This one indicator can increase your returns an average of 210.6% (max 363.0%)

www.quant-investing.com

Agenda

- What indicator is it

- How it is calculated – what it tells you about a company

- How it increased the returns of all 13 strategies we tested it with

- Exactly how you can implement it in your portfolio (with a few mouse clicks)

- Questions and answers

What the indicator is

- Piotroski F-Score

- Developed in 2000 by an unknown accounting professor – Joseph Piotroski University of Chicago

- Improve returns of low Price to Book strategy

- Developed a 9 point ranking system

- Paper: "[Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers](#)"

So did it work?

- Exceeded his most optimistic expectations
- Over 20 years from 1976 to 1996 average outperformance over the market of 13.4% per year
- Buying best shorting worse companies worked even better – average yearly return of 23.0% better than the market

Summary of the research paper

Panel A: One-Year Market-Adjusted Returns[b]

	Mean	10%	25%	Median	75%	90%	%Positive	n
All Firms	0.059	−0.560	−0.317	−0.061	0.255	0.708	0.437	14,043
F_SCORE								
Low Score	−0.096	−0.781	−0.460	−0.200	0.107	0.548	0.318	396
High Score	0.134	−0.462	−0.236	0.000	0.316	0.757	0.500	1448
High—All	0.075	0.098	0.081	0.061	0.061	0.049	0.063	—
t-stat/(p-value)	3.140	—	—	(0.000)	—	—	(0.000)	—
Bootstrap Rslt	2/1000	0/1000	0/1000	0/1000	2/1000	126/1000	—	—
(p-value)	(0.002)	(0.000)	(0.000)	(0.000)	(0.002)	(0.126)	—	—
High—Low	0.230	0.319	0.224	0.200	0.209	0.209	0.182	—

Source: Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers p16

Worked best on small companies

Table 4: One-Year Market-Adjusted Buy-and-Hold Returns to a Value Investment Strategy Based on Fundamental Signals by Size Partition

	Small Firms			Medium Firms			Large Firms		
	Mean	Median	n	Mean	Median	n	Mean	Median	n
All Firms	0.091	−0.077	8302	0.008	−0.059	3906	0.003	−0.028	1835
F_SCORE									
Low Score	−0.091	−0.209	266	−0.094	−0.232	96	−0.132	−0.066	34
High Score	0.179	−0.007	895	0.079	0.024	392	0.020	−0.045	161
High–All	0.088	0.070	—	0.071	0.083	—	0.017	−0.017	—
t-statistic/(p-value)	2.456	(0.000)	—	2.870	(0.000)	—	0.872	(0.203)	—
High–Low	0.270	0.202	—	0.173	0.256	—	0.152	0.021	—
t-statistic/(p-value)	4.709	(0.000)	—	2.870	(0.000)	—	1.884	(0.224)	—

Source: Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers p19

How is it calculated?

Profitability

1. Return on assets (ROA)
Net income before extraordinary items / total assets at the beginning of the year.
Score 1 if positive, 0 if negative

2. Cash flow return on assets (CFROA)
Operating cash flow / total assets at the beginning of the year.
Score 1 if positive, 0 if negative

3. Change in return on assets
Compare this year's return on assets (1) to last year's return on assets.
Score 1 if it's higher, 0 if it's lower

4. Quality of earnings (accrual)
Compare Cash flow return on assets (2) to return on assets (1)
Score 1 if CFROA>ROA, 0 if CFROA<ROA

How is it calculated?

Funding

5. Change in gearing or leverage

Compare this year's gearing (long-term debt / average total assets) to last year's gearing.

Score 1 if gearing is lower, 0 if it's higher.

6. Change in working capital (liquidity)

Compare this year's current ratio (current assets / current liabilities) to last year's current ratio.

Score 1 if this year's current ratio is higher, 0 if it's lower

7. Change in shares in issue

Compare the number of shares in issue this year, to the number in issue last year.

Score 1 if same number of shares, or fewer. Score 0 if there are more shares in issue.

How is it calculated?

