

EC220-PS12

Antoine Goujard

a.j.goujard@lse.ac.uk

**Office hour: on Monday in S684
from 16:30 to 17:30**

Today's class

Stochastic regressors:

B2. Values of regressors are drawn randomly from fixed populations

Usually, we can do the same analysis as with model A. Today we look at the failure of one of the usual assumptions:

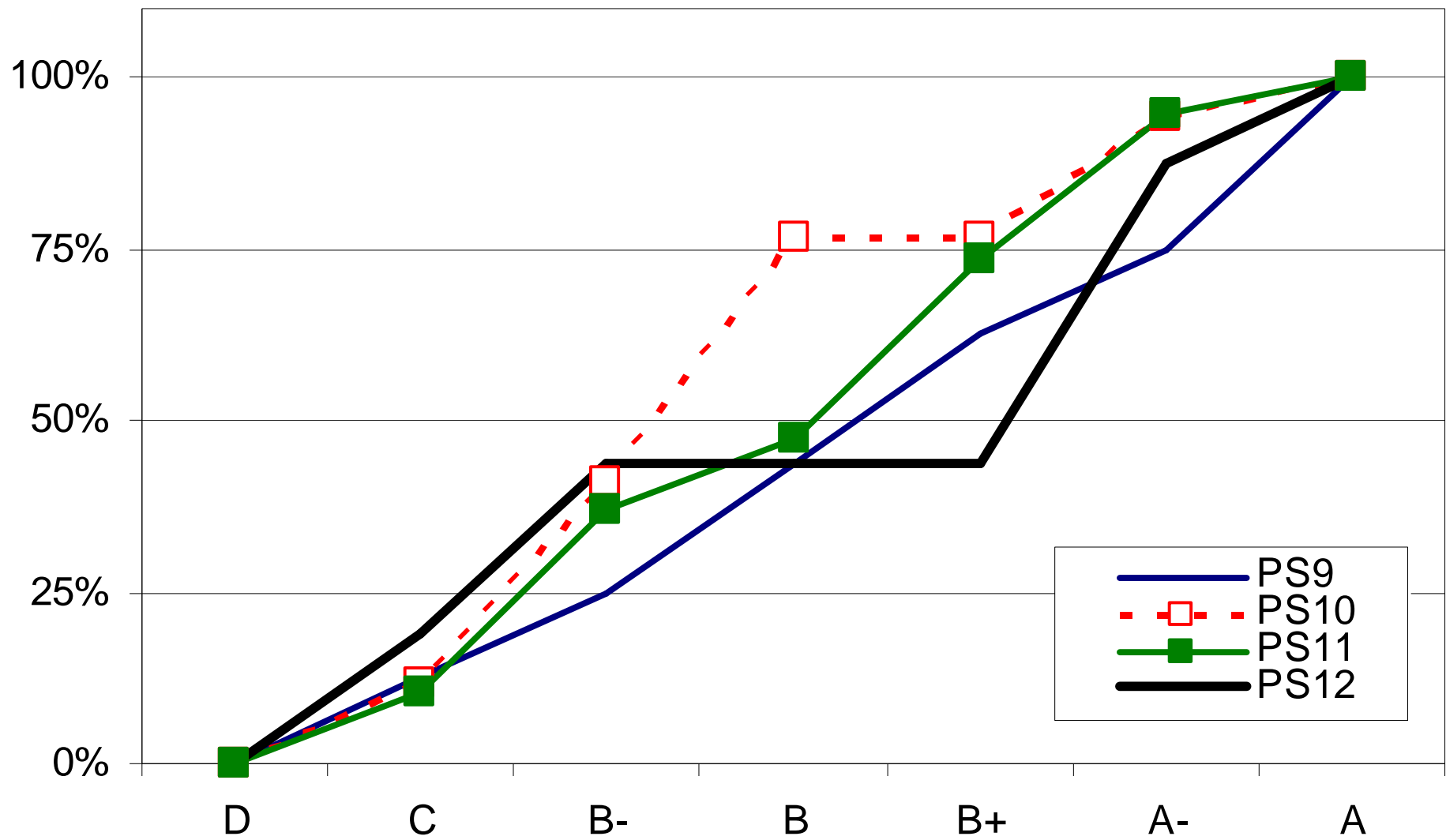
B7. The disturbance term is distributed independently of the regressors: u_i independent of all the X_{jk}

Or B7'.

This is violated by measurement errors in explanatory variables, in some simultaneous equations:

Finite sample properties?

Large sample properties? How to detect it? Fix it?



CATEGORIES OF EXPENDITURE FOR PROBLEM SET 14

<i>CLOT</i>	Clothing and shoes
<i>FLOW</i>	Flowers, seeds, and potted plants
<i>FOOD</i>	Food purchased for off-premise consumption (not be assigned)
<i>GASO</i>	Gasoline and oil
<i>MAGS</i>	Magazines, newspapers, and sheet music
<i>TOB</i>	Tobacco products
<i>TOYS</i>	Nondurable toys and sport supplies
<i>ADM</i>	Admissions to specified spectator amusements
<i>BUSI</i>	Personal business
<i>DENT</i>	Dentists
<i>DOC</i>	Physicians
<i>GAS</i>	Gas
<i>HOUS</i>	Housing (not be assigned)
<i>LEGL</i>	Legal services
<i>MASS</i>	Local transportation: mass transit systems
<i>RELG</i>	Religious and welfare activities
<i>TELE</i>	Telephone and telegraph
<i>BOOK</i>	Books and maps
<i>FURN</i>	Furniture
<i>OPHT</i>	Ophthalmic products

Issue: why OLS and IV estimates are not as expected?

1. “Bookwork answer”: this is a small sample problem, plim’s results are only valid in large sample.
2. “Bookwork answer”: Difference may not be significant (if the IV is imprecise due to a weak instrument). Should perform a DWH test.
3. (very good point) Model misspecifications: the instrument is not valid. One of the three conditions for consistency is violated.
4. (very good point) Measurement errors: if the explanatory variable of interest is subject to measurement error, this implies a downward bias of OLS estimator but not for IV (check this when we have also simultaneous eq. bias).