Eradicating Data Phobia

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Motivating the problem

- What is the type of quantitative skills that professional economists need?
  - Employers’ demand graduates who can ‘organise, interpret and present quantitative data’
- But, what type of quantitative skills are signalled in many economics programmes?
  - A ‘good economist’ is somebody who is highly proficient in advanced mathematics and statistical economics
- Behavioural models of learning suggest that appropriate signalling is crucial to the learning process to ensure appropriate knowledge and skills are assimilated into existing cognitive structures
- We suggest that the signalling has implications due to anxiety about quantitative data analysis:
  - The nature of students applying to economics courses
  - The type of quantitative data analysis students pursuing economics courses use
Ex-ante Signalling: Impact on type of students applying

- A group of students are alienated from studying economics because of the level of quants required
- Signal sent to students before they even consider studying for an economics degree
  - BSc rather than BA (62 of 80 specialist degrees offered by UK Universities are former*)
  - Mathematics requirements vs English Language requirements
- Some of the quantitative tools that they need to be a professional economist students are likely to have met already in a GCSE or A-level course
Signalling in Teaching and Learning: Intensifying anxiety about data analysis

- When students start studying economics they receive further signals which affect their behaviour
  - Silos: economic analysis and data analysis are taught separately - students do not experience or recognise the synergies
  - Highly-abstract presentation of economic analysis
  - Emphasis on method in quantitative analysis

- Issues:
  - Receive few positive behavioural cues about the role of basic data analysis in economics. e.g. Economic briefing or policy analysis.
  - Receive behavioural signals about the importance of econometrics which fuels fears about quantitative analysis in some students

- Affects their use of quantitative data analysis
- Affects enjoyment and/or perceptions of economics
On most economics courses, quantitative analysis moves quickly on to econometrics.

Econometrics is signalled as the default approach to quantitative data analysis.

Emphasis on advanced methods rather than the appropriateness of analysis for investigating economic issues.

In summary, signalling in economics education, be it in curricula or in the ways we teach and assess, tends to denigrate the type of data analysis required most by professional economists - “an ability to organise, interpret and present quantitative data”.
Recommendations

- Recommendations grounded on need to establish positive signals, practice and reinforcement
- Encourage students from heterogeneous backgrounds by broadening the range of economics courses offered
- Ensure that fundamental data analysis becomes integral to students’ cognitive structures through relevant signals and reinforcement
- Demonstrate use of quantitative data in economic analysis
- Role of synoptic/integrated teaching and learning and assessment activities throughout the curriculum
- Placements
- Mentoring by professional economists