The other side of value: The gross profitability premium

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1.1Background

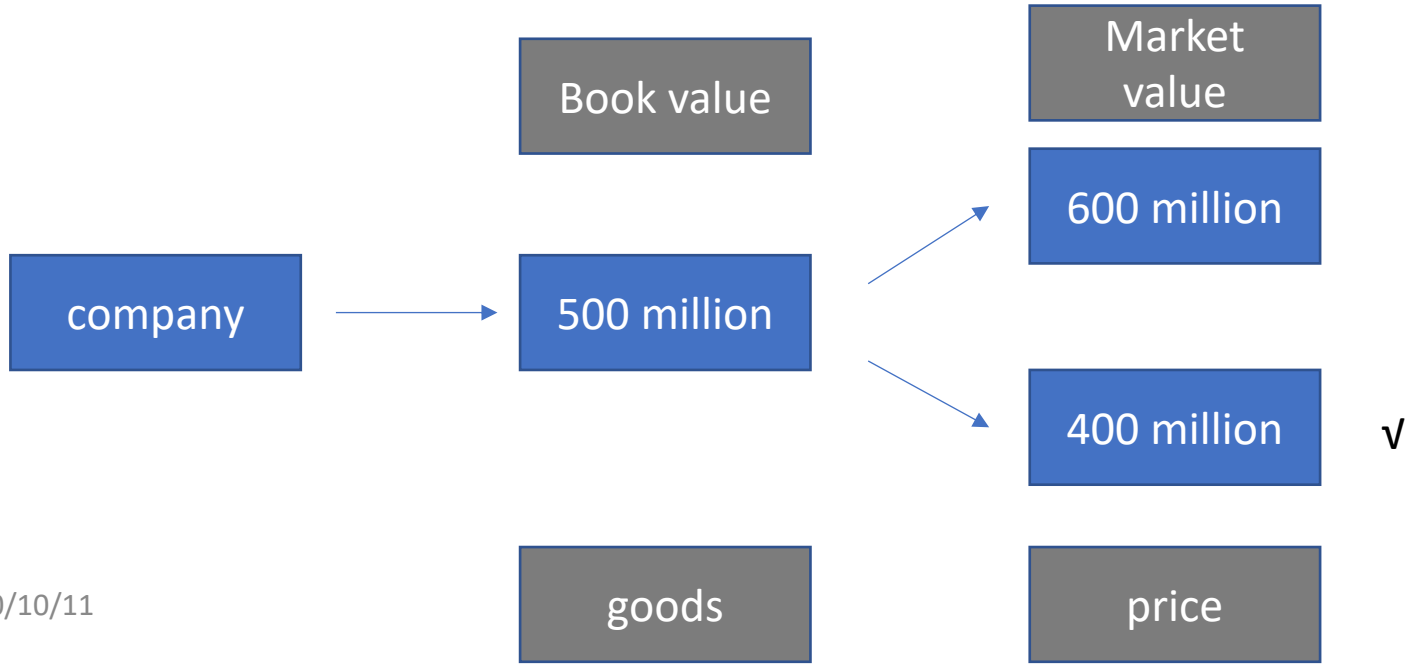
- Profitability(the ratio of a firm's gross profits (revenues minus cost of goods sold) to its assets) has roughly the same power as B/M predicting the cross section of average returns.
- It differs from earlier studies: Fama and French (2008, p. 1663) finds that "profitability sorts produce the weakest average hedge portfolio returns".

1.1Background

- Traditional value strategies: finance the acquisition of inexpensive assets by selling expensive assets;
- Profitability strategies: financing the acquisition of productive assets by selling unproductive assets;
- Because the two effects are closely related, it is useful to analyze profitability in the context of value.

