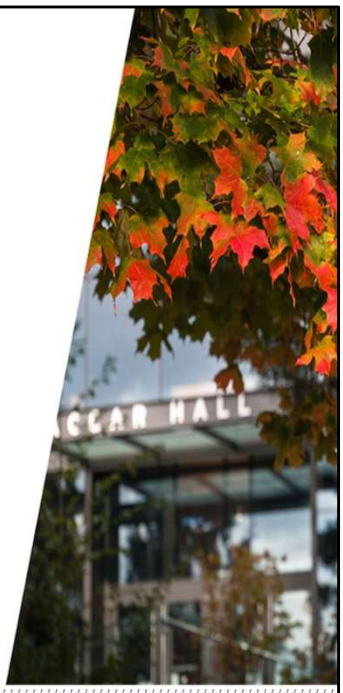
FOSTER Accounting

ENHANCED FSA WITH DATA ANALYTICS

Data Analytics for Professional Accountants (ACCTG 522)

Class 11 | MPAcc Class of 2026



Welcome!

Class Agenda

- **Review**
- Valuation-based screening
  - Portfolio Approaches
  - Additional considerations for Short Positions
- Lab:
  - Simplified RIV-to-Price screen (Factset Inputs, Alteryx workflow)
- Team Selection and Justification Time
  - Team Memo with initial write-up of long-short justification.
- Conclusion and look ahead.

Review

Final Project Consists of an Initiation Report for

- Two stocks
- One long and one short position
- Often called a “Pairs strategy” and attempts to hedge market-wide (or common) stock movements

With supporting documentation and justification.

Review

The first step is to use screening to identify:

1. An undervalued stock, with relatively higher expected returns over the next year as a long target.
2. An overvalued stock, with relatively poor expected returns over the next year as a short target.

Review

Data Analytics can enhance FSA by:

- Providing more **targeted metrics** for screening stocks into over and undervalued.
- Providing more disaggregated or theoretically driven data to support forecasting.

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Valuation-based screening

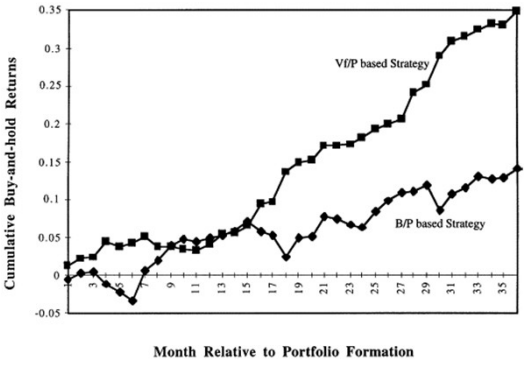
Goal

Use an estimate of the fundamental value (Vf), or intrinsic value, of a stock and compare it to price (p), so that the ratio Vf/p can be used to identify:

1. Stocks that are potentially undervalued because Vf/p is relatively high (Vf>p)
2. Stocks that are potentially overvalued because Vf/p is relatively low (Vf<p)

Portfolio Approaches

What does the data tell us about the fv/p's ability to pick over v under valued stocks?



Portfolio Approaches

Panel D – V_t/P portfolios

	Q1 (Low V_t/P)	Q2	Q3	Q4	Q5 (High V_t/P)	All Firms	Q5 – Q1 Diff.
V_t/P	0.40	0.70	0.87	1.06	1.54	0.91	–
B/P	0.60	0.59	0.68	0.75	0.85	0.69	0.25
ME	812	1252	1531	1377	1177	1230	365
Beta	1.24	1.09	1.05	0.99	1.03	1.08	– 0.210
$Ret12$	0.138	0.154	0.159	0.172	0.169	0.159	0.031***
$Ret24$	0.217	0.298	0.317	0.351	0.369	0.311	0.152***
$Ret36$	0.331	0.450	0.491	0.549	0.637	0.493	0.306***
Obs	3626	3632	3632	3632	3640	18162	

"Hedge returns"
- Average over performance of the overvalued "Q1" relative to the undervalued "Q5"

What does this mean? In each of the five portfolios/quintile groupings, we see the average return for the portfolio above, but not the individual return.

- **Key interpretation:** Vf/P gets it right on average (especially in the extremes Q1,5), but it isn't guaranteed or perfect.

