

Tutorials

English Version



U-Mart Project

<http://www.u-mart.org>



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 - Example of Debriefing
 - Explain what can be seen in the experiment.



Preparation

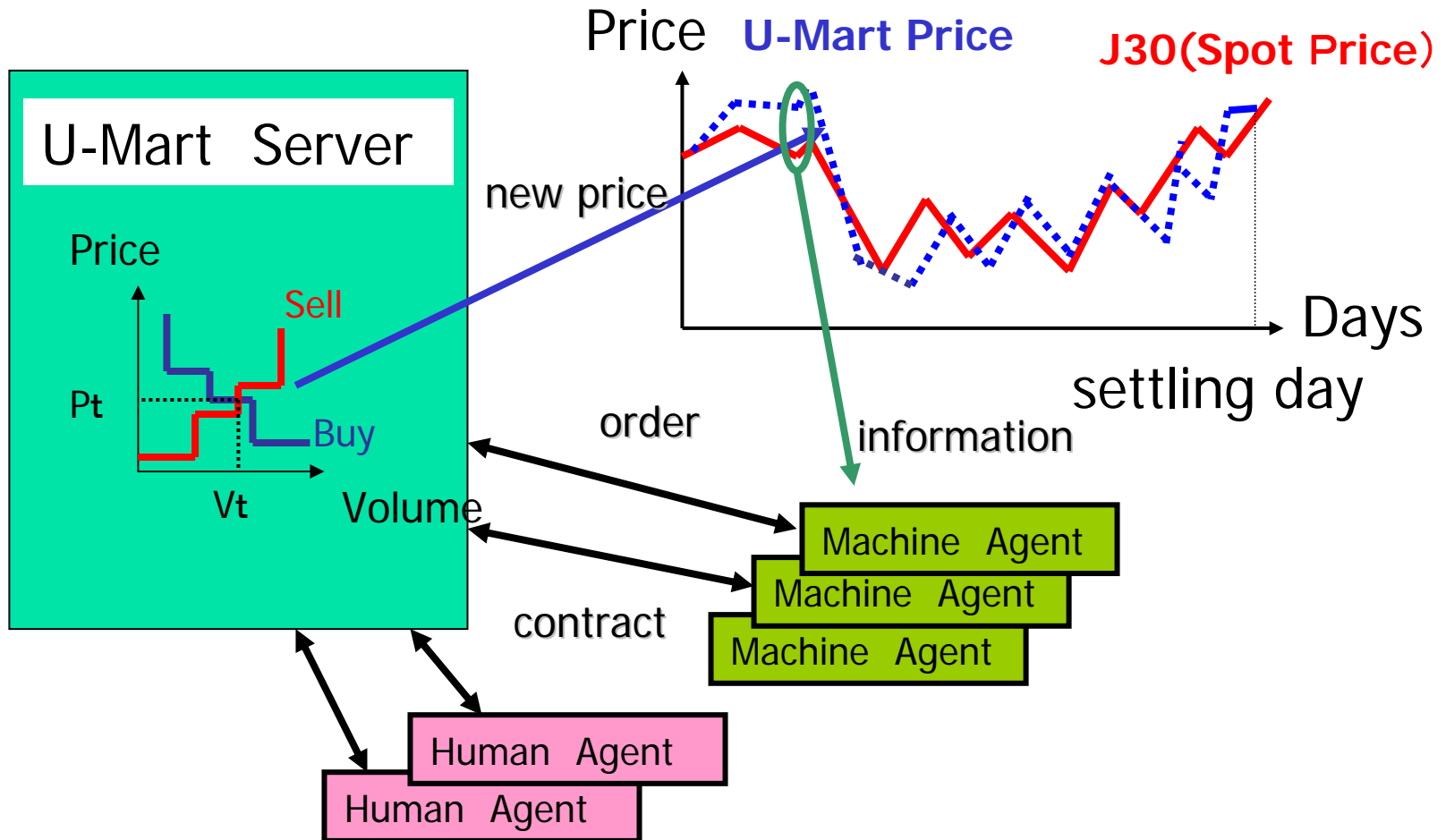
- Please seat and activate PC
- Please confirm U-Mart System
 - CD-ROM
 - The Folder on Desktop
 - etc
- Please check your U-Mart Account and Password
- Please wait others and read handout




Lecture plan

- Learn how to use U-Mart System (artificial futures market)
- Trading Competition
- Debriefing

Architecture of U-Mart



Set of U-Mart System Version2.0



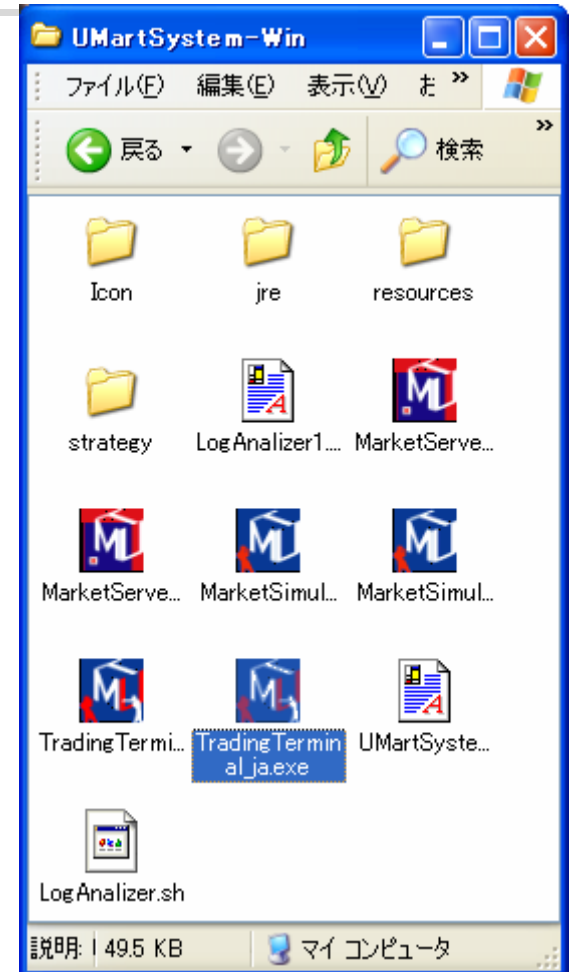
| | Human Agent | Machine Agent |
|-------------------------|---|--|
| Stand Alone Environment | Market Simulator | Stand Alone CUI (Market Server) |
| Via Network | Human Agent Network Terminal | Machine Agent Adapter |
| | Market Server | |

U-Mart System Version 2.0



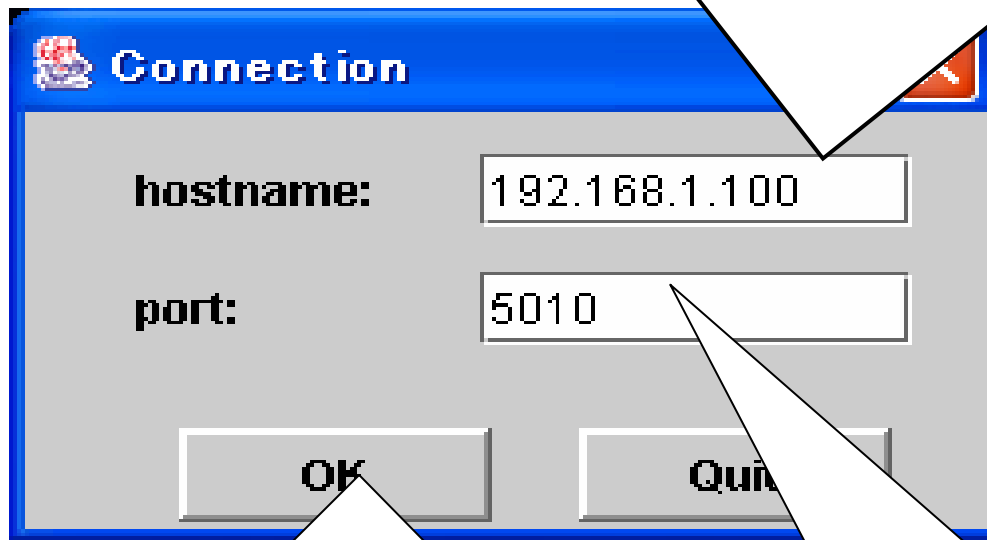
Activate U-Mart System

- Insert CD-ROM
- Double click Icon
 - **Trading Terminal**
 - For Experiment via network
 - **Market Server**
 - Server
 - **Market Simulator**
 - For Training in Standalone environment



Connection to U-Mart Server

1) Enter IP Address of Server in hostname box
(in this case, 192.168.1.100)



3) Then, Click "OK"

2) Port is "5010"



Login U-Mart Server

A screenshot of a Windows-style login window titled "Welcome to localhost:5010". The window has a blue title bar with a close button (X) in the top right corner. The main area is gray and contains two input fields. The first field is labeled "Account:" and contains the text "h10". The second field is labeled "Password:" and contains three asterisks "***". Below the input fields are two buttons: "OK" on the left and "Quit" on the right. Three callout boxes with arrows point to the input fields and the "OK" button, providing instructions for the login process.

Welcome to localhost:5010

Account: h10

Password: ***

OK Quit

1) Enter your Account

2) Enter your password

3) Click "OK"



If this comment is popped up , Enter OK and try again from the beginning.

