

ID440 SP10: Honors Capstone

Koios Documentation



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Who Should Use This Add-in?

This add-in can be used by any person who has an interest in international arbitrage and market mispricing. However, the add-in currently only incorporates commission charges for e-trade account holders; therefore, such users will benefit most from the program. Minimal computer literacy is required beyond basic MS Office skills. The user interface is such that users should not have difficulty learning how to use the add-in.

System Requirements:

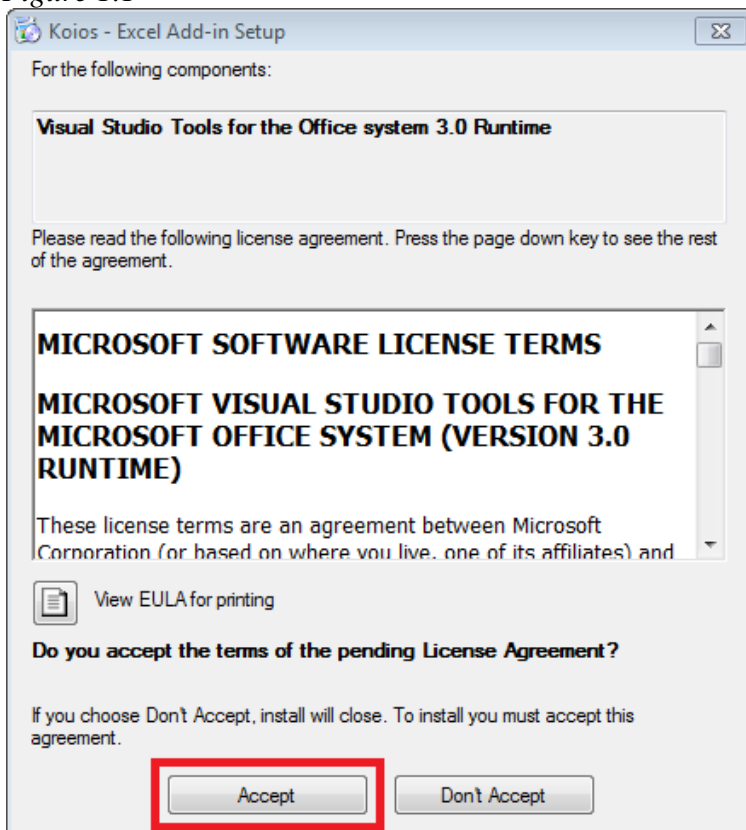
- Windows Vista/7 Operating System
- Microsoft Office Excel 2007
- Windows Installer 3.1
- .NET Framework 3.5
- Visual Studio Tools for the Office System 3.0 Runtime

*****IMPORTANT:** This add-in is intended for personal use. It was created for informational purposes only, and we are not responsible for any financial or other losses incurred directly or indirectly through the use of this add-in.

Installing the Add-in

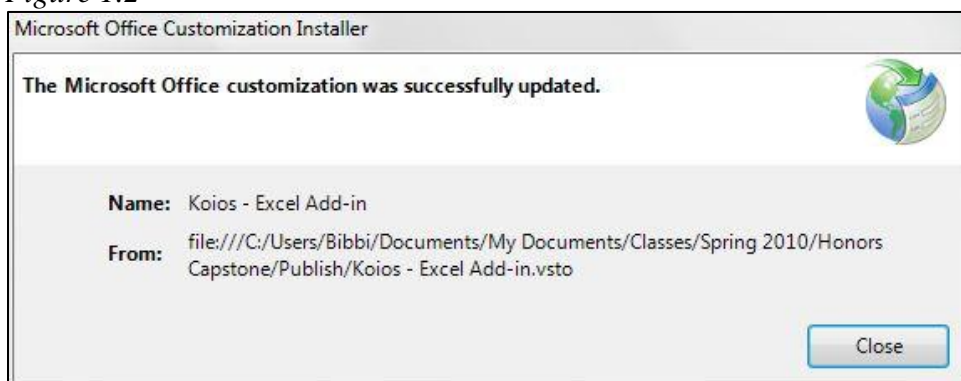
1. The add-in is available for download at http://web.bentley.edu/empl/c/ncarter/student_capstone.html
2. Specify the location where you would like the files to be saved (e.g. My Documents).
3. Navigate to that location (e.g. if you selected My Documents, open My Computer, double-click C:\ drive, double-click Users, double-click your username, double-click My Documents.) Open the Koios – Excel Add-in folder.
4. Double-click SETUP.EXE to begin the installation.
***NOTE: If you are missing Visual Studio Tools for the Office System 3.0 Runtime, you may see the message shown in Figure 1.1. You may accept the license agreement and continue with the installation.

