

# FTS Interactive Markets

- Markets with price discovery
  - Students bid, ask, buy, sell in a continuous double auction
  - a “true market” in that you cannot trade unless someone else in the market is willing to trade with you
- Based around trading cases
  - Describe the environment, trading and learning objectives

# Requirements

- Install the FTS System Manager, available at [www.ftsmmodules.com](http://www.ftsmmodules.com)
- This must be done on every computer running the system
- PLUS: Port 26888 must be open for two-way communication between all computers in the room

# FTS Interactive Markets

- Moderator runs the **FTS Market** from the *FTS System Manager*
  - Selects the trading case
  - Allows connections (by students)
- Each student runs the **FTS Trader** from the *FTS System Manager*
  - Connects to the market
- Trading starts when moderator allows it
- All output is stored in a spreadsheet, easy to provide feedback or data for analysis

# Instructor

- Run the FTS System Manager
- Click “Moderator Applications”

The screenshot shows the FTS System Manager web application. The left sidebar contains two radio buttons: 'Student Applications' and 'Moderator Applications'. The 'Moderator Applications' option is selected and highlighted with a yellow box. Below the radio buttons, there is a text box with the instruction 'Student Applications. Select the application and click "Run Selected Application"'. A dropdown menu is labeled 'Select the application to run'. At the bottom of the sidebar, there is a checkbox labeled 'Download again before running' and a green button labeled 'Run Selected Application'.

The main content area is titled 'Student Applications' in red. Below the title, there is a paragraph: 'On the left, select the application you want to run, then click "Run Selected Application"'. Below this paragraph, there is a list of application categories and sub-items:

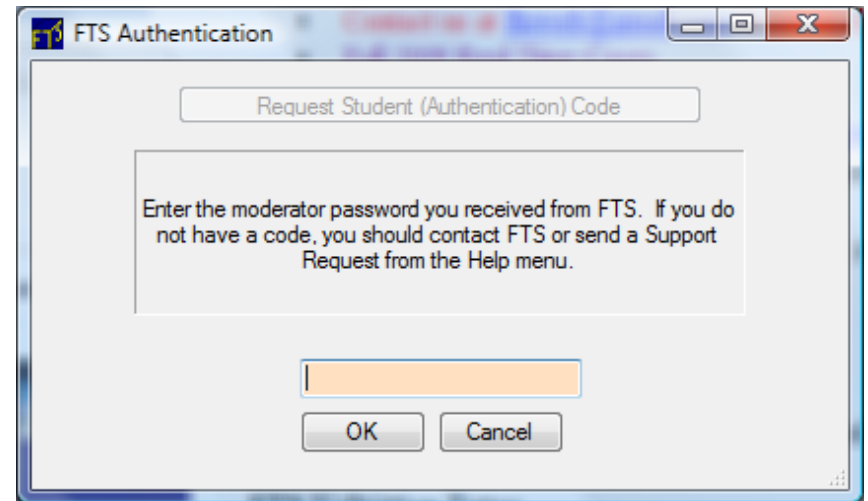
- [Overview of FTS](#)
- [The FTS Real Time System](#)
  - [FTS Real Time Projects](#)
- [The FTS Interactive Markets](#)
  - [Case Descriptions](#)
  - [Case Preparation Manual](#)
- [Overview of the FTS Modules](#)

On the right side of the main content area, there is a list of application categories and sub-items:

- [Bond Valuation and Bond Tutor](#)
- [Financial Statement Analysis and Valuation with Valuation Tutor](#)
- [Option Pricing and Hedging](#)
- [Modern Portfolio Theory](#)
- **US Treasuries**
  - [The Yield Curve](#)
  - [Inflation Expectations](#)
  - [Real Interest Rates](#)

# Instructor

- Enter your moderator password in the little popup window
  - If you don't have a password, please contact FTS



anager  
Moderators Options Help

## FTS System Manager

Applications Moderator Applications

Moderator Mode

Market Version 10

Run Selected Application

Configuration information received

ce discovery Cases, e.g. B01, RE1, etc.