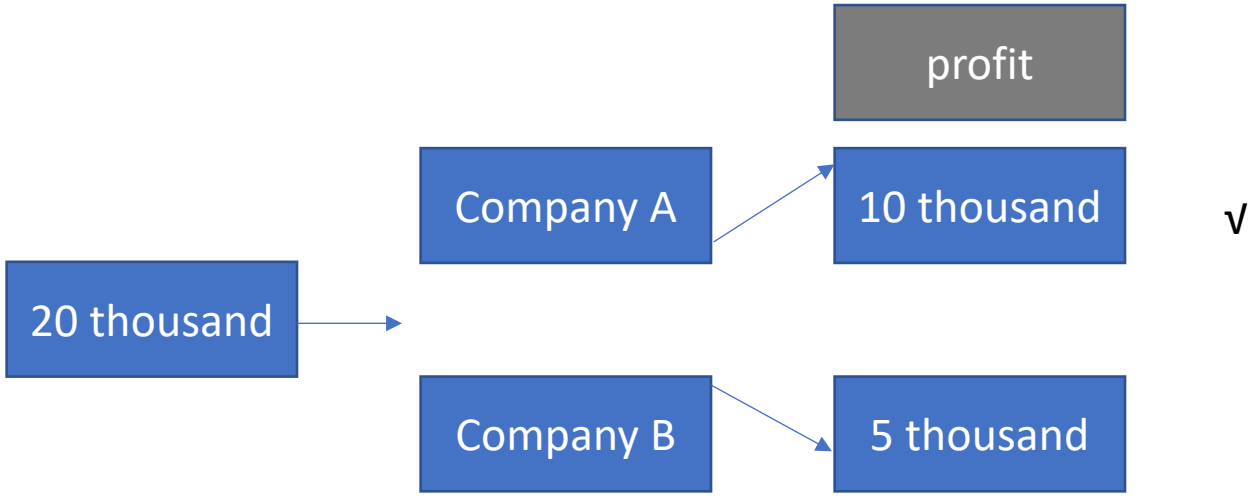
1.1Background

- value strategies:
- When a firm's market value is low relative to its book value, then a stock purchaser acquires a relatively large quantity of book assets for each dollar spent on the firm.



1.1Background

- profitability strategies:
- Based on the same amount of cost, investors prefer the one which is more profitable



1.2Literatures

- Value strategies were first advocated by Graham and Dodd (1934)
- Value firms generate higher average returns than growth firms (Ball, 1978; Berk, 1995)
- Fama and French (2006) finds that earnings(current earnings) has explanatory power
- Fama and French (2006) illustrate the intuition that book-to-market and profitability are both positively related to expected returns

