

Correlation Trade

	time	dow	sp	dow_pred	sp_pred	dow_prchs	sp_prchs	dow_gain	sp_gain	GAIN
	0	12,000	1,500			0	0			
	1	12,000	1,500	12,000	1,500	0	0			
	2	12,000	1,500	12,000	1,500	0	0			
	3	12,000	1,500	12,000	1,500	0	0			
	4	12,000	1,501	12,000	1,500	0	0			
	5	12,000	1,501	12,008	1,501	1	-8			
Case #1	6a	12,008	1,502					8	-8	0
	6b	12,008	1,501					8	-0	8
	6c	12,008	1,500					8	8	16
Case #2	6d	12,000	1,502					0	-8	-8
	6e	12,000	1,501					0	-0	0
	6f	12,000	1,500					0	8	8
Case #3	6g	11,992	1,502					-8	-8	-16
	6h	11,992	1,501					-8	-0	-8
	6i	11,992	1,500					-8	8	0

prediction becomes reality

Dow unchanged, but S&P changes

~~prediction becomes reality~~
Dow moves in opposite direction of prediction

sum: 0

$$\begin{bmatrix} \Delta Dow_t \\ \Delta SP_t \end{bmatrix} = \begin{bmatrix} \alpha_c \\ \beta_c \end{bmatrix} (Dow_{t-1} - \gamma SP_{t-1}) + \begin{bmatrix} \alpha_D & \alpha_S \\ \beta_D & \beta_S \end{bmatrix} \begin{bmatrix} \Delta Dow_{t-1} \\ \Delta SP_{t-1} \end{bmatrix} + \begin{bmatrix} \epsilon_{D,t} \\ \epsilon_{S,t} \end{bmatrix}$$

ERROR CORRECTION MODEL

Cointegrating relationship

↑ autoregression
↑ error terms