Source: Accounting valuation, market expectation, and cross-sectional stock returns

Portfolio Approaches: Lab Simplification

Using Factset historical data and prices, we will simplify the Frankel and Lee (1998) version of Vf below:

$$\hat{V}_t^3 = B_t + \frac{(FROE_t - r_e)}{(1+r_e)}B_t + \frac{(FROE_{t+1} - r_e)}{(1+r_e)^2}B_{t+1} + \frac{(FROE_{t+2} - r_e)}{(1+r_e)^2 r_e}B_{t+2}.$$

Key differences:

- Don't require analysts forecasts, or estimates of future book value, use current data on income and book value and add growth in the denominator.

To a simplified model used in Curtis (2012)

$$vf(x)_t = b_t + \frac{f(1)_t - r \cdot b_t}{r - g}.$$

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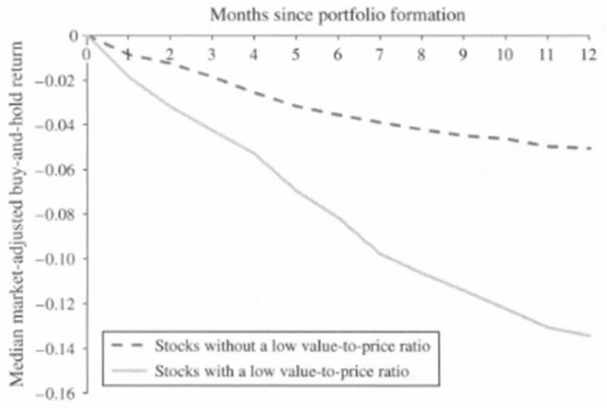
Additional Considerations for Short Positions

Figure 2 **Average Returns to Short-Selling Positions With and Without Low Value to Price**



Source: https://www.jstor.org/stable/24550588

Additional Considerations for Short Positions

Table 6 **Analysis of the Relation Between Future Market-Adjusted Returns and the High Short-Interest Portfolio with Prior Price Declines and Fundamental Analysis**

$$Ret_{it+12} = b_0 + b_1 Overpriced_{it} + b_2 Underpriced_{it} + b_3 Decline_{it-12} + b_4 Beta_{it} + b_5 DivP_{it} + b_6 SzRank_{it} + b_7 InstHold_{it} + e_{it}$$

	b_0	b_1	b_2	b_3	b_4	b_5	b_6	b_7	Adj. R^2 (%)	N
Prediction	?	—	+	+	?	?	?	?		
Book-to-market										
Coefficient	−0.02	−0.029*	0.011	0.026*	−0.003	0.726*	−0.017*	0.112*		
t-statistic	[−0.63]	[−2.29]	[0.47]	[2.28]	[−0.29]	[2.6]	[−3.63]	[4.63]	3.43	112,857
Earnings yield										
Coefficient	−0.036	0.022	0.001	0.032*	−0.005	0.747*	−0.018*	0.124*		
t-statistic	[−1.18]	[1.18]	[0.06]	[2.65]	[−0.62]	[2.67]	[−3.67]	[4.97]	3.41	112,857
Value-to-price										
Coefficient	−0.016	−0.03*	0.008	0.028*	−0.002	0.724*	−0.018*	0.111*		
t-statistic	[−0.52]	[−2.04]	[0.40]	[2.43]	[−0.21]	[2.59]	[−3.74]	[4.63]	3.43	112,857
Accruals										
Coefficient	−0.011	−0.04*	−0.006	0.034*	−0.004	0.75*	−0.019*	0.117*		
t-statistic	[−0.35]	[−2.93]	[−0.46]	[2.69]	[−0.43]	[2.68]	[−3.87]	[4.69]	3.45	112,857
Asset growth										
Coefficient	−0.021	−0.046*	0.021	0.035*	−0.004	0.709*	−0.017*	0.118*		
t-statistic	[−0.70]	[−4.26]	[1.25]	[2.78]	[−0.42]	[2.52]	[−3.59]	[4.72]	3.53	112,857

Other metrics to consider

Prior declines (already correcting some overvaluation), larger stock market values
Dividend paying stocks, stocks with large institutional holdings.

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Future Potential Analyses to improve with data

- Forecasting
- Risk analyses, sentiment (10-K data / words), Fog index
- Ratios, forecasts (xbrl data)
- Other forms 8-K (events), Form 4 (insider selling).


Thank you!
Burke