

Contextual Fundamental Analysis

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Introduction

Value Stocks: Stocks are belongs to high BM firms.

Glamour Stocks: Stocks are belongs to low BM firms.

BM = book value of equity / market value of equity

Value or High BM firms:

- 1) stocks tend to be neglected and financially distressed
- 2) unpopular in the stock market
- 3) Firm's size are small and
- 4) Voluntary disclosures may not be viewed as credible given their poor recent performances
- 5) stocks are usually associated with below average price/earnings (P/E) ratios, low market price/book value
- 6) even though analyst do not recommend buying or selling of high BM's stocks ironically
- 7) but, earnings might be predictable and less volatile stock price

Glamour or Low BM firms:

- 1) fast growing firms —earnings are growing rapidly
- 2) tend to be strong financial condition
- 3) growth rates are high and firms are usually associated with high P/E and P/B ratios.
- 4) earnings are less predictable
- 5) stocks are more volatile
- 6) Nonfinancial information are available
- 7) Due to fast growing effect glamour firms may be able to attract the concentration of sophisticated market mediators, such as analysts and institutional investors

But all firms are not bad and good for all value and glamour stocks respectively, the value and growth styles both go through good and bad time, there is no clear answer which is better. That's why this study investigated whether and how good (winners) and bad (losers) can be separated using contextual fundamental analysis.

Contextual Analysis: context exhibiting strong and unique empirical characteristics (Sloan, 2001)
 ---- more reliable, realistic ,selective and effective context ³

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Motivations

Lev and Thiagarajan (1993)	Abarbanell and Bushee (1998)	Piotroski (2000) & Mohanram (2005)
Financial Signals have predictive power in explaining contemporaneous stock returns.	Investment portfolios formed by longing high-score stocks and shorting low-score stocks based on fundamental signals yields significant positive returns.	A portfolio with higher composite scores earn higher returns for high and low book-to-market (BM) firms.

Fundamental Analysis to Separate Winners from Losers in Value & Glamour Stocks

Main Objective

The main objective of this study is to empirically examining whether investors earn maximum returns from value and glamour firms after separating winners from losers, by contextual investment strategy based on historical financial information (F-SCORE and G-SCORE) in the Korean listed firms.

Literature Review

Lev and Thiagarajan (1993)	>1974 to 1988. >twelve financial signals. >fundamental financial signals have predicted power in explaining future stock returns.
Piotroski (2000)	>Sample: High BM firms. >Binary Scores of financial signals: Profitability, Operating Efficiency, and Leverage and Liquidity. >Findings: Higher score stocks earn higher future stock returns than lower score stocks do
Mohanram (2005)	>Sample: Low BM firms. >Binary Scores of financial signals: Profitability, Earnings and Growth Stability, and Intensity of R&D. >Findings: Higher score stocks earn higher future stock returns than lower score stocks do
Taniguchi and Suganohat (2011)	low (high) BM firms usually earn significant negative (positive) returns, respectively.

Bartov and Kim(2004), Choet at.(2014), Nguyen(2003), Sukanjanapong(2007)

Research Model and Methodology

- The research model is made consistent with Piotroski (2000) and Mohanram (2005).
- To implement the model, this study used TWO composite scores based on financial signals

◆ F-SCORE → Value Stocks

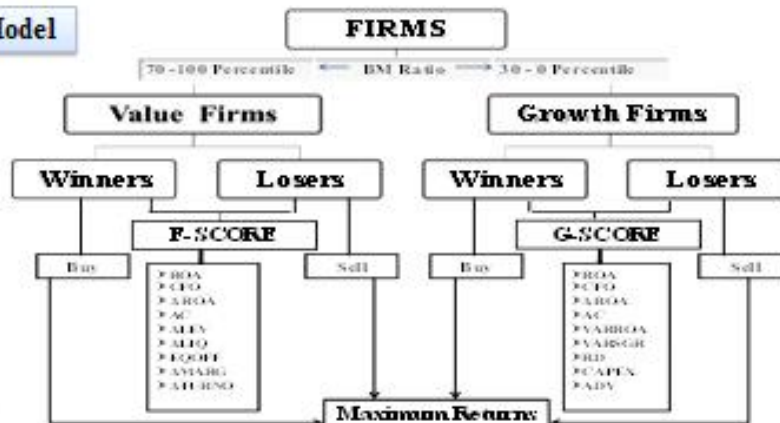
◆G-SCORE— Glamour Stocks

- Both scores are made by **9 fundamental financial signals**. A realization of each financial signal is classified as either good or bad depending on its implication to stock future returns, with 0 and 1 score representing bad and good implication, respectively.

