

FTS Real Time Project Web Based Instructions: The Accruals Anomaly (Advanced)

In this project, your objective is to develop and apply your financial reporting skills to a real-world trading problem. The basic task requires working with the "accruals anomaly" first identified by Sloan (1996). The anomaly is described below, but basically says that companies that have low "non-cash" earnings significantly outperform companies that do not. The implied investment strategy is to buy companies whose earnings are mostly cash income and to go short others.

An interesting underlying theme for this project is whether the accruals anomaly arises from some market inefficiency (e.g., investors are unable to evaluate the impact of excessive accruals upon future earnings) versus whether it arises from its impact upon real economic decision making (i.e., reliance upon excessive accruals is associated with weaker investment decision making)? As a result, both Balance Sheet and Income/Cash Flow measures of accruals are provided in this project.

The project is designed around the FTS 500 Stock case and the cloud version of FTS Real Time Client (RTFTS). That is, being browser based you can complete the project using your laptop, smartphone or iPad.

You will do the following:

- Stock selection: Identify two subsets of stocks, Set A and Set B, such that: based on the accruals anomaly, Set A is predicted to have strong fundamentals relative to Set B and these stronger fundamentals are underpriced in the market relative to Set B.
- Portfolio construction: You will then construct a market neutral position using RTFTS by going long Set A and short Set B. You can use the "long-short" analytic of RTFTS to make your portfolio market-neutral.
- Portfolio Management: In this project, the goal is to see how the stocks in the different sets performed, so once the position is established, you should hold it until the end.
- Performance Analysis: You will compare the performance of the two sets of stocks as well as the overall portfolio, when drawing conclusions about the accruals anomaly.

RTFTS provides a measurement of your performance along several dimensions in terms of the absolute performance generated from being simultaneously long and short.

Depending upon time allocated to this project by your instructor you may have to provide a small team presentation. This presentation should combine both the qualitative (e.g., your strategy), the predicted and realized performance, what worked what didn't and recommendations for the future.

In completing this project, you will work with real world data and gain experience with the many judgment calls that need to made when working with the accruals anomaly. The FTS tools required to complete this project are designed to develop your real world problem solving skills by working on the problem in small teams.

Background Information

Overview

The "accruals anomaly" was first identified by Sloan (1996). It is unusual for accounting to make the cover story of Business Week, however October 2004 this happened and it was observed that:

"[1]nvestors are clamoring to exploit this market inefficiency. "They seem in a bit of a frenzy about it," says Sloan. ... But as more people catch on, this trading opportunity should diminish. How long it lasts depends on the ability and determination of investors to review earnings estimates skeptically. ... More portfolio managers are using sophisticated screening to identify companies that make aggressive estimates. ... Goldman Sachs Asset Management, BG1, Citadel, Starmine, and Susquehanna Financial Group, among many others, are employing versions of the Sloan-Richardson models to guide their investments. Strategists at brokerages, including Sanford C. Bernstein Research, CSFB, and UBS have built model portfolios using similar techniques."

The anomaly exploits information that results from decomposing accounting income into cash income and accruals. In this project your task is to apply various forms of the decomposition and identify two sets of stocks, from the set of stocks in the FTS 500 Case, Set A and Set B, such that Set A:

I. Set A, given the accruals anomaly has stronger predicted fundamentals relative to Set B, and II. The stronger predicted fundamentals are underpriced in the market relative to Set B.

For part I, you should decompose accounting income into two components, cash income and accruals. Cash income is predicted to have greater persistence than accruals. Accounting accruals arise from the application of the accounting matching principle which attempts to match "efforts" to "performance" when measuring accounting income. For an obvious example consider selling commissions that have not been paid for sales made on account. Under the accounting matching principle cash sales, sales on account, paid and unpaid commissions are all recognized when measuring income, whereas cash income only recognizes cash sales and cash commissions when measuring cash income. However, this principle extends to other situations that have less obvious cause and effect relationships such as accelerated depreciation and expense recognition based upon managerial judgments and income smoothing. That is, the accounting rules are such that many accruals have a tendency to revert over time especially whenever accruals result in the smoothing of income.

