

**Continuous exam Microeconomics for AE**  
**Tutorial Week 1B (29 October 2020)**

**Notes:**

- The question concerns the material of Week 1A (26 and 27 October 2020). The question will be examined during the tutorial of Thursday 29 October 2020.

**Question**

Fafchamps *et al.* (2010) study the matching process of scientific collaborations in Economics. One of the data variables that they consider is the research overlap between economists. They show that research collaborations are most likely to start when research overlap is neither too small nor too large.

Fafchamps *et al.* (2010) define research overlap as follows. Consider the three main areas in Economics: Microeconomics, Macroeconomics, and Econometrics, and suppose that economist *A* wrote  $a_1$  articles on Microeconomics,  $a_2$  articles on Macroeconomics, and  $a_3$  articles on Econometrics. Similarly, suppose that economist *B* wrote  $b_1$ ,  $b_2$  and  $b_3$  articles on Microeconomics, Macroeconomics and Econometrics, respectively. Then the research overlap between *A* and *B*,  $O_{AB}$ , is defined as:

$$O_{AB} = \frac{a_1b_1 + a_2b_2 + a_3b_3}{\sqrt{(a_1^2 + a_2^2 + a_3^2)(b_1^2 + b_2^2 + b_3^2)}}.$$

Consider the following example: So far Prof. Dr. Wonderful has written 12 papers on Microeconomics, 4 on Macroeconomics, and 4 on Econometrics. On the other hand, Prof. Dr. Splendid has written 5 papers on Macroeconomics, and 0 on Microeconomics or Econometrics. Then our research overlap is:

$$O_{Wonderful, Splendid} = \frac{12 \times 0 + 4 \times 5 + 4 \times 0}{\sqrt{(12^2 + 4^2 + 4^2)(5^2)}} = \frac{20}{\sqrt{4400}} = \frac{1}{\sqrt{11}} \approx .3015.$$

You are asked to give a critical discussion of this research overlap measure. Questions that you may consider:

- To what mathematical measure does this definition of research overlap correspond?
- When is this measure minimal? When maximal? Can you give examples?
- Do you believe that this is a good measure of research overlap? Why?
- Is there room for improving this measure?

Reference: Fafchamps, M., S. Goyal, and M.J. van der Leij (2010), ‘Matching and Network Effects’, *Journal of the European Economic Association*, 8(1), 203–231.