$$\triangleright F\text{-SCORE} = ROA + CFO + \Delta ROA + AC + \Delta LEV + \Delta LIQ + EQOFF + \Delta MARG + \Delta TURNO \quad (1)$$

$$\triangleright G\text{-SCORE} = ROA + CFO + \Delta ROA + AC + VARROA + VARSGR + RD + CAPEX + ADV \quad (2)$$

Research Model



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Stock Returns Calculation and Empirical Results

1. Buy-and-Hold Returns

- One-year Ahead and Two-year Ahead Returns
- ❖ Return Period: Starting from the beginning of the fourth month after the fiscal year end and ending at the end of the third month after the following one (two) fiscal year(s).

2. Size-Adjusted Buy-and-Hold Returns (Abrahamson and Bushman, 1998)

$$SAR_{i,k}(h) = \prod_{j=1}^h (1 + BHR_{ij}) - \prod_{j=1}^h (1 + BHR_{kj})$$

SAR _{it} / 0	the number of off-farm off-farm income of firm <i>i</i> contained from the fourth month after the fiscal year end of year <i>t</i> through a value greater than 0
SHR _{it}	the off-farm income of firm <i>i</i> contained from the fourth month after the fiscal year end of year <i>t</i> through a value greater than 0
SHR _{it}	the mean return on assets of the firm <i>i</i> contained from the fourth month after the fiscal year end of year <i>t</i> through a value greater than 0
b _{it}	the number of off-farm income of firm <i>i</i> contained from the fourth month after the fiscal year end of year <i>t</i> through a value greater than 0

(3)

Sample Selection & Data Collection
Korean listed Firms - 2005 - 2010

Costs are allocated equally between the two departments	Total Costs
Allocation of overheads to department	1000
Allocation of overheads to department	1000
Allocation of overheads to department	1000
Total Costs	3000

ΔΔ₁ variable has been used as 17% and 33% increase in a reference is lower values.

Descriptive Statistics

Panel A: Financial Characteristics of Value and Glomox Firms													
Variables	Value or High-BM firms (1552 firms)				Glomox or Low-BM firms (1278 firms)				AE firms (527 firms)				
	Mean	Std. Deviation	3rd Quartile	5th Percentile	Mean	Std. Deviation	3rd Quartile	5th Percentile	Mean	Std. Deviation	3rd Quartile	5th Percentile	
Market Value of Equity (\$B. dollars)	149.036	36.830	292.067	7.567	1307.872	1007.889	114.587	2301.437	7.567	11037.672	128.828	81.802	1781.862
Book Value of Equity (\$B. dollars)	238.614	83.591	723.621	7.479	8275.158	302.904	59.902	1373.665	5.303	8173.116	376.372	98.788	1210.310
BS-E ratio	2.328	2.121	0.818	1.200	4.434	0.357	0.034	0.259	0.823	5.237	2.319	1.118	0.882
ABE/E (\$B. dollars)	483.542	144.201	1348.698	14.363	17600.738	1090.863	111.465	3013.333	14.363	17600.738	778.736	122.904	2423.126
BAL/E (\$B. dollars)	398.388	123.462	1344.402	4.308	13877.530	1013.310	89.400	2760.038	4.308	13877.520	889.070	112.389	2181.726
Debt-to-Equity ratio	10.663	3.269	67.306	-80.128	15642.832	82.061	4.829	186.715	-80.118	1042.832	34.915	4.132	137.325

