



**UNIVERSITY OF
PORTSMOUTH**

Tackling the wide distribution of student ability and motivation

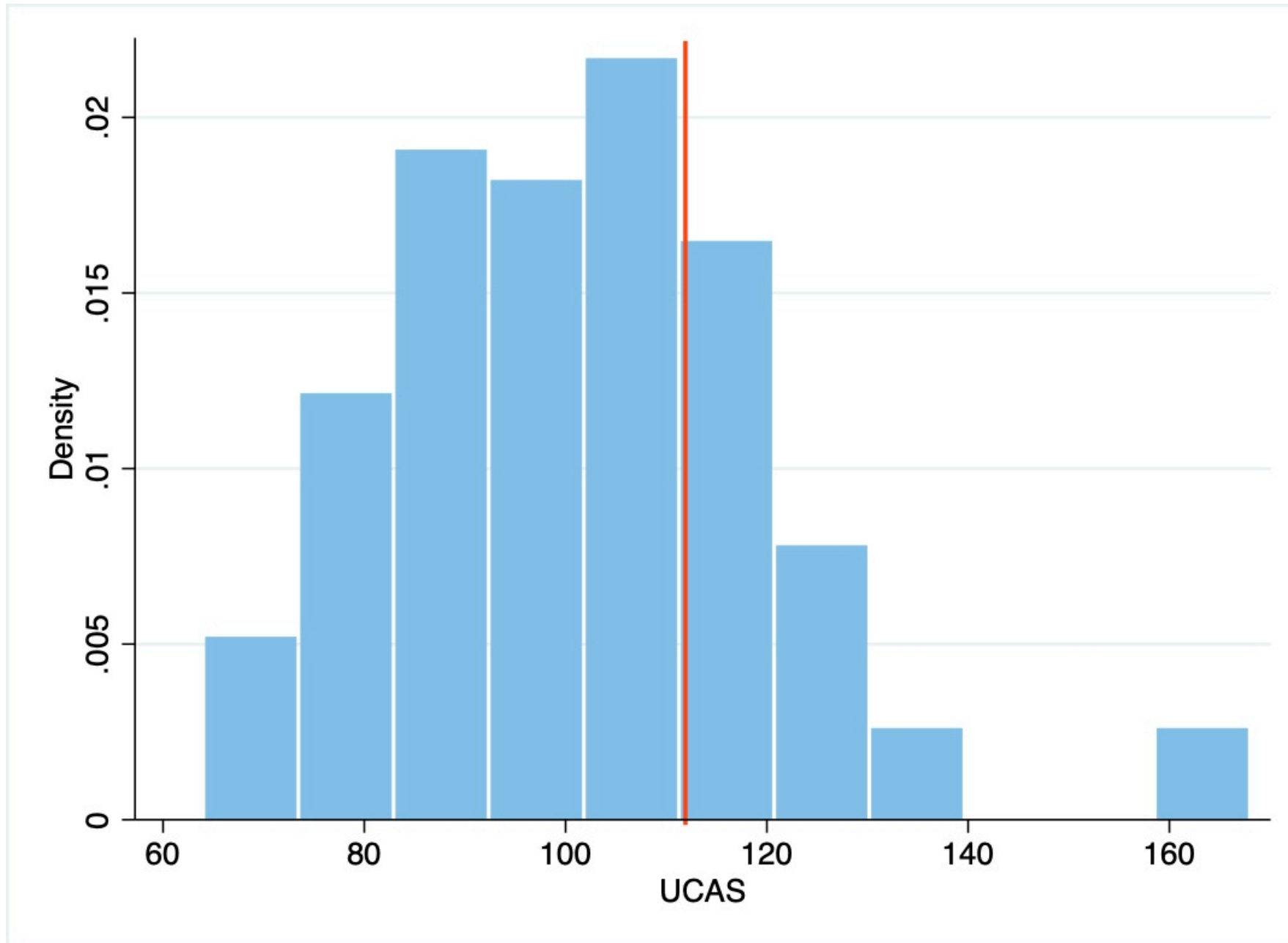
