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(// : // :)

(β)

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¹. Stock return anomalies
². Size effect

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S & P 500

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$$SGR_{iq} = \frac{S_q - S_{q-1}}{S_{q-1}}$$

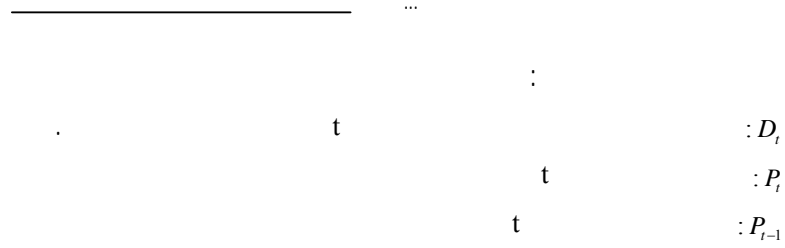
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$$Z_i = \alpha + \beta_1 WCTA + \beta_2 CACL + \beta_3 PBTA + \beta_4 TETA + \beta_5 STA + e$$

- () : Z_i
- () : $WCTA$
- () : $CACL$
- () : $PBTA$
- () : $TETA$
- () : STA
- : β
- : e

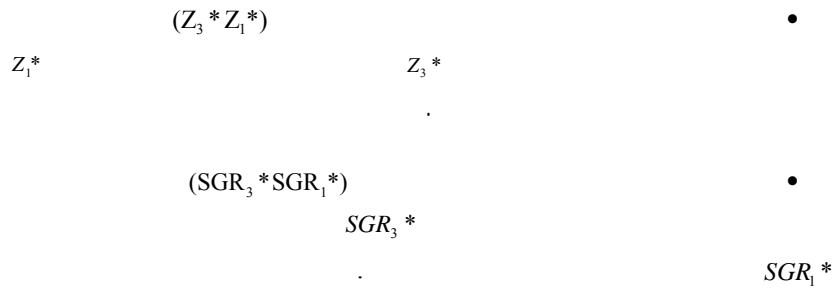
$$R_{it} = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}}$$



$$R_p(t) = \sum R_i / N$$

i : R_i
: N

%	%	%	%	%	%	%	%	%	%	



$$\begin{aligned} & \text{) } \frac{(R_m(t) - R_f(t))}{(R_p(t) - R_f(t))} \end{aligned}$$

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Eviews

t F

(Z₃ * Z₁*) (SGR₃ * SGR₁*)

$$\begin{aligned}
 & \text{[]} \\
 & (Z) \quad (SGR) \\
 & (SGR_1) \quad (SGR_2) \quad (SGR_3) \\
 & (Z_1) \quad (Z_2) \quad (Z_3)
 \end{aligned}$$

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(z)				
low	mid	high		
Z_1SGR_3	Z_2SGR_3	Z_3SGR_3	High	(SGR)
Z_1SGR_2	Z_2SGR_2	Z_3SGR_2	Mid	
Z_1SGR_1	Z_2SGR_1	Z_3SGR_1	Low	

Z_1^*

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$Z_3^* \quad Z_2^*$

$SGR_3^* \quad SGR_2^* \quad SGR_1^*$

(SGR₁)

(SGR₃)

(SGR₂)

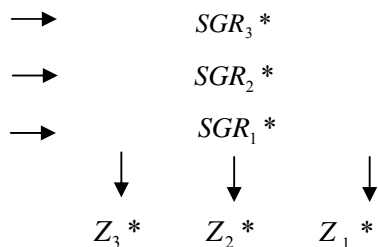
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$$\begin{aligned}
 Z_1 &= (Z - Score \leq 0.4) \\
 Z_2 &= (0.4 < Z - Score \leq 0.6) \\
 Z_3 &= (Z - Score > 0.6)
 \end{aligned}$$

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(z)				
low	mid	high		
$Z_1 SGR_3$	$Z_2 SGR_3$	$Z_3 SGR_3$	high	(SGR)
$Z_1 SGR_2$	$Z_2 SGR_2$	$Z_3 SGR_2$	mid	
$Z_1 SGR_1$	$Z_2 SGR_1$	$Z_3 SGR_1$	low	



$$\begin{aligned}
 & (Z_3^*) & & & (Z_1^*) \\
 & & Z_3^* Z_1^* & & \\
 & SGR_3^* SGR_1^* & (SGR_1^*) & & (SGR_3^*)
 \end{aligned}$$

$$\begin{aligned}
 R_p(t) - R_f(t) &= a + j(SGR_3^* SGR_1^*)(t) + e(t) \\
 H_0 : J &= 0 \\
 H_1 : J &\neq 0
 \end{aligned}$$

$$(R_p(t) - R_f(t))$$

$$SGR_3^* SGR_1^*$$

SGR_3^*

SGR_1^*

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R^2	Prob (F-statistic)	F- statistic	$t(j)$	$t(\alpha)$	J	α	
/	/	/	/	/	/	/	$R_{Z1SGR1} - R_F$
/	/	/	/	/	/	/	$R_{Z1SGR2} - R_F$
/	/	/	/	/	/	/	$R_{Z1SGR3} - R_F$
/	/	/	/	/	/	/	$R_{Z2SGR1} - R_F$
/	/	/	/	/	/	/	$R_{Z2SGR2} - R_F$
/	/	/	/	/	/	/	$R_{Z2SGR3} - R_F$
/	/	/	/	/	/	/	$R_{Z3SGR1} - R_F$
/	/	/	/	/	/	/	$R_{Z3SGR2} - R_F$
/	/	/	/	/	/	/	$R_{Z3SGR3} - R_F$

