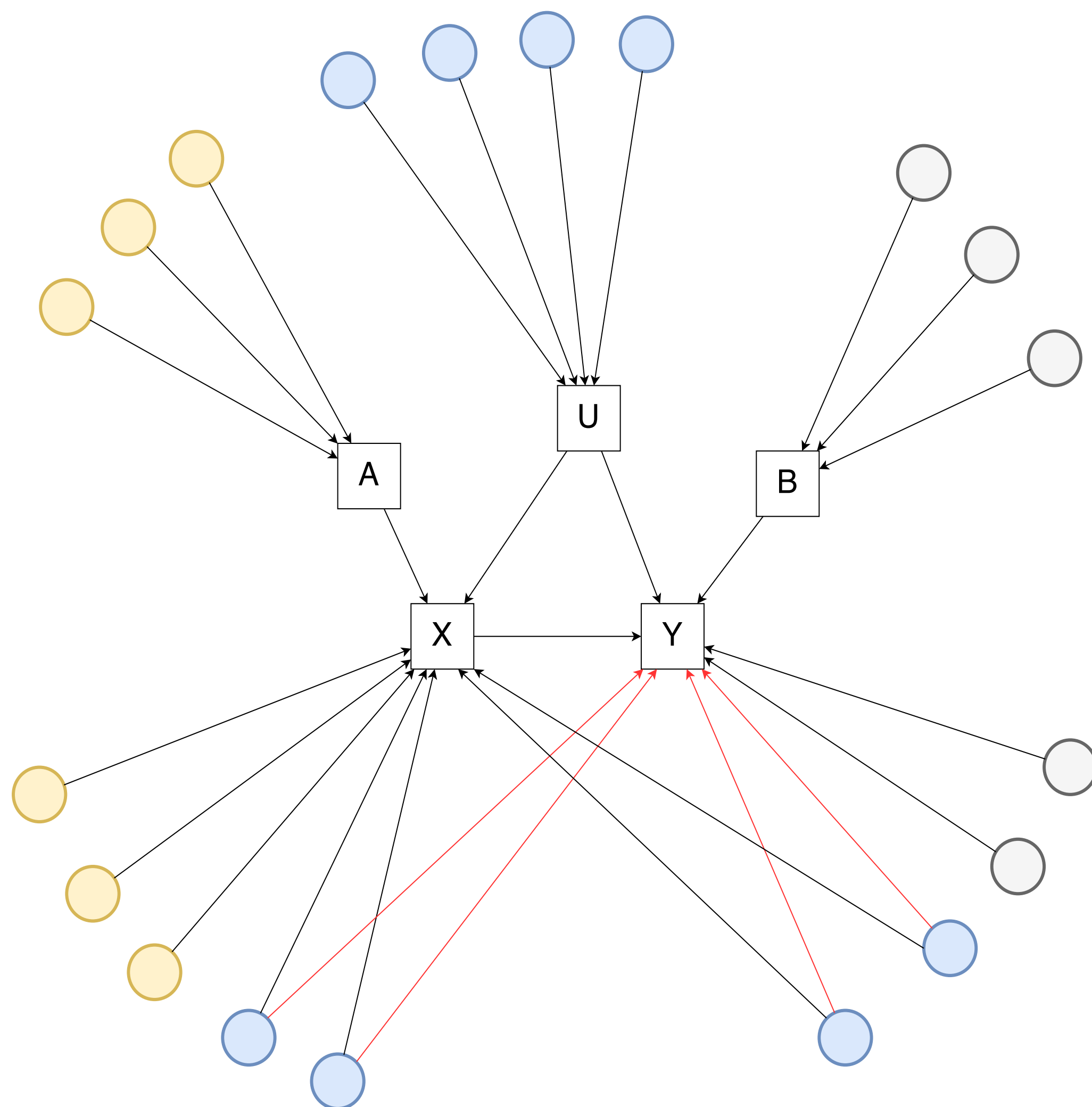