Back Forward Refre

# FTS INTERACTIVE MARKETS

- ❖ [Quick Start Instructions](#) for instructors
- ❖ **Announcement: two new cases:** [BE1](#) is the new ethics case, and [CT1](#) is our systemic risk case.
  - Contact us to set up a web meeting on how to run these cases and obtain the case spreadsheets.
- ❖ **Manuals, Cases, and Instructions**

If a pdf fails to open, in Internet Explorer right click the mouse on the hyperlink and "Target as ..." to download and open the pdf.

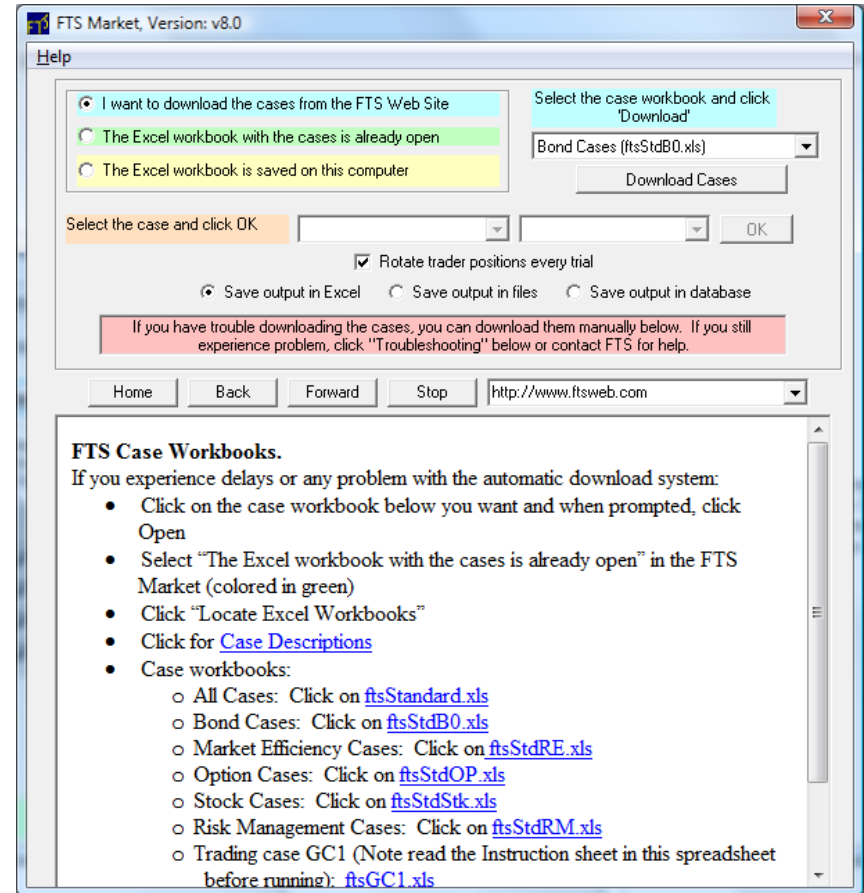
- [Instructions for Moderators.](#)
- [Explanation of End of Trial Trading Summary](#)
- Links to [Files](#) referred to in the Operating Manual
- [FTS Cases](#) all Excel work books
- FTS Case [Descriptions](#)
- [Student Case Preparation Manual](#)
- FTS Case [Solutions Manual](#)
- ❖ **FTS Market: Replay**
  - The replay program lets you replay the session.
  - To run the application, click on [FTS Market Replay](#)
  - For instructions click on [How to Use the FTS Market Replay](#)

## Instructor

Select the FTS Market Version X and click "Run Selected Application" The version numbers change as we add features, so just run the latest version.

