EC220-PS3

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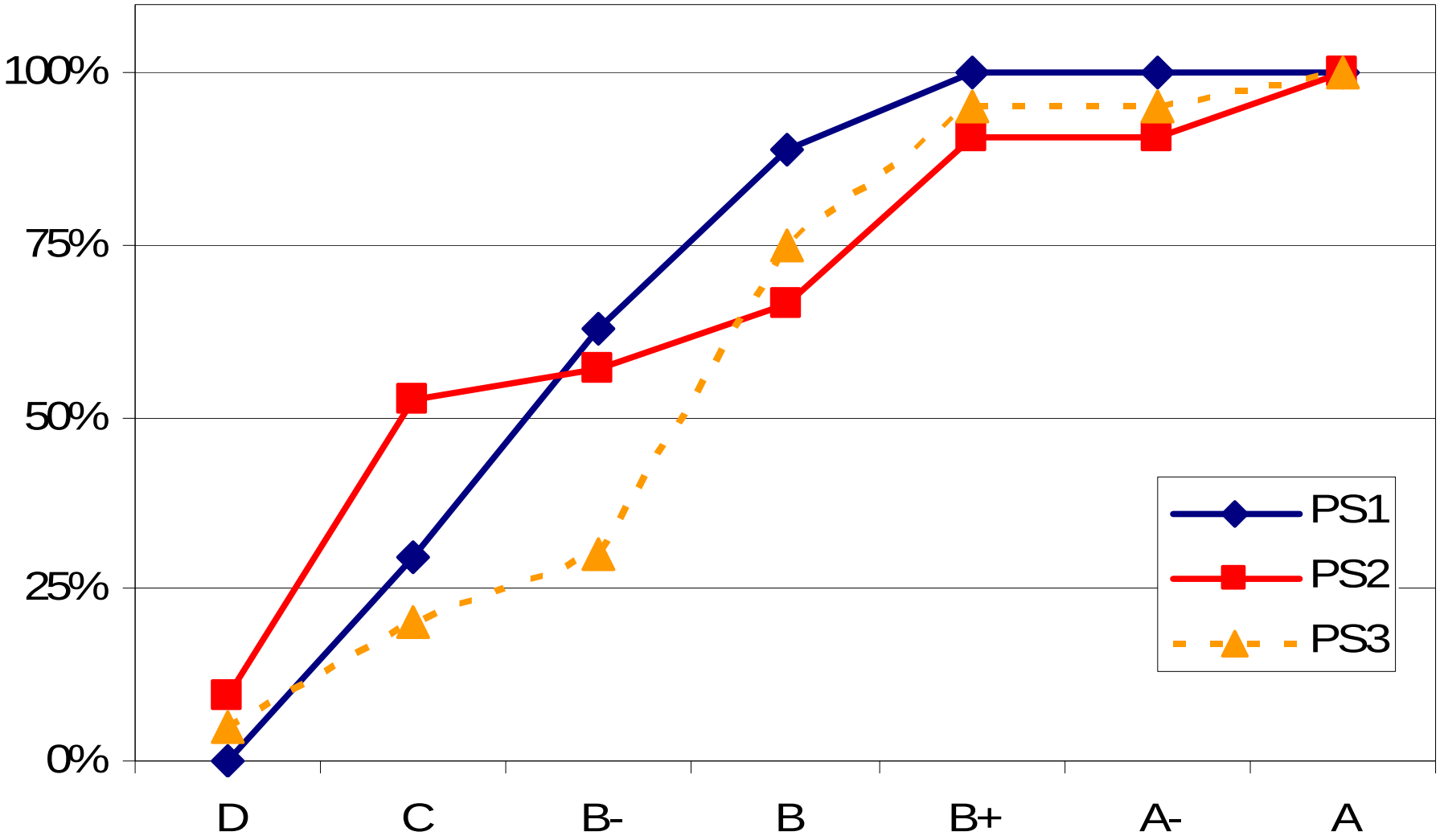
Office hour: on Monday in S684
from 16:30 to 17:30

PS3



Today's plan

- Go back to last week's problem set to look at the Gauss-Markov theorem.
- 2.17-2.25 one sided vs two-sided t-tests.
- 2.21 confidence interval (book p97-98)
- 2.28 F-test (p114-115)
- 2.29 Comparison F-test and (t-test)^2
- 2.30 Rsquares for the regression of Y on X and the regression of X on Y.
- 2.14 trade-off between type I and type II errors

PS3, hypothesis testing
t-tests and F-test

A. Be precise on your test

1. State your model
2. State your hypothesis H0, H1.
3. State your test statistic
4. State the distribution of the test statistic under Ho and the number(s) of degree(s) of freedom.
5. State the significance level used to compute your critical value and compare the critical value to your statistic value.

B. Interpret

1. Give the clear meaning of the conclusion
not just “I reject H0 at the 5% level”
2. Does it seem to make sense ? What are the possible problems with my test, my interpretations...

PS3, hypothesis testing
t-tests and F-test (notations)

Use the correct definition of the t-statistic:

$$t = \frac{b_2 - \beta_2^0}{s.e.(b_2)}$$ And **NOT:** $$t = \frac{b_2 - \beta_2}{s.e.(b_2)}$$

Where beta2(0) is the true value of the parameter beta2 under H0. (remember that beta2 is an unknown parameter so you can not compute the second expression)

Trade-off type I vs type II errors

$$Y_i = \beta_1 + \beta_2 X_i + u_i$$

$$H_0 : \beta_2 = 0$$

$$H_1 : \beta_2 \neq 0$$

Reality Result of your test	Beta2=0	Beta2 ne 0
Beta2=0	No mistake	Type II error
Beta2 ne 0	Type I error	No mistake