Panel B: Size-Adjusted Buy-and-Hold Returns of Value and Glomox Investment Strategy													
Variables	Value or High-BM firms (1539 firms)				Glomox or Low-BM firms (1828 firms)				AE firms (527 firms)				
	Mean	Std. Deviation	3rd Quartile	5th Percentile	Mean	Std. Deviation	3rd Quartile	5th Percentile	Mean	Std. Deviation	3rd Quartile	5th Percentile	
BAL-1 Year	0.565	-0.574	0.211	-1.491	2.879	-0.548	-0.128	0.241	-1.662	2.877	0.200	-0.108	-1.243
BAL-2 Year	0.064	-0.123	0.849	-2.857	4.548	-0.069	-0.233	0.833	-1.863	4.719	0.000	-0.157	-1.289

Correlation

Panel A: Spearman Correlation Analysis between One- and Two-Year Size-Adjusted Buy-and-Hold Returns, the Nine Fundamental Signals and the Composite Signal (F-SCORE) for Value or High BM firms

	BMV	BMV2	ROA	ROE	LEV	TURN	RD	CAPITAL EXP	ADVERTISING	F-SCORE	F-SCORE2
BMV Year	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BMV2 Year	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ROA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ROE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LEV	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TURN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CAPITAL EXP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ADVERTISING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-SCORE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-SCORE2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Panel B: Spearman's Correlation Analysis between One- and Two-Year Size-Adjusted Buy-and-Hold Returns, the Nine Fundamental Signals and the Composite Signal (G-SCORE) for Glamour or Low BM firms

	BMV	BMV2	ROA	ROE	LEV	TURN	RD	CAPITAL EXP	ADVERTISING	G-SCORE	G-SCORE2
BMV Year	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BMV2 Year	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ROA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ROE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LEV	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TURN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CAPITAL EXP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ADVERTISING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G-SCORE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G-SCORE2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Hedge Portfolio Returns

Size-Adjusted Buy-and-Hold Returns to Value Investment Strategy Based on Financial Signals											
Panel A: One-Year Size-Adjusted Buy-and-Hold Returns to an investment strategy based on F-SCORE for value firms											
	Mean	10%	20%	Median	70%	80%	N				
BMV	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
BMV2	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
ROA	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
ROE	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
LEV	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
TURN	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
RD	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
CAPITAL EXP	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
ADVERTISING	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
F-SCORE	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
F-SCORE2	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
Panel B: Two-Year Size-Adjusted Buy-and-Hold Returns to an investment strategy based on F-SCORE for value firms											
	Mean	10%	20%	Median	70%	80%	N				
BMV	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
BMV2	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
ROA	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
ROE	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
LEV	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
TURN	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
RD	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
CAPITAL EXP	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
ADVERTISING	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
F-SCORE	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
F-SCORE2	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
Panel A: One-Year Size-Adjusted Buy-and-Hold Returns to an investment strategy based on G-SCORE for glamour firms											
	Mean	10%	20%	Median	70%	80%	N				
BMV	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
BMV2	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
ROA	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
ROE	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
LEV	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
TURN	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
RD	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
CAPITAL EXP	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
ADVERTISING	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
G-SCORE	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
G-SCORE2	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
Panel B: Two-Year Size-Adjusted Buy-and-Hold Returns to an investment strategy based on G-SCORE for glamour firms											
	Mean	10%	20%	Median	70%	80%	N				
BMV	0.000	-0.000	-0.000	-0.000	0.000	0.000	1000				
BMV2	0.000	-0.000	-0.								

Returns to an Investment Strategy Based on F-SCORE and G-SCORE in Value and Glamour Firms Respectively by Partitions