The view of the Server



U-Mart: Market Server

File Help

Day: 1 Spot Price 2,020 ☐ Auto Update 10 sec. Update

Session: 1 Futures Price 2,020

Info Chart Order Book Contracts Profit Position STDOUT Exchange Info

| | MemberID | Sell | Buy | TotalSell | TotalBuy | Cash | UnrealizedProfit | Margin |
|----------------------------------|----------|------|-----|-----------|----------|---------------|------------------|--------|
| <input type="radio"/> | H h13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input checked="" type="radio"/> | H h30 | 0 | 0 | 0 | 0 | 1,000,000,000 | 0 | 0 |
| <input type="radio"/> | H h31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <input type="radio"/> | H h41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

If login is succeeded,
toggle turns to Green



Order Area



UMart Trading Terminal

File Help

Day: 13 Session: 1 Cash: 1,000,000,000 ☒ Auto Update
Spot Price: 2,234 Available Cash: 997,000,000 1 sec.
Futures Price: 2,234 Unrealized Profit: 0 Update
Position: Long: 10 Margin: 3,000,000

☒ Confirmation
 Price: 2500
Volume: 10

Board Time: 4:38:07 PM
Asked Quo.: -
Bid Quo.: -

Logs

| | | |
|------|------|------|
| 12 1 | 2300 | 2230 |
| 12 2 | 2294 | 2232 |
| 12 3 | 2296 | 2232 |
| 12 4 | 2295 | 2245 |
| 12 5 | 2299 | 2245 |
| 12 6 | 2297 | 2248 |
| 12 7 | 2270 | 2253 |
| 12 8 | 2248 | 2235 |
| 13 1 | 2234 | 2234 |

Chart Order Book Order Contracts Profit Position STDOUT

3,000
2,700
2,400
2,100
1,800
1,500
1,200
900
600
300
0

0 20 40 60 80 100 120 140 160 180 200 220 240

— Spot Price — Futures Price

☐ Auto (Y)
Maximum: 3000
Minimum: 0
☐ Auto (X)
Period: 20



How to send Order

Enter Limited Price, Amount of Order here

The image shows a trading interface with several components highlighted by red rounded rectangles and callout boxes:

- Market Order Buttons:** A group containing "Market Sell" and "Market Buy" buttons.
- Confirmation and Price/Volume Fields:** A central area containing a checked "Confirmation" checkbox, a "Cancel" button, and input fields for "Price" (2500) and "Volume" (10).
- Limit Order Buttons:** A group containing "Limit Sell" and "Limit Buy" buttons.

Callout boxes provide additional context:

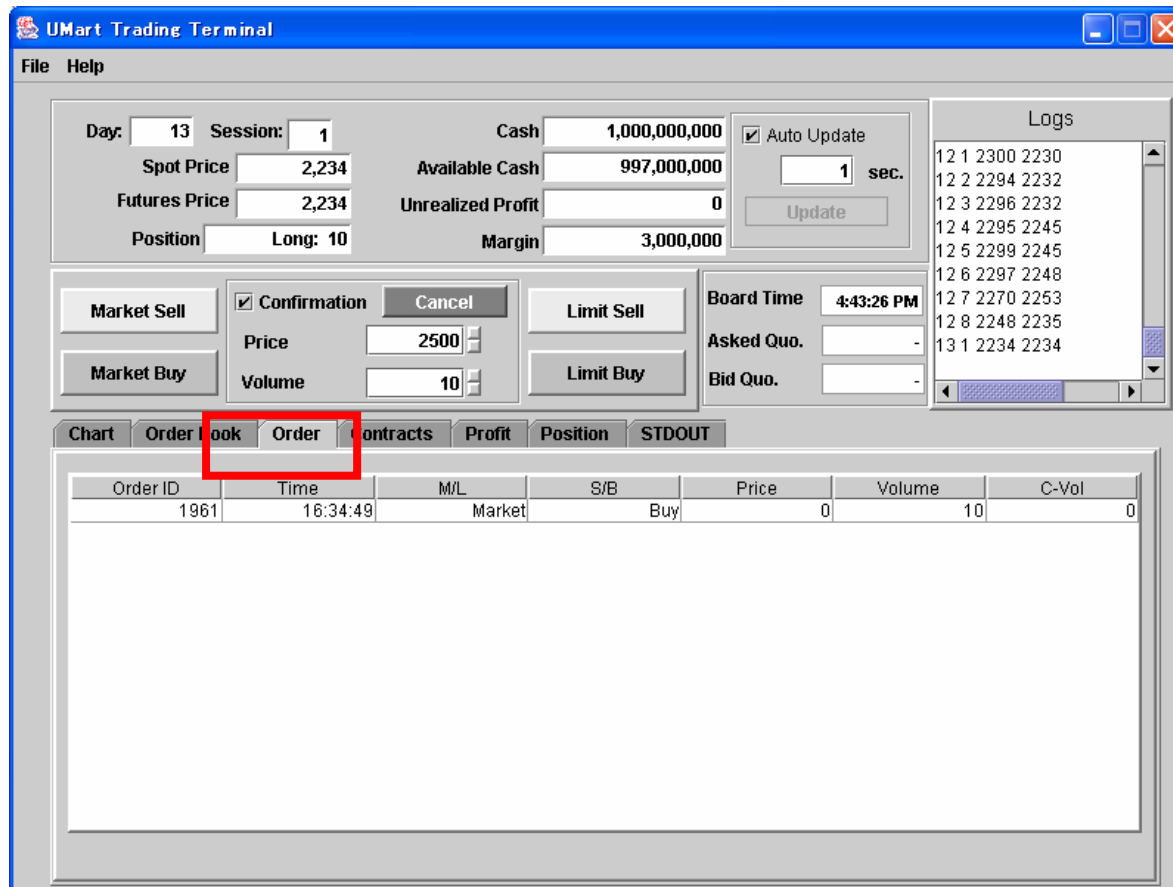
- A box points to the "Price" and "Volume" fields with the text: "Enter Limited Price, Amount of Order here".
- A box points to the "Market Sell" and "Market Buy" buttons with the text: "Order at market price toggle".
- A box points to the "Limit Sell" and "Limit Buy" buttons with the text: "Order at limited price toggle".

Order at market price toggle

Order at limited price toggle

Let's order !

Then check in the "Order" window.



The screenshot shows the UMart Trading Terminal interface. The top menu bar includes 'File' and 'Help'. The main area is divided into several sections:

- Account Information:** Day: 13, Session: 1, Cash: 1,000,000,000, Available Cash: 997,000,000, Unrealized Profit: 0, Margin: 3,000,000. Position: Long: 10.
- Order Entry:** Includes buttons for 'Market Sell', 'Market Buy', 'Limit Sell', and 'Limit Buy'. A 'Confirmation' checkbox is checked, with a 'Cancel' button. Price is set to 2500 and Volume to 10.
- Auto Update:** A checkbox is checked, with a '1 sec.' timer and an 'Update' button.
- Board Time:** 4:43:26 PM.
- Asked Quo.:** -
- Bid Quo.:** -
- Logs:** A list of logs showing timestamps and prices, such as '12 1 2300 2230', '12 2 2294 2232', etc.

The bottom section features a tabbed interface with 'Chart', 'Order', 'Look', 'Order', 'Contracts', 'Profit', 'Position', and 'STDOUT'. The 'Order' tab is selected and highlighted with a red box. Below the tabs is a table with the following data:

| Order ID | Time | M/L | S/B | Price | Volume | C-Vol |
|----------|----------|--------|-----|-------|--------|-------|
| 1961 | 16:34:49 | Market | Buy | 0 | 10 | 0 |

