



Introduction to Moving Average processes

PRACTICAL TIME SERIES ANALYSIS

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Objectives

- ▶ Identify Moving average processes

Intuition

X_t is a stock price of
a company

Each daily
announcement of
the company is
modeled as a noise

Effect of the daily
announcements (noises Z_t)
on the stock price (X_t)
might last few days (say 2
days)

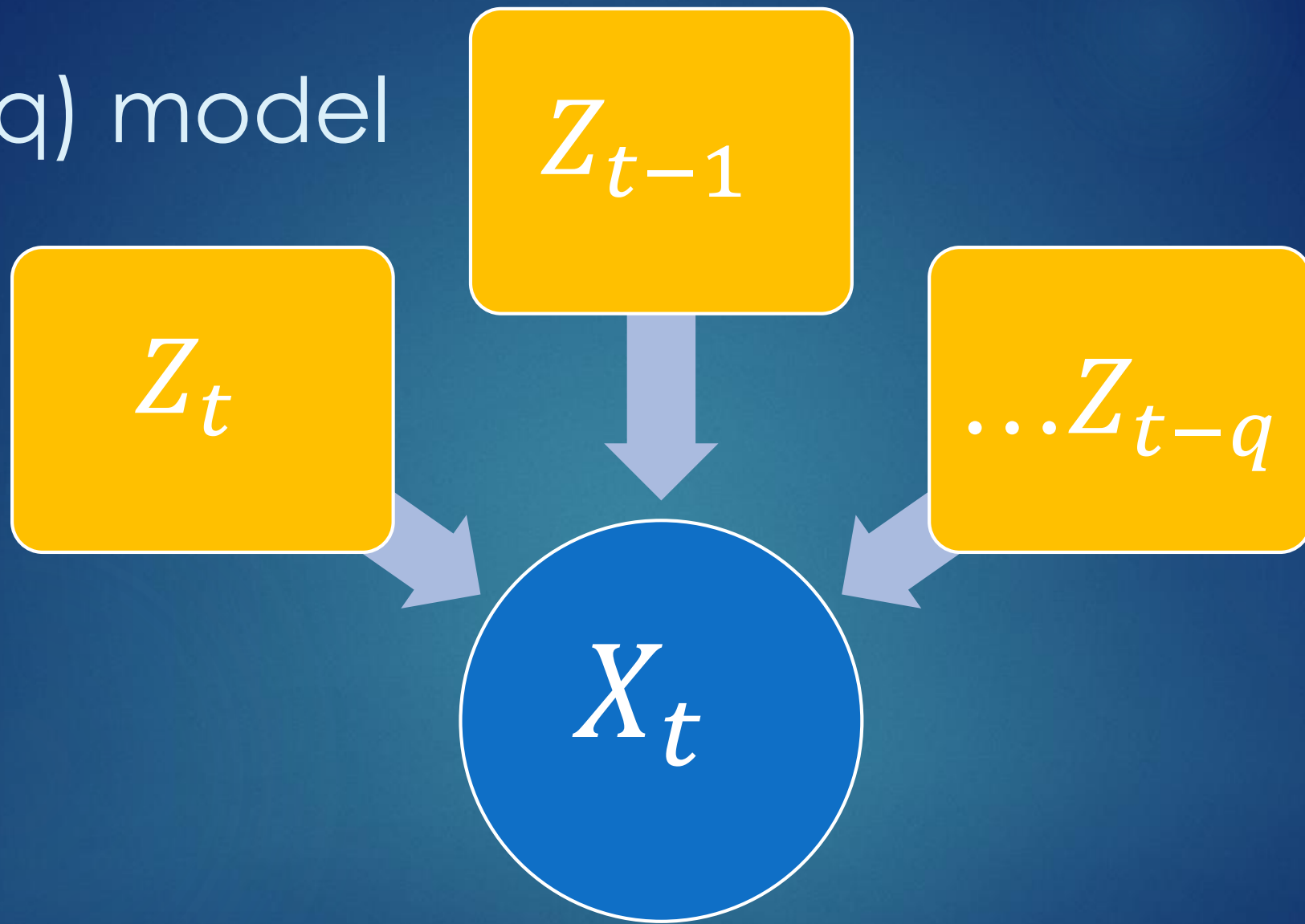
Stock price is linear combination of the noises that affects it

$$X_t = Z_t + \theta_1 Z_{t-1} + \theta_2 Z_{t-2}$$

Moving average model of order 2

MA(2)

MA(q) model



$$X_t = Z_t + \theta_1 Z_{t-1} + \theta_2 Z_{t-2} + \dots + \theta_q Z_{t-q}$$

Z_i are i.i.d. & $Z_i \sim \text{Normal}(\mu, \sigma^2)$

What We've Learned

- ▶ How to identify Moving average processes
 $MA(q)$