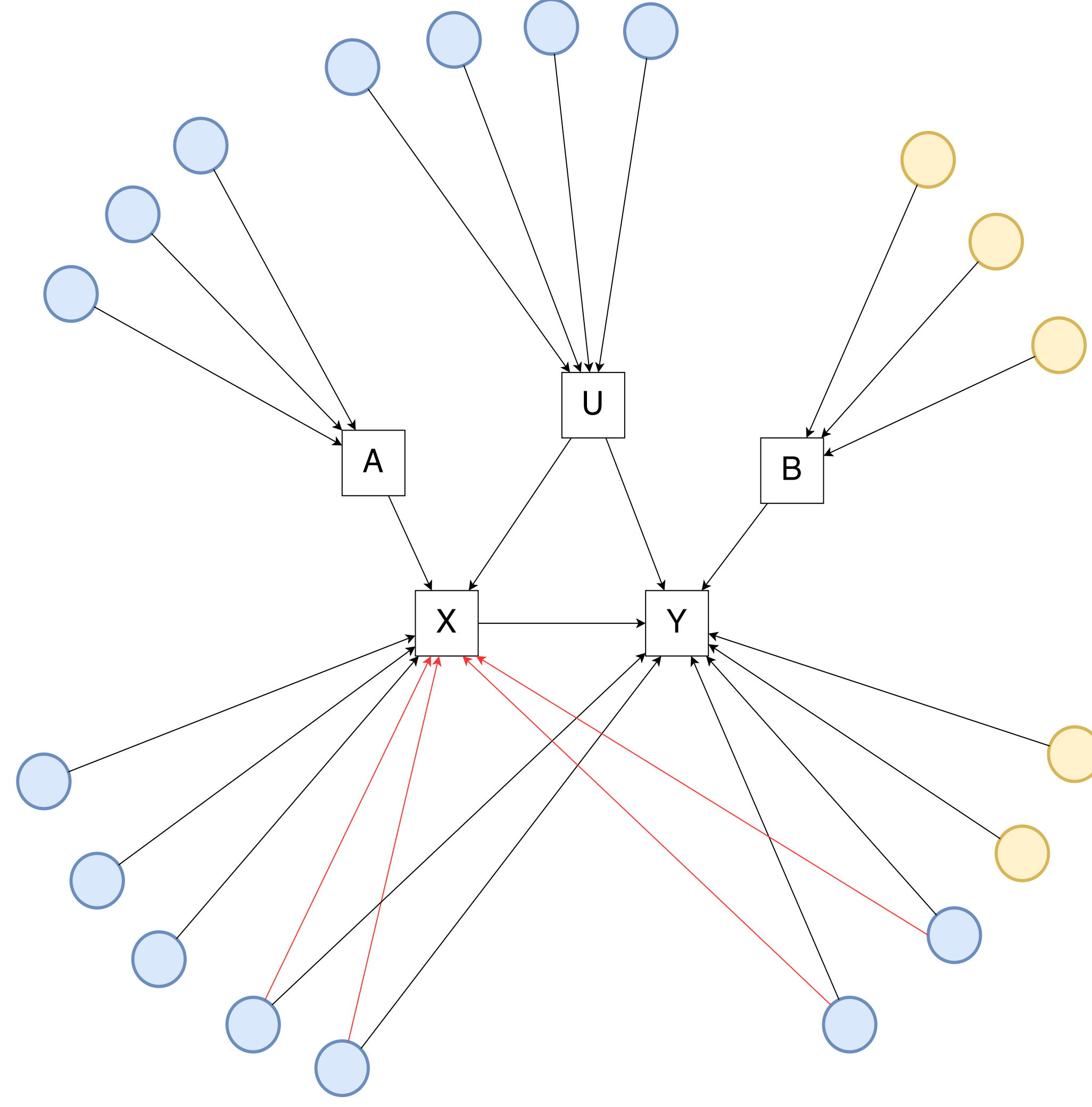