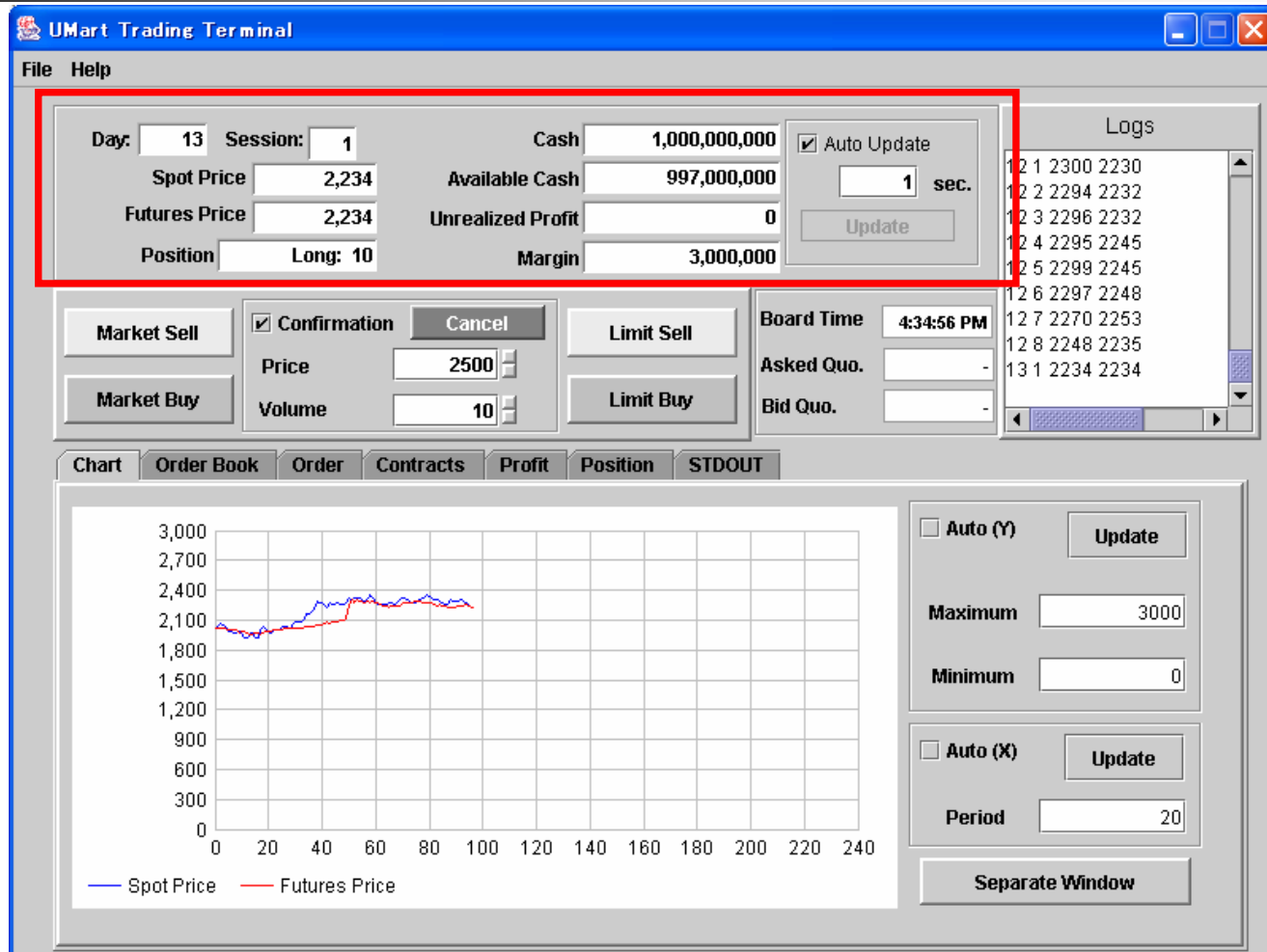


As Market Proceeding

- Updating Session
 - Execute centralized trading name “Itayose”
 - Contracts are conducted.
 - Futures price is decided.
- After the Market (8th session)
 - Mark to the market is conducted.
 - Calculate profit or loss
- Details are written in following “reference”.



Digital Information Area





The meanings of Digital Information

Current Date and Session

Default Setting : 8 sessions/day, 30 days

| | | | | | | |
|---------------|----------|----------|---|-------------------|---------------|---|
| Day: | 13 | Session: | 1 | Cash | 1,000,000,000 | <input checked="" type="checkbox"/> Auto Update |
| Spot Price | 2,234 | | | | 10,000 | <input type="text" value="1"/> sec. |
| Futures Price | 2,234 | | | Unrealized Profit | 0 | <input type="button" value="Update"/> |
| Position | Long: 10 | | | Margin | 3,000,000 | |

Today, please don't touch

Refresh rate of information



The meanings of Digital Information 2

| | | | | | | |
|---------------|----------|-------------------|-------------|------|---------------|---|
| Day: | 13 | Session: | 1 | Cash | 1,000,000,000 | <input checked="" type="checkbox"/> Auto Update |
| Spot Price | 2,234 | Available Cash | 997,000,000 | | | <input type="text" value="1"/> sec. |
| Futures Price | 2,234 | Unrealized Profit | 0 | | | <input type="button" value="Update"/> |
| Position | Long: 10 | Margin | 3,000,000 | | | |

Current position

Long: buying position

You can make profit by price increasing.

Short: selling position



The meanings of Digital Information 3

Cash: your cash

Available Cash: When it became 0, you are bankrupt

Margin: 300,000 points per 1 unit of futures

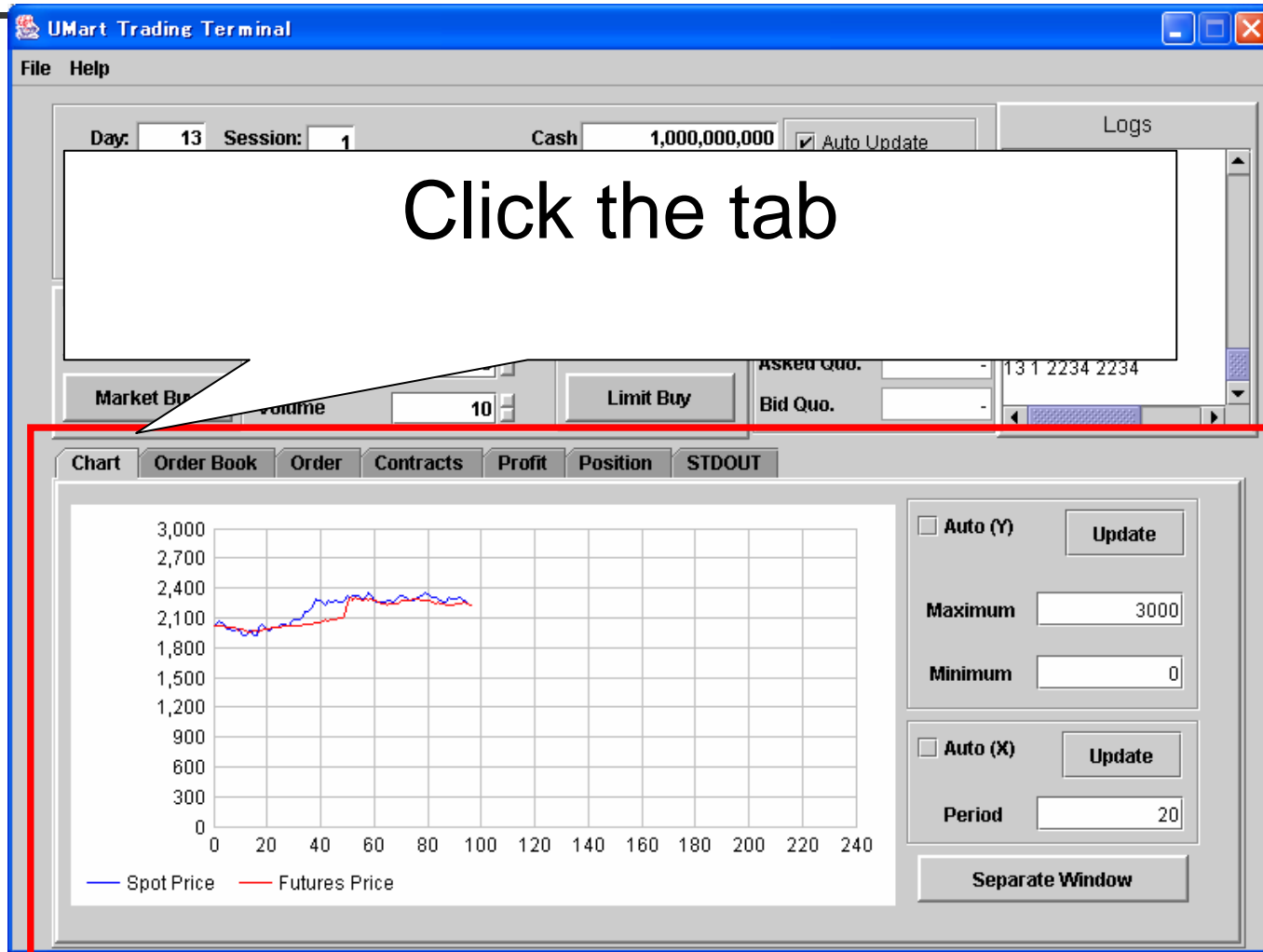
| | | | | |
|---------------|------------|-------------------|---------------|---|
| Day: 13 | Session: 1 | Cash | 1,000,000,000 | <input checked="" type="checkbox"/> Auto Update |
| Spot Price | 2,234 | Available Cash | 997,000,000 | <input type="text" value="1"/> sec. |
| Futures Price | 2,234 | Unrealized Profit | 0 | <input type="button" value="Update"/> |
| Position | Long: 10 | Margin | 3,000,000 | |

