
FTS Trading Manual

A guide for new users

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The FTS Trading manual introduces you to the operational details and conceptual ideas associated with using the FTS Trader. The first half of this manual will help you to master the basics of running the FTS system – from logging into the market to placing a trade. The second half of this manual focuses on the conceptual ideas related to markets and trading. Here you will learn how to analyze your trading performance relative to others in the market and how to strategize for future trades. In addition, the FTS Trader provides a variety of support features designed to help you explore, at your own pace, the many layers of trading in a financial market.

Each FTS trading case is unique. The cases are designed to tie together classroom learning objectives with a price discovery problem facing the trading crowd. Before beginning the system, you should review any classroom concepts that are relevant to your trading exercise. The FTS Trader is designed not only to give you the experience of trading but also to help you discover and refine your own trading strategy to help you succeed in a real world environment.

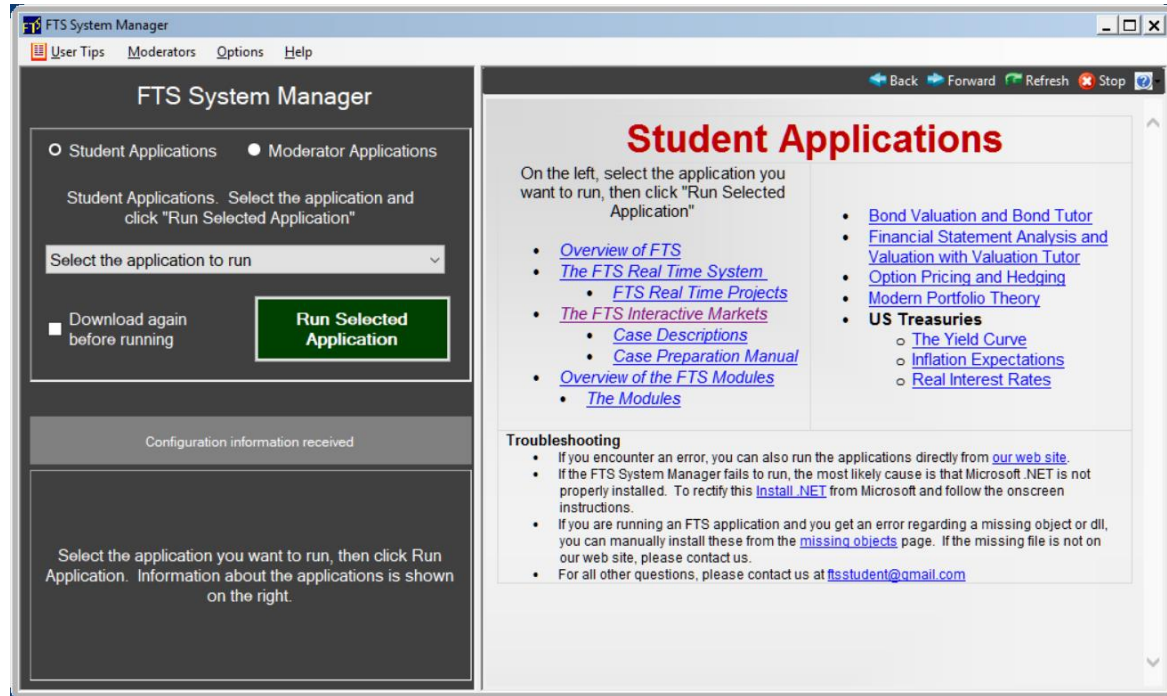
IMPORTANT!

Before beginning this manual you *must* complete the one time installation of the run time libraries required to run the FTS system. If you have not yet installed the libraries, go to www.ftsmodules.com. Click on the Installation menu and install the FTS System Manager.

FTS System Manager

Step 1: Assuming the FTS System Manager has been installed from www.ftsmo.dules.com: as illustrated below:

Once installed you can run the FTS System Manager from either the icon or directly from the Start menu run programs:



From the drop down menu in the FTS System Manager select “FTS Trader” to launch the FTS Interactive Trader

Step 2: Upon clicking Run, you will be presented with the Initial Trader Screen, shown below. Take a minute to view the elements of this screen.

Initial Trading Screen

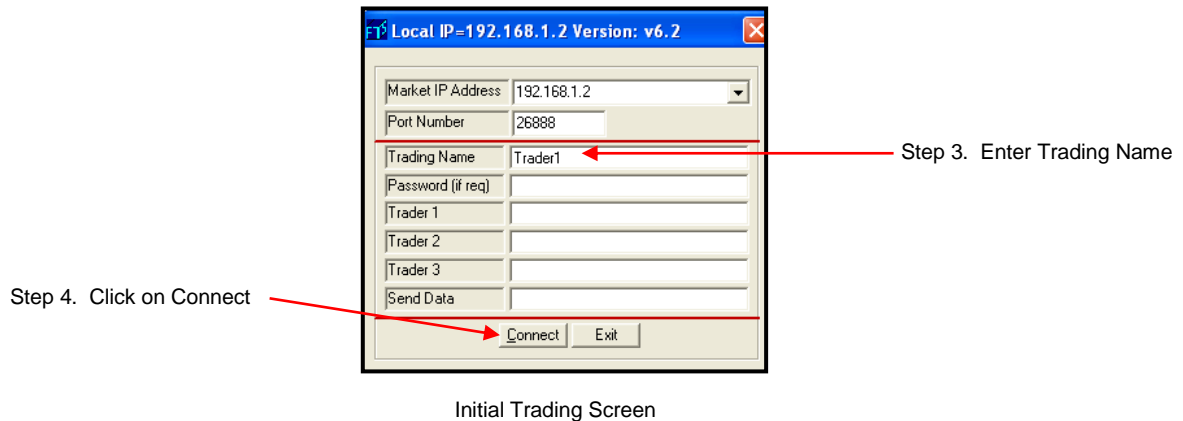
- **Market IP Address:** The Market IP Address is the address that will connect you to the market. *This is a required field.* The appropriate IP Address will be provided to you by your instructor.
- **Port Number:** Your Initial Trading Screen will display a default Port Number. Leave this number as it is unless otherwise directed by your instructor.
- **Trading Name:** The trading name that you enter is the name that will be publicly displayed in the market. *This is a required field.* If you log out of the market and need to log back in, this name must be entered exactly the same way as it was originally. It is best to keep your trading name unique, but simple.
- **Password:** A password is required only if one has been pre-assigned by your instructor. *This field is case sensitive.*
- **Trader 1, Trader 2, Trader 3:** These three Trader fields are where you will enter your real name plus the real names of your team members (if you are assigned to a team). Only your instructor has access to the information entered into these fields.
- **Send Data:** Send Data allows you to enter information such as a market forecast based on your analysis before entering the market. Leave this field blank unless otherwise directed by your instructor.

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How to Login

Step 3: Enter a Trading Name. If you do not have a pre-assigned Trading Name and/or

Password, you may enter the name of your choice.



Step 4: Click **Connect** on the Initial Trading Screen to enter the FTS Trading Screen.

Note: The main trading screen will open *only* if the market is running. Your instructor will indicate when you are able to officially login.

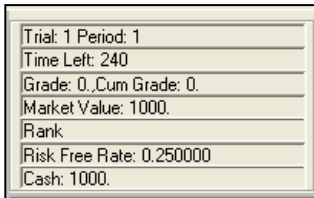
*Once you have successfully logged into the market, please proceed to the following page. If you are experiencing a problem logging into the market, please refer to **Appendix II: Troubleshooting**.*

The FTS Market Trading Screen is the first screen that appears once you have successfully logged into the market. It is important to be familiar with its elements before beginning to trade. However, if at any time during trading you can not remember what a particular object on the screen does, simply place your mouse over the object and a mouse-over description will appear. In order to simplify the FTS Trading Screen, we have divided it into 5 sections, as shown below. These sections will be referenced in the next few pages of this manual.

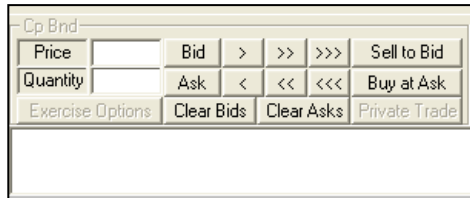
Section 1



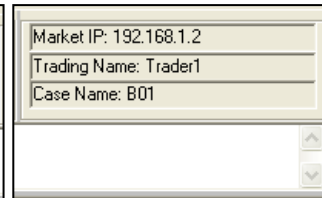
Section 2



Section 3



Section 4



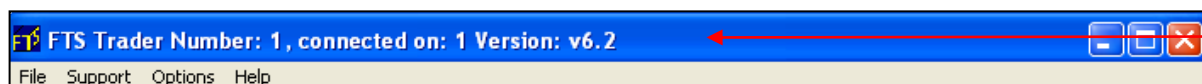
Section 5

Security Name	Bid		Ask		Position	Last	Payoff
Cp Bnd					15.	0.	
Zero Cp					0.	0.	

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FTS Trading Screen

Section 1



Title Bar

Title Bar

The title bar is found at the top of the FTS Trading Screen. This bar lists your Trader Number, Connection Number and Version Number.

Menu Bar

The menu bar offers the four following options: File, Support, Options and Help.

File

- Excel Link: This submenu item allows you to personalize your trading support by exporting real time market and other relevant data from the FTS Trading screen into an Excel spreadsheet. See **Appendix III: FTS Support Screen** for more details.
- Manual Link: The Manual Link is useful if your trading screen starts to slowdown as a result of too much activity from Excel and you would like to break the real time link. This option can only be selected after an Excel Link has been established.
- Update Excel F9: When you click on this submenu item, it will update your manual link (because your manual link is no longer updating in real time).
- Exit: This selection allows you to exit the FTS Trader at any time.

Support

- Show Support: Show Support accesses the price graph and other support resources available for the FTS Trader. See **Appendix III: FTS Support Screens** for more information.
- Calculator: This submenu item produces a general FTS calculator that incorporates dates and yields.
- Treasury Calculator: The Treasury Calculator is an FTS calculator that uses real world Treasury quotations.
- Options Calculator: This submenu item produces a general FTS Option Calculator
- Futures Calculator: The FTS Futures Calculator is an FTS calculator that works with futures and includes carry costs.
- Market Value: The Market Value option depicts your current aggregate position.
- Trading Summary: The Trading Summary displays your aggregate position at the end of each trading period.
- Trading History: The Trading History depicts your current personal trading history (i.e., current trading diary).

Options

- Ticks for Bid/Asks: Ticks for Bid/Asks offers selections for a fixed tick size when using the hand signals on the FTS Trading Screen, shown in Section 5. The tick sizes offered are: 0.01, 0.10, 1.00.
- Quantity for Buy/Sell: Quantity for Buy/Sell selects a default quantity if using hand signals (see Ticks for Bid/Asks).

