ARIMA and Q-statistic

Тест, 5 вопроса

1
Баллы

1.
Find the order of the ARIMA process

$$X_t = 0.4X_{t-1} - 0.2X_{t-2} + 0.15X_{t-3} + Z_t + 0.5Z_{t-1} - 0.3Z_{t-2}.$$

- ( ) ARIMA(3,1,2)
- ( ) ARIMA(2,1,3)
- (•) ARIMA(3,0,2)
- ( ) ARIMA(2,0,3)

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Баллы

2.
Rewrite the process $(1 + 0.2B)\nabla X_t = (1 - 0.3B)Z_t$.

- [x] $(1 - 0.8B - 0.2B^2)X_t = (1 - 0.3B)Z_t$
- [ ] $X_t = 0.8X_{t-1} + 0.2X_{t-2} + Z_t - 0.3Z_{t-1}$
- [ ] $X_t = -0.2X_{t-1} + Z_t - 0.3Z_t$

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3.
Find the order of the ARIMA process.

$$X_t = 3X_{t-2} - 2X_{t-3} + Z_t + 5Z_{t-1}$$

ARIMA(2,1,1)

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ARIMA(1,0,3)

ARIMA(1,2,1)

ARIMA(3,0,1)

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4.
We have some time series whose Q-statistic at lag=4 is calculated, and corresponding p-value is found: p-value=0.34. What does it mean?

- We do not have enough evidence to reject the null hypothesis that there is no autocorrelation at lag 4.
- We do not have enough evidence to reject the null hypothesis that there is no autocorrelation until lag 4.

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Баллы

5.
We have some time series whose Q-statistic at lag=10 is calculated, and corresponding p-value is found: p-value=0.00034. What does it mean?

- We do have sufficient evidence to reject that all autocorrelation coefficients until lag 10 is zero.
- There is a low probability of significant autocorrelation until lag 10.
- There is a significant autocorrelation at at least one lag until lag 10.

Я понимаю, что отправка работы, выполненной не мной, может привести к тому, что курс не будет засчитан, а аккаунт Coursera заблокирован.

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