3 Panel Data

a. What time-varying variables matter?

b. What time-invariant factors are predictors of salary ?

c. Which model do you use ?

d. What do you recommend to the team owner ? How much should you pay existing players ?

data: https://github.com/hipresario/ProjectNBA/blob/master/players\_2006\_clean.csv

Raw Stats for Player:

Name,Season,Age,Tm,Lg,Pos,G,GS,MP,FG,FGA,FG%,3P,3PA,3P%,2P,2PA,2P%,eFG%,FT,FTA,FT%,ORB,DRB,TRB,AST,STL,BLK,TOV,PF,PTS, Ht, Wt, College, From, To

Some observation:

1. Player Name, Pos, Tm, Lg changed infrequently

2. Season, Age can be treated as experience

3. FG, FGA, FG% are all correlated, the same as for 3P, 3PA and 3P%, 2P, 2PA, and 2P%, FT, FTA, and FT%, ORB or DRB and TRB

4. FG = 3P + 2P + FT, i.e. PTS = 3P \* 3 + 2P \* 2 + FT

5. For past 10 years, there are a lot of players not playing all the seasons. To be consistent, we only analyze data for the players

6. Weight, height, education can vary in time, but should be in stable without big changes

7. We select players who played in all the past 10 seasons year 2006 - 2016

**So we consider Time-varying variables:** G, MP, 3P, 2P, FT, ORB, DRB, AST, STL, BLK, TOV, PF

Time-invariant variables: Height, Weight, Education