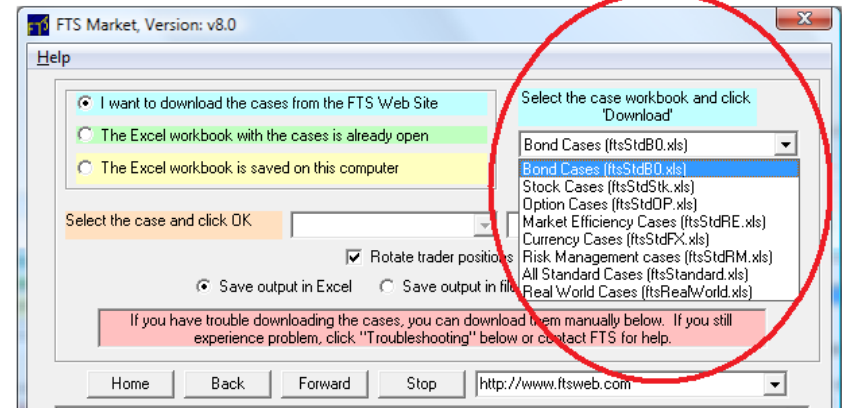
# Instructor

- Once the application launches, the case selection window of the FTS Market will appear



# Instructor

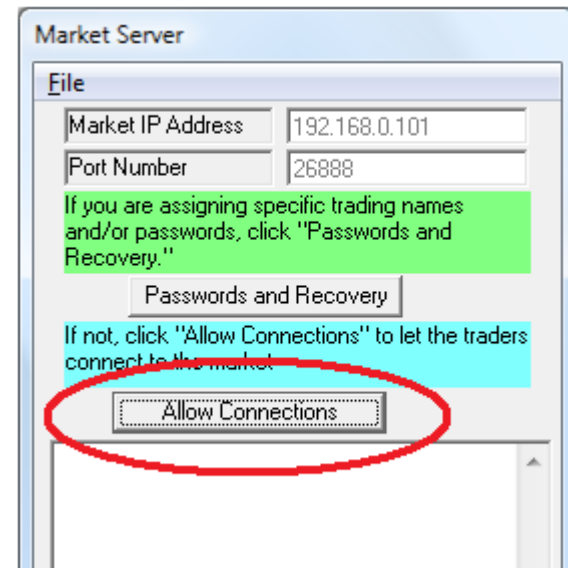
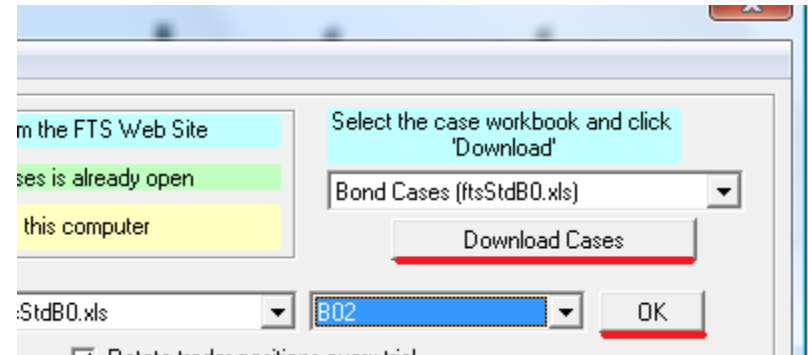
- Select the subset of cases you want to download
  - Or, you can download All Standard Cases
  - You can also read in cases that you have saved on your computer





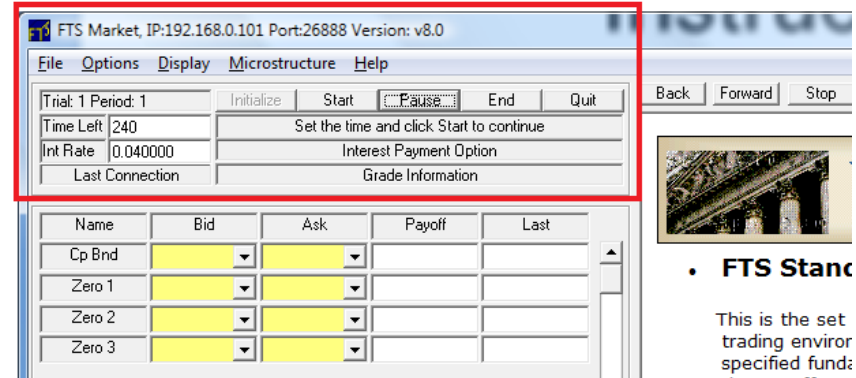
# Instructor

- Click Download Cases
- Select the case and click OK
  - Answer questions that appear next (click No to keep defaults)
- In the window that appears next, click “Allow Connections”



