

# 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

# Signalling in Teaching and Learning: Implications for quantitatively-proficient Students

- ▶ 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