

Financial Services Laboratory

Lesson FIN001

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Topic: REIT data & analysis

September 2005

Learning objective: Download CRSP data and carry out a regression analysis

Description

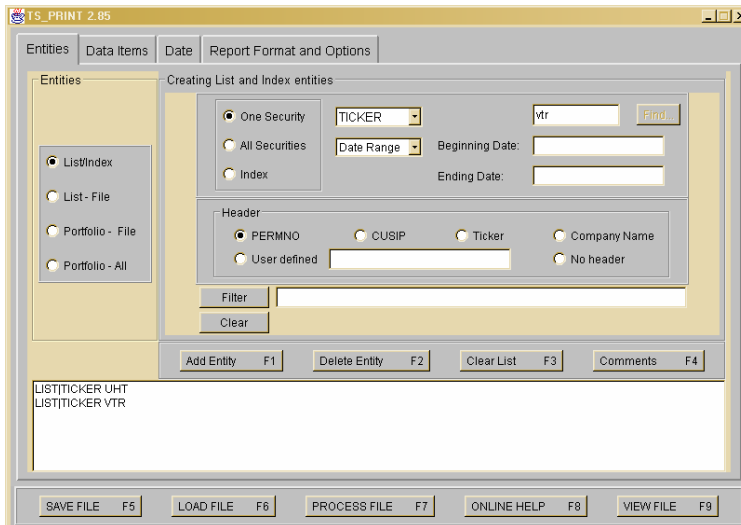
Students are to extract 3-5 years of total returns for a subset of REITs from CRSP (Step 1) and index returns and Treasury bill returns from Ibbotson (Step 2). The students are then expected to run regressions (Step 3) and analyze the results. Steps 1 and 2 should take about 15 minutes each.

Step 1: CRSP

- Make sure that CRSP software is loaded on the computer. Check under programs. If not, it can be downloaded to any computer in Rauch Business Center using Install Software.
- Under **START Programs**, open **LAN CRSP Access 2.9, ts_print**.
- If you are in the FSL, when you click on **ts_print** in **Programs** you will be directed to a DOS command prompt. You will need to enter your user name and password. For the user name, first type **ad** followed by your userid.
 - Example: **ad\jjj204**
- **CRSP** should now work.

Entities Tab

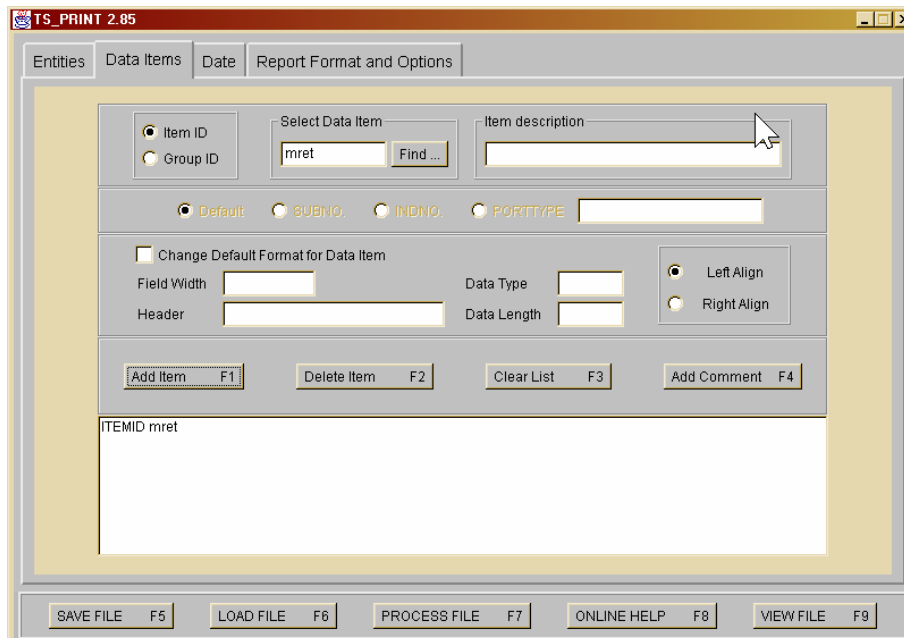
- Under the **Entities** tab, **Creating List** and **Index** entities, click on One Security. Then to the right of One Security, click on the box and drag down to **TICKER**



- In the box to the left of **Find**, enter the REIT's symbol.
- For **Header**, click on Company Name
- Then hit F1 or click on **Add Entity**. Repeat the last two steps for each of the REITs in your sector.

Data Item Tab

- Data Item, for monthly returns enter **mret** in the Select Data Item box and then hit F1 or click on Add Item