Current profit

Black: you win your money

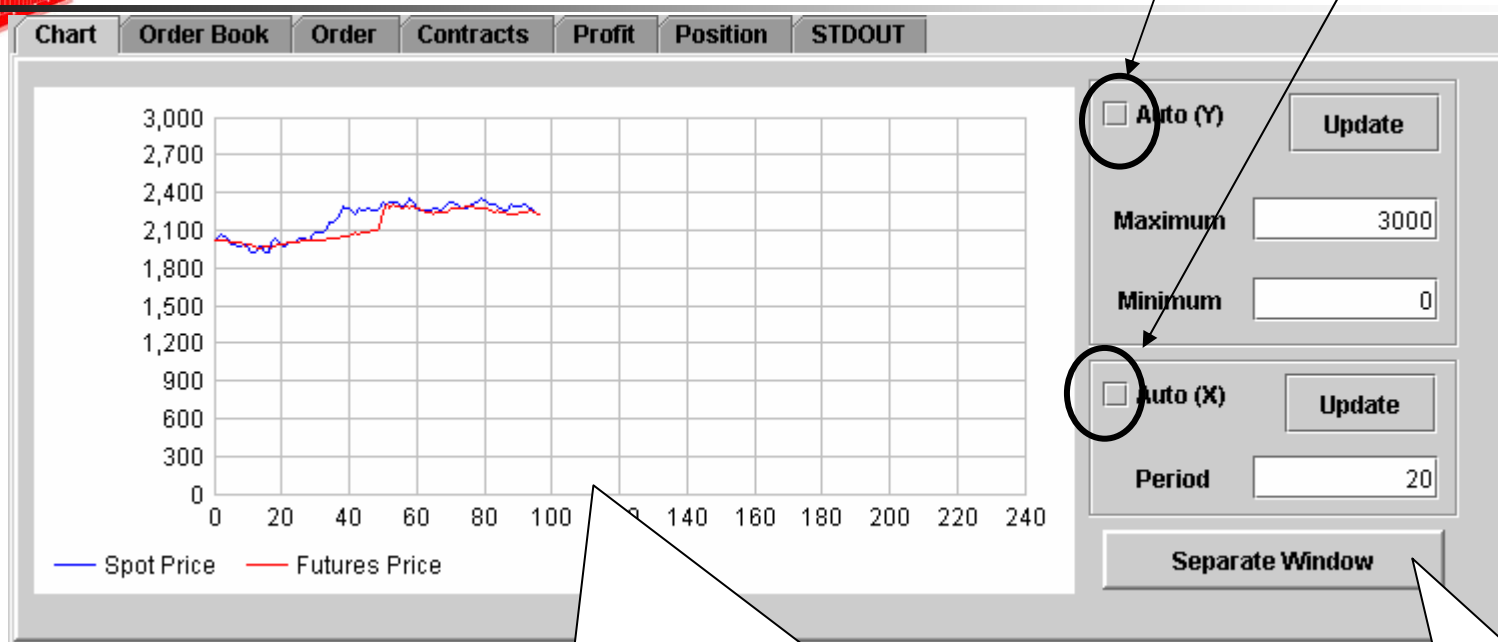
Red : you lose your money

Visual Information Area





Price Chart



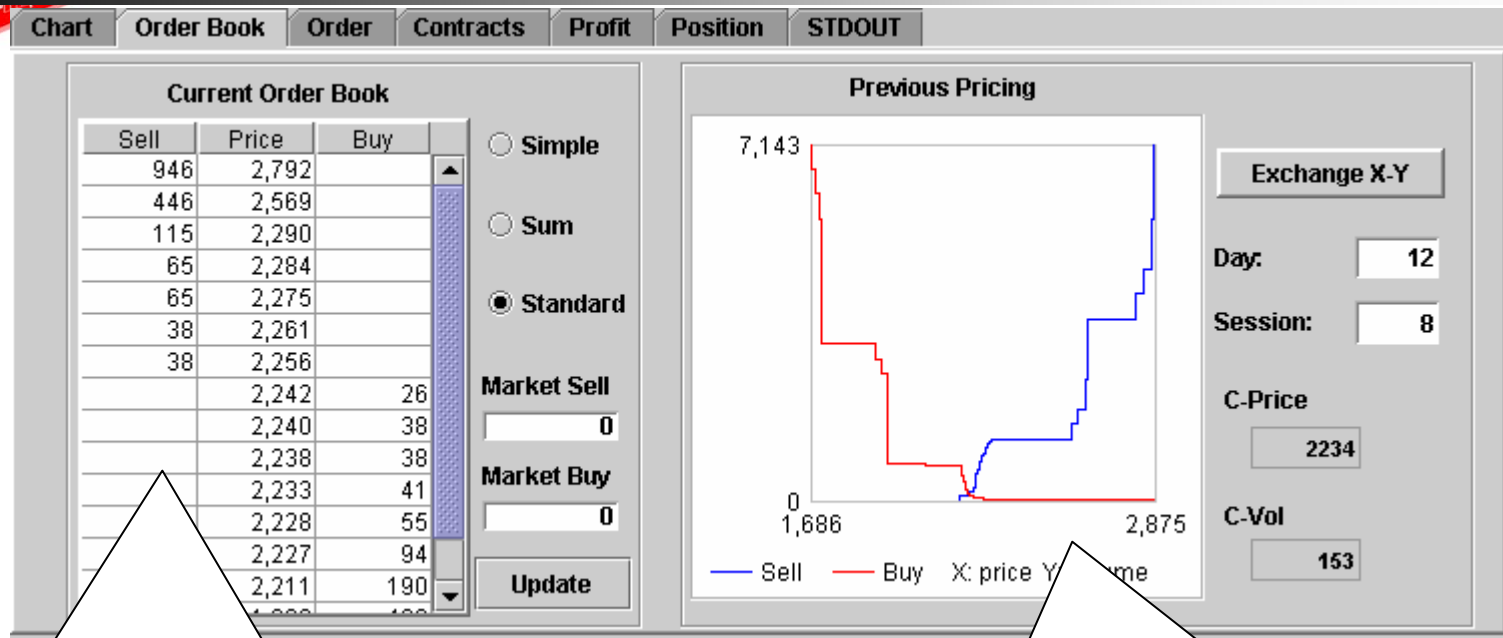
Size adjustment

Graph of Price

Separate Window
Toggle

“Order Book TAB”

Distribution of Order



Current Distributions of Orders

Graph of the distribution of orders at last session.



“order tab” shows current orders

Chart

Order Book

Order

Contracts

Profit

Position

STDOUT

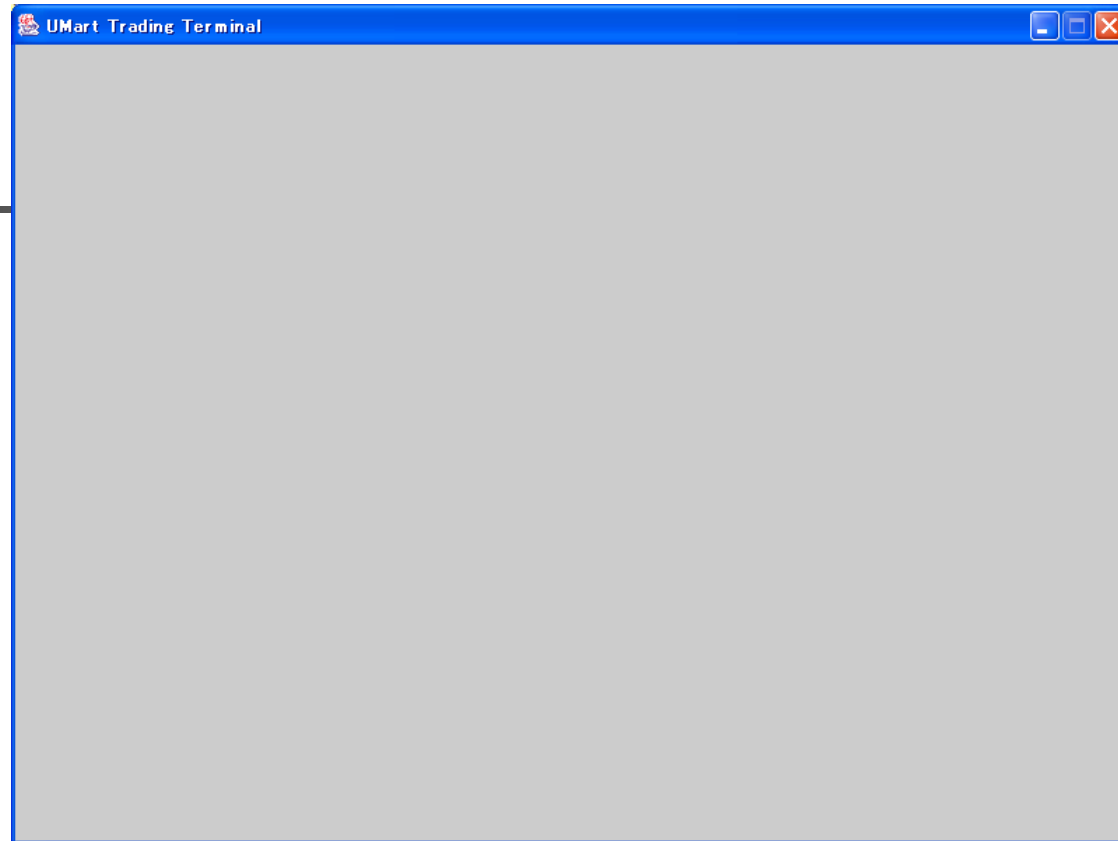
| Order ID | Time | M/L | S/B | Price | Volume | C-Vol | Cancel |
|----------|----------|--------|------|-------|--------|-------|--------------------------|
| 1601 | 14:23:39 | Market | Sell | 0 | 10 | 10 | <input type="checkbox"/> |
| 1630 | 14:24:11 | Limit | Sell | 2,500 | 10 | 0 | <input type="checkbox"/> |
| 1631 | 14:24:12 | Limit | Buy | 2,500 | 10 | 0 | <input type="checkbox"/> |
| 1632 | 14:24:13 | Limit | Buy | 2,500 | 10 | 0 | <input type="checkbox"/> |

You can cancel orders by clicking here



| Chart | Order Book | Order | Contracts | Profit | Position | STDOUT | | | | | | |
|----------|------------|---------|-----------|--------|----------|--------|---------|------|-------|--------|---------|-------|
| Order ID | Day | Session | S/B | Volume | M/L | Price | Can-Vol | C-ID | C-Day | C-Ses. | C-Price | C-Vol |
| 1,985 | 13 | 1 | Buy | 21 | Limit | 2,481 | 0 | 880 | 13 | 1 | 2,280 | 21 |
| 1,984 | 13 | 1 | Buy | 10 | Market | 0 | 0 | 882 | 13 | 1 | 2,280 | 10 |
| 1,983 | 13 | 1 | Buy | 10 | Market | 0 | 0 | 881 | 13 | 1 | 2,280 | 10 |
| 1,982 | 13 | 1 | Buy | 10 | Market | 0 | 0 | 883 | 13 | 1 | 2,280 | 10 |
| 1,981 | 13 | 1 | Buy | 10 | Market | 0 | 0 | 884 | 13 | 1 | 2,280 | 10 |
| 1,961 | 12 | 8 | Buy | 10 | Market | 0 | 0 | 870 | 12 | 8 | 2,234 | 10 |
| | | | | | | | | | | | | |

S/B: Sell/Buy Vol: Volume M/L: Market/Limit C-: Contract Can-: Cancel



If your display become blanc, activate Task Manager by Ctr+Alt+Del, then stop java process. Access server again by new terminal.



