Panel Data - Part I

Cross-Section: One observation on many individuals

Time-Series: Many observations on one individual.

Panel: Many observations on many, individuals.

What's so special about panel data?

(1) can control for fixed observable and mobservable characteristics of an ndividual.

> => reduces (eliminates?) OVB but can exacerbate afternation bias by reducing signal even though reduces noise (i.e. throw the baby (signal) ort with the bath water (noise, OVB).

- Difference: n- Difference: simple, easy, can do with parel data.
- (3) Emors: not only are we worried about enors being correlated across individuals, me're now really worried about enous being correlated within an individual

over time (i.e., serially correlated). CLUSTERING! (also "random effects", but clustering is better).

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	i.e. (1) We should all be experiencing the same								
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di+ Eit

Assumptions:

O E (Pit nit) 70 because E (Ditai) \$0

(2) E(Dit &it)=0

So control for this "fixed-effect" and OVB disappears:

yi = di + Bxit + PDit + Eit

Aside: What is random effects?

Assurptions:

O E(Dit nit) = 0 because E(Dit ai) = 0.

If ai is "random", then E(Dit ai)=0.
Why include pandom effects? Might allow for more efficient estimation, i.e., better standard more, but it's best to just cluster standard evers.

