# PAIRS TRADING

algorithmic and program trading

MANUAL V.15.7.5

Pairs Trading or Statistical Arbitrage is a market neutral strategy that attempts to capture the spread between opposite positions in two highly correlated different stocks when the price relationship diverges outside of historical ratio.


OCTÁVIO VIANA
to **ATM | Investor Association**



Tags: Pairs trading; Statistical arbitrage; Market neutral; Trading stocks strategy; Hedging risk; Near-perfect hedge; Correlated shares; Paired Shares; Spread between stocks; Quantitative methods and analysis; Long-run equilibrium; Algorithmic trading; Program Trading.

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# PAIR TRADING

**Algorithmic and program trading**

Pair Trading – algorithmic and program trading V.15.7.5 is a useful real-time algorithmic and program trading system used as a pair trading strategy in stocks.

This trading tool, as the name suggests, is a complete auto piloted system that can be used without any human intervention. You can just leave the system running and the program will continue trading in accordance to the price of the stocks based on the custom build signals.

This is a Pairs Trading Strategy system for Microsoft Excel 2007 for execution on the Interactive Brokers Platform through Interactive Brokers's TWS Application Programming Interface (TWS API).

We can't post the system on a server or give to everyone a demo, but we can email the program to trusted people who would like to test the system.

Pair Trading – algorithmic and program trading V.15.7.5 benefits are:

1. User friendly, extremely functional, and safe
2. Performs in Microsoft Excel environment, offering the same Excel experience and look
3. Accessible to traders of all skill levels (quite handy to work with)
4. Combines the ability to trade live (over the internet) with a Pair Trading strategy
5. Ability to open trades (multiple trades) in a single click or automatically
6. Analyze statistics
7. Box-language for coding your own triggers and signals
8. Alerts and others automatic features

How to install the program and get started is explained in the "Installation" section.

The application's dialogs are explained in the "Using the program" section.

How to trade is explained in the "Starting trade" section.

For any questions, please refer to http://www.investorassociation.eu

For any suggestions contact info@investorassociation.eu

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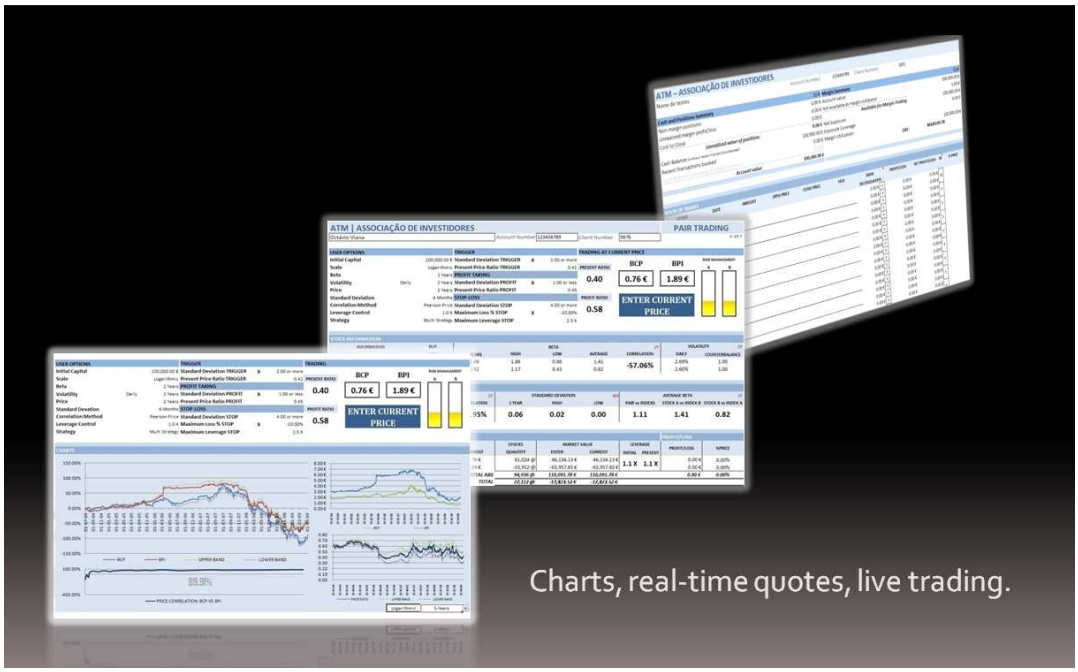



**Requirements:**

Intel Core 2 Duo 3.16 GHz processor or equivalent AMD processor or fast processor

4Gigabytes (GB) of Memory (RAM) or higher

4 Megabytes (MB) free Hard Disk space.

Monitor, 256 colors, 1280x1024

Microsoft Windows XP or Microsoft Windows Vista

Microsoft Excel 2007

High speed internet (20 MBS) or better

# Installation

**To install Pairs Trading – algorithmic and program trading V. 15.7.5.**

In order to use "Pairs Trading – Algorithmic and program trading", the IB'S API must be installed and IB'S TWS must be running.

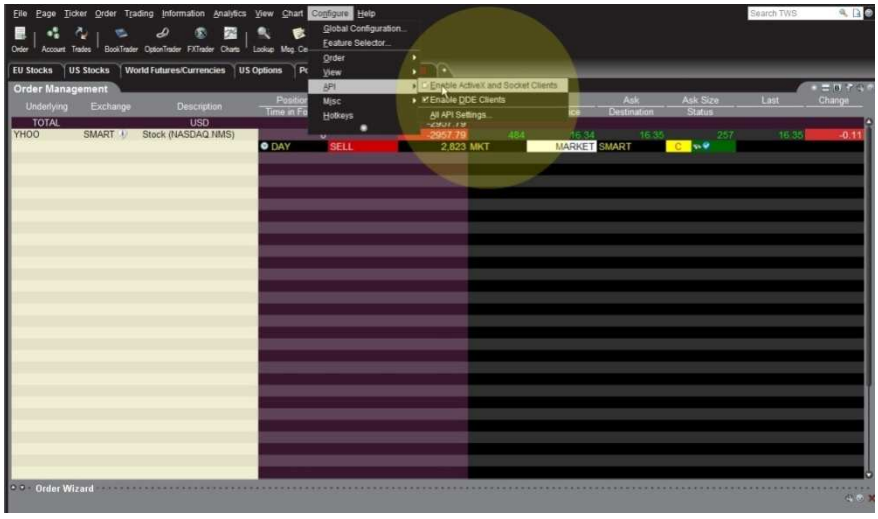
**To install the IB'S API:**

1. Download the file from www.interactivebrokers.com/en/p.php?f=programInterface&ib_entity=llc (Proprietary Tab) and save the file to your hard drive.
2. Double-click the **InstallAX_962.exe** program file on your hard disk to start the installation program.
3. Follow the instructions on the screen to complete the installation.

**To enable IB'S API on IB's TWS.**

1. Open the IB's TWS and Login (to log in double-click the TWS icon on your desktop, enter your username and password, and **click *Login***)

2. On the Tool Bar, click on **Configure** tab, and choose **API**.
3. Mark the box labeled ***Enable ActiveX and Socket Clients***



**Install and start the Pair Trading V. 15. 7:**

Once you have installed and enabled the IB's API on IB's TWS:

1. You must use a file-unzipping program to unzip **Pair Trading** file. If you already have a utility to unzip the file, please proceed to next step, if not, you can download an unzip program from www.7-zip.org

2. **Unzipped the Pair Trading files**. You can do this by right clicking in the zipped file and **click *Extract***.