F

P-value

Z3SGR3 Z1SGR3

t $SGR_3^* SGR_1^*$

%

$$R_p(t) - R_f(t) = a + k(Z_3 * Z_1^*)(t) + e(t)$$

$$H_0 : k = 0$$

$$H_1 : k \neq 0$$

$$(R_p(t) - R_f(t))$$

$Z_3^* Z_1^*$

Z_3^*

Z_1^*

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R^2	Prob (F-statistic)	F- statistic	$t(k)$	$t(\alpha)$	k	α	
/	/	/	/	/	/	/	$R_{Z1SGR1} - R_F$
/	/	/	/	/	/	/	$R_{Z1SGR2} - R_F$
/	/	/	/	/	/	/	$R_{Z1SGR3} - R_F$
/	/	/	/	/	/	/	$R_{Z2SGR1} - R_F$
/	/	/	/	/	/	/	$R_{Z2SGR2} - R_F$
/	/	/	/	/	/	/	$R_{Z2SGR3} - R_F$
/	/	/	/	/	/	/	$R_{Z3SGR1} - R_F$
/	/	/	/	/	/	/	$R_{Z3SGR2} - R_F$
/	/	/	/	/	/	/	$R_{Z3SGR3} - R_F$

F

P-value

t $Z_3^* Z_1^*$

%

$$R_p(t) - R_f(t) = a + b[R_m(t) - R_f(t)] + e(t)$$

$$H_0 : b = 0$$

$$H_1 : b \neq 0$$

$$(R_p(t) - R_f(t))$$

$$\frac{(R_m(t) - R_f)}{}$$

R^2	Prob (F-statistic)	F-statistic	$t(b)$	$t(\alpha)$	b	α	
/	/	/	/	/	/	/	$R_{Z1SGR1} - R_F$
/	/	/	/	/	/	/	$R_{Z1SGR2} - R_F$
/	/	/	/	/	/	/	$R_{Z1SGR3} - R_F$
/	/	/	/	/	/	/	$R_{Z2SGR1} - R_F$
/	/	/	/	/	/	/	$R_{Z2SGR2} - R_F$
/	/	/	/	/	/	/	$R_{Z2SGR3} - R_F$
/	/	/	/	/	/	/	$R_{Z3SGR1} - R_F$
/	/	/	/	/	/	/	$R_{Z3SGR2} - R_F$
/	/	/	/	/	/	/	$R_{Z3SGR3} - R_F$

F P-value

Z1SGR2

$$t \quad R_m - R_f$$

%

$$R_p(t) - R_f(t) = a + b(R_m(t) - R_f) + k(Z_3 * Z_1^*) + j(SGR_3 * SGR_1^*) + e(t)$$

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R^2	Prob (F-statistic)	$t(j)$	$t(k)$	$t(b)$	$t(a)$	j	k	b	α	
/	/	/	/	/	/	/	/	/	/	$R_{Z1SGR1} - R_F$
/	/	/	/	/	/	/	/	/	/	$R_{Z1SGR2} - R_F$
/	/	/	/	/	/	/	/	/	/	$R_{Z1SGR3} - R_F$
/	/	/	/	/	/	/	/	/	/	$R_{Z2SGR1} - R_F$
/	/	/	/	/	/	/	/	/	/	$R_{Z2SGR2} - R_F$
/	/	/	/	/	/	/	/	/	/	$R_{Z2SGR3} - R_F$
/	/	/	/	/	/	/	/	/	/	$R_{Z3SGR1} - R_F$
/	/	/	/	/	/	/	/	/	/	$R_{Z3SGR2} - R_F$
/	/	/	/	/	/	/	/	/	/	$R_{Z3SGR3} - R_F$

F P-value

Z3SGR3 Z3SGR2 Z1SGR2

Z3SGR2 Z2SGR3

t $Z_3 * Z_1^*$

t $R_m - R_f$

Z3SGR2 Z1SGR2

•

$SGR_3 * SGR_1^*$

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$$Z_3^* Z_1^*$$

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$$R_p(t) - R_f(t) = a + b[R_m(t) - R_f] + e(t)$$

$$R_p(t) - R_f(t) = a + k(Z_3^* Z_1^*) + j(SGR_3^* SGR_1^*) + e(t)$$

$$R_p(t) - R_f(t) = a + b(R_m(t) - R_f) + k(Z_3^* Z_1^*) + j(SGR_3^* SGR_1^*) + e(t)$$

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$$\dots$$
$$(\quad)$$

$$R^2$$
$$(R_m - R_f)$$
$$Z_3 * Z_1 * SGR_3 * SGR_1 *$$
$$(\quad)$$

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