Note: The menu item quantity is automatically overridden if you enter a different quantity number directly into the top center part of the screen Quantity textbox.

Help

- Trader Help: Trader Help offers general help solutions for trading.
- Cases: The option for Cases offers default case descriptions.
- Hide Help: This function will hide the help option.

Section 2

Trial: 1	Period: 1
Time Left: 240	
Grade: 0.	Cum Grade: 0.
Market Value: 1000.	
Rank	
Risk Free Rate: 0.250000	
Cash: 1000.	

Trial: Each trading case covers a set amount of calendar time. The trial number indicates the year that the trading is going on.

Period: Every trial is further divided into periods. The trading case, again, specifies the exact number of periods that occur in each trial.

Time Left: Each trading case also specifies a particular amount of time. Once the market begins, Time Left will begin to count down. The time will reset after the completion of each period.

Grade: Also referred to as Grade Cash, grade is a potential trading bonus that is awarded for good trading performance. In a real world setting, trading bonus' are offered as a form of incentive for traders. Grade is updated every trading period.

Cumulative Grade: The cumulative grade is the total amount of accumulated grade cash that you have earned over an entire trial.

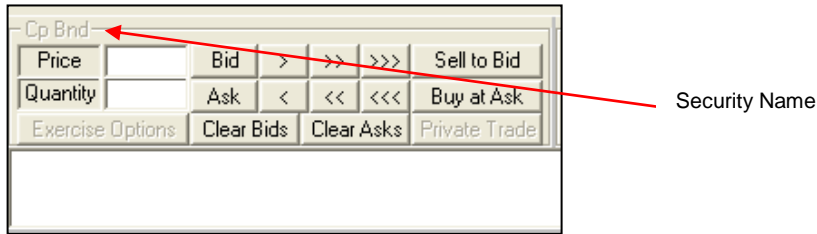
Market Value: The Market Value is the current estimated market value of your position.

Rank: Your Rank is a useful measure of your performance and appears at the end of each trial. It measures your rank relative to other traders in the market and is based on your final Market Value. When trading, you will receive both per trial and cumulative rank information. Your professor has access to your rank information.

Risk Free Rate: The Risk Free Rate is the simple rate of interest that is applied to your end of period cash balance. It is the default method of calculating interest and is used in most cases, however, your instructor does have the power to vary the way that interest is calculated (see Rules of Trading in FTS Markets: Time and Interest).

Cash: Cash indicates the current balance in your money market account.

Section 3



Note: Before any of the buttons or textboxes on the screen above can be used, you must first select a security. Securities are selected for trade in Section 5 of the FTS Trader Screen.

- **Security Name:** The Security Name listed at the top of this section, indicates the security that you have selected to trade.
- **Price Textbox:** Next to the word Price, you will find the Price Textbox. Here you can enter a specified price to trade your chosen security.
- **Quantity Textbox:** Next to the word Quantity, you will find the Quantity Textbox. Here you can enter a specified quantity to trade your chosen security.
- **Bid:** Click on Bid to place your bid in the market. This button is only used by a market maker.
- **Ask:** Click on Ask to place your ask in the market. This button is only used by a market maker.
- **Arrows...:** The arrows automatically increase/decrease you bid/ask by fixed quantities. If you place your mouse over any of the arrows, it will show the fixed value of each button.
- **Sell to Bid:** Click on the Sell to Bid button to sell at a specified price and quantity. This button is only used by a market taker.
- **Buy to Ask:** Click on the Buy to Ask button to place your ask at a specified price and quantity. This button is only used by a market taker.
- **Exercise Options:** This button is not live unless you are working in an options case that trades American options.
- **Clear Bids:** Click on this button to clear all of your personal bids.
- **Clear Asks:** Click on this button to clear all of your personal asks.
- **Private Trade:** The Private Trade button is not live unless you are using a specific instructor-designed case that allows you to trade privately with another trader of your choice. None of the FTS default cases permit this option.

Section 4

Market IP: 192.168.1.2
Trading Name: Trader1
Case Name: B01

- Market IP: The Market IP is the Central Market IP Address.
- Trading Name: The Trading Name is your selected, publicly listed name.
- Case Name: The Case Name references the case with which you are working.

Section 5

Security Name	Bid		Ask		Position	Last	Payoff
Cp Bnd					15.	0.	
Zero Cp					0.	0.	

Bid Hand Signals

Ask Hand Signals

- Security Name: Under the label, Security Name, all of the securities that you have permission to trade in the case will be listed.
- Bid: The textboxes found under the label, Bid, display the current Best Bid (listing the price/quantity). If there is an asterisk (*) next to the price/quantity it means that your bid is the current best bid; also indicating that you are the current market maker.
- Hand Signals related to the Bid:
 - **Column 1**: The upward pointing hand signal increases the existing best market makers Bid by a fixed increment. Go to Options on the menu bar, then Ticks for Bids/Asks to change or view the current automated tick size.
 - **Column 2**: The right pointing hand transmits a market order (i.e., sells to the Bid) up to the quantity you have specified in the Quantity textbox found in Section 3 (top middle part of the screen).
 - **Column 3**: The other right pointing hand with the word Margin written above it is not usually used. *This button is only allowed if margin trading is permitted in the case.*

- **Ask:** The textboxes found under the label, Ask, display the current Best Ask (price/quantity). As with the Bid, if there is an asterisk (*) next to the price/quantity it means that your ask is the current best ask; also indicating that you are the current market taker.
- **Hand Signals related to the Ask:**
 - **Column 1:** The downward pointing hand decreases the existing best market maker's Ask by one tick. You can control the tick size by clicking on Options from the menu bar, then Ticks for Bids/Asks.
 - **Column 2:** The left pointing hand transmits a market order (i.e., buys from the Ask) up to the quantity you have specified in the text box beside Quantity, in section 3 of your screen.
 - **Column 3:** The left pointing hand with the word Margins written above it is not used in standard cases. *This button is only allowed if margin trading is permitted in the case.*
- **Dollar Sign:** The dollar sign, found to the right of the Ask Hand Signals, permits you to transfer cash to your margin account. *This button is not used in standard trading cases. It is only allowed if margin trading is permitted.*
- **Right Arrow:** The right pointing arrow, found to the right of the Dollar Sign, permits you to transfer securities under special circumstances. *This is another button that is not used, unless specified in the case.*
- **Position:** The textboxes below the label, Position, contain your current position in a security. If this number is positive, then you have a long position. If the number is negative this means you have a short position.

Note: Short selling, or selling securities that you do not currently own, is usually permitted in most FTS trading cases. The short position appears negative because any dividend a security pays is automatically subtracted from your cash at the time of payment.
- **Last:** The textboxes below the label, Last, display the last traded price. These boxes change color according to how the last traded price changes relative to the previous last traded price.
 - **Green:** Green indicates that the last traded price increased.
 - **Red:** Red indicates that the last traded price decreased.
 - **Blue:** Blue indicates no change in the price.
- **Payoff:** The textboxes below the label, Payoff, display dividends in a per unit basis, if one is earned on a security. At the end of trial this dividend is the final realized liquidating or marked value.

Markets and Trading

Now that you are familiar with the elements of the FTS Trading Screen, we will review over some of the basic rules of trading (i.e. market microstructure) including:

- Market Structures
- Types of Traders
- Types of Trades

We will apply these rules in the next section, How to Trade, by working through some basic trading examples.

Markets Structures

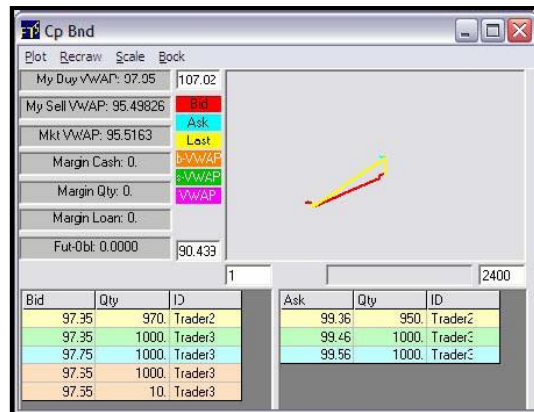
There are two distinct types of financial markets:

1. Order Driven Market – system default
2. Quote Driven Market

1. Order Driven Market

An Order Driven Market is a type of market where all trades are processed through a Central Limit Order Book and all types of traders (market makers and market takers) are permitted to trade. This is the default market in most FTS cases.

The Central Limit Order Book is a feature that contains all of the current market maker's best bids and asks. In the FTS markets, your instructor controls the length of the Central Limit Order Book. The default is often 10 best bids and 10 best asks. The Central Limit Order Book can be accessed through the FTS Trader Screen by double clicking on the security name that you are trading.



Central Limit Order Book

2. Quote Driven Market

The less commonly used Quote Drive Market is a type of market where a set of dealers post bids and asks, allowing only market takers to trade. Traders in a Quote Driven Market can submit either market orders or market limit orders.

Types of Traders

In a typical FTS trading case you can choose to be one of three types of traders:

1. Market Maker
2. Market Taker
3. Both ~ Market Maker and Market Taker

1. Market Maker

A Market Maker is a type of trader who initiates a trade by bidding to buy or asking to sell a security for the price and quantity of their choice. On the trading screen, the market maker will *only* use the Bid and Ask buttons or the up and down hand signals.

2. Market Taker

A trader who completes a trade by selling to a bid or buying from an ask on a security for the quantity of their choice. On the trading screen, the market taker will only use the Sell and Buy buttons or the horizontal hand signal.

3. Both ~ Market Maker and Market Taker

The default for most cases is that you can interchange between both roles as opportunities arise.