**3.** Open the unzip **Pair Trading folder** by double clicking on it and:

3.1. **Double click *Pair Trading V. 15.7 datafeedIB*** to open the worksheet in Microsoft Excel 2007, go to ***Security Alert*** options, and when prompted, **click to enable *Macros***.

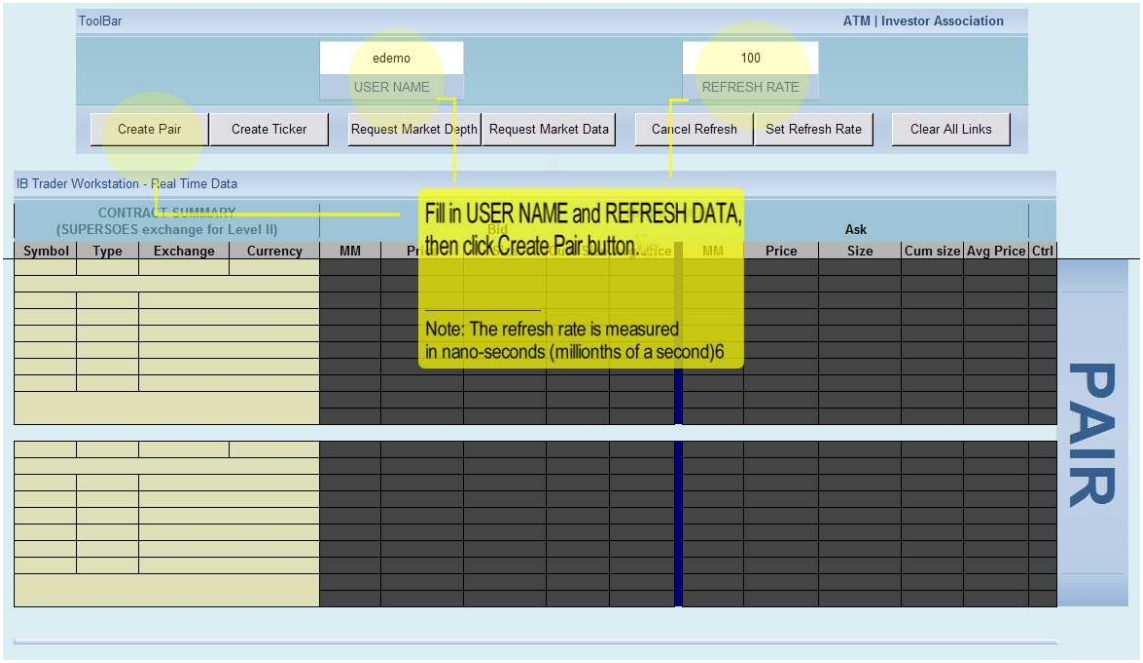
3.2. **Double click *Pair Trading V. 15.7 - AUTO*** to open the worksheet in Microsoft Excel 2007, go to ***Security Alert*** options, and when prompted, **click to enable *Macros* & *ActiveX*** and ***embedded links***

At this point, the Pair Trading system is ready to use.

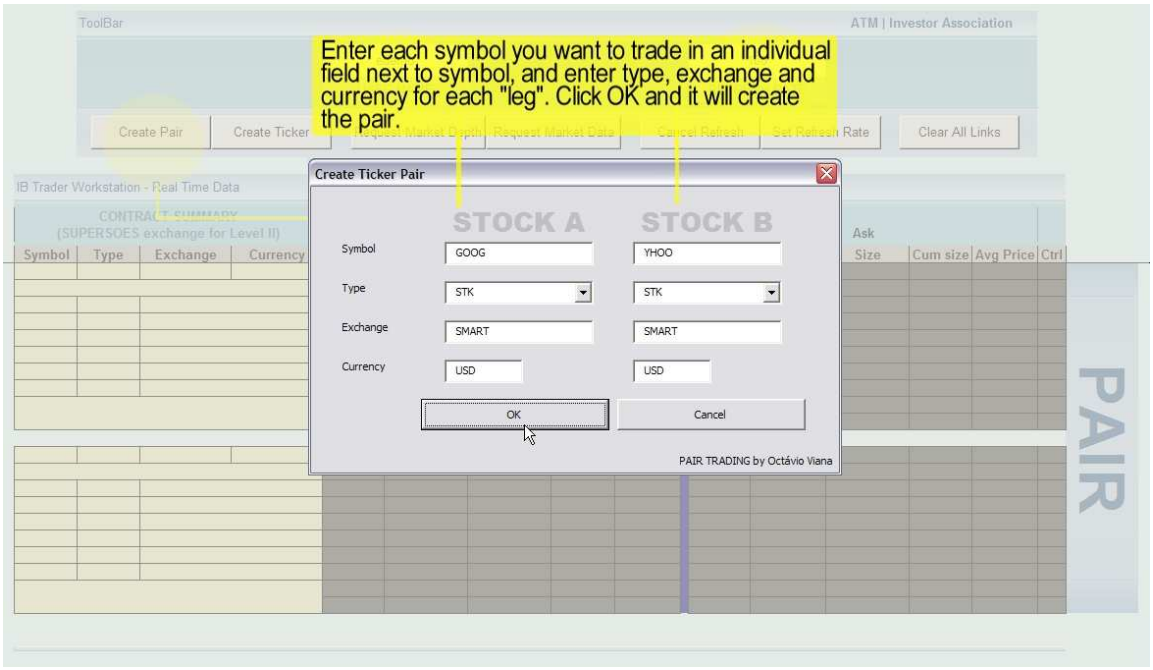
# Using the program

### Real Time DataFeed

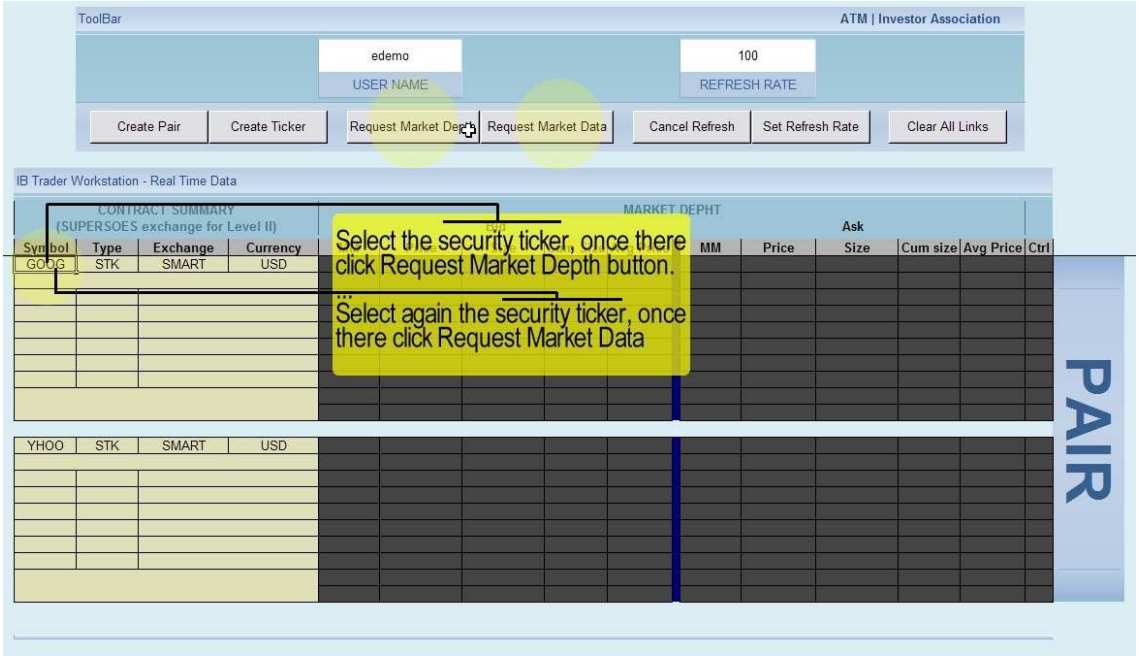
1- In the ***Market Depth*** sheet fill **User Name** and **Refresh Data**, then **click *Create Pair* button**.