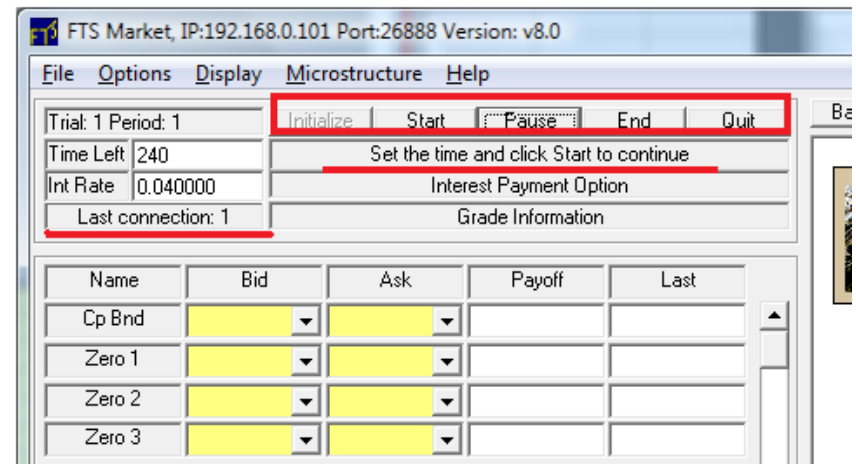
# Instructor

- The main market window will appear
- Note the IP address at the top
  - Tell this IP address to every student, they need to know this to connect to the market



# Instructor

- Once students have connected to the market, click Start to open the trading
  - You can pause/resume the trading, end a trading period
  - After this, follow the instructions in the status box



# Instructor Summary

Launch FTS System manager; enter moderator password

Select FTS Market Version 8.X, then Run Selected Application

Download cases from ftsweb.com

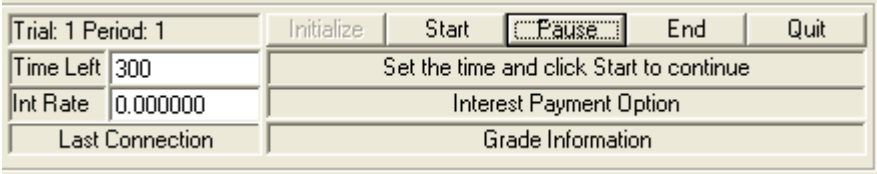
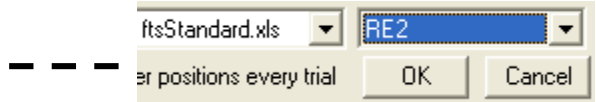
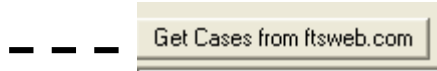
Select Case and click OK

Click OK when asked, then Allow Connections

Wait for students to connect; they will need the IP address

Click Start to open the market

Follow instructions on screen



# Students

- Select and Run the FTS Trader Version X from the System Manager
- They will need:
  - The IP address of the instructor's computer
  - A trading name (they can use their university email address or the instructor can assign each student a unique trading name)

# Students


- Enter the IP Address of the instructor's computer and the trading name, then click Connect to the Market

Local IP=192.168.0.103 Version: v10.0

### FTS Interactive Trader

Market IP Address	192.168.0.103
Port number	26888
Trading Name	
Password (if req)	
Your Name (if req)	

[Connect to the Market](#) [Cancel and Exit](#)

[Connect to Demo Market](#) 

# Students

- The trading window for the students will appear
  - They trade:
    - Place bids and asks, hit bids and asks of others
    - The top right panel lets them enter their quotes and trades
    - They can also use the hand signals

# Students

The screenshot shows the FTS Trader software interface with several key components highlighted for students:

- Trade entry area:** A yellow box highlights the top right section containing controls for submitting bids and asks, including buttons for 'Submit Bid', 'Submit Ask', 'Sell to Bid', 'Buy at Ask', 'Clear Bids', and 'Clear Asks'. It also shows 'Cp Bnd' and 'Time Left: 202'.
- Best bid ask montage:** Two yellow arrows point to the 'Bid' and 'Ask' columns in the main market data table.
- Limit order book:** A yellow label points to the 'Bid' and 'Ask' order book tables on the right side of the interface.
- Real time charts:** A yellow label points to the line chart at the bottom right, which displays bid and ask prices over time.
- History of all trades:** A yellow label points to the table showing a list of all trades executed.
- History of your trades:** A yellow label points to the table showing a list of trades specifically for the user.

