

Stat 215a D. R. Brillinger 11/22/04

Data mining for time series

Case study Liu et al. (2001) Comp Stat 1
Data Analysis

Traditional t.s.a. - non automatic

Sales and transaction data

goals - improve operations management
(labor scheduling, inventory replenishment,
product prep scheduling, strategic planning,
trends, brand loyalty, automatic forecasts, ...)

Fast food restaurant franchises
30,000 stores worldwide

Stores have PC-based servers

POS (point-of-sale) systems

orders keyed in, time stamped, stored, menu
item, ingredients

Several hundred time-ordered series
corporate office higher level data

for each restaurant
data warehoused

Store managers' ability to anticipate:

- (1) Labor requirements
- (2) inventory levels
- (3) food preparation scheduling

labor costs > 30% of \$'s collected
high turnover rate of managers

Managers need to react on day-to-day basis (forecasts needed)