2- Input the request information in the **popup box**, then **click OK** to create the pair.

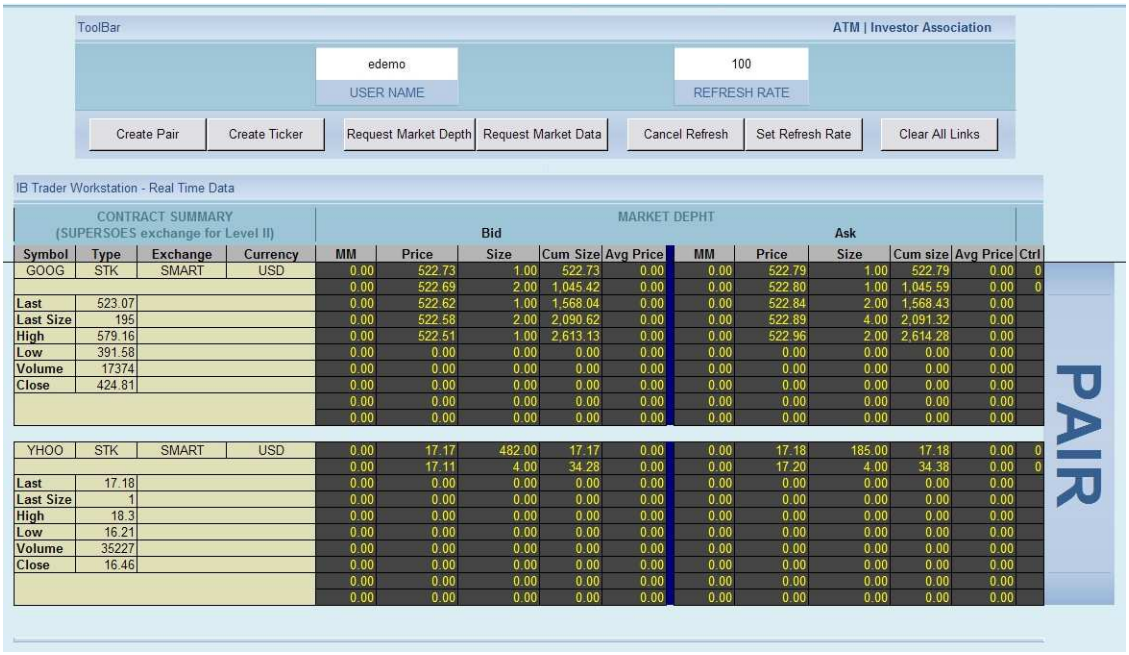


3- Ask for data feed selecting the security ticker ("leg" A) and requesting **Market Depth** and **Market Data.**



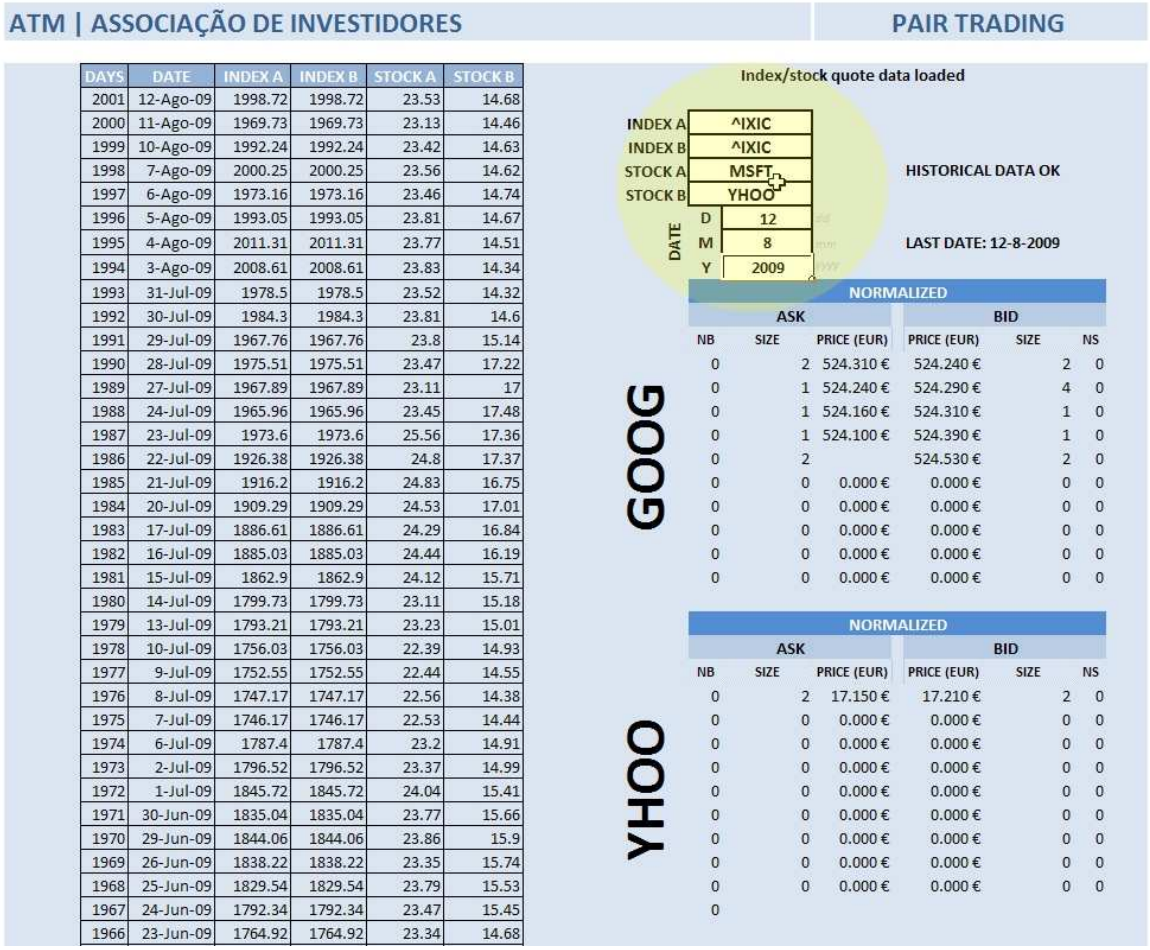

4- Repeat the same procedure with the other "leg".