Types of Trades

There are three primary types of trades supported by the FTS Trader:

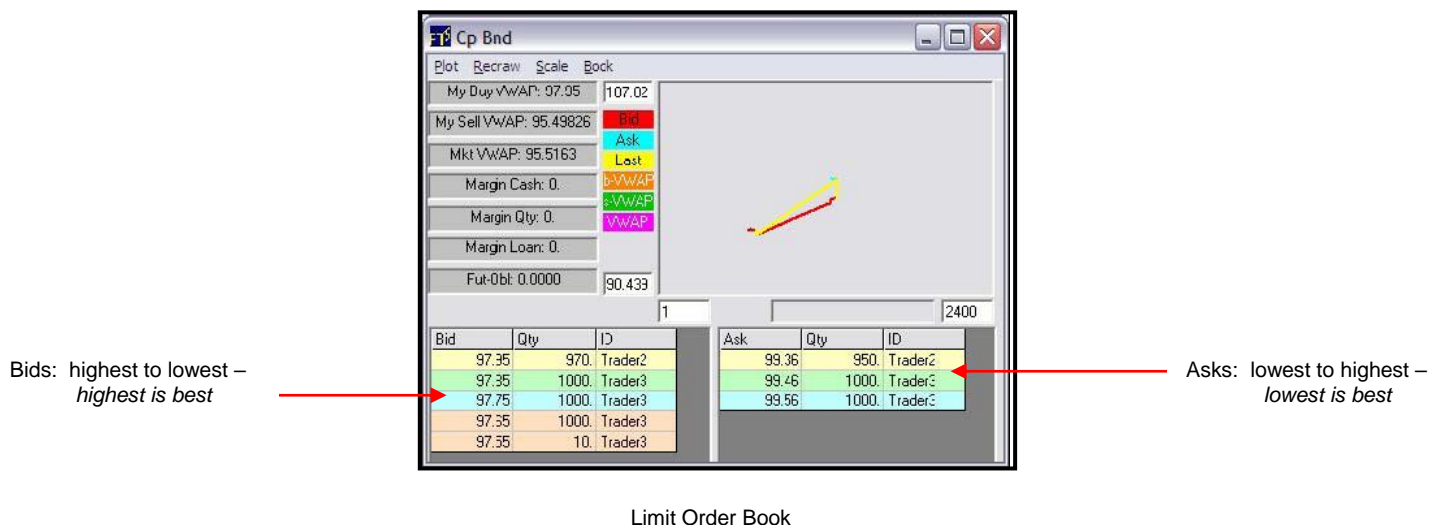
1. Limit Order
2. Market Order
3. Market Limit Order

1. Limit Order

A Limit Order is a type of trade where you place either a **bid to buy** or **ask to sell** on a security at a chosen price and quantity. Limit Orders are always placed by a Market Maker.

In the FTS market, bids are ranked from highest to lowest with the *best bid being the highest*. Asks are ranked from lowest to highest with the *best ask as the lowest*. This ranking is kept in the market's **central limit order book**. The central limit order book can be found by double clicking on the name of the security that you are trading.

See Example 1: How to Submit a Limit Order in the next section, How to Trade.



Central Limit Order Note: Even though you have the ability to specify a price that you want to buy or sell for, it does not guarantee that someone else in the market will trade with you. Your price must be competitive relative to others in the market.

2. Market Order

A Market Order is an unprotected trade where you must either sell to the best bid or buy from the best ask in the limit order book. You have control over the **quantity** traded, but not the price. A Market Order is always placed by a Market Taker.

Care must be taken with market orders. Watch the screen carefully when transmitting a market order because the trading is very fast-paced. The rules of the market are such that if the existing best bid or best ask is taken by some other trader, the second best order in the limit order book becomes the best. A fast moving market exposes you to the risk that your market order will be processed at the new best order, even though it may now be unfavorable. This is why a market order is considered to be unprotected.

See Example 2: How to Place a Market Order in the next section, How to Trade.

3. Market Limit Order

A Market Limit Order is a protected type of trade that is similar to a market order because it can sell to the best bid or buy from the best ask but, unlike the market order, a market limit order is executed *only* if it meets or beats the pre-specified price at which you were willing to buy or sell. This is done in order to protect you from order execution risk.

A market limit order must specify both a **price** and a **quantity**. The price represents the limit that must be met or bettered before the order is processed. A Market Limit Order is always placed by a Market Taker.

See Example 3: How to Place a Market Limit Order in the next section, How to Trade.

Time and Interest

Real Time vs. Virtual Time

An important convention in real world money markets is the treatment of time and interest. This is referred to as the “daycount convention”, which governs how interest is calculated. Similarly, in the FTS markets, it is important to understand how time and interest are treated. This section provides the primary convention that is applied in the FTS system.

In a typical FTS case, you will cover a large period of virtual time in a short period of real time. For example, an FTS case may have you track trading activity over a period of 3 virtual years however, in real time, this may be represented in a 15 minute session, with each “year” lasting only 5 minutes.

Interest

The FTS Trading Screen displays a risk free rate of interest in decimal form. The default for an FTS case follows the money market convention of being applied as simple interest for the time period described in the case. For example, if 1 period = 1 year and the risk free rate = 0.04 then the Annual Percentage Rate (APR) is 4%. Given the importance of the time value of money in finance, the default case can be changed by your instructor.

The treatment of interest follows the typical money market convention. Your instructor is given four main options regarding how interest payments can be made. The first option, Interest on Cash at End of Period, is the default payment option and will therefore be used most of the time. Details for the other interest payment options with calculations can be found in **Appendix IV: Interest**.

- 1. Interest on Cash at End of Period:** This interest payment option calculates interest on your cash balance at a fixed rate then pays the interest to your money market (cash) account *at the end* of each period. Interest on Cash at End of Period is the default interest payment and the simplest implementation of the time value of money for trading purposes. The interest rate used in the calculation below is equal to the Risk Free Rate found on the FTS Trader Screen.

$$\text{Interest Received/Paid} = (\text{End of Period Cash Balance}) * (\text{Interest Rate})$$

In the FTS Markets you can place trades either manually or with hand signals. Over the next several pages, you will find basic examples to help acquaint you with both of these options. Each trading example provided in this manual is based on an **Order Driven Market**. Below is a list of the sample trades that you will find in this section:

Manual Trade Examples

- Example 1: Placing a Limit Order Manually
- Example 2: Placing a Market Order Manually
- Example 3: Place a Market Limit Order Manually

Hand Signal Trade Examples

- Example 4: Placing a Limit Order using Hand Signals
- Example 5: Placing a Market Order using Hand Signals

Important! Market Limit Orders can not be placed with hand signals due to the fact that the price must be manually entered with this type of trade.

Manual Trades vs Hand Signals

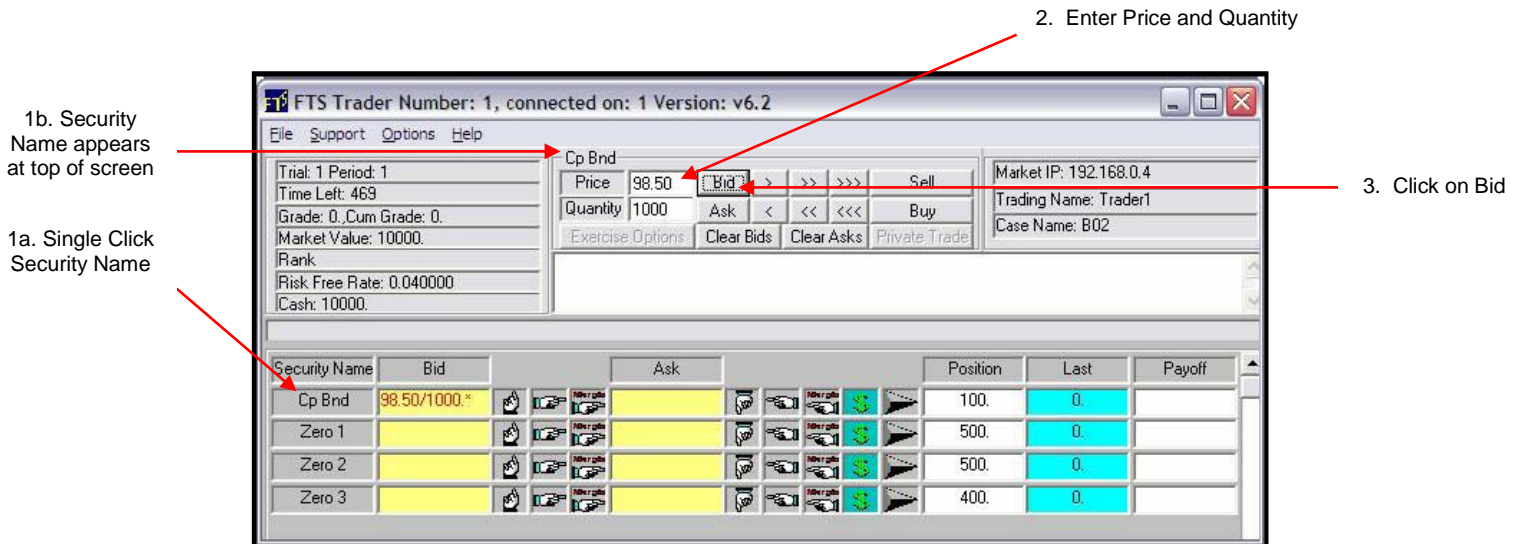
Manual Trades When manually trading, first click on the security name that you would like to trade, to highlight the name in the top center part of the screen. You then enter the price, quantity or both (depending on the type of trade) into the text boxes in the top center part of the FTS screen. Finally, you click on bid, ask, buy or sell to submit your trade to the market.

Hand Signals When trading with hand signals, you only need to click on one of the hand signal buttons to submit a trade for the quantity that you currently have in the quantity text box (top middle part of the screen). The up/down hand signal buttons have the power to increase or decrease the best existing bid/ask (i.e., bid to buy or ask to sell) in the market for the security that corresponds to the hand signal. Similarly, the horizontal hand signals let you send a market order (sell to the bid or buy from the ask) for the security corresponding to the horizontal hand signal. In either case you can execute the transaction with a single click of the hand signal.

Important! The fixed increments that the hand signals increase and decrease bids and asks for, is determined by you at the beginning of a trading sessions. Simply go to Options, on the menu bar, click on Ticks for Bid/Asks and select a tick size value. This value may be changed during the course of trading, but will take up some of your trading time.

When deciding which alternative to use for trading, it is basically a question of flexibility versus speed. Manual trades are more flexible because you are able to constantly change your price or quantity entered. Whereas, with hand signals you have the power of speed because you are able to increase or decrease values and submit trades with one simple click of a button. Fortunately, with the FTS system, you are able to use both methods interchangeably during trading, but it may slow down your trading process.

Example 1: Placing a Limit Order Manually



FTS Trading Screen

Question: How do I submit a *bid to buy* 1000 units of the Cp Bnd at 98.50?

Step 1: Under Security Name on the FTS Trading Screen, single click on the name Cp Bnd to select this security. The name will appear in the top middle part of the screen once selected.

Step 2: Enter 98.50 in the Price textbox and enter 1000 in the Quantity textbox.

Step 3: Click on Bid to submit the bid to buy.

Note: The asterisk next to the newly listed price/quantity, found in the Bid column at the bottom left side of the FTS Trading Screen, indicates that you are either the best market maker or the best market taker. In the case above, you are the best market maker.

