadsheets, but this should give the user a good idea about how to go about creating their sheet correctly.

MPIID
The entire ID column is selected and will be named MPIID.

Figure 153

MPIDATE
The entire range of dates will be selected.

Figure 154

MPIHEADER
All header fields will be selected, including the ID column. Note that dates are NOT header fields.

Figure 155

MPIRETURN
All returns information in date columns, but not the dates themselves, are selected.

Figure 156

Your Excel database should now be ready to be linked into Stylus.

Linking Your Excel Database into MPI Stylus Pro

Once the Excel database has been correctly configured, it is ready to be linked into MPI Stylus Pro. To do this:

1. In Configurator, expand the 'Databases' node in the tree and select 'Manager Series'.
2. Click 'Add' on the right side of the screen. A new entry will be added to the bottom of your Manager Series list on the Design Tree. You may need to expand the list to see the new entry.
3. Please ensure that 'Type' is switched to 'Excel DB'.
4. For ID, enter any unique three-character designation. This may not already exist as a designation for another database in Configurator. You may use any combination of letters and numbers.
5. For 'Name', enter the name of the database as you wish for it to appear in your database lists in the software (for example, Morningstar US).
6. The 'Description' field may be used for entering further information if you wish.
7. For 'Location', use the browse button to navigate to the Excel sheet in question.
8. Once you have completed these steps, please save Configurator before attempting to access the sheet via a study.

Database Options

Allow Direct Returns Editing (MPI DB only)

This feature is database-specific and allows you to enable the direct editing of returns in database streams. It is not recommended that you enable this feature unless for a specific purpose as it may allow other users to adjust data and affect the integrity of information feeding into your analysis. Please note that this option is only supported for the MPI DB database type.

Delayed Open (on first access)

When you open the MPI Stylus Pro application, the default setting is for all databases in MPI Configurator to be opened and read at that time as well. This allows for them to be accessed quickly as you move throughout the application. For users with large numbers of databases, or exceptionally big databases, this can lead to slow opening time for the application and other possible performance issues. By clicking the 'Delayed Open' checkbox, you instruct MPI Stylus Pro not to open a database until the first time you attempt to access it in the application. This is a recommended setting for most databases. Please note that this option does not support the Native, Import, Spreadsheet or Wiesenberger database types.

Portfolio Database Linking

This section references only the Excel-based version of this feature; for information on using this with Access, SQL or other databases supported by the Advanced Database package, please contact MPI Support.

While MPI allows users to manually create, edit and delete portfolios, this can be an inefficient process (and allow extensive opportunities for human error) when scaled to the level of tracking even a few portfolios. In the case of users who have thousands of portfolios to manage, a more efficient solution is called for.

The Portfolio Database linking tool allows the user to use Excel DB functionality to create and update portfolios in an Excel database environment and have MPI Stylus Pro "read" the data. Specific formatting controls will be enacted depending on whether the portfolio is 'Simple' (has static weights) or 'Advanced' (weights change).

Basic Setup

All information MPI Stylus Pro needs to link a portfolio must be located in the first two rows of a worksheet; otherwise, MPI will assume the sheet does not contain relevant information for Excel portfolios and will be ignored. Each header field corresponds to an option which can be defined manually in the Portfolio Editor in MPI Stylus Pro.

The lines of information will be:

- Names of header fields. These can be of two types: a string, or a range of cells.
- Beneath the header filed names will be a line of cells containing the field values. Range fields must be in the format A1:A10 (two cell addresses separated by a colon.) All ranges in the header should have either a width or height of 1, meaning that the range is a single column or row.

Simple Portfolios

Simple Portfolios (portfolios with no change in their weights) have four mandatory fields and four optional fields. If several simple portfolios are found on a single Excel tab, optional fields will apply to all portfolios. Additional Excel tab may be added to the spreadsheet to allow for different options.

Required Fields
The required fields for Simple Portfolios are:

Name	Type	Description
MPI_PORTFOLIOTYPE	String	For simple portfolios, the value should be "Simple"
MPI_ASSETIDRANGE	Range	Range of asset or fund IDs. This will either be one column wide or one row wide. Empty cells will be ignored.
MPI_PORTFOLIOIDRANGE	Range	Range of portfolio IDs. Each portfolio must have a unique ID. Empty cells will be ignored.
MPI_SOURCEDATABASE or MPI_ASSETDBIDRANGE	String Range	One of these two fields is required. If all Assets in the portfolio come from a single database, the Database ID under MPI_SOURCEDATABASE is sufficient. If the Assets come from multiple databases, each one must be defined in a column or row parallel to MPI_ASSETIDRANGE. MPI_ASSETDBIDRANGE defines this cell range. Please note that both options can be used in the same sheet; in this case, the Source Database will be used as the source in blank cells of MPI_ASSETDBIDRANGE.