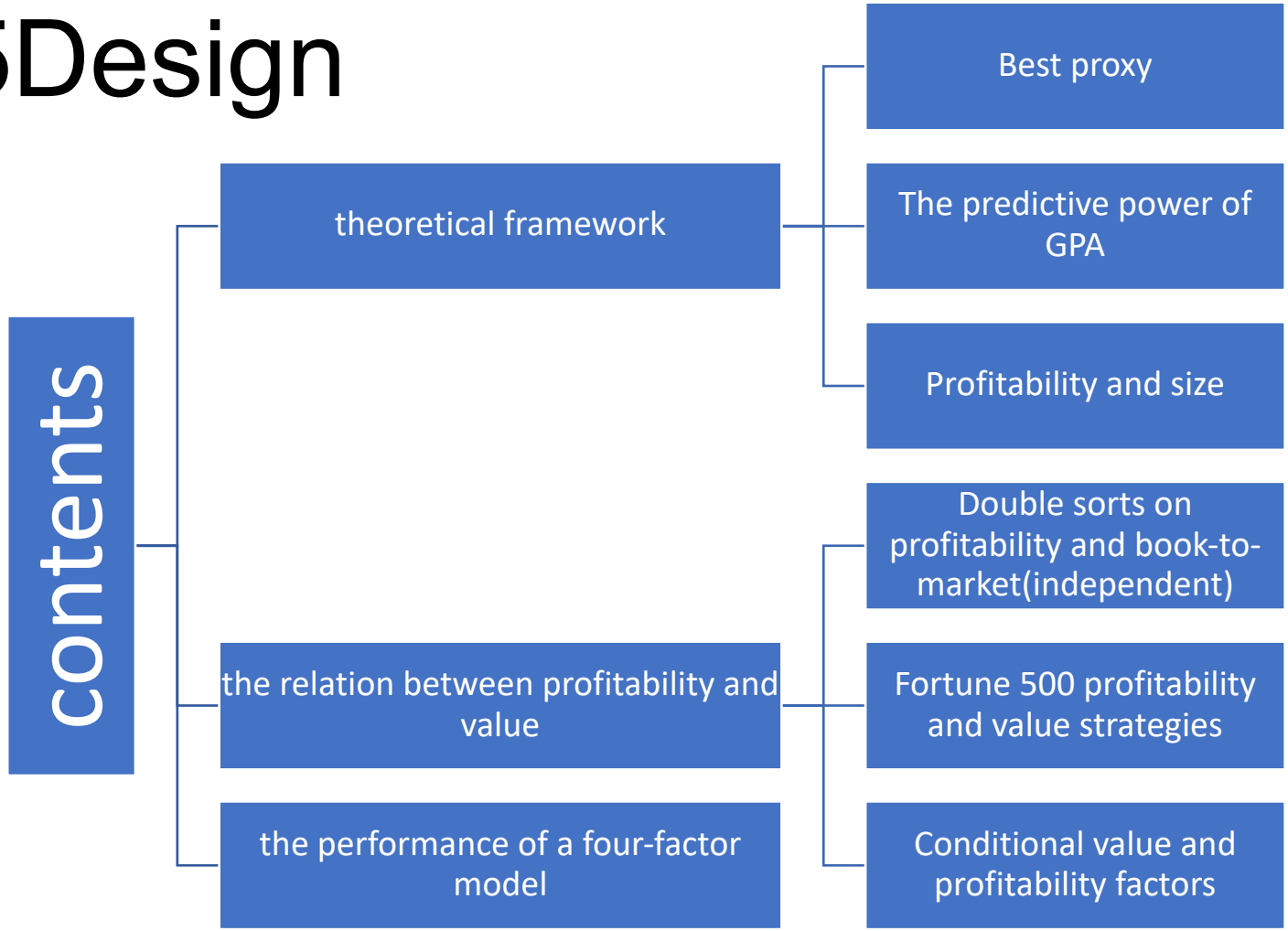
1.3Motivations

- strategies based on value and profitability share much in common philosophically:
  - traditional value strategies finance the acquisition of inexpensive assets by selling expensive assets
  - profitability strategies finance the acquisition of productive assets by selling unproductive assets.
- Similar arguments suggest that firms with **productive** assets should yield higher average returns than firms with unproductive assets.
  - higher profitability indicating higher required rates

1.4Contributions

- Proved that GPA is a good proxy for ‘profitability’ of a firm and it can predict the cross-section return
- Profitability strategy is a good hedging strategy for value strategy
- Propose a new 4-factor model as a pricing model

1.5Design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2.Data

- July 1963 to December 2010
- Compustat data
- excludes financial firms
- rebalanced each year at the end of June

3.Method

- the market value of equity (cum dividend) :

$$M_t = \sum_{\tau=0}^{\infty} \frac{\mathbf{E}_t[Y_{t+\tau} - dB_{t+\tau}]}{(1+r)^{\tau}}$$

- Y_t: the time-t earnings
- $dB_t \equiv B_t - B_{t-1}$:change in book equity(retained earnings)
- r: the required rate of return on expected dividends

- value firms should outperform growth firms
- profitable firms should outperform unprofitable firms.

3.Method

- Which metric is better as a proxy variable?
- Fama and French (2006): current earnings as a simple proxy for future profitability
- Gross profits is a better proxy.
  - a firm's true economic profitability
  - scale gross profits by book assets(not book equity) because gross profits are an asset level measure of earnings. →not reduced by interest payments and independent of leverage.
- Popular media: **earnings**, the variable on which Wall Street analysts' forecasts focus.
- Financial: **free cash flows**, the present discounted value of which should determine a firm's value.

Independent variable	Slope coefficients ($\times 10^2$) and [test-statistics] from regressions of the form $r_{tj} = \beta' \mathbf{x}_{tj} + \epsilon_{tj}$						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Straight profitability variables							
Gross profitability	0.75			0.69	0.62		0.61
	[5.49]			[5.22]	[4.63]		[4.59]
Earnings		0.22		0.08		−0.02	−0.07
		[0.84]		[0.31]		[−0.06]	[−0.27]
Free cash flow			0.27		0.20	0.39	0.33
			[2.28]		[1.64]	[3.17]	[2.67]
log(B/M)	0.35	0.30	0.26	0.34	0.30	0.27	0.31
	[5.98]	[4.97]	[4.59]	[5.54]	[5.17]	[4.48]	[5.05]
log(ME)	−0.09	−0.12	−0.13	−0.11	−0.11	−0.13	−0.11
	[−2.29]	[−3.24]	[−3.20]	[−2.78]	[−2.80]	[−3.34]	[−2.92]
$r_{1,0}$	−5.57	−5.49	−5.52	−5.64	−5.66	−5.56	−5.70
	[−13.8]	[−13.7]	[−13.7]	[−14.1]	[−14.1]	[−13.9]	[−14.3]
$r_{12,2}$	0.76	0.78	0.78	0.74	0.74	0.76	0.73
	[3.87]	[4.02]	[4.02]	[3.80]	[3.80]	[3.93]	[3.74]

- FM: firms' returns on gross profits-to-assets, earnings-to-book equity, and free cash flow-to-book equity.
- Gross profitability has roughly the same power as book-to-market predicting the cross section of returns.
- Gross profitability subsumes these other profitability variables.