Figure 1.1



5. Once the installation is complete, click Close. The add-in has now successfully been installed.

Figure 1.2

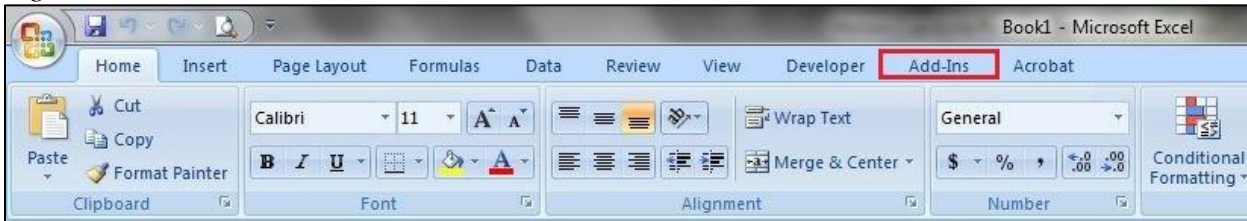


Using the Add-in

Accessing the Add-in

1. Once the add-in has been installed, open Microsoft Office Excel.
2. Open the add-in ribbon by clicking on it – red box in Figure 1.2.

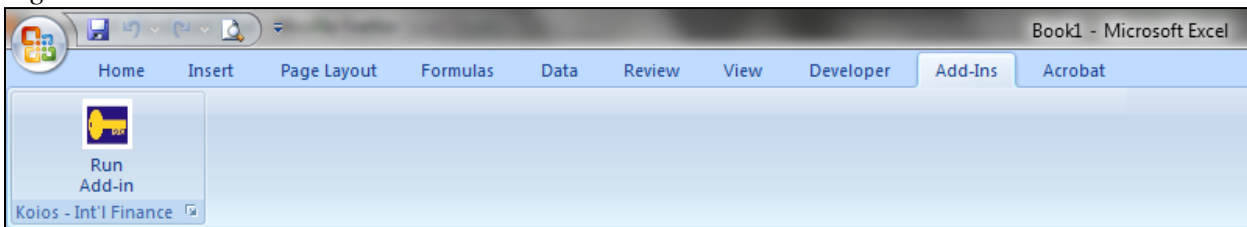
Figure 1.3



Launching the Wizard

1. Once you have accessed the add-ins ribbon, click the Koios icon to launch the wizard.

Figure 1.4



Filling in Required Information

Figure 1.5

Koios Wizard: Step 1 of 1

Main Commission Charges

1. Select your investment account.
 E*TRADE
 Custom

2. Select the method of your trade.
 Online Stock Trades
 Broker-assisted Stock Trades

3. Select your base currency.
[Dropdown menu]

4. Input your US stock ticker.
[Text input]

5. Select the exchanges you wish to search.
 NASDAQ / NYSE
 TSX: Toronto Stock Exchange
 NYX.PA: Euronext Paris
 HKX: Hong Kong Stock Exchange

6. Select your time period.
From: Friday, January 01, 2010
To: Wednesday, April 07, 2010

Reset Next

1. Question 1: Select your investment account. Currently, the add-in only supports e-trade accounts. If you have another account, select custom, but beware, this means that commission charges will **NOT** be included in the final price calculations. *Future versions of the add-in will allow users to specify commission charges from other trading companies.*
 - a. If you selected E*TRADE as your investment account, go to step 2.
 - b. If you selected Custom, you can make changes to the country-specific commission charges in the commissions tab shown in Figure 1.5.1

Figure 1.5.1

Koios Wizard: Step 1 of 1

Main Commission Charges

Country	Online Stock Trades	Broker-assisted Stock Trades
USA	7.99	7.99
Canada	19.99	55.00
France	19.99	35.00
China	299.00	350.00

2. Question 2: Select the method of your trade. Most companies charge separate commissions depending on the type of trade. The charges here are also based on e-trade accounts.