Figure 157

Optional Fields
The following fields for Simple Portfolios are optional:

Name	Type	Description
MPI_PORTFOLIONAMERANGE	Range	Portfolios are to be assigned names with this range. If not used, portfolio names will default to the unique IDs.
MPI_LABELRANGE	Range	Use this range to assign labels to the portfolio assets.
MPI_ORDERRANGE	Range	Use this range to fix the order of the assets in the portfolio. If all values are numerical, Stylus will use the numerical order; otherwise, alphabetical will be used (not case-sensitive.)
MPI_DESCRIPTIONRANGE	Range	Use this field to set the portfolio description range.
MPI_REBALANCE	String	Use this field to set the portfolio rebalancing option. Supported values are: • None (default setting) • Daily • Weekly • Monthly • QuarterlyAnnually

Figure 158

Advanced Portfolios

Advanced Portfolios use options which are featured in the Advanced Portfolio editor in Stylus. Unlike Simple Portfolios, there can only be one Advanced Portfolio per Excel Tab. Advanced Portfolios have four required fields and six optional fields.

Two fields which are necessary for Simple Portfolios must be removed in Advanced Portfolios:

MPI_PORTFOLIOIDRANGE (the ID will be taken from the Excel sheet name)
MPI_PORTFOLIONAMERANGE (replaced with MPI_PORTFOLIONAME)

Required Fields
The following fields are required for Advanced Portfolios:

Name	Type	Description
MPI_PORTFOLIOTYPE	String	For advanced portfolios, the value should be "Advanced"
MPI_ASSETIDRANGE	Range	Range of asset or fund IDs. This will either be one column wide or one row wide. Empty cells will be ignored.
MPI_PORTFOLIODATERANGE	Range	
MPI_SOURCEDATABASE or MPI_ASSETDBIDRANGE	String Range	One of these two fields is required. If all Assets in the portfolio come from a single database, the Database ID under MPI_SOURCEDATABASE is sufficient. If the Assets come from multiple databases, each one must be defined in a column or row parallel to MPI_ASSETIDRANGE. MPI_ASSETDBIDRANGE defines this cell range. Please note that both options can be used in the same sheet; in this case, the Source Database will be used as the source in blank cells of MPI_ASSETDBIDRANGE.

Figure 159

Optional Fields
The following fields for Simple Portfolios are optional:

Name	Type	Description
MPI_PORTFOLIONAME	Range	Use this field to name the Advanced Portfolio. If not used, the portfolio name will be the sheet name.
MPI_LABELRANGE	Range	Use this range to assign labels to the portfolio assets.
MPI_ORDERRANGE	Range	Use this range to fix the order of the assets in the portfolio. If all values are numerical, Stylus will use the numerical order; otherwise, alphabetical will be used (not case-sensitive.)
MPI_EXTENDBEGDATE	String	"Yes" enables the Extend begin date control. "No" disables it (though this is also the default setting.)
MPI_EXTENDENDDATE	String	"Yes" enables the Extend end date control. "No" disables it (though this is also the default setting.)
MPI_REBALANCE	String	Use this field to set the portfolio rebalancing option. Supported values are: • None (default setting) • Daily • Weekly • Monthly • Quarterly • Semi-annually • Annually Note that the semi-annually option is based on the Calendar year, and balances after the June and December returns.
MPI_DESCRIPTION	String	Use this field to set the portfolio description.

Figure 160

Configuration
Excel portfolios are linked into MPI Stylus Pro through the Portfolios Database node in Configurator. The options are the same as those used for Excel databases (for more information, see earlier in this chapter.)

Add Table - Database Tables (for Table Blocks)

The "Add Table" option in the right-click menu is used to create database tables that feed information to the Database Table blocks in MPI Stylus Pro. Extensive information on using this feature is available in a separate technical reference from MPI; however, basic instructions have been provided below in order to give you a good idea of how this feature may be used. To get the full technical reference, please contact us at support@markovprocesses.com.

Purpose

The idea behind the Add Table option was to bring to MPI Stylus Pro a level of functionality that allows the user to bring in table data with more flexibility and less configuration than might be required in other circumstances. Specifically, it gives the user the ability to put into a single table data that may come from different databases or even different database types. In doing so, it accomplishes the result of using SQL in Stylus without the user actually having to make use of a SQL statement.

"Owner" Databases

To create an additional table in Configurator, the corresponding "owner database" must be selected on the Design Tree. The *owner database* is the database that contains the funds/IDs that you will be using to match your other tables to. For example, if you create a table under Morningstar, then Morningstar will become the owner database. We call this database the "owner database" because it is essentially 'borrowing' tables from other databases, even if they are databases of different types.