Insights such as above have resulted in extensive empirical testing of the hypothesis that the cash income component of accounting income has greater persistence than the accrual component of accounting income. These empirical tests have:

i. tested the hypothesized fundamental relationships hold (e.g., equations (8) and (10) below), and ii. market returns are consistent with observed fundamental relationships (i.e., (8) and (9) are consistent and (10) and (11) are consistent) in the formal description below:

$$Earnings_{t+1} = \alpha_0 + \alpha_1 Earnings_t + v_{t+1}.$$
(8)

$$(r_{t+1}-r_{t+1}|\phi_t) = \beta(Earnings_{t+1} - \alpha_0 - \alpha_1^* Earnings_t) + \varepsilon_{t+1}.$$
(9)

Market efficiency imposes the constraint that $a_1 = a_1^*$. This nonlinear constraint requires that stock prices correctly anticipate the average persistence of earnings performance.

Combining the expanded earnings forecasting model in equation (5) with equation (7) gives:

$$Earnings_{t+1} = \gamma_0 + \gamma_t Accruals_t + \gamma_2 Cash flows_t + \upsilon_{t+1}, \tag{10}$$

$$(r_{t+1} - r_{t+1}|\phi_t) = \beta(Earnings_{t+1} - \gamma_0 - \gamma_1^*Accruals_t - \gamma_2^*Cash\,flows_t) + \varepsilon_{t+1}.$$
 (11)

Reference: Sloan 1996

The above allows this important anomaly to be identified and described as follows. First, empirical evidence supports that in aggregate the market gets it right. That is, equations (8) and (9) are consistent with each other. Second, the evidence suggests that the market fails to decompose earnings into its two important components (i.e., (10) and (11) are inconsistent with each other. The anomaly is that the market overweight's the importance of accruals and underweights the importance of cash income.

In other words, buying stocks with earnings dominated by cash flows from operating activities and selling stocks with earnings dominated by accruals has resulted in past excess returns. Your task is to see whether this anomaly persists for the duration of this project!

Estimating Accruals

The cloud (i.e., web based) version of FTS Real Time provides complete support for the accruals project. But first some background theory!

Important Accrual Concepts

Earnings

Quality

Financial Reporting Quality is an area that has attracted both academic and practitioner attention. The quality of financial reports affects both the accuracy of the financial statements as well as how relevant they are for predicting future cash flows. This has led to a large body of research that attempts to understand accrual accounting and its impact upon financial reporting quality.

Accrual versus Cash Income

Accrual income differs from cash income by carefully accounting for expenses incurred but not yet paid for and expenses paid for but not yet realized. For example, an expense paid for but not yet realized is prepaid insurance. This covers a future accounting period and similarly future depreciation expense represents the cost of future services from plant property and equipment that has already been acquired. Examples of expenses incurred but not yet paid for arise from invoices that come into the business *after* the accounting period has ended. This is a common event in practice. On the revenue recognition side accrual income will deviate from cash income on the basis of whether or not the revenue is recognized in the current period. These cases arise when the goods or services provided have been paid for but not yet provided. Under accrual accounting this creates liability items (i.e., credits) on the balance sheet referred to as unearned revenue that can be both current and noncurrent.

Accounting resolves these differences between accrual and cash income by applying the matching principle. That is, accrual income attempts to match expenses to revenue per period irrespective of the timing of cash inflows and outflows. Cash accounting on the other hand matches cash inflows and outflows to the period. Accounting for these real economic differences in practice require managerial judgment and the accounting standards provide flexibility to allow for managerial judgment. As a result, both income measures are subject to being managed over time but accrual accounting provides management with greater flexibility for managing earnings. Financial Reporting Quality attempts to assess the degree to which management is relying upon accruals to meet earnings target. Earnings' are judged to be of higher quality the lower the dependence upon accruals. It is important to note that the use of accruals does not imply that earnings are being manipulated or that earnings management is bad, instead what is important is that the impact upon income from the use of accruals, tend to *reverse* over time whereas cash income tends to *persist* over time. As a result, earnings are judged to be more persistent the higher the quality of earnings is judged to be.

