Typical framework

	Y	X	u
	dep. var.	indep. var.	unobserved
e.g.	wage	educ.	ability
	productivity	exports	managerial quality

E(Y) : expectation / expected value of Y

avg. from every item in popul. from which sample is drawn

e.g. E(wage)

E(pollution)

conditional expectation of Y given X.

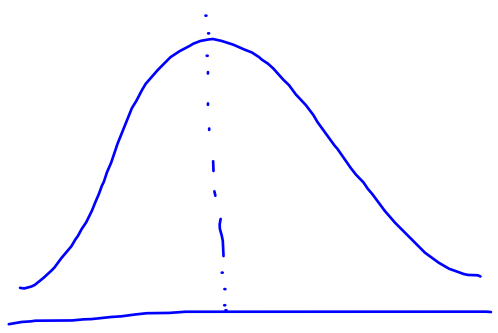
E(wage | pvt. univ.) → avg. from every item in pop. with pvt. univ.

E(pollution | exporter)

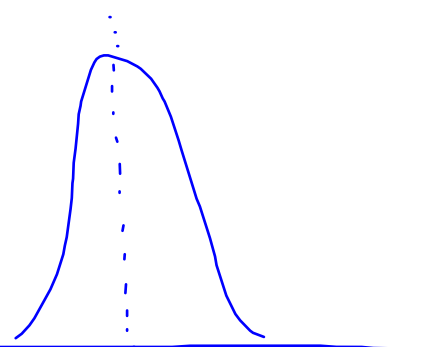
E(wage | educ.) = 10 + 0.5 educ.

V(Y) : variance ; summary measure of variability based on avg. squared deviations from mean

$E(\text{poll.} \mid \text{dom. firms})$



$E(\text{poll.} \mid \text{foreign firms})$



$V(\text{poll.} \mid \text{dom. firms})$

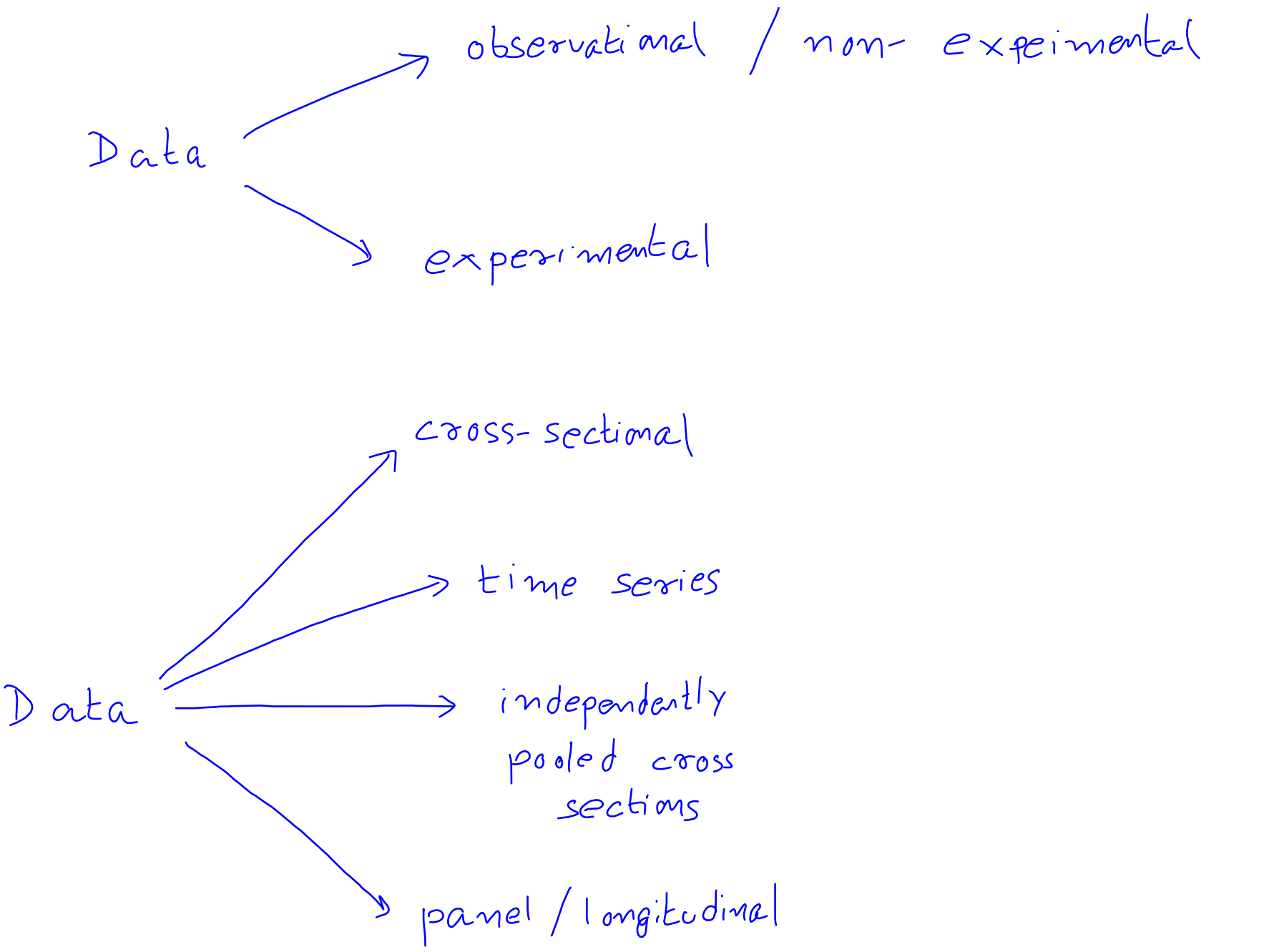
$V(\text{poll.} \mid \text{foreign firms})$

$E(\text{wage})$ may depend on educ.

$V(\text{wage})$ "

Econometrics : not

- economic statistics
- " theory
- application of math. to econ.
- machine learning


Data
observational / non-experimental
experimental
Data
cross-sectional
time series
independently pooled cross sections
panel / longitudinal