Date Tab

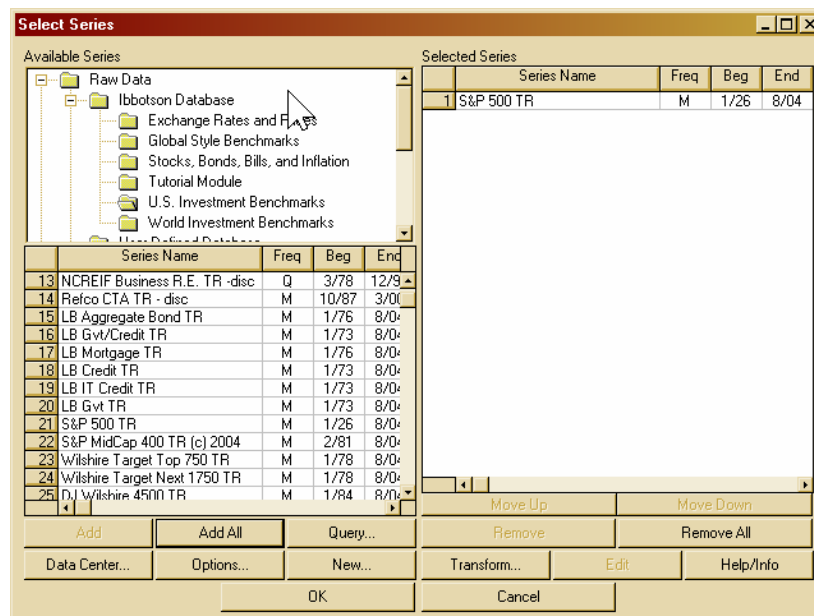
- Choose monthly under Calendar Name
- Type in 19990101-20041231 with Fixed Date Range selected.
- Click on Add Date Specification or hit F1

Report Format and Options Tab

- X-axis assignment, choose ENTITY and yes for Header
- Y-axis assignment, choose DATE and yes for Header
- Z-axis assignment, choose ITEM and yes for Header and 1 for Z Axis Data Flag
- For Output File Name, you cannot have a file or directory name with a space. For example type **h:\reits1.csv**, **delimiter=,**
- Hit F1 or click on the Add Options button
- Click on **Process File** or F7. Click on **Process Screen data**
- Remember to click **SAVE FILE**. After it is saved email to your home machine or save it on your LU Public directory.

Step 2: Ibbotson Data

- Make sure that Ibbotson Investment Software is loaded on the computer. Check under programs. If not, it can be downloaded to any computer in Rauch Business Center using Install Software.
- Under the **Start** button, **programs, Ibbotson Investment Analysis Software**, open **EnCorr Analyzer**.
- Open **Select Series** window. Under **Raw Data**, choose **Ibbotson Database** and then **U.S. Investment Benchmarks**. Click on one of the following broad market U.S. equity benchmarks: S&P 500 TR, DJ Wilshire 5000 TR, Russell 1000 TR, or Russell 3000 TR. Choose U.S. 30-day TBill, a risk-free rate index, from **Stocks, Bonds, Bills and Inflation**.

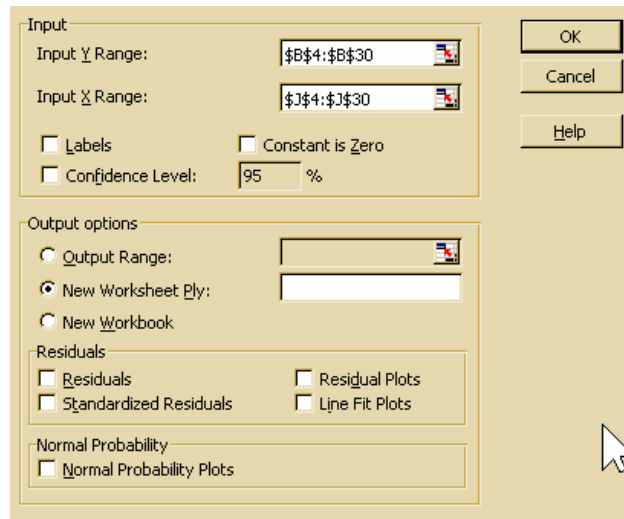


- Click OK. When the Date Settings Window appears, choose monthly frequency and change the time period to January 2000 to December 2004 to include the last five years of data. Click on OK. The series returns will be displayed in the Main Analyzer Window. Right click over the series and choose Send to Excel. From Excel, you can save the file.
- Remember to save it to your LU Public directory (H:\) or email to yourself.

Step 3: Excel Regression

- Open your Excel file created in step 2
- Open the text file from step 1 and remember to choose delimited with commas to import the data
- You will need to change the units of the Ibbotson data by dividing by 100. You will also need to match up the dates of the two data sets.
- Next, calculate columns of excess returns for your REIT ($R_i - R_f$) and for your US index ($R_m - R_f$) using the Tbill data for the risk free rate (R_f).
 - Open Tools-Data Analysis-Regression

- Your US benchmark excess returns ($R_m - R_f$) should be the X-variable. Click on the Input X-variable box and highlight your US benchmark excess returns.
- The Y-variable will your REIT excess returns ($R_i - R_f$). Click on the Input Y-variable box and highlight your REIT excess returns.
- Make sure you have **Constant is Zero** box unchecked.
- Click OKAY.



- Examine the results.
 - What is the intercept?
 - What is the coefficient on the x-variable? This is your Beta.
 - Are they significant?
- Create a column with the average return of all the REITs in your sector for each month: Excel function =average(A1:H1). Create an excess return column for this average ($R_p - R_f$).
- Repeat the regression analysis for your REIT versus this sector portfolio.

SUMMARY OUTPUT						
<i>Regression Statistics</i>						
Multiple R	0.267437					
R Square	0.071523					
Adjusted R Square	0.034384					
Standard Error	0.027715					
Observations	27					
<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	0.001479	0.001479	1.925807	0.177464	
Residual	25	0.019203	0.000768			
Total	26	0.020683				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	0.014486	0.00535	2.707486	0.012048	0.003467	0.025506
X Variable	-0.14886	0.107265	-1.38773	0.177464	-0.36977	0.072061