The reversal of accruals results from the matching principle and historical cost accounting. For example, if a firm chooses straight line over accelerated depreciation for their plant, property and equipment

then current income is higher than later income under straight line depreciation compared to an accelerated depreciation method. The hypothesized difference between cash flows and accruals, in terms of a sustainable earnings impact, is supported empirically. For example, a higher proportion of accruals relative to cash earnings is associated with lower earnings performance in the subsequent period (Sloan 1996). As a result, the question facing outside analysts is:

To what degree is the flexibility provided by accrual accounting being applied?

In the Earnings' Quality branch there are two calculators. These ratios are designed to provide an analyst with insight into earnings quality.

Important Note: There are two main approaches to estimating accruals. The first is a balance sheet approach and the second is an income statement/cash flow approach. From a trading perspective there is a subtle difference between these two approaches. The second assumes (as did Sloan) that the market is inefficient with respect to interpreting the impact of accruals upon a firm's future earnings. The Balance Sheet approach lets you test whether the inefficiency is driven by the impact of using accruals upon management's current and future investment decisions. That is, the use of accruals can have a real impact upon investment decisions.

In this project each team is encouraged to consider both approaches when formulating your investment strategies.

Quality of Earnings (Balance Sheet)

The scaling variable under the balance sheet measure is referred to as Net Operating Assets. This term is the difference between operating assets and liabilities and it is constructed to meet several needs. First, operating assets subtracts out cash and near cash in a consistent manner with the subtraction of cash earnings from Aggregate Accruals. Second, in the liabilities part financing decision effects are subtracted. Thus, Net Operating Assets sharpens the measurement of the impact of accounting accruals upon the numbers resulting from the investment decision.

Operationally these are defined relative to two successive Consolidated Balance Sheets as follows:

NOA(t) = Net Operating Assets (t) = (Total Assets(t) – Cash & Near Cash(t)) – (Total Liabilities(t) – Total Debt(t)) Average Net Operating Assets = (NOA(t) + NOA(t-1))/2

Net Operating Assets at time t is the difference between operating assets and operating liabilities after eliminating accounts that are not subject to accounting accrual measurements.

The quality of earnings using the balance sheet approach is now defined as:

Balance Sheet Accruals Ratio (t) = ((Net Operating Assets (t) - Net Operating Assets (t-1)) / Average Net Operating Assets (t, t-1)

That is, both the numerator and the denominator of the measure of accruals come entirely from the balance sheet. An increase in the Balance Sheet Accruals ratio implies greater use of accruals.

Quality of Earnings (Cash Flow)

The Aggregate Accruals (AA) can be defined from the Consolidated Statement of Cash Flows as follows:

Aggregate Accruals(t) = Net Income(t) - (Cash Flows from Operating Activities(t) + Cash Flows from Investing Activities(t))

Cash Flow Accruals Ratio (t) = Aggregate Accruals (t) / Average Net Operating Assets (t, t-1)

The above measure differs from the balance sheet measure in terms of the numerator which measures aggregate accruals from the cash flow statement. This measure raises the question – why include Cash Flow from Investing Activities in the numerator?

The answer to this question depends upon whether or not future operations are included in the measure. That is, by including cash flow from investing activities includes cash capital expenditures that support *future operating activities* with current cash operating activities but excludes investments that are financed via a stock or debt issue. As noted earlier cash income is predicted to persist and accruals are predicted to reverse, the inclusion of investing activities and its relation to future operating activities is designed to reinforce this property.

Quality of Earnings (Cash Flow) Scaled by Net Income

Percent Operating Accruals = (Net Income – Cash from Operations)/Net Income

This relates the non-cash earnings to earnings to provide what is argued to be a more sensitive measure of the relative importance of earnings management.

A variation for assessing earnings quality that drops cash flows from investing activities is also provided in the calculator. In this variation the focus is purely on cash flow from operations and the scaling variable is changed to Net Income in an attempt to increase the sensitivity of the measure of the impact from accruals upon Income.