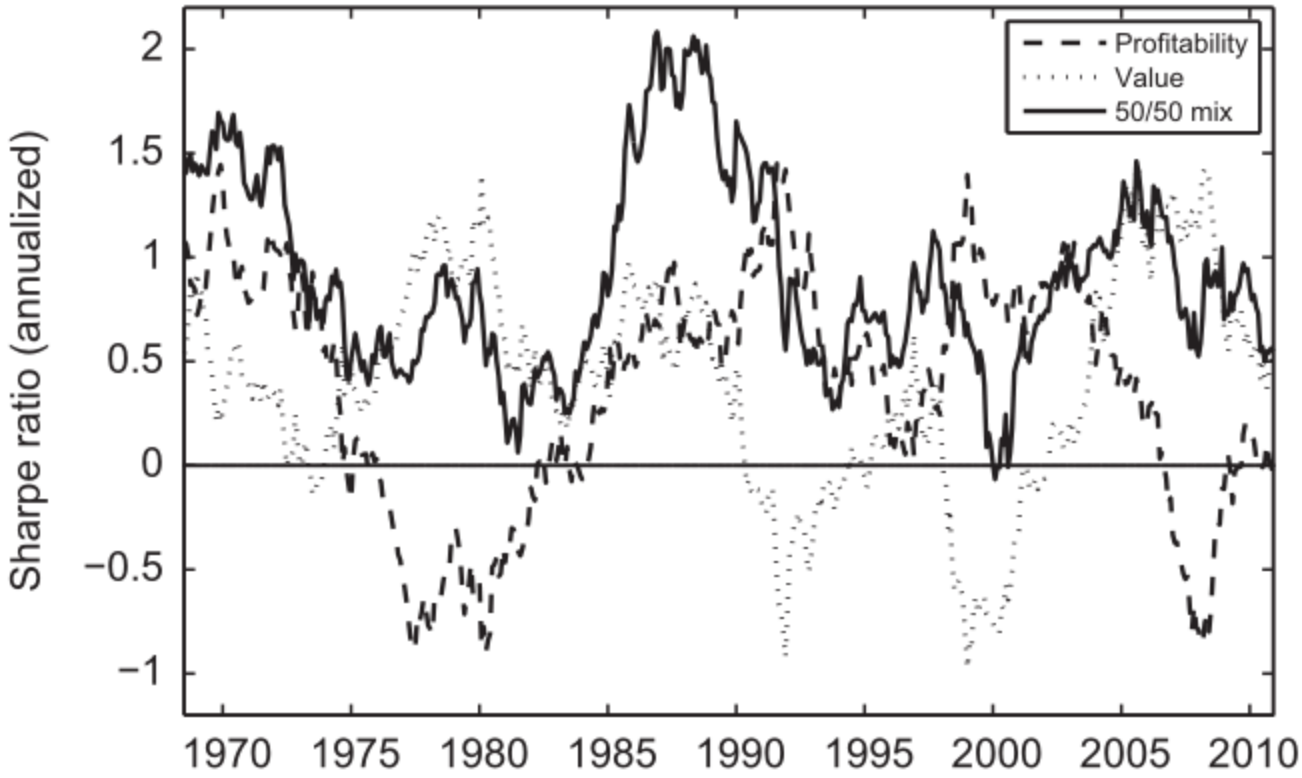
Panel B: Profitability variables demeaned by industry

Gross profitability	1.00				0.94	0.94			0.92
	[8.99]				[9.75]	[8.38]			[8.39]
Earnings		0.28			0.04		0.09		0.02
		[1.86]			[0.15]		[0.51]		[0.13]
Free cash flow			0.16			0.09	0.25		0.21
			[2.54]			[1.23]	[3.30]		[2.54]
log(B/M)	0.35	0.32	0.30		0.33	0.34	0.31		0.34
	[5.57]	[5.40]	[5.13]		[5.15]	[5.33]	[5.12]		[5.30]
log(ME)	−0.09	−0.11	−0.11		−0.10	−0.10	−0.11		−0.10
	[−2.19]	[−2.65]	[−2.64]		[−2.62]	[−2.31]	[−2.69]		[−2.35]
$r_{1,0}$	−5.63	−5.50	−5.52		−5.67	−5.66	−5.53		−5.67
	[−13.2]	[−13.5]	[−13.5]		[−13.4]	[−13.2]	[−13.6]		[−13.3]
$r_{12,2}$	0.76	0.78	0.78		0.75	0.75	0.77		0.74
	[3.66]	[3.98]	[3.95]		[3.63]	[3.63]	[3.92]		[3.61]

- Independent variables: demeaned by industry
- Results are similar with the former, while the results here are even stronger

