高顿财经
GOLDEN FINANCE

高顿CFA押题密卷-Level2

密卷直播**答疑补充**

数量+固收+衍生+组合

Quantitative Method

Violation	Effects	Testing and Correction
Conditional Heteroskedasticity (自变量与残差相关)	回归系数数值不受影响，SEE偏小。Type I error	Breusch-Pagen χ^2-test H_0: 没有异方差 修正: White-SEE/GLS
Positive serial correlation (残差与残差相关)	回归系数数值不受影响，SEE偏小。Type I error	Durbin-Watson test $DW \approx 2(1-r)$ H_0: 没有序列相关 $0 \leqslant DW \leqslant d_L$: 正相关 修正: Hanson-White SEE(同时能修正异方差) /重建模型
Negative serial correlation (残差与残差相关)	回归系数数值不受影响，SEE偏大。Type II error	
Multicollinearity(自变量与自变量相关)	回归系数数值不可靠，SEE偏大。Type II error	t都不显著而R^2或F显著 修正: 去掉一个变量

Quantitative Method

Violation	Effects	Testing and Correction
单位根（协方差不平稳，随机游走）	$b_1=1$	DF检验（单尾） 修正：一阶差分
Conditional Heteroskedasticity (自变量与残差相关)	-	修正: ARCH模型
serial correlation (autocorrelation) (残差与残差相关)	与第n个滞后项的残差的相关系数显著不为零-存在季节性	修正: 增加滞后项
Multicollinearity(自变量与自变量相关) –对时间序列数据不存在	-	-

Supervised Machine Learning

Problem		Complex non-linear data?	
		No	Yes
Supervised ML	Regression	• Penalized regression/LASSO	• Classification and regression tree • Random forest • Neural networks
	Classification	• Support vector machine • K-nearest neighbor	
Unsupervised ML	Dimension reduction	• Principal components analysis	
	Clustering	• K-means clustering • Hierarchical clustering	• Neural networks

Steps on Big Data Projects