Adam Cox – Director of UG Economics

Pavlin Shipkov – Teaching Fellow

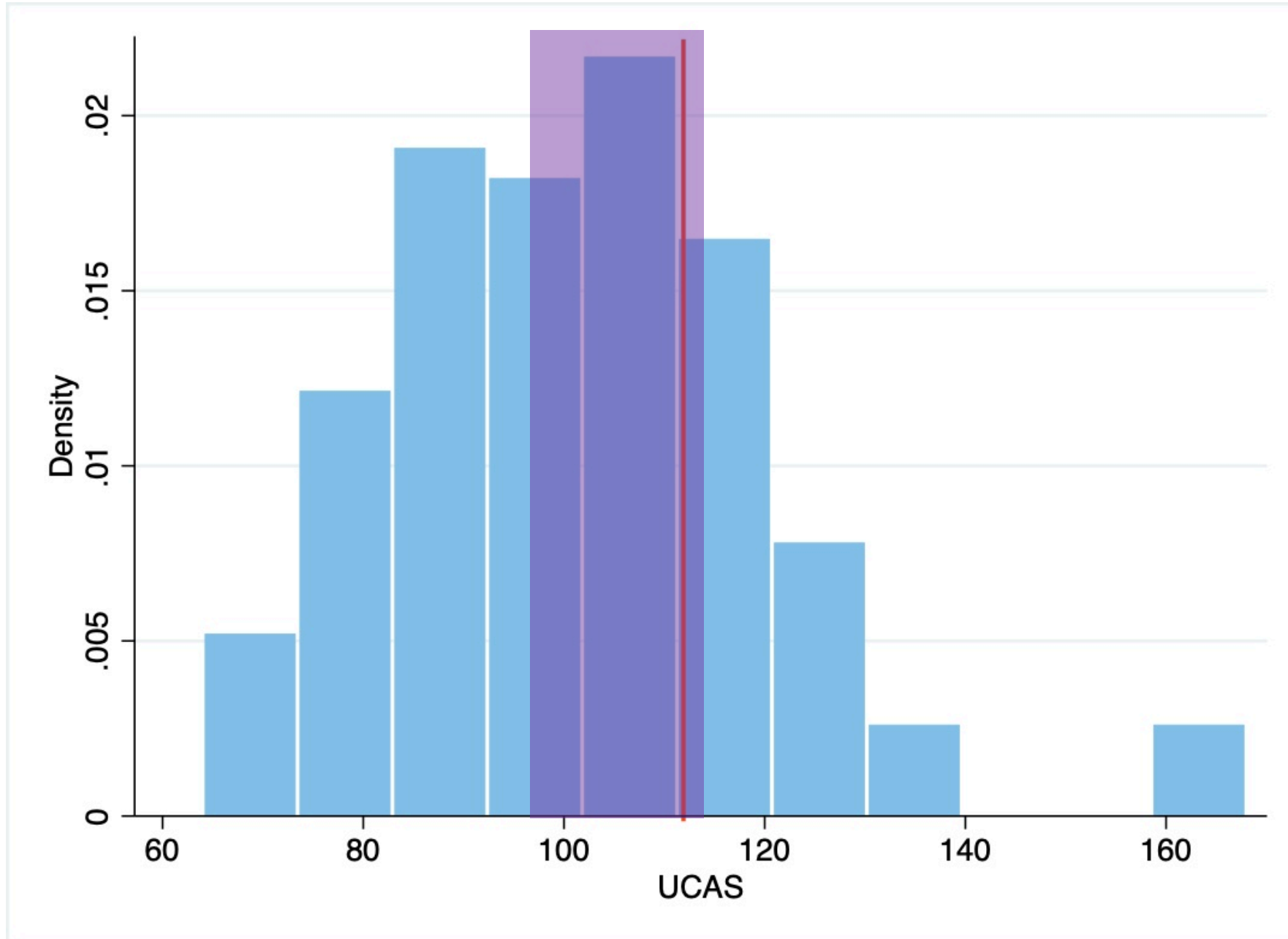
Developments in Economics Education Conference
September 2019