Free Cash Flow Statement Approach

Another popular approach today exploits information in the cash flow statement and the concept of Free Cash Flow:

Earnings Quality = (Net Income (NI) – Free Cash Flow (FCF))/Total Assets

It is assumed that if Free Cash Flows are higher than net income then this is a signal of positive earnings quality.

The support screen below provides the relevant support for each of the above measures.

Application of the Concepts Using RTFTS Support

Step 1: Launch the cloud version of FTS Real time and log into your trading case/position. The following illustrates this for the FTS30 case but it is not restricted to this case.

Go to www.ftsrealtime.com, or if your browser does not support this then go to www.rtfts.com

Login to your trading case (for illustrative purposes the FTS 500 case is used below):

 ↔ O YouTube 		re ftsrealtime	1.com				
11:02 AM Not Logged		Glot	bal Value: 0	Last Activity	r: 0 min, 1 secs		
Login	Position	Trade	Limit Orders	Quotes/Filings	Reports	Research	
Select Tr Trading I Passwor	Name n	iylogin	ocks Case 🛩				
		Login	Logout				

Step 2: Next get to the earnings quality accrual data by clicking on the menu item Research:

$\leftarrow \rightarrow c$	A Not secu	re ftsrealtime.c	om				
🔛 Apps 🤺	r Bookmarks W	UEFA European Ch	a B Intel's Profit For	reca 🔯 CMUQ Webmail	C Qatar Library	Carn 🙆 Home	- CMUQatar G settin
2/2/2022 11	:53:47 AM	Globa	l Value: 1,007,058.	69 Last Activity	y: 1 min, 2 secs		
Login	Position	Trade	Limit Orders	Quotes/Filings	Reports	Research	
			Security				Position
			US Dollar				1,003,398

2022 12	:40:00 PM	Giobal	Volue: 910,764.81	Last Activity: 0 min, 9 secs									
Login	Position	Trade	Limit Orders Que	otes/Filings	Report	s Research							
	siness Ratios		Financial Statemer	nt Analyzin	Screen	H //////							
			Stocks Indust	ries • Sector	rs Select	Microsoft Corpo	ration (MSFT	5	7.5				
	Analyzing Profitability Analyzing Coperations Analyzing Cash Flows Analyzing Risk Quality of Earnings Quality of Earnings Sec Fling Dat Sec Fling Dat		Business Ratios Summery	Microsoft Corporation (MSET) 311.14 6/30/2521		Data Processing, Hosting, and Related Services		All Stocks 466 779	Field				
						297 321			Annual Dividend Book Value of Equity				
						N0A	NIM	- NGA	Capital Expenditures				
								7/29/20	21	N05	NIA	NIA	Cash & Cash Equivalent
					Business Ratios						Cash Flow from Financin		
	 Qualiti 		Fundamental	0.3096	2	0.29883	0.23441	0.33427	Activities				
	Earnin	gs_(Cash	Growth						Cash Flow from Investin				
	Flow)		Return on Equity	0.4315		0,37343	0.2719	0.51132	Activities				
	Price Ratio		Retontion Ratio	0.717	5	0.80024	0.86211	0 65373	Cash Flow from Operations				
	Factor Mod	iels	Analyzing ROE						Cost at Goods Sold				
• 500	mmary Buringers P	Ditty Susiness Ratios: Profit I		3.4447	8	3.91133	6.05474	4 32035					
	Summary		Acced Turneton		9	0.47442	0.48829		Current Assets				
	Summary			2.35076			1 97439 4 36000	4.36005	Current Liabilities				
	Ratios		EBIT	9.264	1	9.59014	987878	8 5363	Depreciation and Amortization				
· Bas	sic Data		Interest Burden	0.9664			0.97868	0.97484					
									Earnings Per Share				

This takes you to the support screen - lets select Microsoft:

You can then immediately get the current earnings quality data by selecting "Business Ratios:

Summary" (see LHS of the screen above) Step 3:

Scroll down and you will see the three basic earnings quality ratios summarized for Microsoft along with a bunch of additional important information:

The summary of earnings' quality ratios are provided by scrolling down to near the bottom:

Analyzing Quality of Earnings				
Accrual Ratio (Balance Sheet)	-9.68307	86.06368	10.08597	-5.70991
Accrual Ratio (Cash Flow Statement)	-0.82458	7.79797	0 55896	-0.56951
Percent Operating Accruals	-0.25247	-0.26456	-0.41921	-0.23193
One Month Change	0.0186	0.0677	0.0426	0.0667
Three Month Change	0.1643	0.0842	0.0533	0.1366
One Year Change	0.524	0.3205	0.3325	0.3482
Industry	Data Processing, Hosting, and Related Services			
Sector	Information			

Interpretation:

The basic idea is that the more a company relies upon accruals to increase their net income the lower is the quality of their earnings. As a result, negative accruals are preferred to positive accruals from an earnings quality perspective.

Microsoft traditionally has high quality earnings and in the above you can see that the numbers are negative and more negative than the average provided in the last column.

Back to the Project!

Team Task I

Your task is to analyze a larger set of stocks than you plan to use and assess an approximate ranking for how much their financial statements reflect using accruals. That is, are accruals over-used (i.e., accrual ratios are strictly positive) to under-used.(accrual ratios are strictly negative.

Team Task II

Given you have ranked accrual use in team task I your team's second task is to assess whether the accruals are relatively over or under priced given the spot stock price. Here your goal is to identify whether price ratios tend to be relatively high or low.

You can also immediately access the price ratios by selecting Summary Price Ratios above:

Business Ration Summary Preandual Statement Analysis Screener Business Ration Summary Summary, Dirice Rations Screener Screener Microsoft Corporation (MSFT) Image Statement Analysis Not Data Processing, Notified and Healand Services Not determining and Healand Services Not determining							D secs	ast Activity: 0 min, 1	ul Value: \$10.885.0	Uarb	21024		
Summary P Business Ration: Summary P Business Ration: Summary Pice Summary Pice Rate Pice to Sales P							ta Henney	Filings Repor	Limit Orders Quite	on Trade	in I		
Business Ratios: Summary: Price Statistics O Stocks • Industriant • Sectors: Solest Summary: Price Statistics Macroauft Consortion (MSFT) Data Processing (MSFT) Macroauft Data Processing Mainted Services At Summary: Price (MSFT) Table Processing Mainted Services No of Data Processing (MSFT) No of Data Processing Mainted Services No. of Data Price No. of Data Mainted Services No. of Data Price							ner //////	ulysis Scree	Financial Statement	tatios			
Summary: Price Summary: Construction (MSTT) People (MSTT)				1.4	t)	ation (MSF)	Microsoft Corpo	Sectors Selec	Stocks Industrie	ess Ratios:			
Solidity Number Proce 329 01 283 32 733 474 466 779 Manual Diversion Manual Diversion 100 2530 5.0001 0 Price Dation 900002021 N/A N/A N/A N/A N/A Manual Diversion 44.8829 10.3223 11.00004 10.00004 10.00004 10.00004 10.00004 00 10.00004 10.00004 10.00004 10.00004 10.00004 10.00004 10.00004 10.00004 10.00004 10.00004 10.00004 10.00004	s of All Slocks			Field		Intermetion	Hosting, and	Corporation					
Price Esding 6/03/2021 N/A	0.2585	5,6231	10.2530	Annual Dividend		Contract of the			Carrier Color				
SEC Flang Date 17850021 NA NA <td>1.6701</td> <td>10:02:02</td> <td>26,568</td> <td>tinok Value of Equity</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td> Basic) </td>	1.6701	10:02:02	26,568	tinok Value of Equity							 Basic) 		
Price to Earlings Cash K Cash Equivalents 31.25 10.0024 0 PYE Fails 30.8000 32.75411 30.9707 12.52288 Cash Fase-cong 46.4960 37.95 3 PYE Fails 30.8000 32.75411 30.9707 12.52288 Cash Fase-cong 46.4960 37.95 3 Price to Sate	2.9423	14.0649	44.8824	Capital Expenditures									
PYE Ratio 36 80007 32 75413 30 0707 12 50206 Cash Flow from Presences Activities 46.4660 27.934 3 Price To Sales	0.9694	10.0524	.9t25 ¹	Cristi & Cristi Equivalents	NVA	NWA.	NA	7/28/2021					
Price to Sales Cash Flow from Investing Notivelia 24.2400 11 5257 1. Price to Book 14.77223 15.87195 27.20425 17 12635 Cash Flow from Investing Notivelias 38.5028 16.8168 3. Price to Book 17.427436 28.31309 42.21970 Cash Flow from Investing Openation 38.5028 16.8168 3. Price to Book 17.427496 28.31309 42.21970 Cash Flow from Investing Openation 38.5028 16.8168 3. Price to Cash Robots 17.427496 28.31309 42.21970 Cash Flow from Investing Openation 38.5028 16.8168 3. Price to Cash Robots 32.95844 30.929523 H8.19177 \$7.0971 Casent Liabities 27.5287 13.8992 0. Price/Derenting Cash Flow 32.95844 30.929523 H8.19177 \$7.0971 Doperation ond Americanization 30.9315 7.2107 1 Cash Flow 41.9752337 96.95804 38.94056 40.09045 Flow Cash Flow 36.42711 17.809 3 Cash Flow <td>-3.9025</td> <td>27.924</td> <td>48.4900</td> <td></td> <td>12 52326</td> <td>30 0797</td> <td>32 75411</td> <td>20.00252</td> <td></td> <td></td> <td></td>	-3.9025	27.924	48.4900		12 52326	30 0797	32 75411	20.00252					
Price Sale 14 /7223 13 87156 27 29455 17 1963 Cash Faw foil Opendors 38 5926 18 8168 3. Price to Book 17 4817 14 27456 28 31304 42 21976 Cost of Goods Sold 34 3439 11 8168 3. Price to Book 17 4817 14 27456 28 31304 42 21976 Cost of Goods Sold 34 3439 11 8169 0. Price to Book 10 2000 10 22523 88 1917 17 00471 Corrent Accests 32 8070 12 8802 0. Price Corrent Pow 32 35844 30 22523 88 19177 17 00471 Depresision and Accests 30 5215 7 2107 1 Price Corrent Fore 17 52337 16 88541 38 91634 40 09043 20 5216 31 8002 0. Caselity of Lamings - 17 52337 16 89541 38 91634 40 09043 Earmings Her Share 81 4003 0. Accrual Ratin - - 06 00309 10 09097 -0.09941 Earmings Her Share 81 4003 0.	1.2164	11.5257	26.2400						Price to Sales				
Price/Book 17 4877 14 27456 26 31309 42 21976 Count of Goods 5046 34 3439 11 1651 0 Price/Book Discovery Solos Carrent Accests 32 3070 11 1651 0 Price/Book Solos Solos Carrent Accests 32 3070 11 1651 0 Price/Book Solos Solos Solos Carrent Accests 32 3070 11 1651 0 Price/Book Solos Solos Solos Solos Dispectation 27 5287 13 8892 0 Price/Form 17 52337 16 8961 38 91634 10 90645 10 90645 30 5215 7 2107 1 Accrual Ratin	0.5048	16 6168	36 5926	Cash Flow from	17.13633	27.29425	13/67156	14.77225					
Price to Clearly Robes 32.95644 30.23623 88.1917 67.02471 Carrent Access 32.930 117.169 0 Price Converting Conver		Sector Sector			(2219/6	26.31.309	14 77458	17 4077					
Robit Comment Access 32 0070 17 000 18 000 <th< td=""><td>0.7566</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	0.7566												
Price/Construint 32.35844 30.22623 88.10177 #7.02471 Depresention 30.5215 7.2107 1. Proce/FCFE 17.72337 10.08561 38.91634 40.09544 57.007 1. Causity of Esemines	0 60070												
Cesh Fow Dependention and Americanism 30 5215 7.2107 1. Prove CEE 17 52337 16 09541 38 91654 40 99043 Americanism 30 5215 7.2107 1. County of Tammaps Account Refin 40 90507 -070994 Free Cesh Flow 34.2711 17 8009 3. Classifier 30 60300 10.00307 -0.70994 Free Cesh Flow 34.2711 17 8009 3. Prove Cesh Flow 34.2711 17 8009 3. 10.00307 -0.70994 Free Cesh Flow 10 Floating 10.4554 13.10944 1.	0.3638	13.088	27 5287		-17.02471	68 10177	10 22623	32 35644					
PreseFCRE 17.52337 16.89541 38.91034 40.09043 Earnings Vice Share II.186 -9.4003 0.0 Accrual Rate	1.4424	7 2107	30 57 15										
Account of Tamings Account Ratio (Disince Sheet) = 600307 06 00308 10 00307 5 70991 Ten Cash Flaw 5 Eastly 41 4454 131 1004 1	0 2202-	7.4022	11100		10.09043	31 BIGH	16.89501	1762307	PROFORE				
Account Mallor Section 2000 10:00007 - 570991. Fine Cash Flow to Equity 41.4454 131.0084 1	3.7093								Quality of Earnings				
Assigned Radia (Cardy Section 2017) 1	1 7404				-5.70991	10.00507	06:06368	100000					
Exa Statement Contract Contract Contract	1.23071	8,2977	32 3094	hyberost Expense	0.56951	0.5589	7 79797	0.82458	Astrual Rate (Cenh				