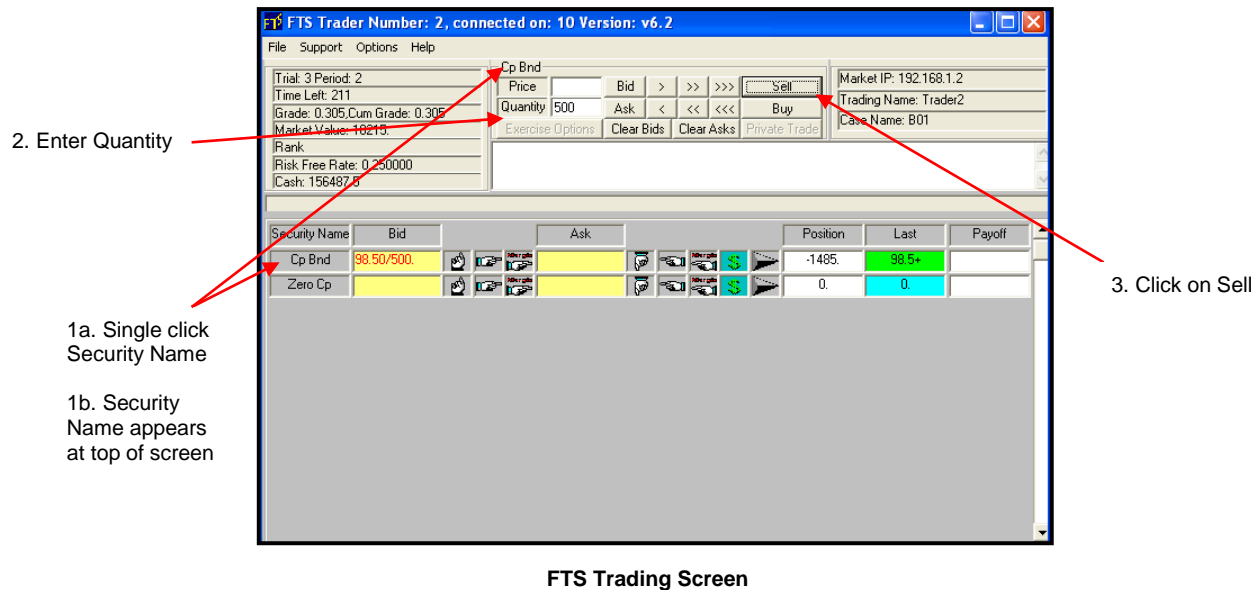
Market Maker

In Trading Example 1, you would like to buy a security at a price and quantity specified by you, the trader. This type of trade is recognized as a **limit order** because you have specified both the price and quantity for the security that you are trading. In addition, you are recognized as a **market maker** because you are initiating a trade by making a **bid to buy**.

Limit Order – Ask to Sell

In the example above, you are placing a Bid to Buy. In order to place a limit order with an Ask to Sell, enter the information the same way as above, but instead of clicking Bid to submit the order, click on Ask.

Example 2: Placing a Market Order Manually



Question: How do I submit a *market order* selling 500 units to the existing Bid?

Step 1: Under Security Name, single click on the name Cp Bnd to select this security. The name will appear in the top middle part of the screen once selected.

Step 2: In the top middle part of screen enter 500 in the Quantity textbox. Leave the Price textbox blank to indicate no limit and submit an unprotected market order.

Step 3: Click on Sell to submit the order (sell to the bid).

Note: In Trading Example 2, you would like to sell 500 units of the security, Cp Bnd, to the market maker's bid of 98.50 per unit. The question indicates that the trader is a market taker because the trader would like to submit a market order to sell to a bid.

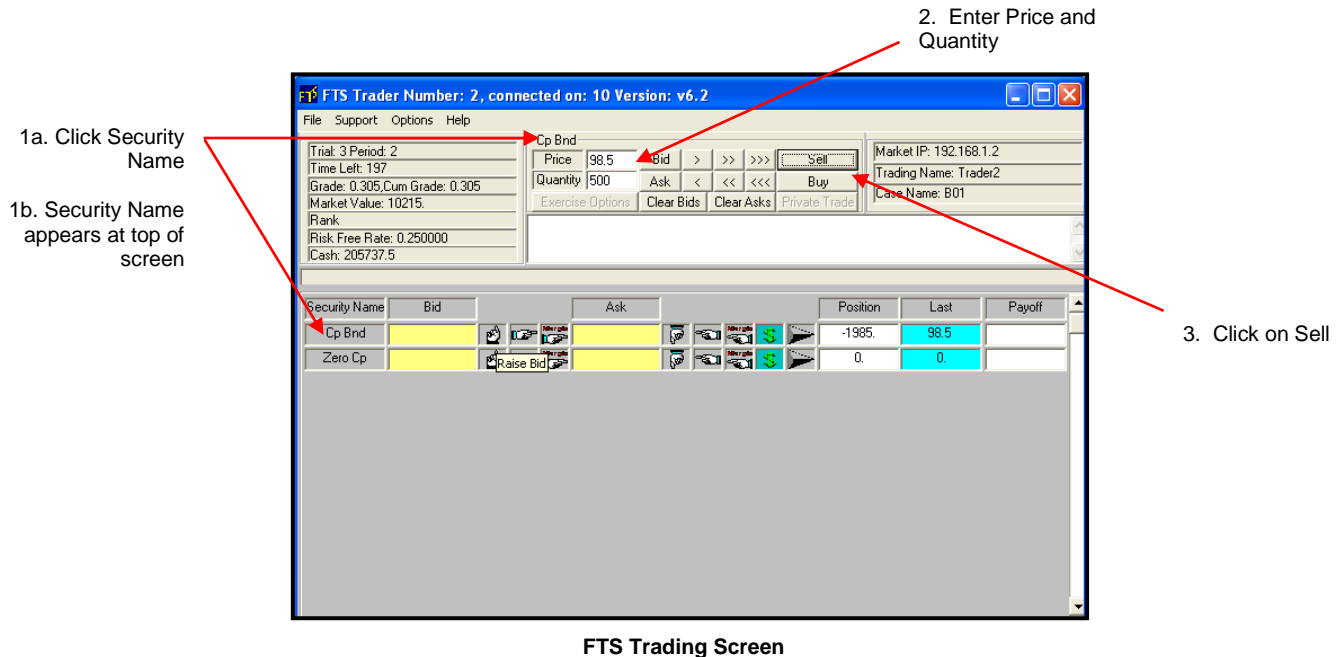
Market Taker

In Trading Example 2, you would like to sell a specified number of units to the current bid. This type of trade is recognized as a **market order** because you have specified the quantity but do not have control over the price. In addition, you are recognized as a **market taker** because you are responding to a trade by submitting an offer to **sell to another trader's bid**.

Market Order – Buy from Ask

In the example above, you are selling to a bid. In order to place a Market Order with a buy from ask, enter the quantity as above, but instead of clicking on Sell to submit the trade, click on Buy.

Example 3: Placing a Market Limit Order Manually



Question: How do I submit a *market limit order* selling 500 units at 98.5 or better?

Step 1: Under Security Name, single click on the name Cp Bnd to select this security. The name will appear in the top middle part of the screen once selected.

Step 2: In the top middle part of screen, enter 98.5 in the Price textbox and 500 in the Quantity textbox.

Step 3: Click on Sell to submit the order (sell to the bid). By entering a price, you are ensuring that you will sell to a Bid for 98.5 or better, if available.

Note: In Trading Example 3, you would like to sell 500 units of the security, Cp Bnd, at the price of 98.5 or better to the current market maker. This question indicates that you are a market taker because you would like to sell to a bid.

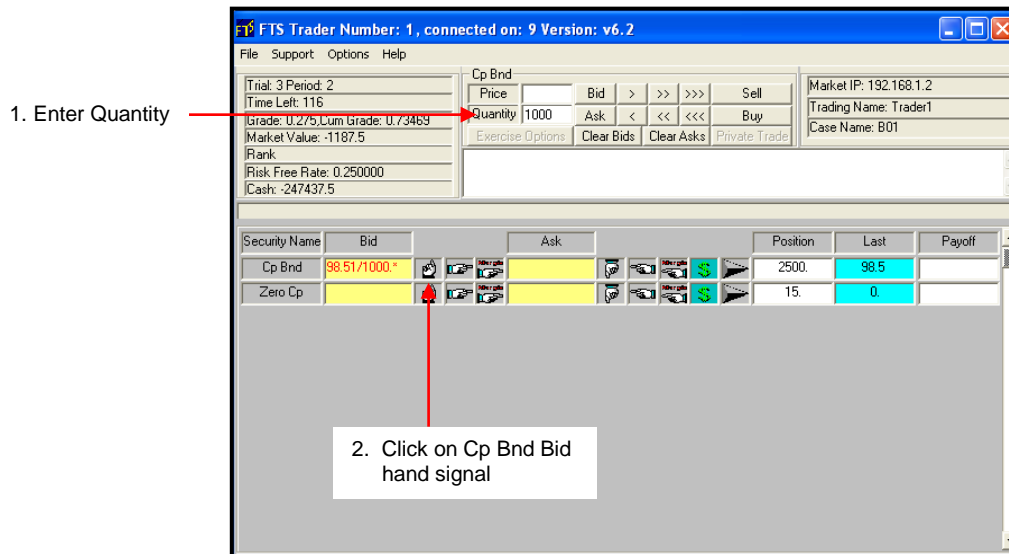
Market Taker

In Trading Example 3, you would like to sell a specified number of units to the current bid at a specified price or better. This type of trade is recognized as a **market limit order** because you have specified both the price and the quantity. In addition, you are recognized as a **market taker** because you are responding to a trade by submitting an offer to **sell to another trader's bid**.

Market Order – Buy from Ask

In the example above, you are selling to a bid. In order to place a Market Limit Order with a buy from ask, enter the price and quantity as above, but instead of clicking on Sell, click on Buy to submit the trade.

Example 4: Placing a Limit Order using Hand Signals



FTS Trading Screen

How can I *make market* if I want to increase the existing 98.5 Bid to 98.51 for 1000 units?

Step 1: Select Options from the main menu. Click on Ticks for Bids/Asks and select 0.01. This action will set your hand signal increments to .01 increases or decreases in price. You only need to complete this step *once*, unless you would like to increase your tick incremental value for future trades.

Step 2: In the top middle part of screen enter 1000 in the Quantity textbox. Whenever you manually enter a value into either the Price or Quantity textbox, it will automatically override any of the values increased/decreased by the hand signals.

Step 3: Click on the upward pointing Hand Signal beside Cp Bnd, found in the Bid column, to raise the existing Bid by 1 cent for 1000 units.