When the quotes and market depth request has been submitted successfully, the market depth screen will return the real time quotes and market depth.



### Historical Data

Input the request information (symbols and last date) in the ***Data*** sheet (Pair Trading V. 15.7 Auto workbook); that will download historical trading data for the last 2001 trading days and issue symbol, including indexes. It will automatically update existing data if ran again at a later date.



ATM | ASSOCIAÇÃO DE INVESTIDORES — PAIR TRADING

| DAYS | DATE | INDEX A | INDEX B | STOCK A | STOCK B |
|---|---|---|---|---|---|
| 2001 | 12-Ago-09 | 1998.72 | 1998.72 | 23.53 | 14.68 |
| 2000 | 11-Ago-09 | 1969.73 | 1969.73 | 23.13 | 14.46 |
| 1999 | 10-Ago-09 | 1992.24 | 1992.24 | 23.42 | 14.63 |
| 1998 | 7-Ago-09 | 2000.25 | 2000.25 | 23.56 | 14.62 |
| 1997 | 6-Ago-09 | 1973.16 | 1973.16 | 23.46 | 14.74 |
| 1996 | 5-Ago-09 | 1993.05 | 1993.05 | 23.81 | 14.67 |
| 1995 | 4-Ago-09 | 2011.31 | 2011.31 | 23.77 | 14.51 |
| 1994 | 3-Ago-09 | 2008.61 | 2008.61 | 23.83 | 14.34 |
| 1993 | 31-Jul-09 | 1978.5 | 1978.5 | 23.52 | 14.32 |
| 1992 | 30-Jul-09 | 1984.3 | 1984.3 | 23.81 | 14.6 |
| 1991 | 29-Jul-09 | 1967.76 | 1967.76 | 23.8 | 15.14 |
| 1990 | 28-Jul-09 | 1975.51 | 1975.51 | 23.47 | 17.22 |
| 1989 | 27-Jul-09 | 1967.89 | 1967.89 | 23.11 | 17 |
| 1988 | 24-Jul-09 | 1965.96 | 1965.96 | 23.45 | 17.48 |
| 1987 | 23-Jul-09 | 1973.6 | 1973.6 | 25.56 | 17.36 |
| 1986 | 22-Jul-09 | 1926.38 | 1926.38 | 24.8 | 17.37 |
| 1985 | 21-Jul-09 | 1916.2 | 1916.2 | 24.83 | 16.75 |
| 1984 | 20-Jul-09 | 1909.29 | 1909.29 | 24.53 | 17.01 |
| 1983 | 17-Jul-09 | 1886.61 | 1886.61 | 24.29 | 16.84 |
| 1982 | 16-Jul-09 | 1885.03 | 1885.03 | 24.44 | 16.19 |
| 1981 | 15-Jul-09 | 1862.9 | 1862.9 | 24.12 | 15.71 |
| 1980 | 14-Jul-09 | 1799.73 | 1799.73 | 23.11 | 15.18 |
| 1979 | 13-Jul-09 | 1793.21 | 1793.21 | 23.23 | 15.01 |
| 1978 | 10-Jul-09 | 1756.03 | 1756.03 | 22.39 | 14.93 |
| 1977 | 9-Jul-09 | 1752.55 | 1752.55 | 22.44 | 14.55 |
| 1976 | 8-Jul-09 | 1747.17 | 1747.17 | 22.56 | 14.38 |
| 1975 | 7-Jul-09 | 1746.17 | 1746.17 | 22.53 | 14.44 |
| 1974 | 6-Jul-09 | 1787.4 | 1787.4 | 23.2 | 14.91 |
| 1973 | 2-Jul-09 | 1796.52 | 1796.52 | 23.37 | 14.99 |
| 1972 | 1-Jul-09 | 1845.72 | 1845.72 | 24.04 | 15.41 |
| 1971 | 30-Jun-09 | 1835.04 | 1835.04 | 23.77 | 15.66 |
| 1970 | 29-Jun-09 | 1844.06 | 1844.06 | 23.86 | 15.9 |
| 1969 | 26-Jun-09 | 1838.22 | 1838.22 | 23.35 | 15.74 |
| 1968 | 25-Jun-09 | 1829.54 | 1829.54 | 23.79 | 15.53 |
| 1967 | 24-Jun-09 | 1792.34 | 1792.34 | 23.47 | 15.45 |
| 1966 | 23-Jun-09 | 1764.92 | 1764.92 | 23.34 | 14.68 |

Index/stock quote data loaded

INDEX A ^IXIC
INDEX B ^IXIC
STOCK A MSFT
STOCK B YHOO

DATE D 12 M 8 Y 2009

HISTORICAL DATA OK

LAST DATE: 12-8-2009

GOOG

| NORMALIZED | | | | | |
|---|---|---|---|---|---|
| ASK | | | BID | | |
| NB | SIZE | PRICE (EUR) | PRICE (EUR) | SIZE | NS |
| 0 | 2 | 524.310 € | 524.240 € | 2 | 0 |
| 0 | 1 | 524.240 € | 524.290 € | 4 | 0 |
| 0 | 1 | 524.160 € | 524.310 € | 1 | 0 |
| 0 | 1 | 524.100 € | 524.390 € | 1 | 0 |
| 0 | 2 | | 524.530 € | 2 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |

YHOO

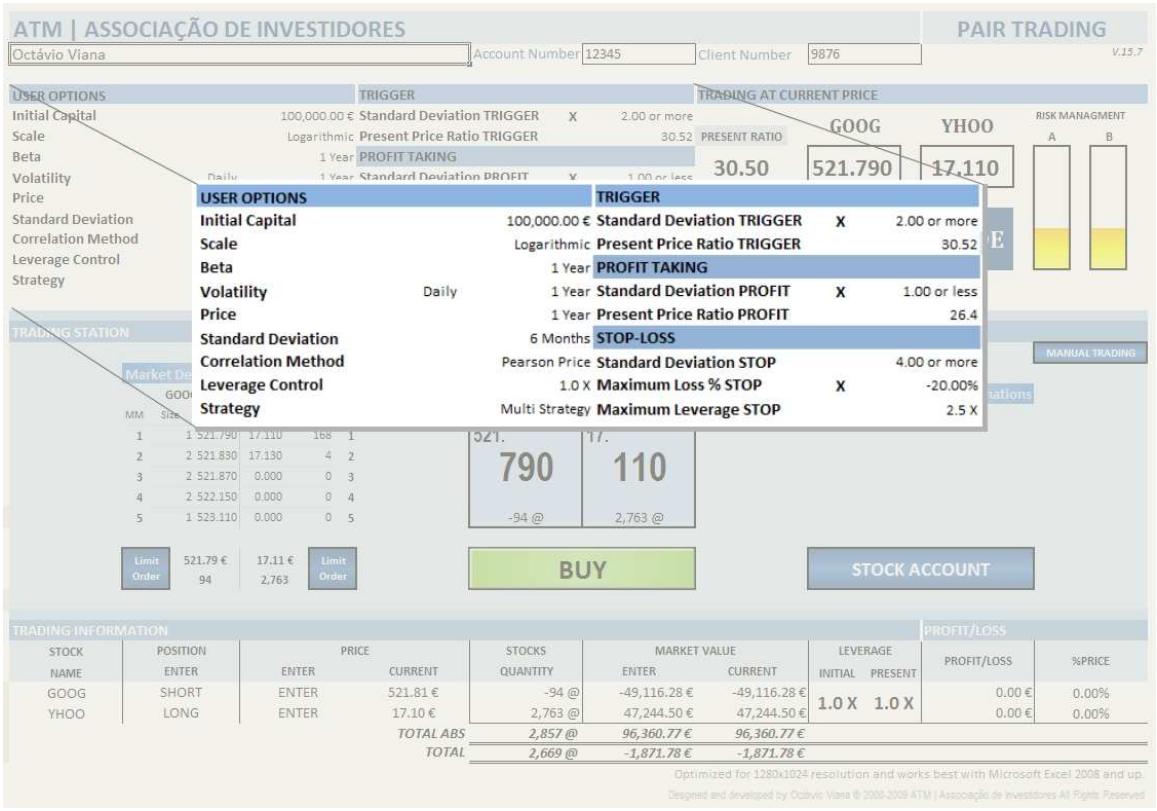
| NORMALIZED | | | | | |
|---|---|---|---|---|---|
| ASK | | | BID | | |
| NB | SIZE | PRICE (EUR) | PRICE (EUR) | SIZE | NS |
| 0 | 2 | 17.150 € | 17.210 € | 2 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | 0 | 0.000 € | 0.000 € | 0 | 0 |
| 0 | | | | | |