		Alphas and three-factor loadings				Portfolio characteristics			
Portfolio	r^e	α	MKT	SMB	HML	GP/A	B/M	ME	n
Panel A: Portfolios sorted on gross profits-to-assets									
Low	0.31	−0.18	0.94	0.04	0.15	0.10	1.10	748	771
	[1.65]	[−2.54]	[57.7]	[1.57]	[5.87]				
2	0.41	−0.11	1.03	−0.07	0.20	0.20	0.98	1,100	598
	[2.08]	[−1.65]	[67.5]	[−3.13]	[8.51]				
3	0.52	0.02	1.02	−0.00	0.12	0.30	1.00	1,114	670
	[2.60]	[0.27]	[69.9]	[−0.21]	[5.42]				
4	0.41	0.05	1.01	0.04	−0.24	0.42	0.53	1,114	779
	[1.94]	[0.83]	[70.6]	[1.90]	[−11.2]				
High	0.62	0.34	0.92	−0.04	−0.29	0.68	0.33	1,096	938
	[3.12]	[5.01]	[58.3]	[−2.03]	[−12.3]				
High–low	0.31	0.52	−0.03	−0.08	−0.44				
	[2.49]	[4.49]	[−0.99]	[−2.15]	[−10.8]				
Panel B: Portfolios sorted on book-to-market									
Low	0.39	0.13	0.98	−0.09	−0.39	0.43	0.25	1,914	965
	[1.88]	[2.90]	[90.1]	[−5.62]	[−23.9]				
2	0.45	−0.02	0.99	0.05	0.04	0.31	0.54	1,145	696
	[2.33]	[−0.29]	[78.1]	[2.61]	[2.23]				
3	0.56	0.03	0.96	0.04	0.22	0.26	0.79	849	640
	[2.99]	[0.53]	[63.5]	[2.09]	[9.71]				
4	0.67	−0.00	0.96	0.10	0.53	0.21	1.12	641	655
	[3.58]	[−0.03]	[74.8]	[5.66]	[27.1]				
High	0.80	0.07	1.01	0.25	0.51	0.21	5.47	367	703
	[3.88]	[1.04]	[60.7]	[10.7]	[20.5]				
High–low	0.41	−0.06	0.03	0.34	0.91				
	[2.95]	[−0.71]	[1.44]	[12.0]	[30.0]				

- Sorts on profitability(value-weighted average excess returns)
- the GPA portfolios' average excess returns are generally increasing with profitability
- GPA and BM are negatively related.
- Profitable firms tend to be growth firms, and unprofitable firms tend to be value firms



- Performance over time of profitability and value strategies.
- Profitability generally performed well in the periods when value performed poorly
- Value generally performed well in the periods when profitability performed poorly.
- As a result, the mixed profitability-value strategy never had a losing five-year period over the sample

4.Results: Profitability and size

Characteristic	(Small)	(2)	(3)	(4)	(Large)
Number of firms	2,427	749	484	384	335
Percent of firms	54.2	16.9	11.3	9.26	8.25
Average capitalization (millions of dollars)	39.6	206	509	1,272	9,494
Total capitalization (billions of dollars)	101	173	273	544	3,652
Total capitalization (percent)	2.43	3.73	6.13	12.6	75.1
Portfolio book-to-market	2.64	1.36	1.06	0.88	0.61
Portfolio gross profits-to-assets	0.27	0.28	0.26	0.25	0.27

- The time series averages of the characteristics of quintile portfolios sorted on market equity.
- Stocks in the nano-cap portfolio make up less than 3% of the market by capitalization
- The portfolios exhibit little variation in profitability, but a great deal of variation in book-to-market, with the smaller stocks tending toward value and the larger stocks toward growth.
- The portfolios exhibit little variation in profitability

Panel A: Portfolio average excess returns and time series regression results

	Gross profits-to-asset quintiles					Profitability strategies				
	Low	2	3	4	High	r^e	α	β_{mkt}	β_{smb}	β_{hml}
Size quintiles										
Small	0.40	0.64	0.78	0.89	1.07	0.67	0.63	0.05	−0.13	0.13
						[4.59]	[4.27]	[1.48]	[−2.68]	[2.47]
2	0.37	0.71	0.71	0.73	0.90	0.53	0.54	0.01	0.06	−0.08
						[3.97]	[3.96]	[0.35]	[1.34]	[−1.58]
3	0.40	0.73	0.74	0.68	0.81	0.41	0.38	0.10	0.18	−0.15
						[2.88]	[2.71]	[3.02]	[4.01]	[−3.05]
4	0.45	0.62	0.59	0.65	0.84	0.38	0.45	0.03	0.21	−0.35
						[2.82]	[3.62]	[1.00]	[5.14]	[−7.95]
Big	0.30	0.37	0.49	0.36	0.55	0.26	0.50	−0.05	−0.05	−0.51
						[1.88]	[3.90]	[−1.56]	[−1.09]	[−11.3]
Small-minus-big strategies										
r^e	0.10	0.28	0.29	0.53	0.51					
	[0.39]	[1.40]	[1.45]	[2.64]	[2.37]					
α	−0.21	−0.16	−0.13	−0.03	−0.08					
	[−1.30]	[−1.63]	[−1.26]	[−0.31]	[−0.72]					
β_{mkt}	−0.03	−0.00	−0.01	0.01	0.07					
	[−0.69]	[−0.01]	[−0.45]	[0.53]	[2.88]					
β_{smb}	1.54	1.34	1.34	1.32	1.45					
	[28.9]	[41.1]	[38.9]	[39.7]	[41.9]					
β_{hml}	−0.22	0.20	0.17	0.48	0.42					
	[−3.90]	[5.56]	[4.56]	[13.5]	[11.1]					