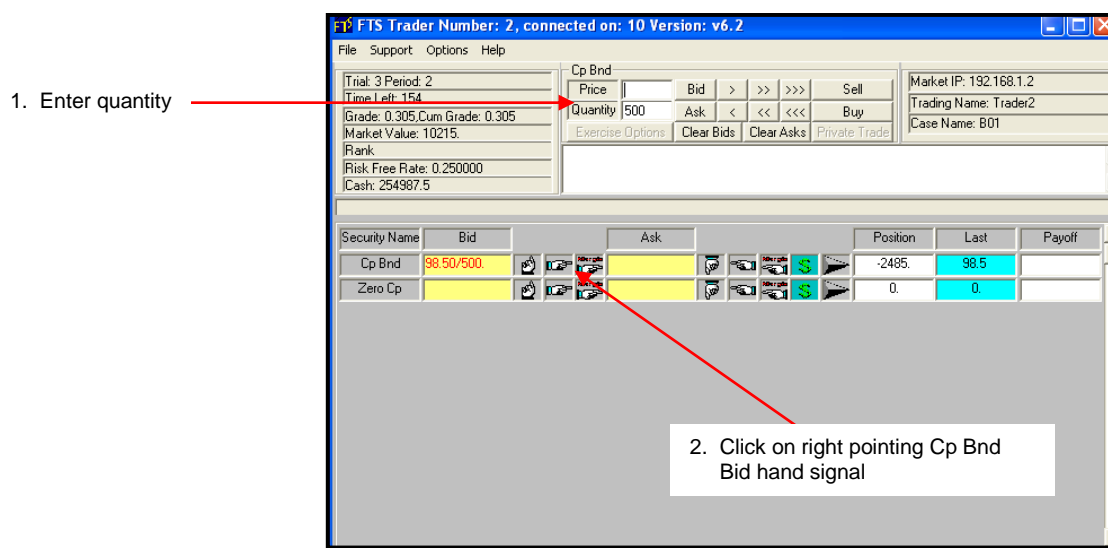
Market Maker

In Trading Example 4, you would like to place a **bid to buy** at a specified price and quantity. This type of trade is recognized as a **limit order**. When using hand signals, there must already be an existing trade on the screen because you are increasing or decreasing the bid/ask in fixed quantities. In addition, you are recognized as a **market maker** because you are initiating a trade by placing a bid to buy.

Limit Order – Ask to Sell

In the example above, you are placing a bid to buy. In order to place a Limit Order with an ask to sell, enter the price and quantity as above, but instead of clicking on Bid, click on Ask to submit the trade.

Example 5: Placing a Market Order using Hand Signals



FTS Trading Screen

How do I submit a *market order* selling 500 units to the existing Bid?

Step 1: In the top middle part of screen enter 500 in the Quantity textbox. In this example, it does not matter if you have not selected a security and you do not need to enter a price (because this number will be ignored).

Step 2: Click on the middle, right pointing hand signal beside Cp Bnd (on the Bid Side) to sell.

Note: Trading Example 4 indicates that the trader is a market taker because the trader would like to submit a market order to sell to a bid.

Market Taker

In Trading Example 5, you would like to **sell to a bid** at a specified quantity. This type of trade is recognized as a **market order**. When using hand signals, there must already be an existing trade on the screen because you are increasing or decreasing the bid/ask in fixed quantities. In addition, you are recognized as a **market taker** because you are responding to an existing trade by selling to a bid.

Market Order – Buy from Ask

In the example above, you are selling to a bid. In order to place a Market Order with a buy from ask, enter a quantity as above, but instead of clicking on Sell, click on Buy to submit the trade.

Market Limit Orders and Hand Signals:

A Market Limit Order cannot be executed with hand signals because this type of order requires that the trader specify the price.

A common problem faced by all real world traders involves developing and analyzing a trading strategy. A positive feature of the FTS market structure is that, unlike the real world, FTS trading trials are designed to help you learn by modifying your strategy on the basis of feedback across trials. As a result, you are able to analyze your performance relative to that of the other traders who make up the market's trading crowd. In this section, we will review over specific ways to evaluate your trading performance in the FTS system, both at the end of each period and the trial.

How Trading Performance is Measured

Different FTS cases measure performance according to different sets of criteria. The most common performance measures look at how you:

1. Managed Returns
2. Managed Risk
3. Both – Managed Returns and Risk

End of Period Performance Indicators

At the end of every Trading Period, you can look at the following four items.

The screenshot shows the FTS Trader interface with the following data:

Security Name	Bid	Ask	Position	Last	Payoff
Cp Bnd			1100.	102.5+	10.
Zero 1			2500.	89.56-	0.
Zero 2			1500.	89.5+	100.
Zero 3			1400.	78.5+	0.

Annotations in the image:

- A red arrow labeled "2. Market Value" points to the "Market Value: 137240." field in the top left panel.
- A red arrow labeled "1. Realized Payoffs" points to the "Payoff" column in the table.

1. **Realized Payoffs:** The Realized Payoffs at the end of the period are *security specific*. For a stock, the realized payoff is the end of period dividend. The end of period dividend can be random so this will indicate the actual realization of that dividend. For a fixed income security, the realized payoff is contractually specified and so realized payoff will simply equal the final face amount.

2. **Market Value:** The Market Value will provide you with an indication of your final liquidated value. It will display your position marked to market in securities. This figure does not include cash. Market Value is the product of Position * Last.
3. **Trading Summary:** The Trading Summary, as shown below, will automatically appear at the end of each trading period. At a glance, this summary provides information regarding changes in your cash account (i.e. money market account) over the course of the period. The Trading Summary also shows you what you have done relative to having done nothing, the actual price that you have bought or sold at (VWAP) and how your cash account changed. If you are trading and buying and selling approximately the same quantity, then comparing the actual sell VWAP to your actual buy VWAP will indicate whether or not you have made trading profits for that period. The bars on the Trading Summary show, graphically, actual cash versus no cash trades. The supporting numbers for this graph, are provided in the grids below.



Trading Summary Screen

4. **VWAP Price Graph:** The Buy and Sell VWAP (Volume Weighted Average Price) Price Graph, see **Appendix III: FTS Support Screen**, indicates how you are buying and selling compared to the market. If you are buying lower than the market VWAP and selling higher than the market VWAP, then you are probably doing well. In contrast, if you are buying higher than the market VWAP and selling lower than the market VWAP, then you are probably not performing well. Again, this is not a perfect indicator because the market may not be getting the prices right.

End of Trial Performance Indicators

At the end of the Trading Session, the best indicators for evaluating your final performance are Trading Summary, Rank, Grade Cash and Average, High and Low.

1. **Realized Final Payoffs:** Your realized payoffs are used to mark your position to market. Once your positions are marked to market, the payoffs are automatically liquidated (or converted to cash).
2. **Grade Cash:** This is your trading bonus for the current trial. The method by which grade cash is calculated can be found in the trading case unless it has been over-ridden by your instructor. *Use your mouse-over for an explanation of the numbers listed.*
3. **Cumulative Grade Cash:** This is your trading bonus cumulated across trials. *Use your mouse-over for an explanation of the numbers listed.*
4. **Average, High and Low:** The Average, High and Low provides the current Average, High and Low of Cumulative Grade Cash for the market as a whole. *Use your mouse-over for an explanation of the numbers listed.*
5. **Rank:** *Use your mouse-over for an explanation of the numbers listed.* Your rank indicates your **relative performance** compared to others in the trading crowd (1 is the highest). This number is based on your final market value. A consistently low rank suggests that you are employing an inferior trading strategy relative to the other members of the trading crowd. Each FTS trading case links the price discovery problem to specific and important learning objectives. If you are finding yourself in a low ranking position, be sure to check that you understand the concepts that underlie the learning objectives established by the case. Your rank lists three values: Current Grade, Cumulative Grade and Average Grade (in that order).

3. Grade Cash
4. Cum. Grade Cash
5. Average, High and Low

The screenshot shows the FTS Trader software interface. The top window title is "FTS Trader Number: 1, connected on: 1 Version: v7.0". The interface includes a menu bar (File, Support, Options, Help) and a main control area with buttons for "Price", "Quantity", "Bid", "Ask", "Clear Bids", "Clear Asks", "Clear All", "Sell", and "Buy". A status bar on the right shows "Market IP: 192.168.1.2", "Trading Name: Trader1", and "Case Name: B02".

On the left side, a box contains performance indicators:

- Trial: 1 Period: 3
- Time Left: 0
- Grade: 19.21741, Cum Grade: 19.21741
- Avg: 18.9 Hi: 19.2 Lo: 18.5
- Ranks: 1,1,1.00
- Risk Free Rate: 0.160000
- Cash: 192174.13797

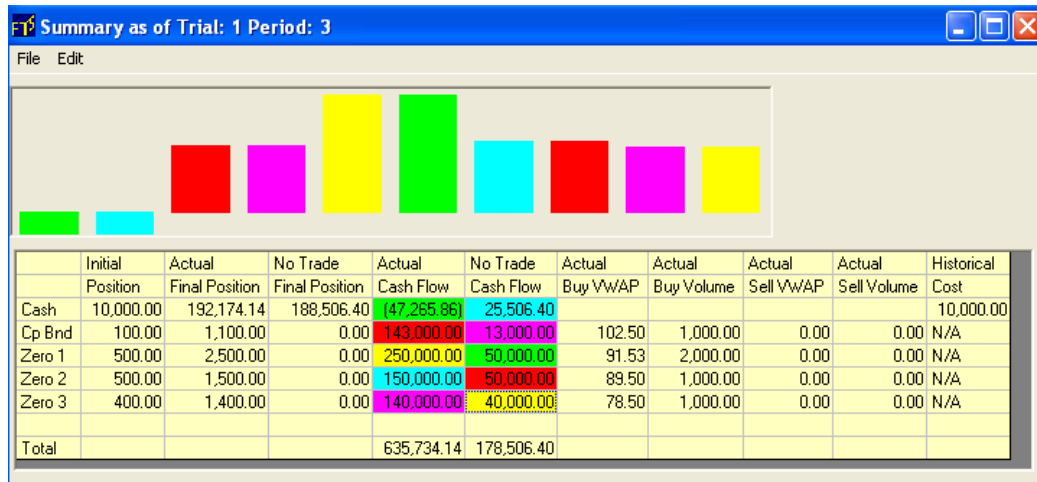
Below this is a table with columns: Security Name, Bid, Ask, Position, Last, and Payoff. The table contains the following data:

Security Name	Bid	Ask	Position	Last	Payoff
Cp Bnd			1100	102.5+	110
Zero 1			2500	89.56-	0
Zero 2			1500	89.5+	0
Zero 3			1400	78.5+	100

2. Realized Final Payoff

Analyzing Performance

6. Trading Summary: The Trading Summary, as shown below, is an important performance indicator. This summary will immediately tell you how you have traded relative to doing nothing (autarky). Recall that at the end of a trial your entire position is liquidated (converted to cash). As a result, by comparing your actual final position in cash to your no trade final position in cash, you will see whether your trading realized a gain or a loss. In addition, the Trading Summary indicates each individual security's contribution to cash from the final period and your buy VWAP and sell VWAP. Based on this evidence you can evaluate any gains or losses.