Note 1: If one of the securities or one of the indexes didn't have enough historical trading data, the system will return a error massage.

Note 2: If you don't know a company's ticker symbol, you can find it in Yahoo! Finance using their "symbol lookup" function.

## User Options

The Pair Trading system includes a flexible user options to customize the trading rules depending on the time frame, scale, leverage, strategy, trigger, stop loss, etc.




**Initial Capital:** The amount of money allocated to this particular strategy. (Recommended minimum 10k)

**Scale:** You can choose between nominal or logarithmic scale. (Recommended logarithmic to the long periods)

**Beta:** The relation of security returns with market as a whole (index). You can choose from 1 month until 5 years.

**Volatility:** Standard Deviation of compounded returns of a security to a specific time frame. You can choose from 2 weeks until 5 years, and daily, monthly or annually.

**Price:** Close price - daily. You can choose from 2 weeks until 5 years.

**Standard Deviation:** Is the variability of the price ratio. A pair with a high STD is more profitable but is considered more risky.

**Correlation Method:** You can choose between Pearson (price), Pearson (returns), and Spearman correlation coefficients.

**Leverage Control:** You can control the amount of debt used in the trade. More leverage increase the returns (maximizing the gains or losses).

**Strategy:** The strategy is the Pair Trading's "secret sauce". You can choose between six market strategies.

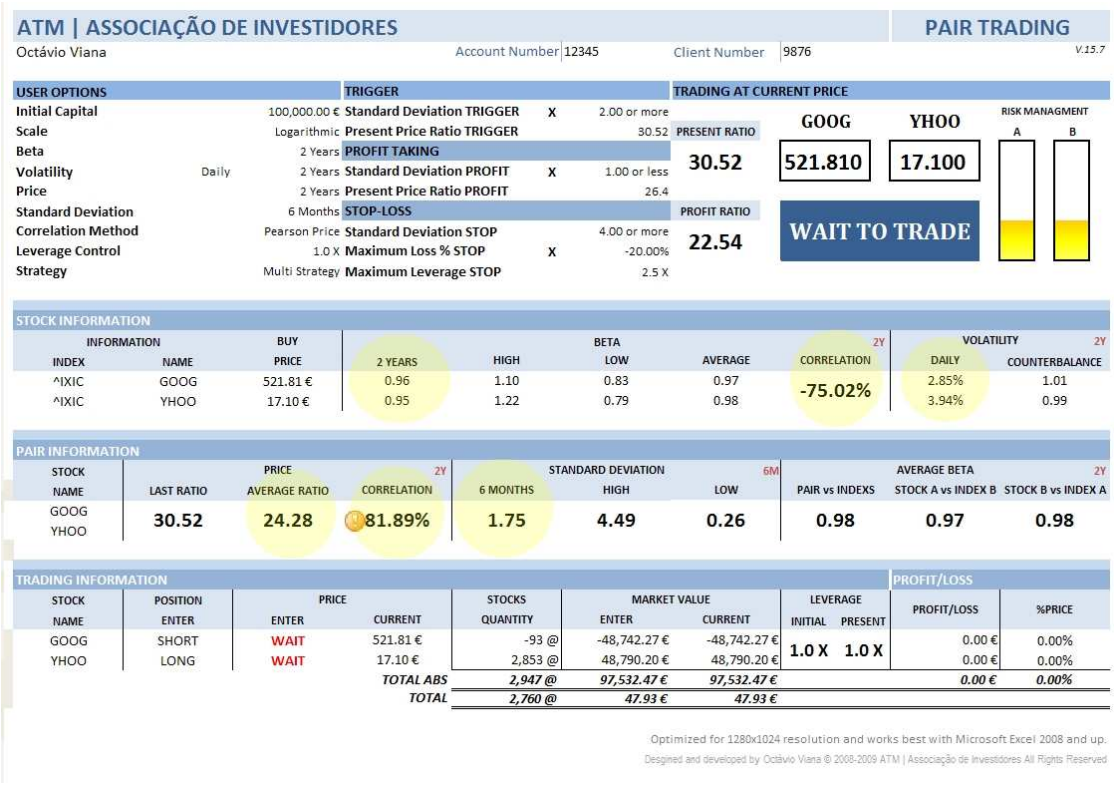
**Trigger:** Is an event that triggers market entry, based on STD or Price Ratio signal.

**Profit Taking:** Is an event that triggers market exit (with profit), based on STD or Price Ratio signal.

**Stop Loss:** Is an event that triggers market exit (with loss) to limit losses, based on STD, Price Ratio or Percentage Loss signal.

## Statistics

Once you have your indicators, triggers, and time frames selected, you have an easy way to analyze the pair. The price statistics, on the ***Statistics*** sheet, provide that easy way to measure various characteristics of the pair, namely the correlation, volatility, Beta, etc.