Panel A1: One-Year Size-Adjusted Buy-and-Hold Returns to an investment strategy based on F-SCORE for value firms by size partitions									
	Small firms			Medium firms			Large firms		
	Mean	Median	N	Mean	Median	N	Mean	Median	N
All Firms	0.062	-0.045	512	0.058	-0.055	512	0.060	-0.042	512
Low Q-2	0.056	-0.016	72	0.052	-0.012	51	-0.018	-0.049	48
Middle 3-6	0.058	-0.076	289	0.058	-0.059	292	0.062	-0.050	269
High 7-9	0.072	-0.070	52	0.062	-0.080	69	0.065	0.006	96
High - Low	0.015	-0.056		0.008	-0.068		0.082	0.055	
t-Statistic (P-Value)	1.678 (0.097)			2.661 (0.015)			2.722 (0.002)		
Panel A2: One-Year Size-Adjusted Buy-and-Hold Returns to an investment strategy based on G-SCORE for glamour firms by size partitions									
	Small firms			Medium firms			Large firms		
	Mean	Median	N	Mean	Median	N	Mean	Median	N
All Firms	-0.070	-0.218	609	-0.069	-0.186	610	-0.059	-0.099	609
Low Q-2	-0.101	-0.291	172	-0.082	-0.186	82	-0.045	-0.255	27
Middle 3-6	-0.062	-0.196	401	-0.067	-0.158	425	-0.021	-0.115	412
High 7-9	-0.081	-0.151	36	-0.050	-0.175	76	0.017	-0.066	170
High - Low	0.019	0.140		0.035	0.032		0.071	0.209	
t-Statistic (P-Value)	1.687 (0.055)			2.126 (0.002)			2.728 (0.000)		
Panel B1: One-Year Size-Adjusted Buy-and-Hold Returns to an investment strategy based on F-SCORE for value firms by trading volume partitions									
	Low Volume			Medium Volume			High Volume		
	Mean	Median	N	Mean	Median	N	Mean	Median	N
All Firms	0.036	-0.077	512	0.065	-0.057	512	0.022	-0.097	512
Low Q-2	0.023	-0.083	68	-0.107	-0.097	51	-0.056	-0.099	48
Middle 3-6	0.031	-0.075	279	0.102	-0.058	292	0.027	-0.095	269
High 7-9	0.049	-0.102	90	0.018	-0.001	69	0.066	-0.110	96
High - Low	0.026	-0.019		0.125	0.097		0.102	-0.011	
t-Statistic (P-Value)	1.879 (0.016)			1.212 (0.012)			2.891 (0.002)		
Panel B2: One-Year Size-Adjusted Buy-and-Hold Returns to an investment strategy based on G-SCORE for glamour firms by trading volume partitions									
	Low Volume			Medium Volume			High Volume		
	Mean	Median	N	Mean	Median	N	Mean	Median	N
All Firms	-0.027	-0.145	609	-0.032	-0.128	610	-0.096	-0.218	609
Low Q-2	-0.025	-0.201	78	-0.007	-0.239	78	-0.128	-0.231	126
Middle 3-6	-0.025	-0.137	466	-0.006	-0.116	421	-0.116	-0.218	299
High 7-9	-0.028	-0.127	35	-0.051	-0.126	111	0.026	-0.057	36
High - Low	-0.016	0.066		-0.066	0.106		0.145	0.272	
t-Statistic (P-Value)	1.761 (0.070)			2.265 (0.008)			2.022 (0.006)		
Panel C1: One-Year Size-Adjusted Buy-and-Hold Returns to an investment strategy based on F-SCORE for value firms by share price partitions									
	Low Volume			Medium Volume			High Volume		
	Mean	Median	N	Mean	Median	N	Mean	Median	N
All Firms	0.096	-0.066	512	0.055	-0.075	512	-0.050	-0.082	512
Low Q-2	-0.010	-0.096	68	-0.001	-0.016	52	-0.128	-0.126	55
Middle 3-6	0.116	-0.055	282	0.077	-0.078	292	-0.037	-0.082	276
High 7-9	0.085	-0.076	66	-0.030	-0.109	67	0.062	-0.058	86
High - Low	0.095	0.020		-0.029	-0.095		0.191	0.075	
t-Statistic (P-Value)	1.828 (0.067)			0.956 (0.097)			1.256 (0.078)		
Panel C2: One-Year Size-Adjusted Buy-and-Hold Returns to an investment strategy based on G-SCORE for glamour firms by share price partitions									
	Low Volume			Medium Volume			High Volume		
	Mean	Median	N	Mean	Median	N	Mean	Median	N
All Firms	-0.076	-0.228	609	-0.039	-0.153	610	-0.022	-0.096	609
Low Q-2	-0.066	-0.228	78	-0.092	-0.222	78	-0.062	-0.187	126
Middle 3-6	-0.082	-0.216	466	-0.032	-0.162	421	-0.028	-0.116	299
High 7-9	-0.122	-0.229	35	-0.016	-0.120	111	-0.002	-0.052	36
High - Low	-0.057			0.079			0.060		
t-Statistic (P-Value)	2.217 (0.001)			2.254 (0.002)			2.289 (0.000)		