- the profitability spread is large and significant across size quintiles

Panel A: Portfolios sorted on gross profits-to-assets

		Global three-factor loadings				Portfolio characteristics			
	r^e	α	MKT	SMB	HML	GP/A	B/M	ME	n
Low	−0.16	−0.72	1.23	0.35	0.21	0.09	0.91	936	1,211
	[−0.37]	[−2.81]	[20.8]	[3.06]	[1.98]				
2	0.19	−0.29	1.10	0.26	0.19	0.20	0.79	1,530	1,211
	[0.50]	[−1.65]	[27.2]	[3.26]	[2.65]				
3	0.29	−0.07	1.12	0.20	−0.12	0.32	0.72	1,843	1,211
	[0.76]	[−0.40]	[29.7]	[2.76]	[−1.76]				
4	0.44	0.17	0.94	0.06	−0.03	0.54	0.95	1,946	1,211
	[1.44]	[1.30]	[31.7]	[1.05]	[−0.65]				
High	0.60	0.27	0.88	0.32	0.11	1.02	1.46	940	1,211
	[1.95]	[1.60]	[22.7]	[4.21]	[1.58]				
High–low	0.76	0.99	−0.35	−0.04	−0.10				
	[2.25]	[2.97]	[−4.61]	[−0.24]	[−0.73]				
Panel B: Portfolios sorted on book-to-market									
High–low	0.51	0.31	−0.03	0.31	0.53				
	[2.12]	[1.46]	[−0.69]	[3.30]	[6.11]				

- The international evidence also supports the hypothesis that gross profits-to-assets has roughly the same power as book-to-market predicting the cross section of expected returns.
- The profitability spread in international markets is significant and even larger than the value spread.

4.Results: Double sorts on profitability and book-to-market

- profitability and book-to-market are **negative** correlated
- A value strategy that avoids holding stocks that are more unprofitable than cheap, and avoids selling stocks that are more profitable than expensive, should outperform conventional value strategies.
- A profitability strategy that avoids holding stocks that are profitable but fully priced, and avoids selling stocks that are unprofitable but nevertheless cheap, should outperform conventional profitability strategies.

Panel A: Portfolio average returns and time series regression results

	Gross profits-to-asset quintiles					Profitability strategies				
	Low	2	3	4	High	r^e	α	β_{mkt}	β_{smb}	β_{hml}
Book-to-market quintiles										
Low	−0.08	0.19	0.27	0.26	0.56	0.64	0.83	−0.24	−0.27	−0.01
						[3.52]	[4.76]	[−6.03]	[−4.81]	[−0.18]
2	0.19	0.30	0.40	0.70	0.90	0.70	0.69	−0.12	0.26	0.01
						[4.13]	[4.00]	[−3.05]	[4.61]	[0.09]
3	0.38	0.39	0.74	0.69	0.87	0.49	0.27	0.09	0.53	0.10
						[2.80]	[1.64]	[2.30]	[9.89]	[1.77]
4	0.50	0.60	0.94	1.04	0.93	0.43	0.28	0.07	0.65	−0.14
						[2.47]	[2.06]	[−0.94]	[9.40]	[−1.27]
High	0.65	0.83	0.96	1.09	1.08	0.44	0.34	−0.04	0.51	−0.08
						[2.38]	[1.79]	[1.83]	[12.6]	[−2.52]
Value strategies										
r^e	0.73	0.64	0.69	0.83	0.52					
	[3.52]	[3.42]	[3.76]	[4.74]	[2.81]					
α	0.45	0.27	0.39	0.38	−0.03					
	[2.76]	[1.65]	[2.26]	[2.80]	[−0.20]					
β_{mkt}	−0.18	−0.06	−0.03	−0.06	0.02					
	[−4.77]	[−1.44]	[−0.86]	[−1.95]	[0.72]					
β_{smb}	−0.04	0.27	0.32	0.74	0.75					
	[−0.75]	[5.00]	[5.57]	[16.6]	[16.2]					
β_{hml}	0.91	0.81	0.58	0.69	0.85					
	[15.7]	[14.1]	[9.52]	[14.2]	[17.0]					

Value strategy:
Mean:0.68%(before:0.41%)
Profitability strategy:
Mean:0.54%(before:0.31%)

- controlling for profitability improves the performance of value strategies and controlling for book-to-market improves the performance of profitability strategies.