Trading Summary Screen

Sample Autarky* Trading Performance Analysis: FTS Case B02

End of Period 1

The screen above displays a sample trading screen for FTS Case B02. The screen shows the trader's position at the end of Trial 1, Period 1. Further, the interest payment method used for case B02, is the default Interest on Cash at End of Period. Follow along with the steps below for a specific example of what happens at the end of a trading period and how to analyze performance. Assume the following about this case:

- Initial Position:
 - Cash: 10,000
 - Coupon Bonds: 100
 - Zero 1 Bonds: 500
 - Zero 2 Bonds: 500
 - Zero 3 Bonds: 300
- No trades were made throughout entire trial

End of Period Performance Analysis

1. Realized Payoffs

Under the Payoff column the cash distribution per unit of each security market open is realized. The Coupon Bond (Cpn Bnd) pays coupon payment number 1 which equals 10. The 1-year Zero Coupon Bond (Zero 1) matures and pays 100. The remaining two zero coupon bonds have not yet matured therefore there is a zero distribution from each of these in the Payoff column.

2. Market Value

At the end of year 1, after the bond and interest payments have been made, your market value is further increased/decreased by the product of the two columns: Position * Last .¹ In this example, market value is increased from the Cp Bnd payment by $100 \times 97.5 = 1,000$.

3. Trading Summary

The Trading Summary, as shown below, automatically appears at the end of each trading period. Due to the fact that this is an autarky case, the summary below is showing you what happened to your positions as a result of not having traded.

	Initial Position	Actual Position	No Trade Position	Actual Cash Flow	No Trade Cash Flow	Actual Buy VWAP	Actual Buy Volume	Actual Sell VWAP	Actual Sell Volume	Historical Cost
Cash	10,000.00	61,400.00	61,400.00	400.00	400.00					10,000.00
Cp Bnd	100.00	100.00	100.00	1,000.00	1,000.00	0.00	0.00	0.00	0.00	N/A
Zero 1	500.00	500.00	500.00	50,000.00	50,000.00	0.00	0.00	0.00	0.00	N/A
Zero 2	500.00	500.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Zero 3	400.00	400.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Total				51,400.00	51,400.00					

Trading Summary

4. VWAP Price Graph

Notice that the VWAP Price Graph below also does not indicate any prices for Trader 1. This is because we have not traded so there is no information to display.

Bid	Qty	ID	Ask	Qty	ID
			97.56	1000	Trader2

Analyzing Performance

¹ Autarky is when a trader does not complete any trades.

Reconciling Cash

The end of period 1, year 1 total cash balance for the trader is 61,400. The cash amount has been reconciled as follows:

Reconciliation

Opening Balance	10,000
+ Interest (10,000*.04)	400
+ Coupon Payments (100*10)	1,000
+ Face Value from Zero 1 (500*100)	50,000
Total Cash at End of Period	61,400

End of Period 2

After your cash account has been reconciled at the end of Period 1, the market in B02 then opens again for trading period 2 (day 1, year 2). The same set of transactions apply to the end of period 2 except that in B02 the year 2 risk free rate is 10% APR. In a real trading case, you could again analyze your performance indicators as we did in Period 1.

End of Period 3

Shortly after the end of year 2, the market opens again for trading period 3 (day 1, year 3). This is the last trading period and the end of year 3 is the end of the trading trial in B02.

Note: Normally, multiple trials are conducted to let you gain experience with the trading environment and competing against other traders in the trading crowd.

End of Trial Performance Analysis

1. Rank
2. Grade Cash
3. Avg High & Low

FTS Trader Number: 1, connected on: 1 Version: v7.0

File Support Options Help

Trial: 1 Period: 3
Time Left: 0
Grade: 18.85064, Cum Grade: 18.85064
Avg: 18.9 Hi: 20.9 Lo: 16.9
Ranks: 2,2,2,00
Risk Free Rate: 0.160000
Cash: 188506.39967

Market IP: 192.168.1.2
Trading Name: Trader1
Case Name: B02

Security Name	Bid	Ask	Position	Last	Payoff
Cp Bnd			100	99 +	110
Zero 1			500	0	0
Zero 2			500	96 +	0
Zero 3			400	98 +	100

End of Period 3

The screen above illustrates the end of period 3. At the end of any trial the following additional information is released:

1. Rank

Current Grade: Your current grade is 2.
 Cumulative Grade: Your current cumulative grade is 2.
 Grade: Your average grade is 2.

There were 3 traders in this market, therefore your trading strategy appears neither to be the best nor the worst in the market.

Note: Good trading performance is indicated by a consistently low rank (with 1 being the lowest).

2. Grade Cash

At the end of each trial your entire position arising from the current trial is cashed out. Cash represents the total amount earned across the three trading periods in B02. The amount earned is converted into "Grade Cash" in the following method (as specified by Case B02):

$$\text{Grade Cash} = 0.0001 * \text{Cash} = 0.0001 * 188506.399 = 18.50639$$

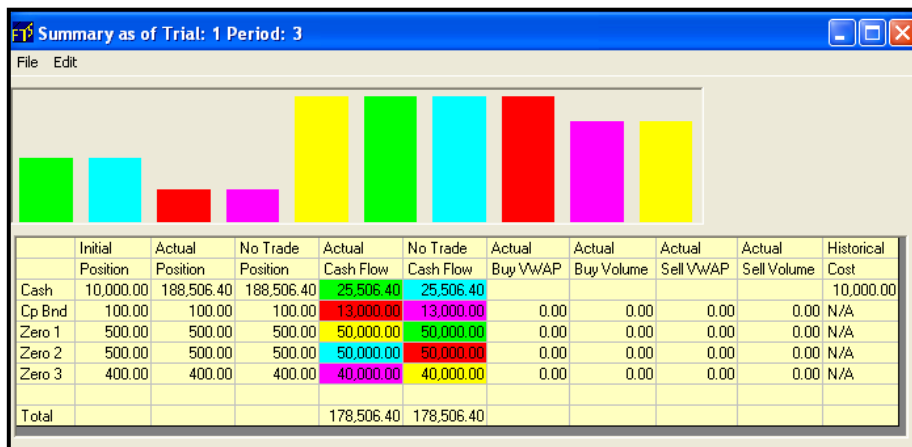
Grade Cash is also cumulated across trials for performance measurement purposes. In the above screen Cum Grade Cash appears to be missing but this can be read from the mouse-over (holding the mouse over the filed) as 40.1558.

3. Average, High and Low

These numbers indicate the average cumulative grade cash high and low for the entire market.

4. Trading Summary

The trading summary below indicates that this strategy was a positive one. The initial cash increased from \$10,000 to an actual cash flow of \$25,506.40 as a result of implementing a no-trade (autarky) strategy.



FTS Program Installation

Please install the FTS System Manager from www.ftsmo.dules.com

Troubleshooting

If your instructor has the market running and you fail to connect, the following set of tests will help you to resolve the problem:

✓ **General Information Test**

When you fail to correctly login, it is important to begin by checking that you have correctly entered your information into the Initial Trading Screen. Namely the Market IP Address and your Trading Name, as these are both required fields.

✓ **Firewall Test**

If you have tested your general information and have determined that everything is entered correctly, your next step should be to check your firewall. To perform a quick test on your firewall, follow the brief instructions below.

Step 1: Left click on Start at the bottom of your screen.

Step 2: Select the option for Run... to open a DOS window.

Step 3: Enter: Ping [and your IP Address]. (ex. Ping 172.131.23.142)

If you fail to get a response from the server, then your failure to login is likely a firewall issue. You will need to temporarily stop your firewall and perform the firewall test again. Some firewalls block all ports other than the main http port 80 and selected others. The default port number for the FTS market is 26888. If you are dealing with a firewall issue that involves blocked port numbers you will need to unblock the port number working within your firewall software or temporarily stop your firewall.

✓ **Missing Component Test**

If you are receiving a message stating that there is a missing component, return to the www.ftsmo.dules.com and repeat the one time installation of the run time libraries. Click on Install Now and accept all defaults. You need to be logged into your own PC as a local administrator to complete this one time installation. To manually install the FTS program, please refer to **Appendix I: FTS Installation**, located in this manual.

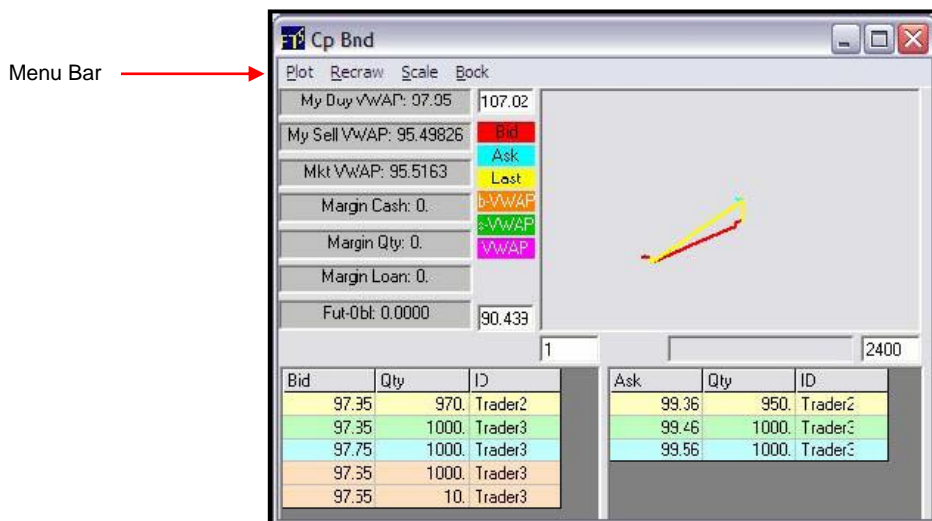
If you have tried all three of the tests above and are still unable to login to FTS Trader, please contact us by email at fts@ftsw eb.com or call 1-800-967-9367.

FTS Market Support Screen

The FTS Trader has a large amount of built in support. In addition, support can be greatly enhanced by linking to your personal Support Screen. In this section, we will introduce you to this support screen and how to use it to enhance your trading experience.

Step 1: Open the FTS Trading Screen.

Step 2: Click on Support from the menu bar and select Show Support. You can also access this support window by double clicking on one of the security names listed under the label, Security Name. Once you have completed these steps, your Support Screen will appear.



Central Limit Order Book

Elements of the Central Limit Order Book

Menu Bar

Plot

- **Plot Bid, Ask, Last:** This submenu option plots the bids (red), asks (blue) and last (yellow) on the graph.
- **MyBuy, MySell, Market VWAP:** This submenu option lists the individual trades in terms of your Volume Weighted Average Price (VWAP) and the

market's Volume Weighted Average Price (VWAP). VWAP is a trading benchmark widely used in practice.

Appendix III

Note: Your interpretation of this graph will depend upon your current role as a trader. If you are a trader, you will always want your buying VWAP (MyBuy) to be lower than the market's VWAP, during any given period, and vice versa for your selling VWAP (MySell). In contrast, however, if your role is as an analyst assessing fundamentals, then the relationship between MyBuy, MySell and Market VWAP may be irrelevant if you assess that the market is mispriced relative to their estimated intrinsic value.

- **Plot All:** This feature will plot all of the information: Bid, Ask, Last, MyBuy, MySell, Market VWAP.