It is important to know your owner database because you will need some ID column to ensure that the tables you bring in (and their underlying data) have a way of linking to the correct return series in the owner database.

Adding a Table

To add a Table:

1. In Configurator, browse to the Design Tree setting corresponding to the owner database you wish to use. For example, in the screen shot below, the owner database will be Morningstar.
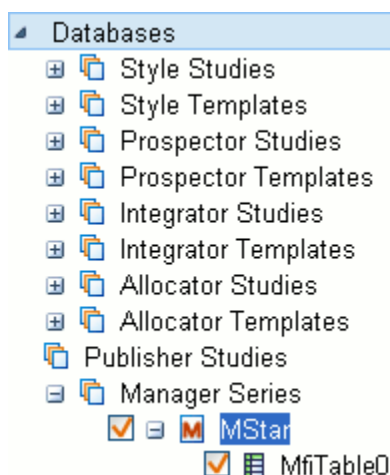
Figure 161

2. Right-click on the database name on the Design Tree and select "Add Table." A new table will appear under the database name with an automatic default name consisting of the database ID, "Table" and a number. For example, the first table created in Morningstar would read MfiTable0.
3. Click on the table name on the Design Tree. You will now fill in the appropriate fields in order to properly format your table setup. The columns below describe the parameters necessary.

Required/Optional	Parameter Name	Description
Required Settings	Type	Table type (based on the outside database you will be referencing.) This will either be Excel DB, MPI DB or OLE DB.
	Location	The location of the table. Depending on the table type, this may mean different things. Pressing the browse (…) button opens a help dialogue to specify a particular location, but the key thing to remember is: • Excel DB – Table location is a full path to a particular worksheet file. • MPI DB – Directory name where data (*.DBF) and index (*.IDX) files are located. • OLE DB – Data source connection string to access the table.
	Table	The name of the table to be accessed. Pressing the browse (…) button opens a help dialogue allowing the name of a table to be selected from a list, but the key thing to remember is: • Excel DB – Spreadsheet name or a predefined named range. The first row in a named range is recognized as a row of labels used as column names. No blank row is allowed between the labels and the data. As an alternative to a named range, a spreadsheet name may be used. This causes the whole spreadsheet to be recognized as a table, and the first nonempty row in the spreadsheet must be a row of labels. • MPI DB – This is the name of a DBF table located in the directory specified in the Location parameter. • OLE DB – This is the name of a table or view available from the data source specified in the Location parameter.
Optional Settings	Description	A text description for the table.
	Title table	The name of the table used to store column titles. This must be a table with a minimum of two columns – one for column names, the other for associated titles. Depending on the table type, particular column names may be different: • MPI DB – First column must be named 'field' and the second column must be named 'title'. • OLE DB – First column must be named 'FName' and the second column must be named 'FTitle'. For both types of database there may be an optional additional column ('tabname') that allows you to filter title table contents for a particular table name. If the title tab is not specified, the program tries to use the title table from an owner database to associate columns with titles. If no associated title is found, a column name is used. • Excel DB – For Excel DB, a title table does not need to be specified because the program uses text from the first row cells as column titles.

Figure 162

Using the Table Columns Grid

When you add a table, the table columns grid will need to be filled out appropriately. A review of the options may be found below.

Column Name	Control/Entry Type	Description	Input Options (if specific)
(blank)	Checkbox	The checkbox setting determines whether the column is configured for later usage in the chart/table designer.	-
Name	Read-only text	The column name.	-
Title	Read-only text	The column title. This may be associated with a column name in an optionally provided title, or be in the owner database's title table. If no associations are found then a column name is used as a title.	-
Type	Read-only text	The column type. This may be one of three options: • C – character or string column; • N – numeric column; • D – date column	-
ID	Checkbox	The checkbox setting here determines whether or not the column is a manager ID column. It is used to establish the relationship between the configured table and the owner database header table. This relationship allows the configured table to filter according to the current selection of the managers in the Stylus Chart/Table Designer window. Of all options selected in the Design Tree (managers, indices, etc.), only those matching the manager ID column type will be considered. For instance, if the ID column is numeric then the only managers considered would be those whose IDs can be converted to numbers. All others would be ignored even if they are selected in the corresponding section of the Design Tree. There may be one ID column only set for a table; this setting is optional. If this is not specified, the Design Tree selections have no effect on the table query output shown in the table and chart views. Therefore, omitting this setting makes it possible to show data unrelated to the header table.	-
Key	Dropdown box.	The Key column (or columns) is used in addition to the ID column in order to combine data for different managers into a common table. According to the Stylus reporting technology, the number of rows for every selected manager in the resulting chart/table must be the same. This means that the statement output rows for several managers must be aligned somehow relative to one another. In cases where the row corresponding to some key column value is absent, the manager's output has a row inserted with a special N/A value. It is desirable for the key column value (or combination of column values) to be unique for any selected manager; if duplication does occur and the system gets several rows for a key column value, a simple row comparison algorithm is used in order to avoid duplicate rows in the final table view. Obviously, the ID column may not be used as a Key column because there is no way to combine manager rows by a manager ID column value that is unique for every manager. The key column may also be used to generate labels for charts. If the key column is a text column then text labels are generated. It may also be used to combine several Table blocks if no blocks of other types are present in the table or chart design. In some cases it is possible to combine columns to make a composite key. If this setting is omitted, but the ID column is present, then the system still needs some way to combine different manager rows for the final	**No** (default; hidden) **Yes** (for generic columns) **Day** **Week** **Month** **Quarter** **Year**