ATM | ASSOCIAÇÃO DE INVESTIDORES — PAIR TRADING

Octávio Viana — Account Number 12345 — Client Number 9876 — V.15.7

| USER OPTIONS | | TRIGGER | | | TRADING AT CURRENT PRICE | | |
|---|---|---|---|---|---|---|---|
| Initial Capital | 100,000.00 € | Standard Deviation TRIGGER | X | 2.00 or more | | GOOG | YHOO |
| Scale | Logarithmic | Present Price Ratio TRIGGER | | 30.52 | PRESENT RATIO | 521.810 | 17.100 |
| Beta | 2 Years | PROFIT TAKING | | | 30.52 | | |
| Volatility | Daily 2 Years | Standard Deviation PROFIT | X | 1.00 or less | | | |
| Price | 2 Years | Present Price Ratio PROFIT | | 26.4 | | | |
| Standard Deviation | 6 Months | STOP-LOSS | | | PROFIT RATIO | WAIT TO TRADE | |
| Correlation Method | Pearson Price | Standard Deviation STOP | | 4.00 or more | 22.54 | | |
| Leverage Control | 1.0 X | Maximum Loss % STOP | X | -20.00% | | | |
| Strategy | Multi Strategy | Maximum Leverage STOP | | 2.5 X | | | |

RISK MANAGMENT: A, B

STOCK INFORMATION

| INFORMATION INDEX | NAME | BUY PRICE | BETA 2 YEARS | BETA HIGH | BETA LOW | BETA AVERAGE | CORRELATION 2Y | VOLATILITY DAILY 2Y | VOLATILITY COUNTERBALANCE 2Y |
|---|---|---|---|---|---|---|---|---|---|
| ^IXIC | GOOG | 521.81 € | 0.96 | 1.10 | 0.83 | 0.97 | -75.02% | 2.85% | 1.01 |
| ^IXIC | YHOO | 17.10 € | 0.95 | 1.22 | 0.79 | 0.98 | | 3.94% | 0.99 |

PAIR INFORMATION

| STOCK NAME | PRICE LAST RATIO | PRICE AVERAGE RATIO 2Y | CORRELATION 2Y | STANDARD DEVIATION 6 MONTHS | STANDARD DEVIATION HIGH 6M | STANDARD DEVIATION LOW 6M | AVERAGE BETA PAIR vs INDEXS 2Y | AVERAGE BETA STOCK A vs INDEX B 2Y | AVERAGE BETA STOCK B vs INDEX A 2Y |
|---|---|---|---|---|---|---|---|---|---|
| GOOG YHOO | 30.52 | 24.28 | 81.89% | 1.75 | 4.49 | 0.26 | 0.98 | 0.97 | 0.98 |

TRADING INFORMATION — PROFIT/LOSS

| STOCK NAME | POSITION ENTER | PRICE ENTER | PRICE CURRENT | STOCKS QUANTITY | MARKET VALUE ENTER | MARKET VALUE CURRENT | LEVERAGE INITIAL | LEVERAGE PRESENT | PROFIT/LOSS | %PRICE |
|---|---|---|---|---|---|---|---|---|---|---|
| GOOG | SHORT | WAIT | 521.81 € | -93 @ | -48,742.27 € | -48,742.27 € | 1.0 X | 1.0 X | 0.00 € | 0.00% |
| YHOO | LONG | WAIT | 17.10 € | 2,853 @ | 48,790.20 € | 48,790.20 € | | | 0.00 € | 0.00% |
| | | | *TOTAL ABS* | *2,947 @* | *97,532.47 €* | *97,532.47 €* | | | *0.00 €* | *0.00%* |
| | | | *TOTAL* | *2,760 @* | *47.93 €* | *47.93 €* | | | | |

Optimized for 1280x1024 resolution and works best with Microsoft Excel 2008 and up.

Designed and developed by Octávio Viana © 2008-2009 ATM | Associação de Investidores All Rights Reserved

The most important statistics are highlighted.

**Price correlation:** More price correlation better is the pair to trade. 90% of correlation is liked

**Average ratio:** If your input to trigger (market entry or exit) is the Price Ratio, you need this average price ratio.

**Standard Deviation:** A pair with a high STD is more profitable but is considered more risky

**Beta:** A pair with similar betas is better. Betas greater than 1 may allow to trade more frequently.

**Beta Correlation:** More Beta correlation better is the pair to trade.

**Volatility:** If you are a day trader, the daily volatility can be a good indicator for your perceptual stop loss limit, the same for other time frame.

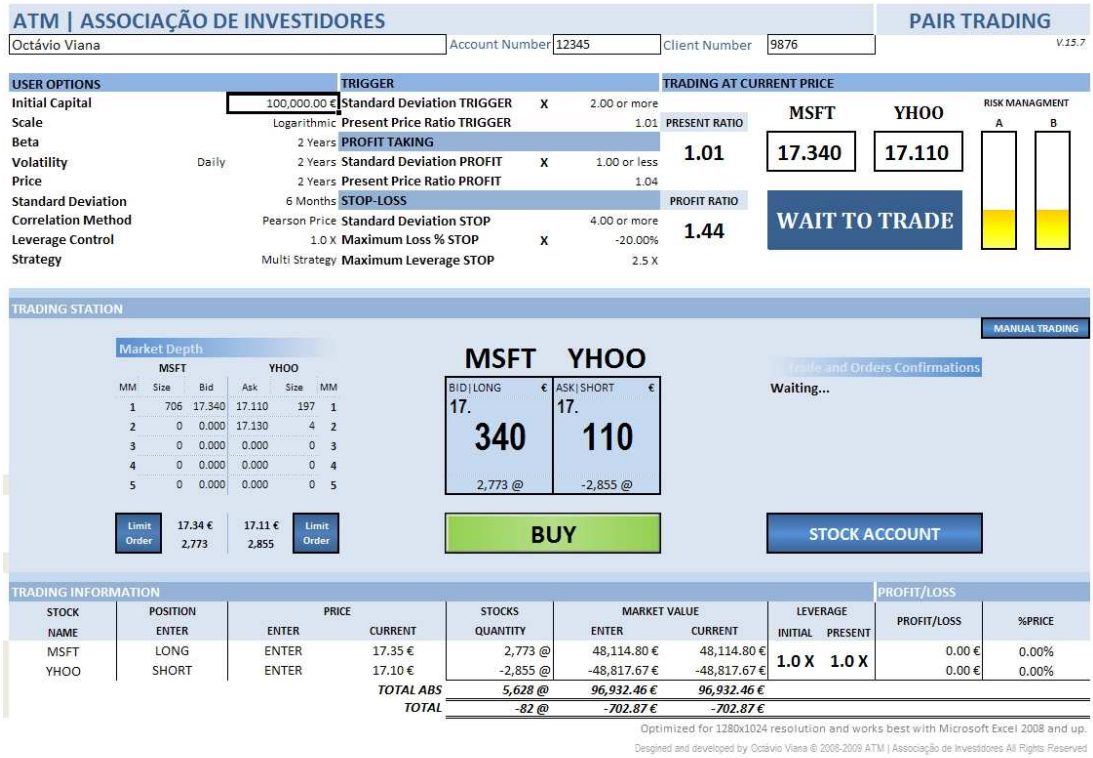
## Charts

Sometimes complex statistics and data make more sense when you have a visual representation, because charts can help you to visualize the completed picture of the pair correlations. In the ***Chart*** sheet you can find some statistics charts.