		Alphas and three-factor loadings				Portfolio characteristics			
Portfolio	r^e	α	MKT	SMB	HML	GP/A	B/M	ME	n
Panel A: Portfolios sorted on gross profits-to-assets									
Low	0.38	−0.15	1.02	−0.04	0.22	0.12	1.02	5.93	150
	[1.88]	[−1.96]	[55.1]	[−1.38]	[7.89]				
2	0.57	0.00	1.13	0.11	0.08	0.31	0.86	7.82	200
	[2.51]	[0.06]	[74.4]	[5.08]	[3.36]				
High	0.65	0.25	1.02	0.08	−0.18	0.64	0.41	9.20	150
	[3.03]	[3.84]	[68.5]	[3.69]	[−7.81]				
High–low	0.27	0.40	0.00	0.11	−0.40				
	[2.33]	[3.75]	[0.17]	[3.23]	[−10.5]				
Panel B: Portfolios sorted on book-to-market									
Low	0.38	0.07	1.10	0.04	−0.48	0.51	0.25	1.03	150
	[1.56]	[1.08]	[69.5]	[1.86]	[−20.2]				
2	0.52	−0.00	1.07	0.07	0.08	0.34	0.58	7.27	200
	[2.49]	[−0.02]	[79.7]	[3.56]	[3.91]				
High	0.70	0.02	1.02	0.06	0.52	0.21	1.55	5.33	150
	[3.60]	[0.40]	[73.3]	[2.85]	[24.9]				
High–low	0.32	−0.05	−0.08	0.01	1.01				
	[2.16]	[−0.64]	[−4.41]	[0.56]	[37.0]				
Panel C: Portfolios sorted on average gross profits-to-assets and book-to-market ranks									
Low	0.19	−0.20	1.12	0.01	−0.27	0.22	0.45	7.72	150
	[0.79]	[−2.25]	[53.2]	[0.25]	[−8.51]				
2	0.59	0.10	1.01	0.02	0.09	0.38	0.68	8.83	200
	[3.00]	[1.95]	[87.3]	[1.32]	[5.05]				
High	0.81	0.17	1.08	0.15	0.29	0.45	1.21	5.87	150
	[3.81]	[2.80]	[77.0]	[7.62]	[13.8]				
High–low	0.62	0.37	−0.04	0.14	0.56				
	[5.11]	[3.67]	[−1.73]	[4.30]	[15.8]				

- Fortune 500 profitability and value strategies
- buys one dollar of each of the 150 stocks with the highest combined profitability and value ranks
- shorts one dollar of each of the 150 stocks with the lowest combined ranks.

4.Results: Conditional value and profitability factors

- Result before suggests that HML factor would be more profitable if it were constructed controlling for profitability.
- HML|GP、PMU|BM

	BM(>70%)	BM(30%~70%)	BM(<30%)	
GPA(0~10%)				HML|GP
……				HML|GP
GPA(90%~100%)				HML|GP

4.Results: Conditional value and profitability factors

	Dependent variable									
	HML|GP			PMU|BM			HML		PMU	
Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Intercept	0.54 [5.01]	0.23 [4.55]	0.23 [4.52]	0.48 [5.35]	0.48 [5.23]	0.51 [5.54]	0.40 [3.25]	−0.07 [−1.31]	0.32 [3.30]	0.02 [0.57]
MKT			−0.03 [−2.37]			−0.07 [−3.24]				
SMB			0.05 [2.86]			0.03 [1.12]				
HML		0.77 [45.4]	0.77 [43.0]		0.02 [0.51]	−0.01 [−0.26]				
HML|GP								1.04 [47.6]		−0.33 [−22.7]
PMU|BM								−0.18 [−6.73]		0.98 [57.2]
Adj. R^2		78.4%	78.7%		0.0%	1.4%		79.9%		85.8%

- (1)：HML|GP: excess average returns of 0.54% per month over the sample(t=5.01). HML: 0.40% per month(t=3.25)
- (2) (3)：HML|GP has an extremely large information ratio relative to standard HML and the three Fama and French factors
- (4)：the profitability factor constructed controlling for book-to-market is equally profitable.
- (5) (6)：PMU|BM has a large information ratio relative to HML or the three Fama and French factors
- (7) (8) (9) (10)：standard HML/PMU inside the span of HML|GP and PMU|BM

4.Result: the performance of 4-factor model

- most earnings related anomalies, and a large number of seemingly unrelated, are just different expressions of these three basic underlying anomalies
- three types of anomalies:
- Anomalies related to the construction of the factors themselves: Strategies sorted on size, book-to-market, past performance, and gross profitability;
- Earnings-related anomalies: Strategies sorted on return on assets, earnings-to-price, asset turnover, gross margins, and standardized unexpected earnings;
- Anomalies considered by Chen, Novy-Marx, and Zhang(2010)