**Main Market Data Table:**

Security	Bid	Ask	Last	Position	Payoff	Buy VWAP
Cp Bnd		101.00/100	85.50	100		
Zero 1	96.15/96.70	96.36/100	96.25/90	500		
Zero 2	88.50/50	88.90/50	88.8/50	600		
Zero 3	75.36/150	91.90/500	75.46/10	400		

**Order Book Tables:**

Bid	Bid Qty	Bid ID	Ask	Ask Qty	Ask ID
			101.00	100	G Gekko
			101.80	10	BMS
			101.90	10	BMS
			102.00	50	R&B

**Trade History Tables:**

Trial	Period	Time	Security	Price	Quantity
1	2	217	Zero 3	75.46	10
1	2	217	Zero 2	88.8	50
1	2	217	Zero 1	96.25	90
1	2	217	Cp Bnd	85	50

Trial	Period	Time	Security	Trade	Price

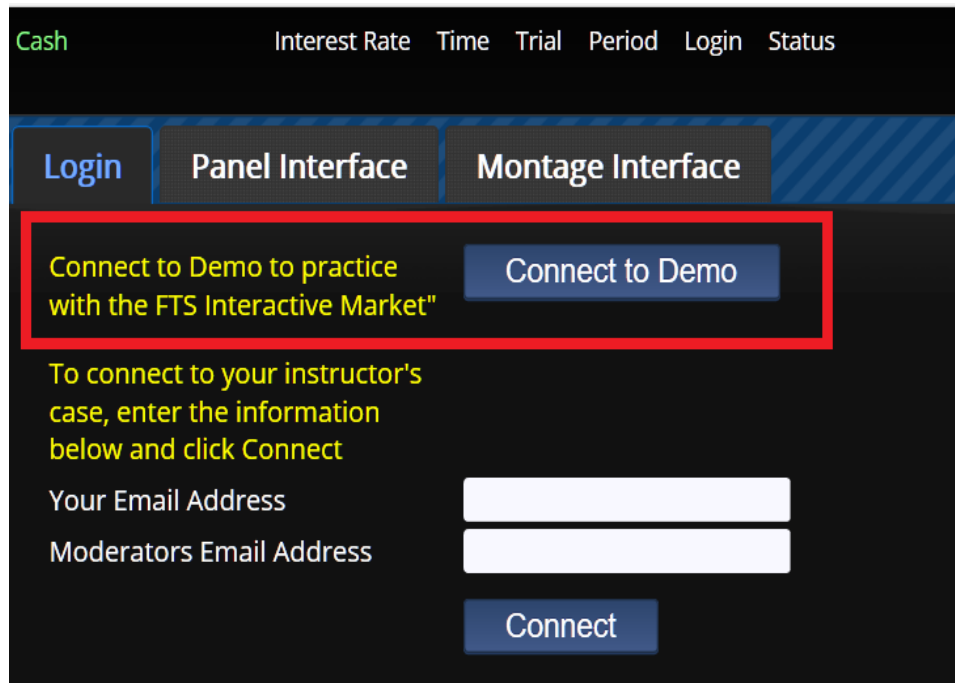


# Student Practice

- We run a demo all the time of case B02
- It has prices and trades from a previous session
- You can interact
  - Enter quotes, trade
  - Practice all the mechanics

# Student Practice

- In a web browser, go to
  - [www.ftswetrader.com](http://www.ftswetrader.com)
  - Click Connect to Demo on the web page:



Cash Interest Rate Time Trial Period Login Status

Login Panel Interface Montage Interface

Connect to Demo to practice with the FTS Interactive Market" [Connect to Demo](#)

To connect to your instructor's case, enter the information below and click Connect

Your Email Address

Moderators Email Address

[Connect](#)

# Running a continuous practice market

- You can run your own “unattended” market that runs all the time and that students can log in out as they want
  - Run a market as usual
    - Require students to login with the first part of their email address, so when they login again, they re-use their trading name
      - If they login with a different name every time, you will soon exceed the maximum number of traders
  - Start the market
  - From the Market’s Options menu,
    - Check on “Cycle mode”
      - This means that when it reaches the end of the trials, its starts over with trial 1
    - Check on “Auto mode”
      - This means that you don’t have to click Initialize or Start in between periods
    - Check on “Don’t write trading history”
      - Otherwise your output spreadsheet can get very large
  - The market will now run keep running, students can login and logout, and practice any case you want.