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Regression for One-Year Buy-and-Hold Return for Value and Glamour Firms

Panel A: Coefficients from Pooled Regressions for Value firms
 $BHR_i = \beta_0 + \beta_1 SIZE_i + \beta_2 BM_i + \beta_3 MOM_i + \beta_4 ACCRUAL_i + \beta_5 EOFF_i + \beta_6 F-SCORE_i + \varepsilon$ (5)

Intercept	SIZE	BM	MOM	ACCRUAL	EOFF	F-SCORE	Adj. R ²
-0.049	-0.000	0.039	-0.222	-1.110	0.002		0.061
(1.204)	(-0.682)	(6.697)	(-6.659)	(-6.812)	(0.026)		
-0.064	-0.000	0.095	-0.266	-1.199	0.032	0.027	0.065
(-1.190)	(-0.621)	(6.797)	(-6.865)	(-7.261)	(0.562)	(2.802)	

Panel B: Coefficients from Pooled Regressions for Glamour firms
 $BHR_i = \beta_0 + \beta_1 SIZE_i + \beta_2 BM_i + \beta_3 MOM_i + \beta_4 ACCRUAL_i + \beta_5 EOFF_i + \beta_6 G-SCORE_i + \varepsilon$ (6)

Intercept	SIZE	BM	MOM	ACCRUAL	EOFF	G-SCORE	Adj. R ²
-0.148	0.015	0.210	0.040	-0.299	-0.022		0.025
(-2.986)	(1.029)	(5.791)	(1.668)	(-5.972)	(-1.067)		
-0.181	0.009	0.208	0.037	-0.227	-0.029	0.028	0.029
(-2.600)	(0.697)	(5.757)	(1.262)	(-5.126)	(-0.951)	(1.974)	

Note: SIZE = Company's book value of equity at the end of fiscal year; BM = book value of equity at the end of fiscal year, scaled by the market value of equity; MOM = six months buy-and-hold return on the six months directly preceding division of dividends; ACCRUAL = net income less cash flow operations, scaled by beginning book value; EOFF = income volatility scaled by size (the five annual equity signals during the prior fiscal year were when the 240,000-240,000, 220,000-220,000, 200,000-200,000, 180,000-180,000, and 160,000-160,000 were all true); G-SCORE = 250,000-250,000, 230,000-230,000, 210,000-210,000, 190,000-190,000, 170,000-170,000, 150,000-150,000, 130,000-130,000, 110,000-110,000, 90,000-90,000, 70,000-70,000, 50,000-50,000, 30,000-30,000, 10,000-10,000, 0-0, -10,000-10,000, -30,000-30,000, -50,000-50,000, -70,000-70,000, -90,000-90,000, -110,000-110,000, -130,000-130,000, -150,000-150,000, -170,000-170,000, -190,000-190,000, -210,000-210,000, -230,000-230,000, -250,000-250,000, -270,000-270,000, -290,000-290,000, -310,000-310,000, -330,000-330,000, -350,000-350,000, -370,000-370,000, -390,000-390,000, -410,000-410,000, -430,000-430,000, -450,000-450,000, -470,000-470,000, -490,000-490,000, -510,000-510,000, -530,000-530,000, -550,000-550,000, -570,000-570,000, -590,000-590,000, -610,000-610,000, -630,000-630,000, -650,000-650,000, -670,000-670,000, -690,000-690,000, -710,000-710,000, -730,000-730,000, -750,000-750,000, -770,000-770,000, -790,000-790,000, -810,000-810,000, -8

Summary

- Value firm outperform glamour firm → **BM effect exist in Korean Stock Market.**
- Firms with higher composite score earn higher one-year and two-year size-adjusted returns than do firms with lower composite score *without additional risk.*
 - **Fundamental variables do separate winners from losers**
- A portfolio of longing high score stocks (winners) and shorting low score stocks (losers) earn positive size-adjusted returns (12.4%).
- Historical accounting information can be used to predict future stock returns after separating winners from losers in Korean value & glamour stock.



Thanks for Your Valuable Time