3. Question 3: Select your base currency. Currently, most of the currencies listed are hard currencies. *Future versions of the add-in will support soft currencies as well.*
4. Question 4: Input your US stock ticker. To maximize speed, you can only search for one company at a time. Please note that the ticker inputted here MUST be a US ticker! *Future versions of the add-in will support multiple tickers.*
5. Question 5: Select the exchanges you wish to search. The exchanges listed here are all supported by e-trade. *Future versions of the add-in will include other stock exchanges that are supported by trading companies other than e-trade.*
6. Question 6: Select your time period. Please note that the conclusion table with the suggested strategy uses **ONLY** the most recent stock price. This field is meant for informational purposes, and historical stock prices have no impact on the suggested trading strategy.

Explanation of Output

Figure 1.6

The screenshot shows an Excel spreadsheet with the following data:

Section 1:

The investment account you selected is:	E*TRADE
The trade method you selected is:	Online Stock Trades
The base currency you selected is:	EUR
The ticker you inputted is:	GE
The exchanges you selected are:	NASDAQ / NYSE NYX.PA: Euronext Paris

Section 2:

The calculated commission charges are:	USA	FRA
	5.978078	19.99

Section 3:

Exchange rates:	USD	EUR
1 EUR =	1.33655	1

Section 4:

Exchange: NASDAQ / NYSE							
Date	Open	High	Low	Close	Volume	Adj Close	
4/7/2010	18.57	18.75	18.39	18.5	60464200	18.5	
4/6/2010	18.45	18.65	18.41	18.6	54106500	18.6	
4/5/2010	18.42	18.65	18.33	18.53	55879400	18.53	
4/1/2010	18.27	18.4	18.18	18.33	45478000	18.33	

Exchange: NYX.PA: Euronext Paris							
Date	Open	High	Low	Close	Volume	Adj Close	
4/7/2010	13.9	14	13.87	13.89	12200	13.89	
4/6/2010	13.63	13.9	13.63	13.86	16600	13.86	
4/1/2010	13.5	13.63	13.49	13.56	7500	13.56	

Section 5:

Exchange Rate	1.33655	1
Commission	5.978078	19.99
Price: Base Currency	13.84161	13.89
Price + Commission	19.81969	33.88

Strategy: The cost to sell is the commission charge for the exchange with higher price plus the difference in price. If cost to sell is less than the cost to buy, proceed with transaction.

An Excel workbook is created when “Next” is clicked in the wizard. Sheet 1 in this workbook is divided into 5 distinct sections. Below is an explanation of each section (numbered 1 through 5 in Figure 1.6).

1. This table simply returns the inputs that you selected in the wizard.
2. Depending on the type of investment account and trade method, different commission charges apply. This table shows the commission charges for trades in each country. The values shown here are already converted to the base currency selected by the user.
3. Since each exchange lists stock prices in local currency, they must be converted to the base currency that the user selected. This table pulls the most recent exchange rate data available from www.xe.com.
4. This table returns the stock price data for the historical period selected by the user. The historical data is additional information that user may use for other analyses (e.g. trend analysis). Note that the only cells

used in calculations for Table 5 are highlighted in yellow. For calculations to determine the trading strategy, ONLY these cells are used.

5. This table shows the exchange rates from table 3 and the commissions from table 2. It takes the most recent price from table 4 and converts it into the base currency. It then adds the commission (already in base currency) to the price for each exchange. The price values in bold are the final stock prices with commission included. The final strategy is a result of a comparison between the cost to buy the stock and the cost to sell the stock. For example, in Figure 1.6, GE is less expensive on the NYSE and more expensive on Euronext Paris. Therefore, the user would want to buy it in the US and sell it in France. The price to buy the stock is equal to the price + commission, which is 19.82. The cost to sell the stock is equal to the commission charge for Euronext Paris plus the difference in the price. More specifically, it is $19.99 + (13.89 - 13.84)$, which is equal to 20.04. Therefore, since it would cost more to sell it than it would to buy it, there is no opportunity to make a financial profit. If the situation was reversed (i.e. the cost to buy was less than the cost to sell), the user could proceed with the transaction.

***NOTE: prices on Yahoo! Finance, and consequently in the spreadsheet, are delayed by approximately 15 minutes.