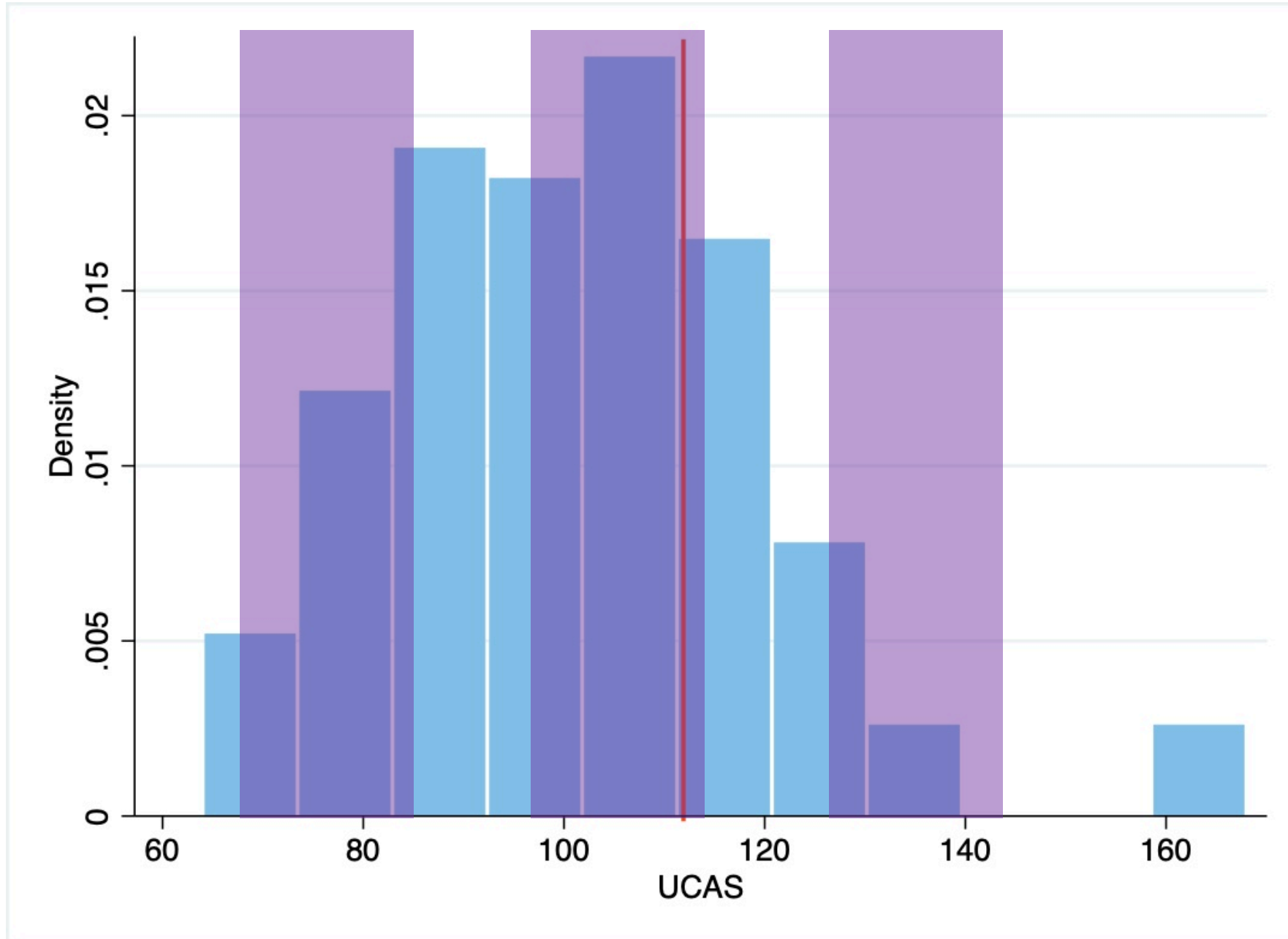
UCAS entry points 2018



Motivation and Research Questions

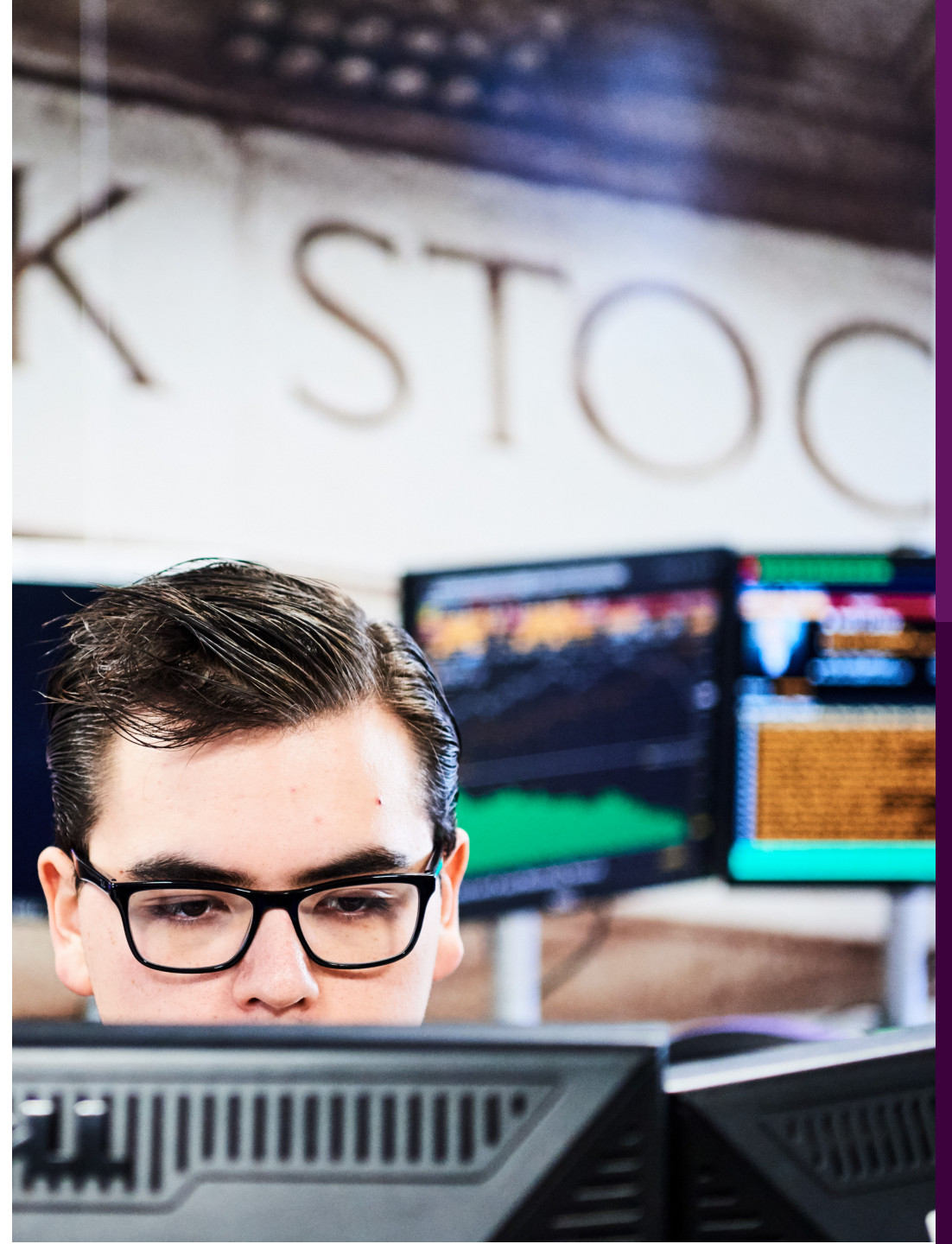


Motivation and Research Questions



Motivation and Research Questions

- Encouraging engagement across the distribution that goes beyond class attendance (includes feedback).
- Developing the students' ability to take ownership of their learning (internal feedback).
- Involving students in developing appropriate and useful learning experiences.
- *Previous attainment -> Engagement -> Performance?*



Re-thinking Learning Materials - Internal Feedback

- Seminar materials re-design
- A simple way to modify existing exercises
- Enable students to:
 - assess their ability to tackle the material;
 - reflect on their performance and generate internal feedback;
 - self-regulate and address gaps in understanding.

Essential Knowledge ★☆☆

Explain what is meant by rivalry and excludability in terms of goods. What are the different types of goods based on these two characteristics?

Standard Applications (of Essential Knowledge) ★★★

Suppose that Hampshire County Council is debating whether to build a new fixed link tunnel to the Isle of Wight. The Council surveys Hampshire residents and finds that, on average, each of the 1.5 million residents values the new tunnel at £100 and the tunnel would cost £120 million to construct.