To answer these types of questions you can examine the price ratios. Here the traditional measures are Price to Earnings Ratio (PE) and Price to Earnings to Growth (PEG) ratios. The latter is important because current market prices reflect the consensus analyst growth forecasts (e.g., 5-year consensus analyst forecast) and dividing by growth provides a control for this. In this project you can extend the basic PEG ratio to your cash flow and accrual measures to assess whether you think the market is currently over- or under-valuing these parameters when forming the two portfolios.

Finally, once you have identified your two sets of stocks and their rankings then form a long/short position from a subset of stocks such that you have at least 5 stocks in each position (i.e., 5-long and 5short).

Implementation Phase: Portfolio Construction

In this phase you will implement your positions using RTFTS. Each team will go long/short their selections. This forms a market neutral position that is predicted to exploit your analysis of accruals. All positions are marked-to-market every day and your relative performance compared to the other teams in this class is available in real time. You will have one million dollars to work with and be

careful to note that when selling short you do not get use of the all of the proceeds from a short sale. You should practice working with long and short positions in your personal trading accounts before working with the team account. Once positions are set it is not recommended that you engage in day-today adjustments but if you do you should document this in your final report.

Grading (Suggested only or as announced by your Professor)

You will be graded in terms of both actual performance and the quality of your team's analysis that is written up in the report. The final project grade will be broken up into 30% for relative performance and 70% for project quality. Relative performance will be evaluated in terms of absolute performance as well as specific performance over the set of days the market went up and down respectively. Project quality is assessed in terms of both the form of your write-up and presentation, as well as its content. In terms of the 70% allocated to project quality the breakdown between form and content is 30% (i.e., $.3^*.7 = 0.21$) for form and 70% for content (.7*.7 = 0.49).

Report Requirement:

Main body should not exceed 7-pages including the Executive Summary. You can add additional material to appendices if you want.

Page 1: Executive Summary --- this should be a self-contained summary of the bottom-line findings in your report. Well over 90% of users in business never read past the executive summary so you should write up an executive summary carefully.

Pages 2-7: The main body of your report. You can organize this in any logical way. That is, it should present clearly your objectives, how you evaluated and selected your two sets of stocks in terms of strong versus weak financials, relative pricing analysis and the results from the investing phase. You should use a combination of text and graphics in your report to communicate this information. Finally, your report should include a summary of the bottom-line results and concluding comments in terms of what you learned including what you would change if you were doing this again.

For additional details you can use appendices. For example, support numbers for a chart or an assertion in the main body can be provided in the appendix. These numbers should be selected summary support numbers --- that is *we do not want* every financial statement in the appendix.

Summary of Important Events

- 1. Form teams
- 2. Planning Phase: Screening and analysis of your subset of stocks, planning of long/short position.
- 3. Implementation Phase
- 4. Implementation phase ends
- 5. Analysis phase
- 6. Team Presentations