Redraw

- **Redraw:** When you originally launch the Support Screen the graph may be blank. If this is the case, click on Redraw to refresh the graph.

Scale

- **Automatic:** This submenu item will automatically compute the scaling graph.
- **Manual:** This feature allows you to enter your own scale directly into the text box at each of the graph's corner axes.

Book

- **My Book:** This option displays your current dealing book for a particular security. Your current dealing book displays all of your outstanding bids and asks.
- **Entire Book:** Entire Book displays the central limit order book for the entire market. It provides all current bids and asks.
- **Trading Summary:** At the end of each period you can see your aggregate position. Your aggregate position displays your trading personal VWAP's (buying and selling) versus the market VWAP.
- **Trading History:** This option depicts your current personal trading history (i.e., current trading diary) or your Trading History sheet. The Trading History spreadsheet sheet has been maintained in case you have a history dependent trading strategy defined in your Excel support workbook.

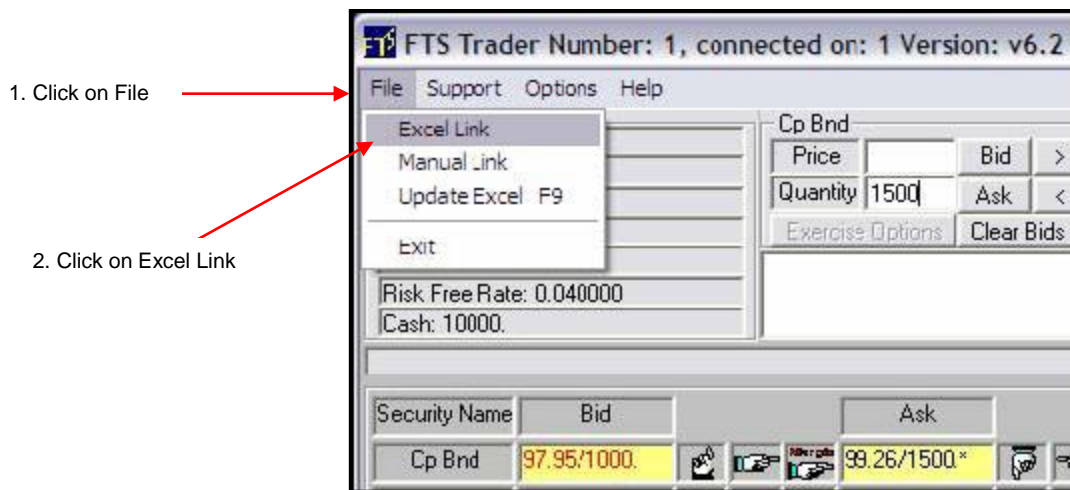
Linking to Excel

In the real world markets, Excel is widely used as an important trading support system. Excel provides the power and flexibility necessary to customize a trading support system according to your individual needs.

To make working with Excel an easier task, your FTS trader is designed to let you be up and running immediately by allowing you to link the trading screen directly to Excel. It also allows you to capture all of your personal transactions in the market automatically. Follow the steps below to learn how to link to Excel.

How to Link to Excel

Step 1: Give focus to your FTS Trading Screen and **click** on File.



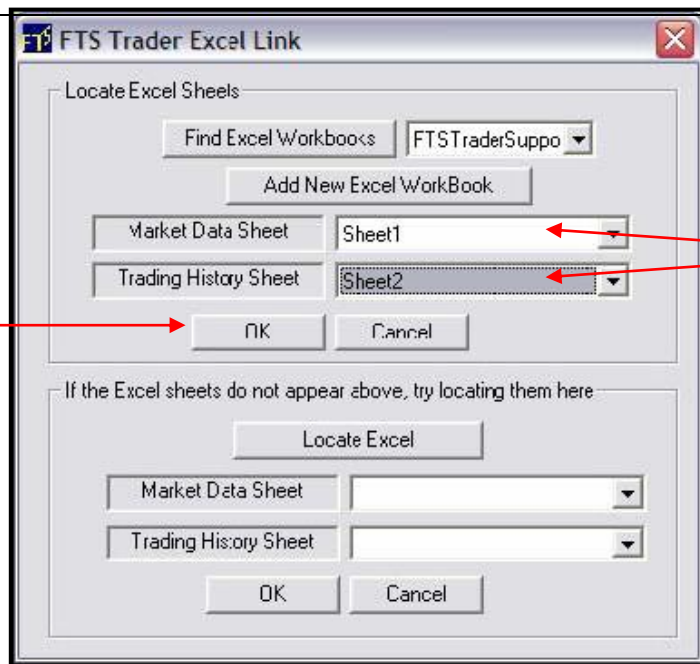
Step 2: **Click** on Excel Link.

Step 3: Once you have clicked on Excel Link, the screen below will appear. **Click on Find Excel Workbooks.**

3. Click on Find Excel Workbooks



Step 4: Use the drop-down menus next to Market Data Sheet and Trading History Sheet to select Sheet 1 and Sheet 2, respectively. *It is important to select two different sheets within your Excel workbook for Market Data and Trading History.*



4. Select Sheet 1 and Sheet 2 from drop-down menus

5. Click OK

Step 5: Click OK.

Note: If the Excel sheets do not appear on your screen, click on Ctrl+Alt+Del and select Task Manager. Select Applications then double click on Task to sort all open Applications. Close off all open Excel workbooks. These actions will ensure that the FTS Trader will be able to effectively locate the correct Excel workbook.

Excel Link

	A	B	C	D	E	F	G	H	I	J	K
1		Security	Bid	Bid Qty	Ask	Ask Qty	Units	Paycfl	Last	Last Qty	VWAP
2		Cp Bnd	97.95	1000	99.26	1500	100				
3		Zero 1					500				
4		Zero 2					500				
5		Zero 3					400				
6		Cash	10000								
7											
8		Time Left	Total Time	Trial	Period	RiskFree					
9		308	500	1	1	0.04					
10											
11											

Once you have made your link to Excel, a screen similar to that shown above, will appear. Take a minute to view each description of the sheets contained in this workbook. The screen above is a sample screen; data will differ depending on the case being used.

Market Data Sheet

In the example above, the Market Data Sheet, is displayed on Sheet 1 because we linked Sheet 1 with Market Data when we established our initial Excel Link. The Market Data Sheet provides a real time link to the market data. Everything in this sheet will automatically update in real time as trading takes place.

Security: The Security column lists all of the securities that are traded in the FTS case with which you are working. At the bottom of this column is Cash.

Bid: The Bid column lists the current best bid for each security being traded. If the Bid number is red then you are the current market maker in that security.

Bid Qty: The Bid Qty column lists the quantity associated with the bid.

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Appendix III

Ask: The Ask column lists the current best bid for each security being traded. If the Ask number is red then you are the current market maker in that security.

Ask Qty: The Ask Qty column lists the quantity associated with the ask.

Units: The units indicate the number of units that you have bought or sold.

VWAP: The VWAP Column is the Market Volume Weighted Average Price Column and is applicable if the trading case involves futures.

My Buy VWAP: The My Buy VWAP column lists your personal buying VWAP from all trades where you either bought as a market taker or a market maker.

My Sell VWAP: The My Sell VWAP column lists your personal selling VWAP from all trades where you either sold as a market taker or a market maker.

Margin Cash: The Margin Cash column is applicable if the trading case permits margin trading.

Margin Quantity: The Margin Quantity column is applicable if the trading case permits margin trading.

Margin Loan: The Margin Loan column is applicable if the trading case permits margin trading.

Last Info: The Last Info column provides the current headline (if any news is available) for a security. The FTS markets also support program trading strategies from this Excel support sheet.

Trading History Sheet

Sheet 2 contains your personal trading diary. The Trading History automatically records all of your trading transactions.

Trial: Trial indicates the trial in which past trading has occurred.

Period: Period indicates the period in which past trading has occurred.

Time: Time indicates the length of the time that the trading lasted.

Security: Security indicates the securities that you have traded in the past.

Action: Action indicates whether you bought or sold in a trade.

Price: Price lists the prices at which you have bought or sold securities.

Quantity: Quantity lists the quantities of the securities that you have bought and sold.

My Buy VWAP: The My Buy VWAP column lists your personal buying VWAP from all trades where you either bought as a market taker or a market maker.

My Sell VWAP: The My Sell VWAP column lists your personal selling VWAP from all trades where you either sold as a market taker or a market maker.

Market Value: The Market Value will provide you with an indication of your final liquidated value. It will display your position marked to market in securities. This figure does not include cash.

Program Trading

In a fast moving market, program trading *may not* be efficient because the resources applied to Excel in Windows may slow down the Excel response. As a control against this you can click on the File from the FTS Trader Menu Bar and select Manual. The Manual option will break the real-time Excel link and maintain an Excel link that can be updated manually. To update manually, you may either click on File from the FTS Trader Menu Bar, then click on Update Excel F9 or you can simply use the F9 key directly in Excel.

Please Note: *Program Trading is a function that must be turned on by your moderator in order to use it in a trading session!*

Transmitting Orders

As a trader, you can use your support Excel Spreadsheet to transmit orders to the market in three ways:

1. You can type the order directly into the relevant cell in your Excel spreadsheet.
2. You can paste in a set of orders into multiple cells. This allows you to transmit multiple orders at one point in time.
3. You can build an Excel macro that automates your orders.

Types of Orders

There are three basic order types that you can use in Excel:

1. Make Market: If you have dealing rights you can use Excel to post both bids and asks

for single or multiple securities directly to the market book.

2. **Take Market:** You may transmit market orders by buying from the ask or selling to the bid at your specified quantity for the best available price.
3. **Take Market using a Market Limit Order:** This order type allows you to buy from the ask at a quantity that you specify up to (and equal to) a price that you specify. Alternatively, you can sell to a bid for the quantity that you specify down to (or equal to) the price that you specify.

Trading Example

The following steps demonstrate how a trader can program a trade.

Step 1: Link to Excel using the steps detailed on pages ...

Step 2: Locate the Market Data sheet and look for the column listing Security Names.

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Appendix III

Step 3: Enter or paste your trade in column A, next to the Security Name that you wish to trade. For example, if Cp Bnd is a listed security and it is located in cell B2 (column B, cell 2), then you will place your trade into cell A2., so that the trade is next to the security name. This information will be automatically recorded by the FTS Trader as soon as it is entered into the cell.

Note: As mentioned above in, Transmitting Orders, you also have the option to enter a trade by creating a macro. A macro is an Excel feature that you can program to carry out a specific set of orders. In this case, your orders would involve entering trades every n seconds.