4.Result: the performance of 4-factor model

		Time series regression results				
Factor	$\mathbf{E}[r^e]$	α	MKT	SMB	HML	UMD
HML*	0.47	0.25	0.02	0.10	0.42	0.01
	[6.42]	[5.41]	[2.07]	[6.71]	[26.6]	[1.09]
UMD*	0.58	0.28	−0.06	−0.07	−0.09	0.58
	[4.17]	[6.51]	[−6.74]	[−5.27]	[−6.58]	[63.7]
PMU*	0.27	0.35	−0.08	−0.11	−0.08	0.05
	[4.88]	[6.90]	[−7.39]	[−6.78]	[−4.63]	[4.56]

- Industry-adjusted gross profitability/ value/ momentum have more predictive power than straight factors
- All three factors generate highly significant average excess returns
- All three of the industry-adjusted factors have Sharpe ratios exceeding those on any of the Fama and French factors.

Sorting variable used in strategy construction	$E[r^e]$	α_{FF4}	Alternative model abnormal returns and factor loadings				
			α	MKT	HML*	UMD*	PMU*
Market equity	0.35	−0.19	0.38	−0.01	0.43	0.25	−1.35
	[1.53]	[−1.60]	[1.54]	[−0.24]	[2.83]	[3.20]	[−6.42]
Book-to-market	0.58	0.05	−0.03	−0.05	1.65	−0.02	−0.43
	[3.13]	[0.39]	[−0.20]	[−1.64]	[17.5]	[−0.41]	[−3.33]
Prior performance	1.43	0.52	−0.14	0.07	0.47	2.25	0.08
	[4.28]	[3.99]	[−0.92]	[2.06]	[4.93]	[45.6]	[0.61]
Industry-adjusted profitability	0.21	0.32	−0.04	−0.06	−0.04	0.04	1.01
	[2.34]	[4.01]	[−0.61]	[−3.95]	[−0.86]	[1.63]	[16.8]
Return on assets	0.67	0.84	−0.15	−0.10	0.06	0.35	2.33
	[2.81]	[4.63]	[−0.75]	[−2.39]	[0.49]	[5.53]	[13.6]
Return on equity	1.02	0.82	0.07	−0.13	0.77	0.42	1.52
	[4.47]	[4.23]	[0.32]	[−2.82]	[5.76]	[6.09]	[8.23]
Asset turnover	0.54	0.47	−0.15	0.26	0.15	−0.13	2.05
	[2.92]	[2.45]	[−0.81]	[6.95]	[1.40]	[−2.24]	[13.5]
Gross margins	0.02	0.42	0.01	−0.01	−0.46	−0.07	1.00
	[0.15]	[3.33]	[0.05]	[−0.39]	[−4.97]	[−1.38]	[7.78]
SUE	0.69	0.54	0.36	0.06	−0.31	0.62	0.30
	[4.00]	[3.66]	[2.20]	[1.88]	[−3.08]	[11.9]	[2.13]
Failure probability	0.76	0.94	−0.26	−0.34	−0.34	1.30	2.19
	[2.09]	[4.44]	[−0.99]	[−6.41]	[−2.11]	[15.8]	[9.93]
Ohlson's O-score	0.11	0.59	0.09	−0.14	−0.51	0.16	0.85
	[0.58]	[4.55]	[0.48]	[−3.62]	[−4.50]	[2.75]	[5.40]
Net stock issuance	0.73	0.62	0.21	−0.09	0.64	0.07	0.81
	[5.15]	[4.70]	[1.49]	[−3.06]	[7.31]	[1.49]	[6.71]
Total accruals	0.37	0.37	0.39	−0.13	0.28	0.05	−0.38
	[2.35]	[2.32]	[2.16]	[−3.46]	[2.53]	[0.84]	[−2.54]
Asset growth	0.70	0.30	0.23	−0.11	1.06	0.13	−0.18
	[4.17]	[2.12]	[1.37]	[−3.10]	[10.4]	[2.48]	[−1.26]
Organizational capital	0.46	0.30	0.27	−0.01	0.06	0.18	0.25
	[3.73]	[2.55]	[1.94]	[−0.46]	[0.71]	[4.06]	[2.11]
Root mean squared pricing error	0.67	0.54	0.22				

The new 4-factor model can explain most of the anomalies

5.Conclusions

- Gross profitability represents the other side of value. Both are designed to acquire productive capacity cheaply.
- Profitability, measured by gross profits-to-assets, has roughly the same power as book-to-market predicting the cross section of average returns.
- Because the value and profitability strategies' returns are negatively correlated, the two strategies work extremely well together.
- Controlling for gross profitability explains most earnings related anomalies and a wide range of seemingly unrelated profitable trading strategies.