# Trading Basics: Bids

- A bid is an offer to buy
  - The highest bid is the most anyone is willing to pay
    - The highest bid is shown in the montage
  - If someone else posts a bid, what can I do?
    - I can sell to them if I think the price is high enough
    - I can raise the bid if I am prepared to pay more
  - If I post a bid, what can happen?
    - Someone else can hit my bid, so they will sell to me and I will buy
    - They can raise the bid if they are prepared to buy at a higher price

# The Basics: Bids

- Everyone put in a bid
  - Click on a security name, then enter a price and a quantity, then click Submit Bid
- See the bids in the book
- Sell to the bid
  - Enter a quantity, click Sell to Bid

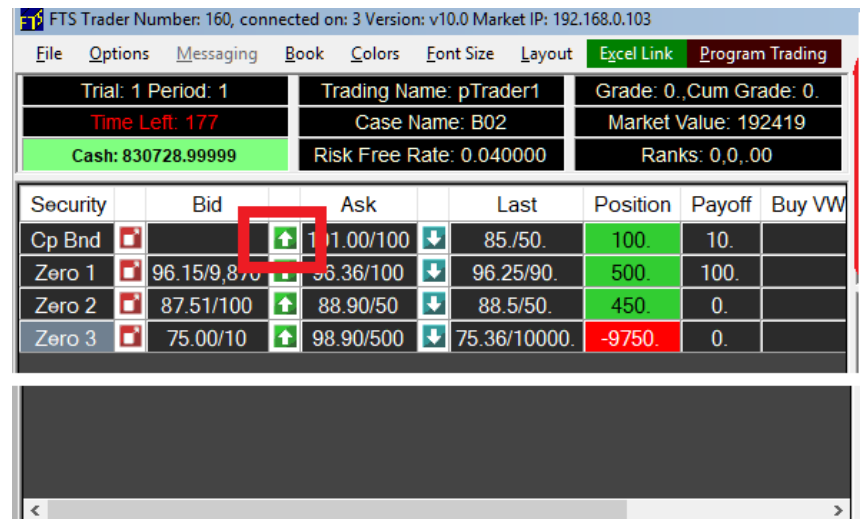
The screenshot shows a trading interface for a security named "Zero 3". The interface includes a header with the security name and a "Time Left: 177" indicator. Below the header is a control panel with buttons for "Submit Bid", "Sell to Bid", "Clear Bids", "Submit Ask", "Buy at Ask", and "Clear Asks". The "Price" and "Quantity" fields are highlighted in orange. Below the control panel are two tables: "Bid" and "Ask".

Bid	Bid Qty	Bid ID
75.00	10	Palpatine
10.00	10	mikek
10.00	10	mikek

Ask	Ask Qty	Ask ID
98.90	500	hustler
99.00	100	M.Burns
99.40	450	hustler
99.50	500	hustler
99.60	100	nome
99.70	50	GordonG...
99.70	100	blade

# The Basics: Bids

- Best bid is shown in the montage
- Buttons provide an easy way to trade
  - Click on the arrows to raise the bid
  - Double click on the cell to sell to the bid
  - Your position will change as you trade, and you can see the last traded price next to it



FTS Trader Number: 160, connected on: 3 Version: v10.0 Market IP: 192.168.0.103

File Options Messaging Book Colors Font Size Layout Excel Link Program Trading

Trial: 1 Period: 1	Trading Name: pTrader1	Grade: 0, Cum Grade: 0
Time Left: 177	Case Name: B02	Market Value: 192419
Cash: 830728.99999	Risk Free Rate: 0.040000	Ranks: 0,0,.00

Security	Bid	Ask	Last	Position	Payoff	Buy VW
Cp Bnd	↑	↓	85./50.	100.	10.	
Zero 1	96.15/9.870	96.36/100	96.25/90.	500.	100.	
Zero 2	87.51/100	88.90/50	88.5/50.	450.	0.	
Zero 3	75.00/10	98.90/500	75.36/10000.	-9750.	0.	