The following codes are recognized by FTS:

b/price/qty: bid/price/quantity (ex. b/85.67/201 – bid for a price of 85.67 and 2000 units)

a/price/qty: ask/price/quantity

y/price/qty: market buy limit order

s/price/qty: sell/price/quantity

y/qty : market buy order at the prevailing best market price

s/qty: sell/quantity

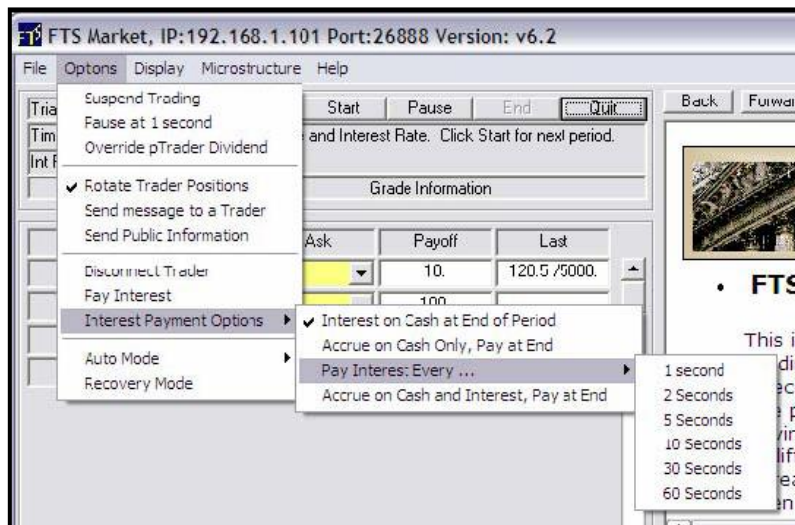
cb: clear bids

ca: clear asks

Codes will allow you to increase the level of sophistication by enabling you, for example, to place multiple trades at once.

Interest

The treatment of interest depends upon your instructor running the market. On your instructor's Central Market Screen, shown below, four main options are given regarding how interest payments can be made. The first option, Interest on Cash at End of Period, is the default payment option and will therefore be used most of the time.



Instructor's Central Market Screen

The four interest payment options found on the Instructor's Central Market Screen include:

1. Interest on Cash at End of Period (default)
2. Accrue on Cash Only, Pay at End
3. Pay Interest Every...
4. Accrue on Cash and Interest, Pay at End

When discussing Interest in the FTS cases, there are three types used for the calculations below:

1. Interest Rate = Risk Free Rate (located on the main Trader Screen)
2. Time Adjusted Interest Rate
3. Discrete Time Interest Rate

Interest Default

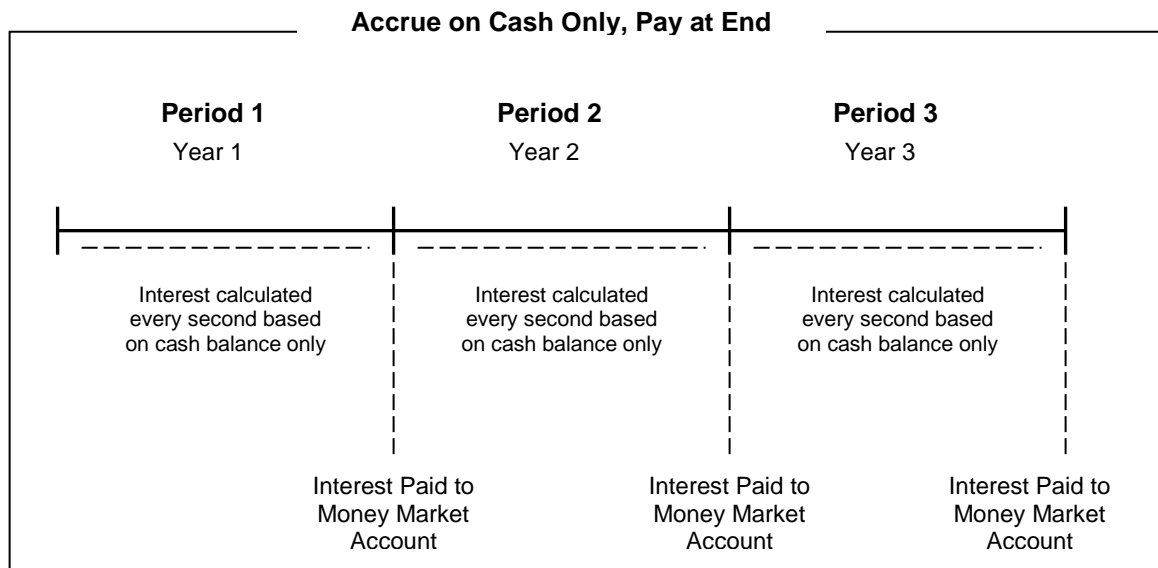
- 2. Interest on Cash at End of Period:** This payment option calculates interest on your cash balance at a fixed rate then pays the interest to your money market (cash) account *at the end* of each period. Interest on Cash at End of Period is the default interest payment and the simplest implementation of the time value of money for trading purposes.

$$\text{Interest Received/Paid} = (\text{End of Period Cash Balance}) * (\text{Interest Rate})$$

Other Interest Options

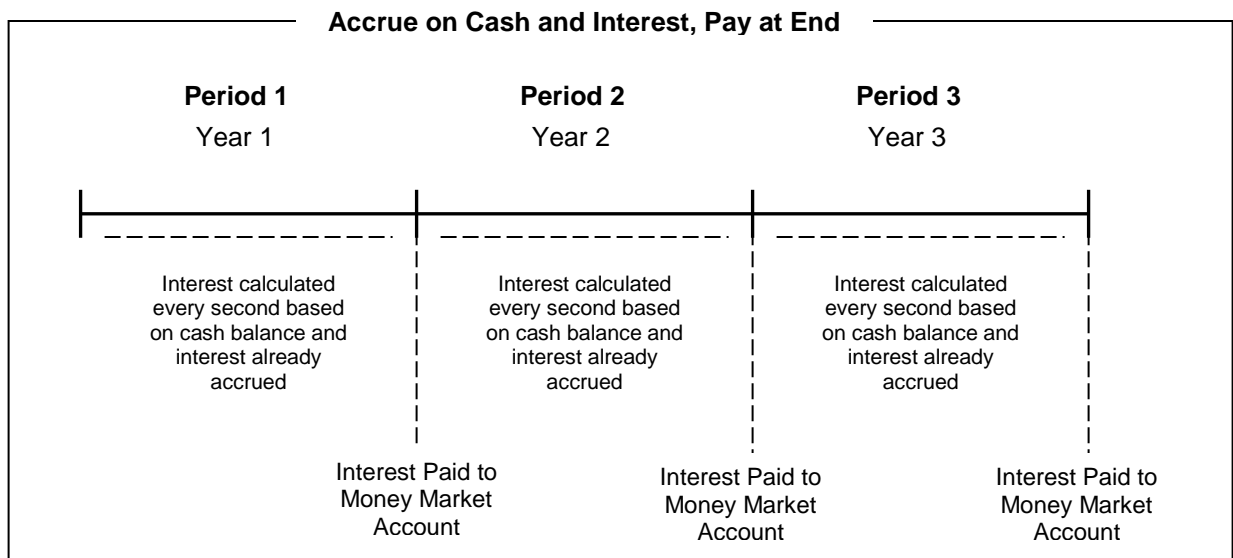
- 3. Accrue on Cash Only, Pay at End:** This payment option applies simple interest earned on your cash balance every second of each trading period. Pay at End means that the interest accrued during the period is paid at the end of the period.

$$\text{Interest Received/Paid} = \text{Cash Balance at time } t * \text{Time Adjusted Interest Rate}$$



4. **Accrue on Cash and Interest, Pay at End:** With this interest payment method, interest on your cash balance is compounded every second. Accrue on Cash and Interest earns interest on your cash balance *and interest* already earned on that balance. Pay at End means that the interest is only realized at the end of each period.

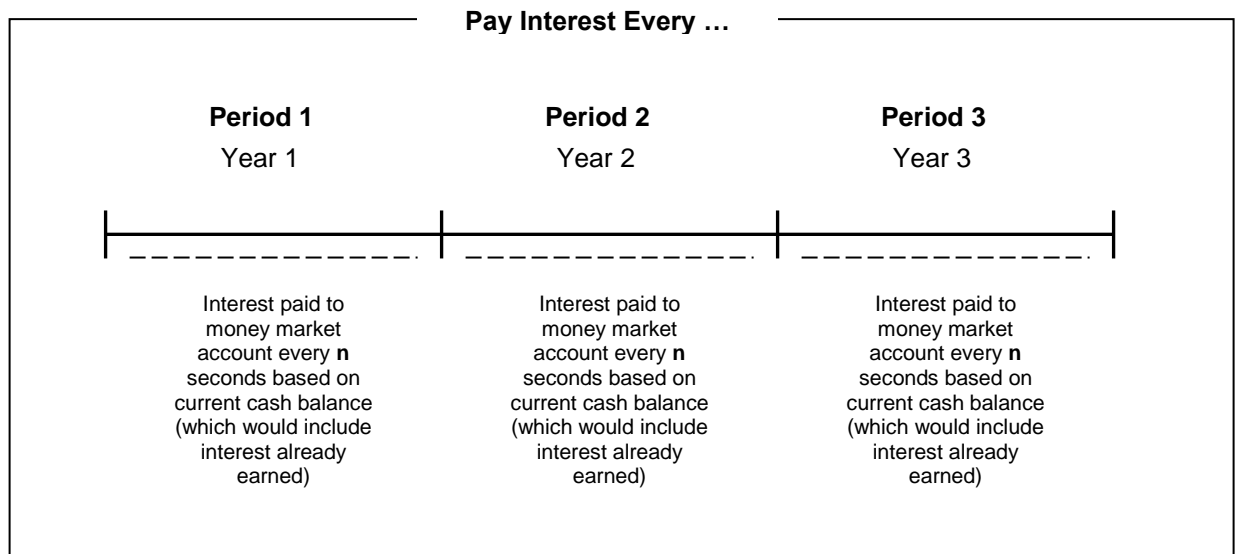
$$\text{Interest Received/Paid} = (\text{Cash Balance} + \text{Accrued Interest})_{\text{Time} = t} * (\text{Time Adjusted Interest Rate})$$



- 5. Pay Interest Every...:** This payment options permits interest to be paid at pre-specified intervals of time, as defined by your moderator. Your moderator's Central Market Screen offers several time options ranging from 1 second to 60 seconds. Pay Interest Every... pays interest at a compounded rate.

Interest Receive/Paid =

(Cash balance at end of each specified interval of time + Accrued Interest) * Discrete Time Interest Rate



A Note on the Real World Markets

In practice the time value of money is fundamental to understanding financial markets. In addition, when trading fixed income securities it is always important to understand quotation convention in terms of the time and compounding conventions implied. For example, the very liquid offshore deposit markets (e.g., Libor) is a rate that is quoted in terms of simple interest under an Actual Days/360 day-count convention. That means if Libor = 5% and \$1000 is deposited for 90 days then at the end of the 90 days you receive $\$1000 * (1 + 0.05 * 90 / 360) = \1012.50