# Starting trade

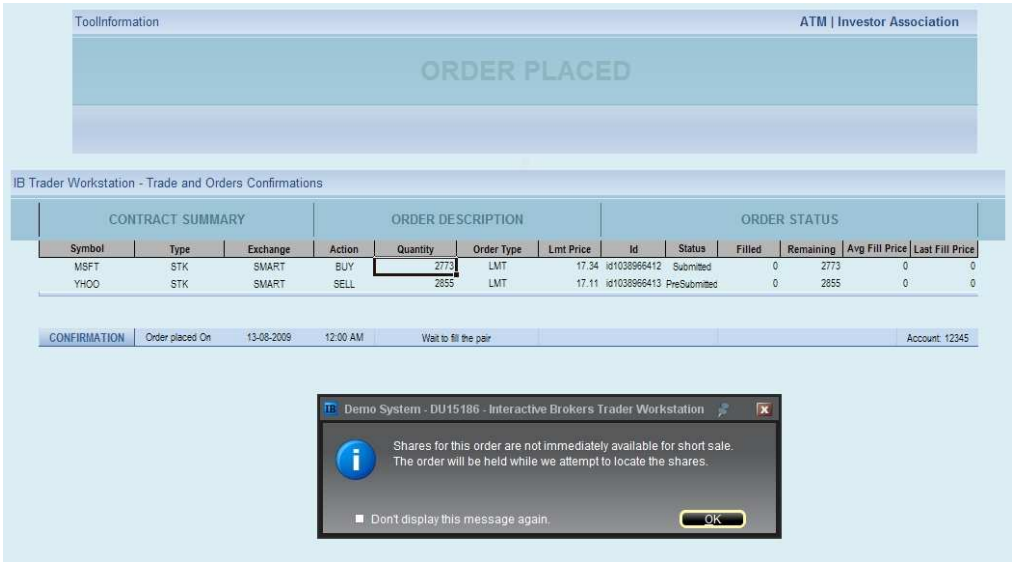
## Trading

The ***Trading Station*** sheet is your order entry and trading signal application.




In this sheet you can monitor the quotes of the chosen pair (market depth – prices available bid and ask quantities) and transmit the "basket" order with a single click when you get (or not) the signal to trade.

The "basket order" gives you the facility to trade the pair as a package (buy one leg and sell other) in nano seconds. When you fire the "basket order", you are automatically redirected to ***the Orders Confirmations*** sheet where you can see the progress of your "basket order" and received alerts from TWS.



**1.** Execute a Buy Order to the "basket" (pair) simply by clicking the **BUY** button (in green color) and your "basket order" is submitted directly to Interactive Brokers TWS. You will create an order to buy one leg at the asking price for the quantity shown in the ask price window and at the same time you will create another offer for the other leg, to sell at bid price the quantity shown in the bid price window. When the pair is open, the green button (**BUY**) changes to red and turns to **SELL**, and you can close the pair, executing a Sell. Your basket order is submitted to Interactive Brokers TWS at ask and bid price to the leg to sell and to the leg to buy respectively. The quantity of each leg is the same quantity you bought and sell in that order.

To deactivate a pending order you just need to click on **BUY WAIT** or **SELL WAIT** button which is show in BUY or SELL button place while the system is waiting to fill the "basket order".

This "basket orders" are not "combo legs". If you reprogram the system to executed "combo legs" (you need reprogram in VBA language) the Interactive Brokers SmartRouting guarantees best execution for each leg and entire order, with Interactive brokers taking the risk for partially executed orders.

**2.** In this window you can view the prices available bid and ask quantities (market depth) in real time. In the blue boxes of this window you can choose the type of order you want.

**Limit Order-** Limit Order is an order with price limit. In other words, is an order to buy or sell a set quantity of securities at a specified price or below.

**FOK Order** – Fill or Kill order is an order to fill a set quantity of securities at a specified price immediately and must be complete filled or killed (cancel). Is a simple limit order to execute immediately or, if not, is cancel.

**Market Order** – Market Order is an order to fill a set quantity of securities at the best available price. When you select Market Order the system will show you a blue rectangle where you can choose "***protect market order***" or "***unprotect market order***". If you select "***protect market order***" your other will be killed (cancel) if the first five available bid/ask quantities didn't fill your order completed.

**Average Price** - Average Price is not an order. The average price provides the information about the compounded average price for the five available bid/ask quantities.

**3.** This window is your trading signal box where you get the information to trade (buy or sell) the pair. Additional shows a chart (two bars) with the impact of each "leg" in the current (Profit/Loss) Pair.

**4.** In this window you get the trades and orders confirmations for the last trade of current pair. You use the blue box below to choose in which account you want record the trade (stock account or margin account). You can choose for manual, semi auto or auto trading.

**Manual trading** – You can buy and sell the pair clicking in the execution button (box 1).

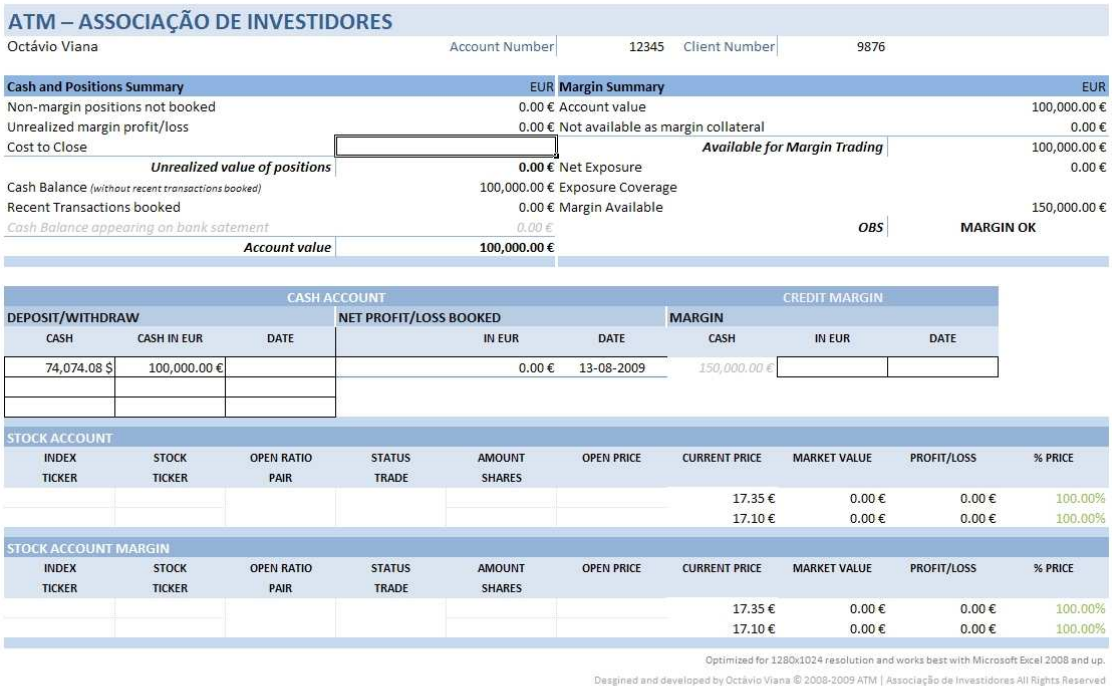
**Semi Auto Trading** – The system automatically buys and sells the pair, running and executing the trade (buy pair and sell pair) only once. When the trade is close, the system turn to standby mode awaiting authorization to begin a new trade.

**Auto Trading** – The system automatically runs and executes the trades (buy and sell pair) continuously. It doesn't require human intervention, but is better a human monitor the system continuously… If you don't want continuously monitor the system, you better learn to pray.

# Account

## Summary Account

The ***Summary Account*** shows you the real time account balance, net margin available for trading, non-margin position not booked, unrealized margin profit/loss, cost to close, recent transition booked, net exposure, exposure coverage, market value of your open orders (current Pair Trading portfolio), etc.