Please try and play.

- Market price order, Limited price order
- Canceling orders.
- Auto adjustment and separate window
 - In Chart, Profit, Position Tab
- Order Book
 - Simple, Sum, Standard



Result of the competition

| memberID | Property | status |
|-------------------------|------------|--------|
| You | 1000000000 | 1 |
| T02_Abe | 1093304000 | 1 |
| T03_Irie | 1029895000 | 1 |
| T01_Ayaki | 1095901000 | 1 |
| RsiStrategy | 945183000 | 1 |
| T01_Yamanaka | 1226412000 | 1 |
| TrendStrategy | 1024209000 | 1 |
| T04_Kitakubo2 | 707962000 | 1 |
| T04_Kitakubo1 | 798850000 | 1 |
| T04_Kitakubo0 | 709888000 | 1 |
| SRsiStrategy3 | 1110647000 | 1 |
| SRsiStrategy2 | 1058031000 | 1 |
| SRsiStrategy1 | 1030245000 | 1 |
| RandomStrategy | 960516000 | 1 |
| SRandomStrategy3 | 1063078000 | 1 |
| SRandomStrategy2 | 1176531000 | 1 |
| SRandomStrategy1 | 1010458000 | 1 |
| SFSspreadStrategy2 | 1114290000 | 1 |
| SFSspreadStrategy1 | 1102630000 | 1 |
| DayTradeStrategy2 | 1005974000 | 1 |
| DayTradeStrategy1 | 957250000 | 1 |
| AntiTrendStrategy2 | 861570000 | 1 |
| AntiTrendStrategy1 | 962789000 | 1 |
| MovingAverageStrategy | 981255000 | 1 |
| SMovingAverageStrate... | 1017591000 | 1 |
| SMovingAverageStrate... | 1021173000 | 1 |
| SMovingAverageStrate... | 987249000 | 1 |

UMart Trading Terminal

File Help

Save

Quit

Day: 30 Session: ..

Spot Price 1,977

Futures Price 1,977

Position 0

Select "Quit" in pull down menu.

If you select "Save", you can save log data.

(After the next game, please save your log and analyze them.

Please check your result and order



Let's have a game!

Setting

1 Session

1 day

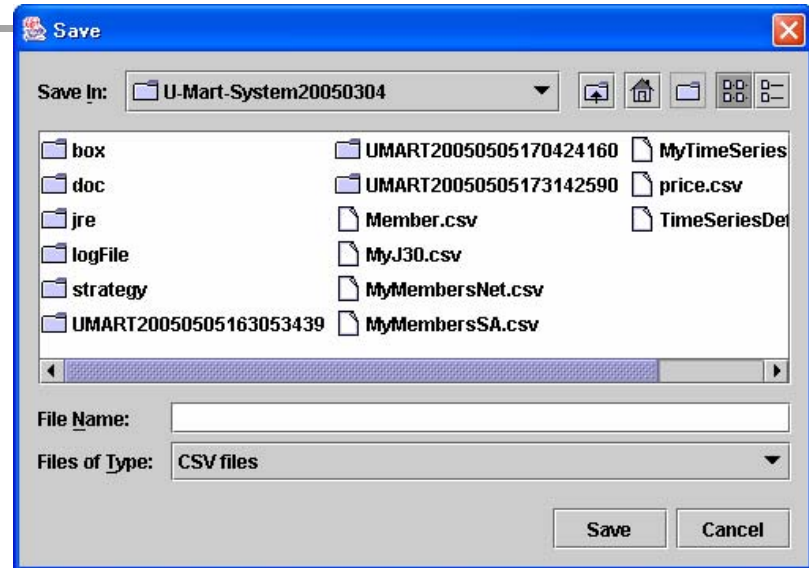
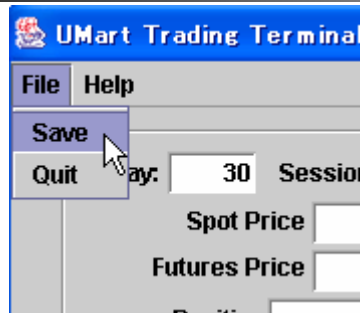
Second

Session

Days

After finish the game, please don't "quit"

Personal LOG



- Select Folder (default is "My Document" Folder)
- Enter file name



Debriefing

- To improve your understanding
- To improve lecture
- To improve tools

- Take a look back on the situation and behavior
 - Log analysis (reference 3)
 - Discussion
 - Questionnaire (report)

The logo for U-Mart is located in the top-left corner. It consists of a blue square with a white line graph, a red square with the text 'U-Mart' in white, and a yellow square with a black line graph.

Further more

- “Doc” folder in CD-ROM
 - Tutorial (this presentation)
 - Pamphlet (introduction of activities of U-Mart Project)
 - Descriptions of Standard Agents.
- Annual Open Contest
 - For Human Agent: U-Mart 200x Series
 - For Machine Agent: UMIE 200x Series
- Web Page <http://www.u-mart.org> (for both)
 - New information and new tools are provided from this site.
 - Announcement of Open Contest



Reference



Reference

1. How to use Market Simulator

- Please refer when you train in standalone environment.

2. How to use Market Server

- For facilitator to conduct experiments via network.

3. Institutions of futures market

- Guide of “margin” and “mark to the market”

4. Example of Log analysis

- Example of Debriefing with log analysis

1. How to use Market Simulator



■ Variations of Market Setting

- Selection of spot price time series (and where you use ?)
 - Price time series from not only any actual market but also from any stochastic models
- Setting : The number of days and the number of sessions of each days.
 - You can control number the timing of market to the market by the number of session per day.
- Random Seed
 - With same spot prices, same set of agents, Market can be changed by random seed.
- Selection of Agent set
 - You can select opponents.

Executions and Setting



MarketSimul...

Double click the Icon of Market Simulator



Setting

Experimental Setting

Setting: **Default** File

Brand Name : J30

Filename : resource:j30.csv

Trading Period: 30

#Sessions per Day: 8

Start Point: 120

Random Seed

☐ System Clock

☒ User

0

Agent Setting

Player's Setting

Tab Setting

☐ Create Logs

☒ Auto Run

OK Quit Default

Setting of Time Series CSV-File①

Setting of Days and Sessions

Setting of Random Seed

Setting of Agent Set CSV-File②

Setting of Player's trading environment. Initial asset, fee, information, and so on

CSV-File 1 Setting of Spot Price Time Series

resource/csv/TimeSeriesDefinition.csv

Nick name of spot price time series.

Specify data file of spot price time series

Name to specify the source of time series.

Start point.

of days

of Sessions

| | A | B | C | D | E | F | G |
|---|----------|------------------|-----------|-----------|---------|--------------------|---|
| 1 | Nickname | File name | BrandName | StartStep | MaxDate | NoOfSessionsPerDay | |
| 2 | Default | resource:\30.csv | J30 | 120 | 30 | 8 | |
| 3 | Ex1 | resource:\30.csv | J30 | 340 | 20 | 4 | |
| 4 | Ex2 | resource:\30.csv | J30 | 400 | 10 | 8 | |
| 5 | | | | | | | |



CSV-File 2 Setting of Agent Set

resource/csv/MembersSA.csv

■ How to Set Agent Set

- Set file name of machine-agent program in “Real Name”
- Set parameters for machine agents in “System Parameters” column.
- Fill LoginName column, then you name an agent with program and a set of parameters.
- Other columns are common parameters of agents.
 - Password, Initial cash, interest rate, fee, ... and so on

■ Setting Terms

- LoginName
- Password
- Attribute
- Connection
- Access(Allow_All)
- RealName
- SystemParameters
- Seed
- InitialCash
- TradingUnit
- FeePerUnit
- MarginRate
- MaxLoan
- Interest

2. How to use Market Server

- Variations of Market Setting (Same as Market Simulator)
 - Selection of spot price time series (and where you use ?)
 - Price time series from not only any actual market but also from any stochastic models
 - Setting : Number of days and number of sessions of each days.
 - You can try any length of days. Number of session par day means how often orders are canceled and conduct mark to the market.
 - Random Seed
 - With same spot prices, same set of agents, Market can be changed by random seed.
 - Selection of Agent set
 - Setting of Human Agents and Machine Agents

How to Set Market Server



MarketServe..



Setting

Experimental Setting

Setting:

Brand Name : J30

Filename : resource:j30.csv

Trading Period:

#Sessions per Day:

Start Point:

Random Seed

☐ System Clock

☒ User

☒ Create Logs

Port:

Setting of Time Series
CSV-File①

Setting of Days and
Sessions

Setting of Random Seed

Setting of Agent Set
CSV-File②

CSV-File 1 Setting of Spot Price Time Series

resource/csv/TimeSeriesDefinition.csv

Nick name of spot price time series.