Efficiency

8. Change in gross margin
Compare this year's gross margin (gross profit / sales) to last year's.
Score 1 if this year's gross margin is higher, 0 if it's lower

9. Change in asset turnover
Compare this year's asset turnover (total sales / total assets at the beginning of the year) to last year's asset turnover ratio.
Score 1 if this year's asset turnover ratio is higher, 0 if it's lower

Piotroski or F-Score = 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9
Good or high score = 8 or 9
Bad or low score = 0 or 1

How it increased returns of strategies we tested

Investment Strategy	Stand-alone Strategy	Combined with the F-Score	Improvement
Earnings Yield 12 months	235.7%	448.7%	213.1%
Earnings Yield 5 years	291.1%	457.4%	166.3%
Price To Book	400.3%	591.2%	191.0%
FCF Yield	317.4%	680.4%	363.0%
FCF Yield 5 years	325.8%	391.4%	65.6%
Price To Sales	191.2%	455.5%	264.2%
Net Debt On Market Value	-13.6%	224.9%	238.5%
ROIC	82.6%	232.7%	150.1%
ROIC 5 years	134.2%	329.6%	195.4%
Price Index 12 months	159.6%	477.7%	318.1%
Price Index 6 months	248.0%	393.3%	145.3%
MF Rank	182.8%	340.9%	158.1%
ERP5	279.8%	549.3%	269.5%
Average	218.1%	428.7%	210.6%

First selected companies with a Piotroski F-Score of 8 or 9 then selected one of the 13 strategies
Tested on companies in the Eurozone over the 12-year period from 13 June 1999 to 13 June 2011.
Source: *What Works on European Markets: The Best Performing Investment Strategies*

How to get the F-Score working in your portfolio

- Very easy to do
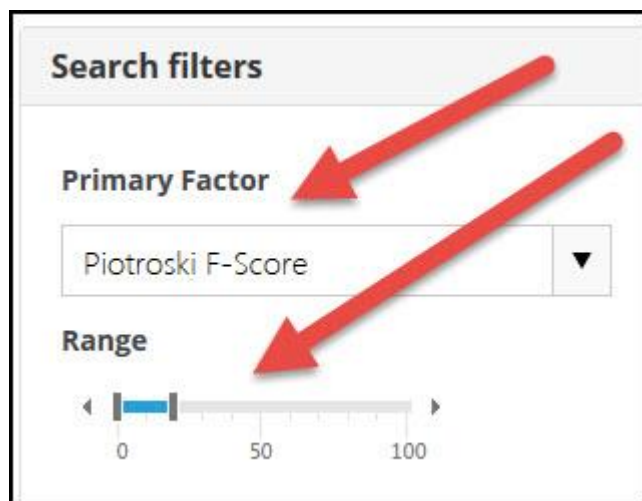
Select Piotroski F-Score from the **Primary Factor** drop down list under the **Quality** heading.

To select only the companies with the best (highest) F-Score move the slider to that you select **0% to 20%** of the Piotroski F-Score values.

How about companies with an improving F-Score?

- We also have a report for that

Piotroski

Date	name	Currency	Country	Fscore	F score (-7d)	MV EUR
Feb 09, 2018	The Hour Glass Limited	SGD	Singapore	7	6	283,756
Feb 09, 2018	Cabbeen Fashion Limited	HKD	China	8	5	158,270
Feb 09, 2018	LTC Corporation Limited	SGD	Singapore	7	6	61,528
Feb 09, 2018	Investcorp Bank B.S.C.	USD	Bahrain	7	5	548,720
Feb 09, 2018	Lee Enterprises, Incorporated	USD	United States	7	6	107,276
Feb 09, 2018	DNO ASA	NOK	Norway	7	5	951,923
Feb 09, 2018	AXYZ Co., Ltd.	JPY	Japan	8	6	180,329
Feb 09, 2018	Hokkaido Coca-Cola Bottling Co., Ltd.	JPY	Japan	8	5	191,996
Feb 09, 2018	Shriro Holdings Limited	AUD	Australia	8	7	90,938

QUANT INVESTING

Summary

- Piotroski F-Score is a great indicator to

- Increase your returns

- Help you screen out deteriorating companies (bad fundamental momentum)

- Works especially well on small companies

- Increases the return of all strategies we tested

- Fundamental stop loss (sell if F-Score < 6)

Questions and answers

There is no such thing as a stupid question

Contact information:
info@quant-investing.com