ATM – ASSOCIAÇÃO DE INVESTIDORES

Octávio Viana | Account Number 12345 | Client Number 9876

| Cash and Positions Summary | EUR | Margin Summary | EUR |
|---|---|---|---|
| Non-margin positions not booked | 0.00 € | Account value | 100,000.00 € |
| Unrealized margin profit/loss | 0.00 € | Not available as margin collateral | 0.00 € |
| Cost to Close | | *Available for Margin Trading* | 100,000.00 € |
| *Unrealized value of positions* | 0.00 € | Net Exposure | 0.00 € |
| Cash Balance *(without recent transactions booked)* | 100,000.00 € | Exposure Coverage | |
| Recent Transactions booked | 0.00 € | Margin Available | 150,000.00 € |
| *Cash Balance appearing on bank satement* | *0.00 €* | *OBS* | MARGIN OK |
| *Account value* | 100,000.00 € | | |

| CASH ACCOUNT | | | | | CREDIT MARGIN | | |
|---|---|---|---|---|---|---|---|
| DEPOSIT/WITHDRAW | | | NET PROFIT/LOSS BOOKED | | MARGIN | | |
| CASH | CASH IN EUR | DATE | IN EUR | DATE | CASH | IN EUR | DATE |
| 74,074.08 $ | 100,000.00 € | | 0.00 € | 13-08-2009 | *150,000.00 €* | | |

STOCK ACCOUNT

| INDEX TICKER | STOCK TICKER | OPEN RATIO PAIR | STATUS TRADE | AMOUNT SHARES | OPEN PRICE | CURRENT PRICE | MARKET VALUE | PROFIT/LOSS | % PRICE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 17.35 € | 0.00 € | 0.00 € | 100.00% |
| | | | | | | 17.10 € | 0.00 € | 0.00 € | 100.00% |

STOCK ACCOUNT MARGIN

| INDEX TICKER | STOCK TICKER | OPEN RATIO PAIR | STATUS TRADE | AMOUNT SHARES | OPEN PRICE | CURRENT PRICE | MARKET VALUE | PROFIT/LOSS | % PRICE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 17.35 € | 0.00 € | 0.00 € | 100.00% |
| | | | | | | 17.10 € | 0.00 € | 0.00 € | 100.00% |

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This sheet displays real time reports to the open orders: Symbol, price, open ratio, amount of shares, Status Trade (is always OPEN), current price of each leg, current market value for each leg, and the profit/loss for each leg.

## Transactions Book

The ***Transactions Book*** shows you the real time account balance, net margin available for trading, non-margin position not booked, unrealized margin profit/loss, cost to close, recent transition booked, net exposure, exposure coverage, market value of your open orders (current Pair Trading portfolio), etc., like the *Account Summary*. But this sheet shows you the execution report for every trade made (and closed), including symbol, date of execution, amount, open price, close price, fees, profit/loss, net profit loss, etc.

**ATM – ASSOCIAÇÃO DE INVESTIDORES**

Octávio Viana | Account Number 12345 | Client Number 9876

| Cash and Positions Summary | EUR | Margin Summary | EUR |
|---|---|---|---|
| Non-margin positions | 0.00 € | Account value | 100,000.00 € |
| Unrealized margin profit/loss | 0.00 € | Not available as margin collateral | 0.00 € |
| Cost to Close | 0.00 € | *Available for Margin Trading* | 100,000.00 € |
| ***Unrealized value of positions*** | **0.00 €** | Net Exposure | 0.00 € |
| Cash Balance *(without recent transactions booked)* | 100,000.00 € | Exposure Coverage | |
| Recent Transactions booked | 0.00 € | Margin Utilization | 150,000.00 € |
| *Cash Balance appearing on bank satement* | *0.00 €* | ***OBS*** | **MARGIN OK** |
| ***Account value*** | **100,000.00 €** | | |

BOOK OF TRADES

| STOCK | DATE | AMOUNT | OPEN PRICE | CLOSE PRICE | FEES | BANK RECONCILIATION | PROFIT/LOSS | NET PROFIT/LOSS | M | % PRICE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | N | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | N | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | N | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | N | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | N | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | N | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | N | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | Y | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | | |
| | | | | | | 0.00 € Y | 0.00 € | 0.00 € | Y | |
| TOTAL | | 0 @ | TOTAL | | *0.00 €* | *0.00 €* | *0.00 €* | *0.00 €* | | *0.00%* |

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# Uninstallation

**To uninstall Pairs Trading – algorithmic and program trading V. 15.7.5.**

1. Select Pair Trading folder with the right button of the mouse;
2. Then click the [Delete...] button to delete the folder so that it can be automatically removed.

# Registration

To register go to http://www.investorassociation.eu

Registration benefits are:

1. Get information on updates
2. New versions are free
3. Get support by E-mail

For any questions contact us directly, E-mail: info@investorassociation.eu

# Support

You can consult http://www.investorassociation.eu 24-hours-a-day to find the latest product information, product updates, and answers to common questions.

For technical support contact us directly, E-mail: info@investorassociation.eu

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The trading signals are not a recommendation to buy or sell, but a statistical interpretation and opinion of the possible evolution of the stock pair without any guarantee. The trading signal shouldn't be used by anyone to trade. The author accepts no liability whatsoever for any loss arising from any use of this statistical interpretation and opinion.

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**TRADE IN LIQUID AND ACTIVE MARKETS**
Trade in liquid and active markets (special in short-term) where you can move in and out ease.

**REWARD TO RISK**
Watch for a reward-to-risk ratio at least of 2:1. You must stipulate a confidence level according the risk-to-reward and allocate capital as this confidence level. If you have a higher reward-to-risk your confidence level is higher too and you can allocate more capital in that trade.

**FIXED-PERCENTAGE BET**
If you use a fixed-percentage bet you are automatic decrease the allocated capital when you loss and consequential reduce the futures loss; and increase the allocate capital when you win and consequential you have an exponential growth.

**LIMIT LOSSES**
As soon as position is initiated, you should have a stop loss. Stops may be used to limit losses and protect profits. Stop orders must be placed in appropriate relation to the reason to enter in trade, outside of the price range determined by the volatility and far enough if stop you to know that you were wrong, avoiding getting stopped out by the normal "noise" of the market. If the original reason for entering the trade may no longer be valid, get out. Mental stops do not work.

**WHEN IN DOUBT, GET OUT**
If the market doesn't move immediately in the way of your Pair, then there's no need to remain in the pair. In most cases you are better out of position and waiting for the market move to jump in again. Off course you need give time to the things happen (your time frame) but always use a time stop.

**WATCH FOR A GOOD PAIR**
Choose a highly correlating pair and that this correlation makes sense. Don't get in and out every time trying to catch a good chance. Wait for the good buying /selling opportunities. If you lose an opportunity don't force a trade, the market will continue to be there give you new opportunities.

**REMAIN CONSISTENT**
Find a formula (user options) that works for you, test and back testing consecutively and stick to it. You have to be disciplined and respect the trading plan integrally.

**STOP TRADING AND RE-EVALUATE**
Consider the impact of losing money in your capacity to analyze the next trade. If you have consecutive losses get out and re-evaluate what you are doing wrong, the market will still be there once you have a new plan of action.