Specify data file of spot price time series

Name to specify the source of time series.

Start point.

of days

of Sessions

| | A | B | C | D | E | F | G |
|---|----------|------------------|-----------|-----------|---------|--------------------|---|
| 1 | Nickname | File name | BrandName | StartStep | MaxDate | NoOfSessionsPerDay | |
| 2 | Default | resource:\30.csv | J30 | 120 | 30 | 8 | |
| 3 | Ex1 | resource:\30.csv | J30 | 340 | 20 | 4 | |
| 4 | Ex2 | resource:\30.csv | J30 | 400 | 10 | 8 | |
| 5 | | | | | | | |

CSV-File 2 1 Settings of Human Agents



resource/csv/MembersNet.csv

- Set real name of human agent in “Real Name” column.
- Set unused Tabs (information windows) in “Access” column. If it is blank, the agent can use all information.
- Set Remote to “Connection” column.
- Set human to “Attribute” column.
- Set Login ID to “LoggingName”, and set passwd as well.
- Other columns are common parameters of agents.
 - Passwd, Initial cash, interest rate, fee, ... and so on
- Setting terms
 - LoginName
 - Password
 - Attribute
 - Connection
 - Access(Allow_All)
 - RealName
 - SystemParameters
 - Seed
 - InitialCash
 - TradingUnit
 - FeePerUnit
 - MarginRate
 - MaxLoan
 - Interest

CSV-File 2 2 Settings of Machine Agents

resource/csv/MembersSA.csv



How to Set Machine Agent

- Set file name of machine-agent program in “Real Name”
 - Set parameters for machine agents in “SystemParameters” column.
 - Fill LoginName column, then you name an agent with program and a set of parameters.
 - Other columns are common parameters of agents.
 - Passwd, Initial cash, interest rate, fee, ... and so on
- Setting Terms
 - LoginName
 - Password
 - Attribute
 - Connection
 - Access(Allow_All)
 - RealName
 - SystemParameters
 - Seed
 - InitialCash
 - TradingUnit
 - FeePerUnit
 - MarginRate
 - MaxLoan
 - Interest

3. Institutions of Futures Market





1. Institutions of futures

- “Contract 1 unit of futures at 2200 point” means ...
 - 1 trading unit is 1000 unit of stock index
 - This contract worth $1 * 1000 * 2200 = 2.2$ million point
 - If 1 point worth 1 Japanese yen, this contract worth 2.2 million yen!



Meanings of Contract futures

This is futures contract, so you don't have to pay now.

This contract is only a promise.

Guarantee of contract

1) for Exchange (market): margin

2) for sharer : mark to the market



Margin: guarantee for Exchange

<U-Mart>

uniformly 300,000 points for 1 unit.

In the case, that you make contract 1 unit of futures at 2200 point, then you make contract of 2.2 million points with 0.3 million points cash.



Margin of U-Mart

| | | | | | | |
|---------------|--|-------------------|--|------|--|---------------------------------------|
| Day: | <input type="text" value="9"/> | Session: | <input type="text" value="8"/> | Cash | <input type="text" value="1,006,930,000"/> | <input type="checkbox"/> Auto Update |
| Spot Price | <input type="text" value="2,067"/> | Available Cash | <input type="text" value="997,930,000"/> | | | <input type="text" value="0.3"/> sec. |
| Futures Price | <input type="text" value="1,950"/> | Unrealized Profit | <input type="text" value="6,930,000"/> | | | <input type="button" value="Update"/> |
| Position | <input type="text" value="Short: 30"/> | Margin | <input type="text" value="9,000,000"/> | | | |

For example, you have 30 unit of short position, you need $30 * 300,000 = 9$ million points for margin. At default setting, all users start trading with 3 billion points, then you don't have to arrange cash additionally. (BUT) Exchange attaches 9 million points. Then, Available cash = Cash – Margin



Mark to the market: guarantee for sharer

- futures: Some one's short position correspond to some one's long position.
- Total units of short position equals that of long position.
- Then, some one's profit correspond to some one's loss.

Mark to the market:

Clearing profit and loss everyday !



Mark to the market

- Every day, calculate the current value of futures contract and estimate unrealized profit.
- Then, all contracts are settled, that is, Exchange moves cash from the account with losses to the account with profit.



Make Contract

| Chart | Profit | Order | Contracts | Order Book | Position | STDOUT | | | | | | |
|----------|--------|---------|-----------|------------|----------|--------|---------|------|-------|---------|---------|-------|
| | | | | | | | | | | | | |
| Order ID | Day | Session | S/B | Volume | M/L | Price | Can-Vol | C-ID | C-Day | C-Board | C-Price | C-Vol |
| 1019 | 7 | 2 | Sell | 10 | Market | 0 | 0 | 448 | 7 | 2 | 2289 | 10 |
| | | | | | | | | | | | | |

In this case, The player have 10 units of short position at 2289 points.



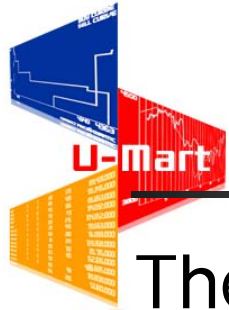
After last session of the day,

| | | | | | |
|---------------|---|-----------|-------------------|------|---------------|
| Day: | 7 | Session: | 8 | Cash | 1,001,130,000 |
| Spot Price | | 2,217 | Available Cash | | 998,130,000 |
| Futures Price | | 2,176 | Unrealized Profit | | 1,130,000 |
| Position | | Short: 10 | Margin | | 3,000,000 |

At last session, futures price is 2176. Then the player make profit $2289 - 2176 = 113$ points per unit.

Amount of cash in the player's account increase $113 * 10 \text{ units} * 1000 = 1,130,000$

Therefore, Cash = initial cash + unrealized profit



Bankrupt

The number of unit which you can make contract is (available cash/ 300,000) .

Initially, 1 billion / 0.3 million = 3333 units

You are bankrupted when you cannot arrange cash for mark to the market, not when you lose all your money. So you have to pay attention your position and available cash.



Closing Transaction

You had 10 units of long position.

Then you contract 10 units of short order.

At this situation,

- 1) your position become neutral.
- 2) Loss and profit from long position is canceled by profit and loss from your short position.

Your position can be seen as “zero”.



Settlement

- All positions are settled at the first spot price of one day after the last day of futures period.

At default setting,
futures period is 30 days.
then settlement is conducted at the first spot price of
31st day.