a

Identifying instruments for
X against Y

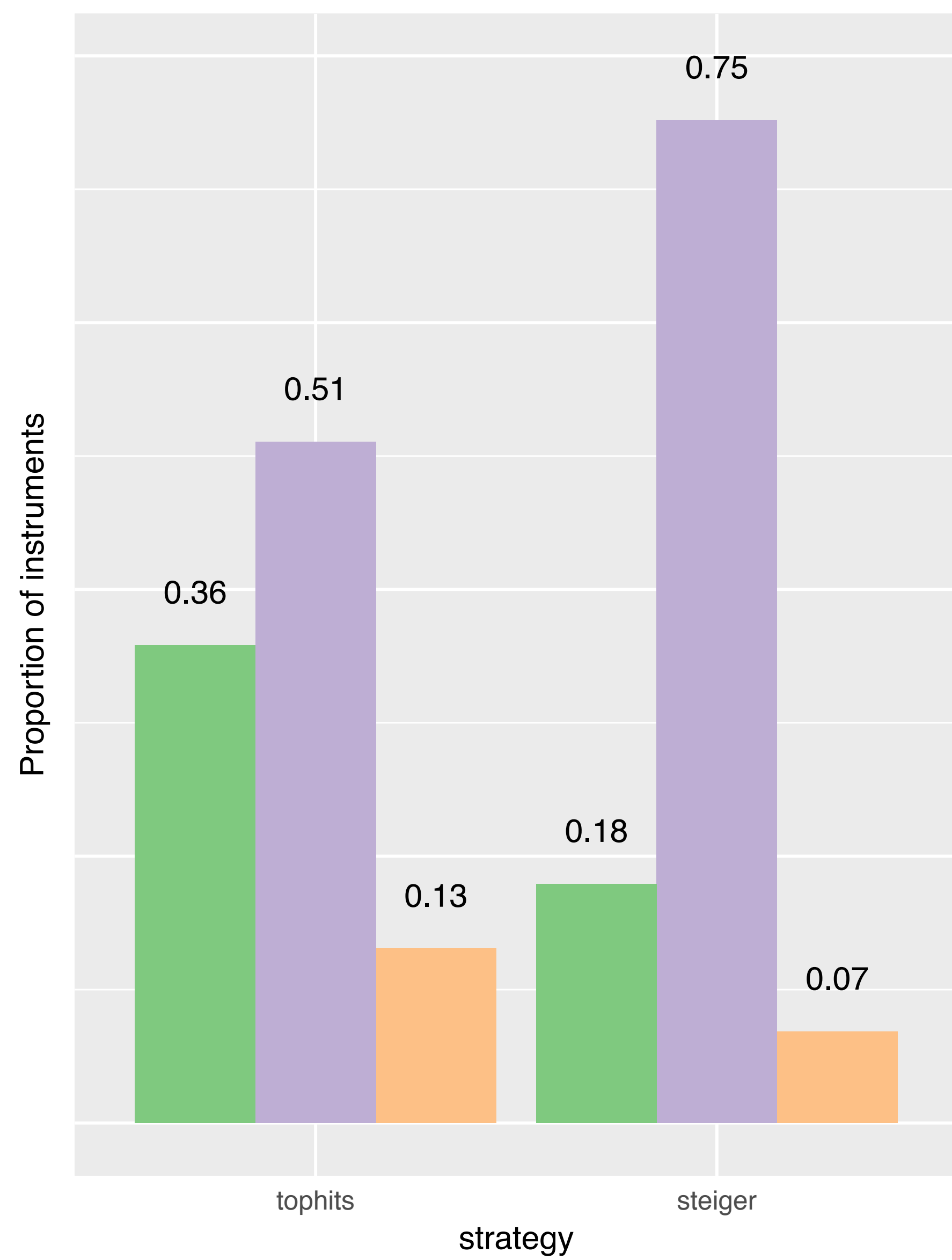


Identifying instruments for
Y against X



- Identified by GWAS on the exposure, valid instrument
- Identified by GWAS on the exposure, invalid instrument
- Not identified by GWAS on the exposure
- ↔ Horizontal pleiotropic effect

b



c