		output. In this case, rows are joined by row number. This means for all managers that the number of rows is equal to the maximum row number and the additional bottom rows are filled with N/A values. The row comparison is also used for this case in order to avoid duplicate rows; however, a comparison may be done only with the previous manager's row as there is no key column available. For this reason, the final output may depend on the order of actual rows in the table output.	
Order	Dropdown box	One or more columns determining a default sorting order. Every column may have ascending/descending order attributes assigned (this setting is optional.) If it has been omitted, the default will be that the table query output is sorted by the specified Key column in ascending order. A default sorting order may be overridden by table/chart design settings.	**None** (default, hidden) **Asc** (ascending) **Desc** (descending)

Figure 163

Linked Databases

This sub-node on the Design Tree lets users view their current list of Linked Databases, and includes the following fields:

- ID – The unique database ID
- Name – The name assigned to the given database
- Description – The DB description
- Class – Displays the database class

Database Views

Database Views allow the user to define customized database field browse/selection screens, in order to eliminate scrolling or selection from unwanted/unnecessary fields. A Database View tells MPI Stylus Pro how you want to see a specific database – which columns are of interest, and in what order they should appear. Database Views are always created in Configurator and may be used throughout the application in the following nodes/areas: Managers, Series, Manager Groups, Style Outline, Assets, Peer Groups, Benchmarks, Hedge Groups, Include/Exclude filters, Prospector Indicators and the Studies node.

Default View
Users may mark a specific view as 'Default' in order to specify in what manner the database should normally appear.

Database View limits
You may create multiple Database Views for a single database, and then use a dropdown to decide which view is appropriate in any specific database interaction. This allows you to tailor views to different tasks/jobs.

Applying Database Views across Multiple Databases
You may decide to apply a specific Database View across multiple databases in order to provide a consistent user experience, Please note that not all databases will necessarily have the same column/header names or data.

Filters for Database Views
You may add filters to Database Views to ensure that some basic logic/criteria are applied before the database output is applied. This is useful for ensuring that you are selecting only from series of interest to your Database View task.

Use automatic database view in selection pane
This control was added to the Database tab in Configurator to specify the use of Default databases.

Global Dictionaries

Subscribers to our Advanced Database package will see a 'Global Dictionaries' option here. For more information, please see our Dictionaries User Guide, available on the MPI website.

Troubleshooting the Configurator Module

Q. Why do two of my configured Database Folders contain the same files?
A. This happens when two Database Folders are pointing at the same location. Simply change the location of one to a different folder.

Q. Why do I see files other than the type of files which this Database Folder should contain? (Ex: Executable files in a Stylus Study Database Folder)

A. This is corrected using the Mask field in the properties section for that Database Folder. The following masks should be used for the following files:
  - Style Study: *.sty
  - Prospector Study: *.unv
  - Integrator Study: *.itg
  - Allocator Study: *.ast

Q. Why do the fields in the property window not correspond with the ones listed in the documentation as the ones that need to be filled out?
A. Make sure that Type field is set to the correct type of database that you are trying to create. For example if you want to create an Excel Database your Type dropdown box should be set to "Excel DB"

Q. What does <home> mean?
A. <home> is defined by default as your Stylus directory as it was installed, but this can be changed in the Default node of Configurator.

Appendix A

MPI Stylus Pro Analytics

MPI Stylus Pro provides users with access to an extraordinary selection of analytics, including the flexibility to select your own dates/time periods, specify calculation parameters, etc. As such, there is a large volume of information available on the specific calculations behind each analytic block, model, etc.

In prior versions of this manual, a summary of relevant calculations was provided in this space in order to give users a quick idea of some of the analytics and how they operate. As of version 9.0, this information has been moved to a new standalone reference document in order to provide a great deal more clarity and detail on how our powerful set of analytics functions.

This document may be accessed directly in your application by going to:

Help-> About-> Formula Reference

Alternately, you may contact MPI Support for the standalone PDF.

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