Before settlement, If your position become zero,
your profit or loss is fixed

4. Example of Log Analysis

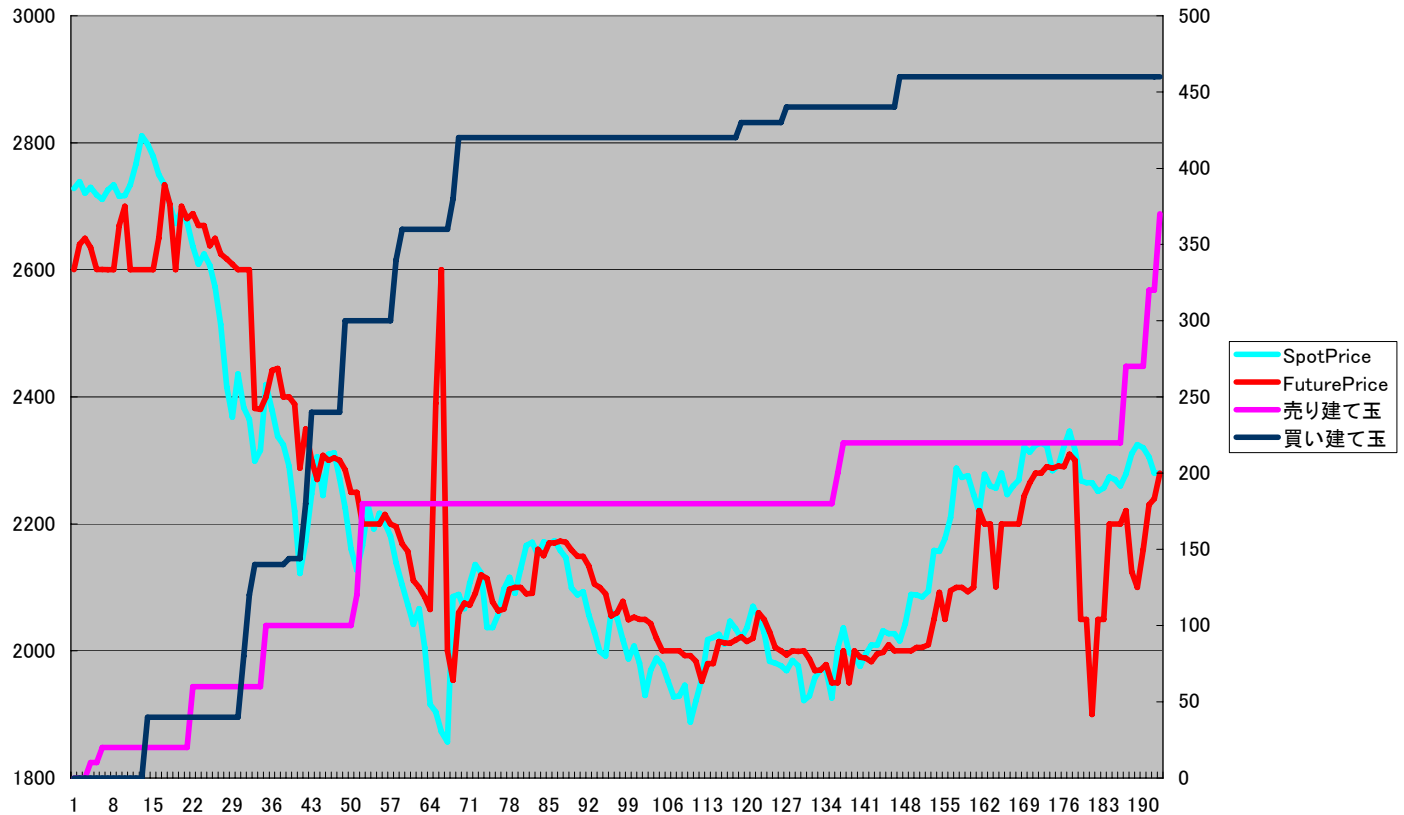


Experiment in Chiba Institute of Technology -

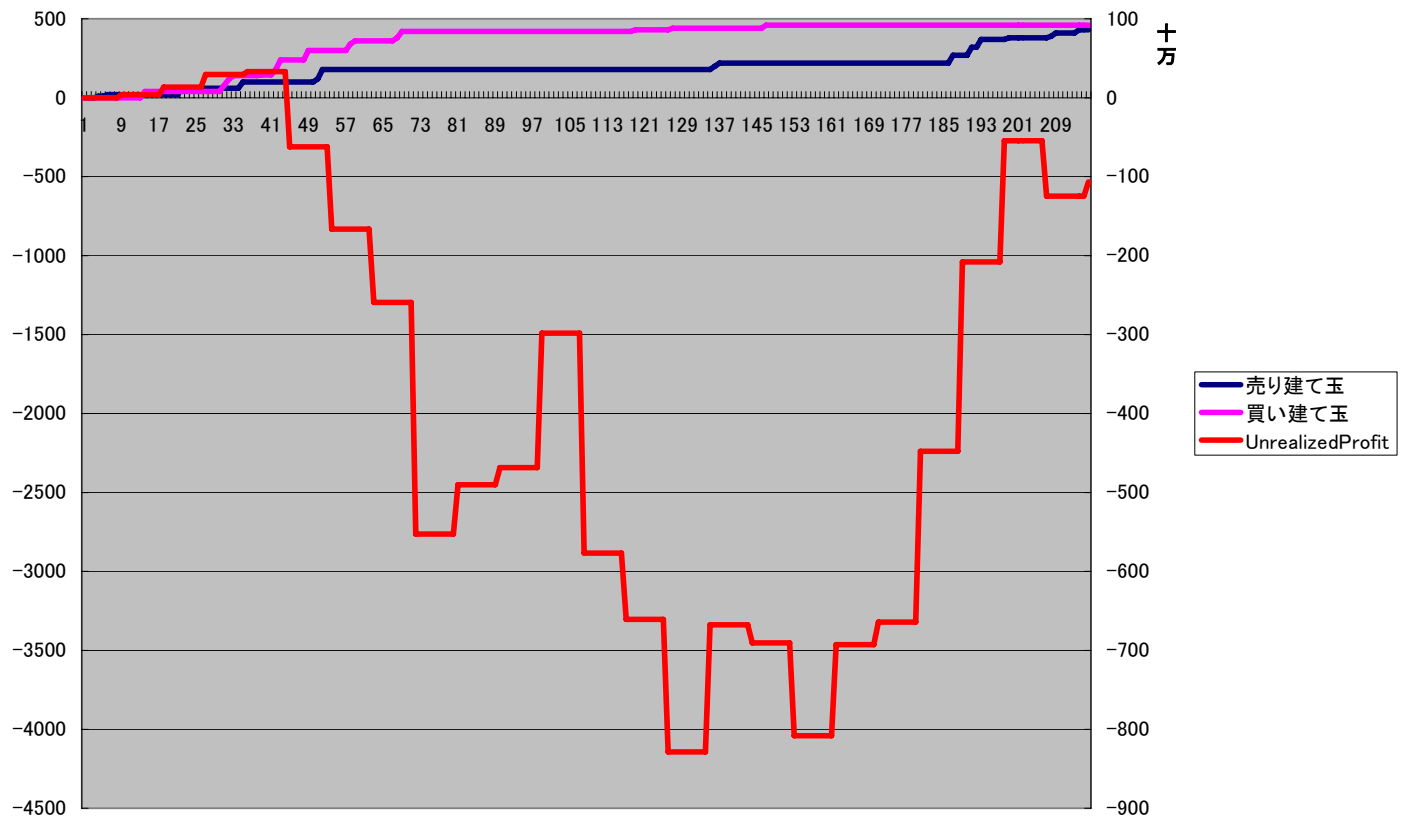
“Position control:
Learning trajectory of a student”



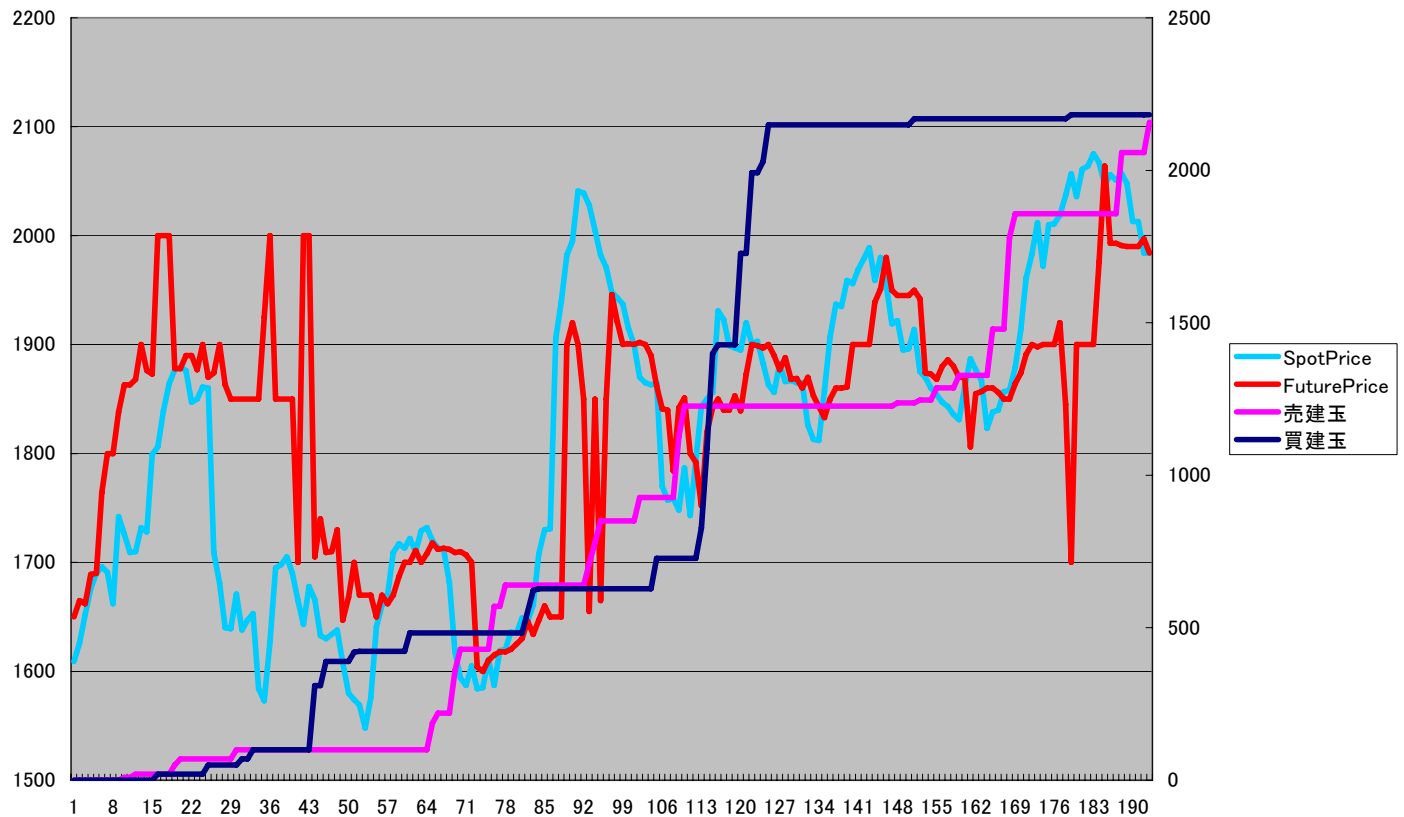
1st Experiment: She failed to trade



She couldn't do “stop loss” trading.