# The Basics: Asks

- An ask is an offer to sell
  - The lowest ask is the least anyone is willing to get
    - The lowest ask is shown in the montage
  - If someone else posts an ask, what can I do?
    - I can buy from them if I think the price is low enough
    - I can lower the ask if I am prepared to accept less
  - If I post an ask, what can happen?
    - Someone else can hit my ask, so they will buy from me and I will sell
    - They can lower the ask if they are prepared to sell at a lower price

# The Basics: Asks

- Everyone put in an ask
  - Click on a security name, then enter a price and a quantity, then click Submit Ask
- See the asks in the book
- Buy from the ask
  - Enter a quantity, click Buy At Ask

The screenshot shows a trading interface for a security named "Zero 3". The interface includes a control panel at the top with a "Time Left: 177" indicator. Below the control panel are two tables: a "Bid" table and an "Ask" table. The control panel has buttons for "Submit Bid", "Sell to Bid", "Clear Bids", "Submit Ask", "Buy at Ask", and "Clear Asks".

Zero 3			Time Left: 177		
Price	<input type="text"/>	Submit Bid	Sell to Bid	Clear Bids	
Quantity	<input type="text"/>	Submit Ask	Buy at Ask	Clear Asks	

Bid	Bid Qty	Bid ID
75.00	10	Palpatine
10.00	10	mikek
10.00	10	mikek

Ask	Ask Qty	Ask ID
98.90	500	hustler
99.00	100	M.Burns
99.40	450	hustler
99.50	500	hustler
99.60	100	nome
99.70	50	GordonG...
99.70	100	blade



# The Basics: Asks

- Best ask is shown in the montage
- Hand signals provide an easy way to trade
  - Click on arrow to lower the ask
  - Double click in the cell to buy at the ask
  - Your position will change as you trade, and you can see the last traded price next to it

FTS Trader Number: 160, connected on: 3 Version: v10.0 Market IP: 192.168.0.103

File Options Messaging Book Colors Font Size Layout Excel Link Program Trading

Trial: 1 Period: 1	Trading Name: pTrader1	Grade: 0., Cum Grade: 0.
Time Left: 177	Case Name: B02	Market Value: 192419
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Security	Bid	Ask	Last	Position	Payoff	Buy VW
Cp Bnd		101.00/100	85./50.	100.	10.	
Zero 1	96.15/9,870	96.36/100	96.25/90.	500.	100.	
Zero 2	87.51/100	88.90/50	88.5/50.	450.	0.	
Zero 3	75.00/10	98.90/500	75.36/10000.	-9750.	0.	

# Practice Trading

- Enter bids and asks
  - Hand signals can be used to quickly raise bids (hand pointing up)/lower asks (pointing down)
- Sell to the bids and buy at the asks of others
  - See how your position changes
  - See how your cash changes
- At the end of the period
  - Interest is paid on cash
  - Then any payoffs from the securities are distributed
    - E.g. coupon payments, dividends
  - All this is added to your cash
- At the end of the trial
  - After interest and payoffs, your cash is converted to “grade cash”
    - E.g. grade cash =  $0.1 * \text{cash}$

# Practice on your own

- Using the case B02 demo, select the Excel link from the File menu
- Learn how to use this from the [Student Preparation Manual](#)
- Follow the instructions for case B02 in the manual

# Instructor Suggestion

- In the class before you run a trading case, run a practice session
  - Explain the case
  - Run one trial so everyone sees the screen
  - They can create an Excel template during that trial
    - So pause the market, give them time to create the Excel link and save the spreadsheet
  - Students work on the spreadsheet and any other case preparation
  - In the next class, run the case

# Contact Us

- If you have questions about how to run a case or questions about a case, or if you want to modify a case, contact us:

[ftsweb@gmail.com](mailto:ftsweb@gmail.com)