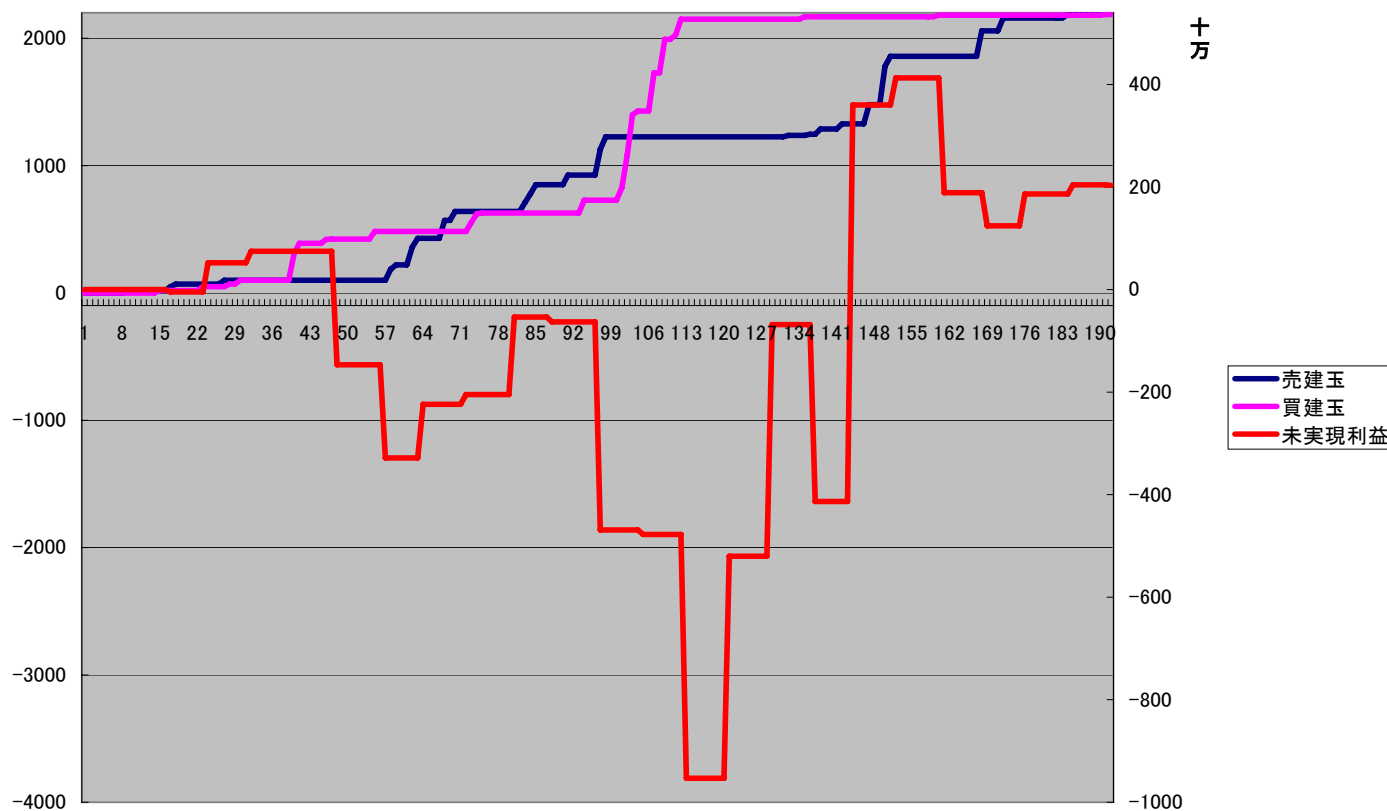


At next experiments: Doing better

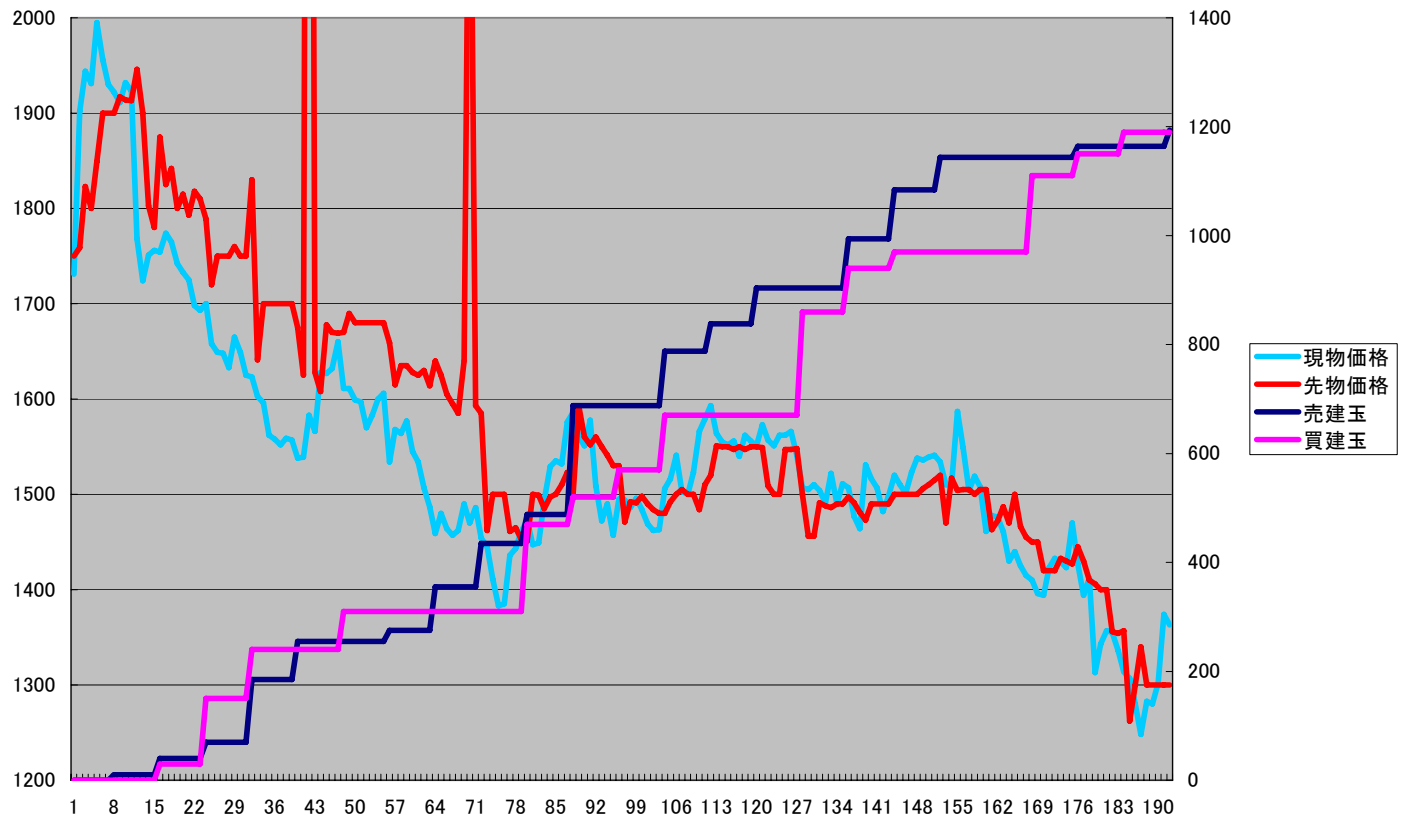




With profit



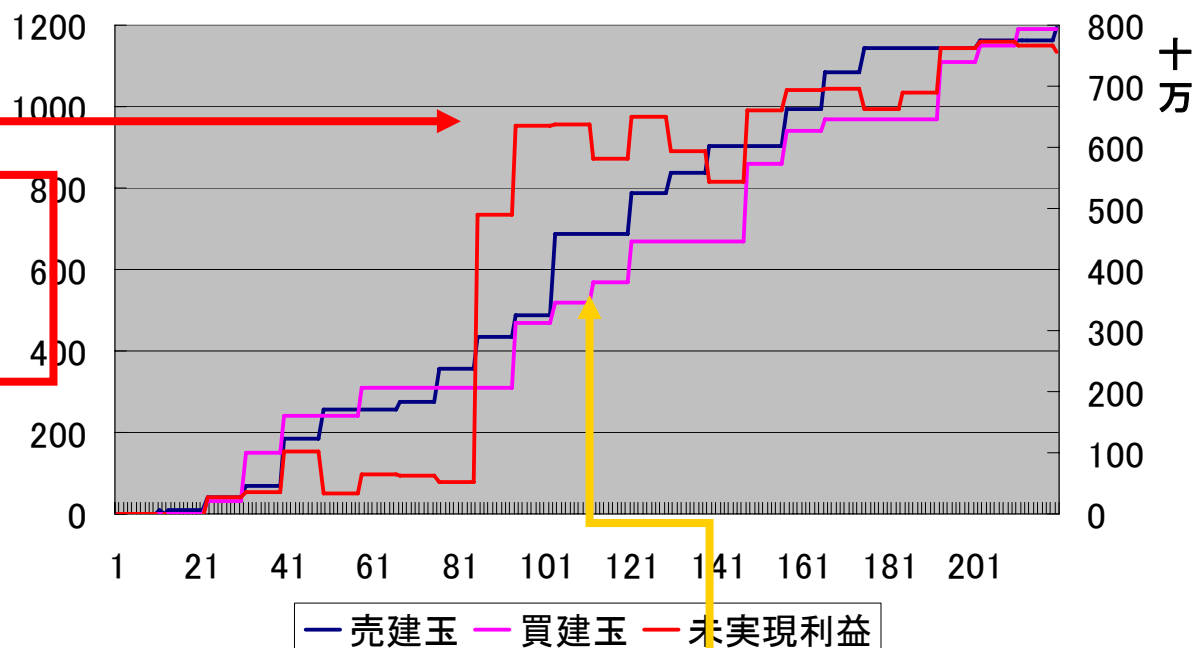
The 3rd Experiment: She could control her position well





Following her position

She accumulated profit.



Short term trading.

Positions were changed continually.