Extensions (to Standard Applications) ★★★

Ad blocking refers to the use of specialised software in order to alter or entirely prevent advertisements from being displayed during a user's online browsing experience. Statistics from recent years suggest that between a quarter and a third of users utilise some type of ad blocker and one study estimates the economic impact of ad blocking at around \$40 billion in lost revenue for companies in 2016.

Virtual Learning Environment – Monitor engagement outside class

The screenshot displays a user interface for a virtual learning environment. At the top, a blue header bar contains the text "MANKIW, ECONOMICS, 4TH EDITION" on the left, and a calendar icon and a menu icon on the right. Below the header, there are two toggle switches: "SHOW HIDDEN" (turned off) and "EDIT" (turned off). A "Collapse all" link with an upward arrow is on the left, and a green "+ Add / Create" button and a "Filters" dropdown are on the right.


The main content area lists several topics, each with a folder icon, a title, and a count of activities:

- Micro Topic 7: Theory of Consumer Choice (Pt. 2) - 3 activities
- Micro Topic 8: Production and Costs - 11 activities
- Micro Topic 9: Firms in Competitive Markets - 7 activities

Under "Micro Topic 9", there are two sub-sections:

- Concept Clips**: A sub-section containing one item: "ConceptClips: Average Revenue and Marginal Revenue".
- Problem Walk Through**: A sub-section containing one item: "Aplia Questions: Background to demand: Consumer choices".


The "Aplia Questions" item is displayed in a table-like format:

| | | | |
|---|-------------------------|-------------------------|----------------------|
|  Aplia Questions: Background to demand: Consumer choices Due Dec 2, 2018 @ 11:00 PM GMT ● COUNTS TOWARDS GRADE | 90% submitted | 60% avg score | 108 points |
|---|-------------------------|-------------------------|----------------------|

Below the table, there is a text description: "This problem set introduces the assumptions of the standard economic model. It covers budget constraints (constructing and interp..." followed by a dropdown arrow.

At the bottom, "Micro Topic 10: The Efficiency of Markets" is listed with 9 activities.

Practice Exercises and Ongoing Assessment – Instant feedback



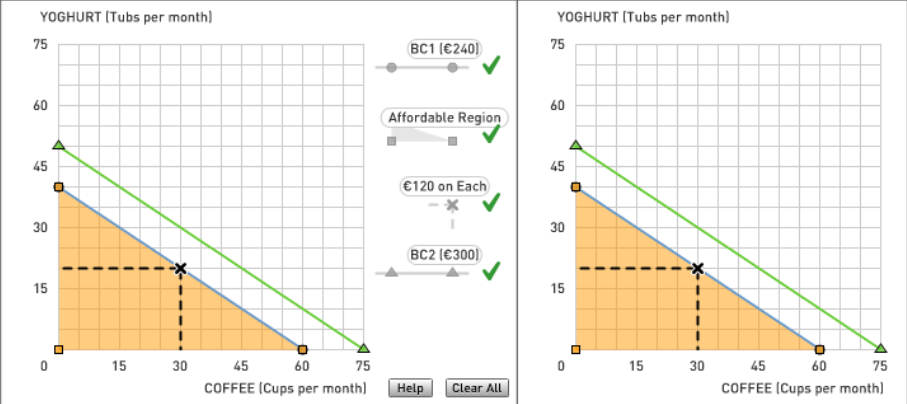
Assume Jake has a monthly budget of €240 to spend on yoghurt and coffee. Coffee is priced at €4 per cup, and yoghurt is priced at €6 per tub.

If Jake spends his entire €240 on coffee, he can buy 60 cups ✓ of coffee per month. If he spends his entire €240 on yoghurt, he can buy 40 tubs ✓ of yoghurt per month.

Explanation: Open

Use the blue line (circle symbols) to plot Jake's budget constraint on the following graph. Next, use the orange triangle (square symbols) to shade the area that represents combinations of coffee and yoghurt that are affordable for Jake. Finally, place the black point (X symbol) on the point on Jake's budget constraint that corresponds to a scenario in which Jake spends €120 on each good. Dashed drop lines will automatically extend to both axes.

Answer



YOGHURT (Tubs per month)

COFFEE (Cups per month)

BC1 [€240] ✓

Affordable Region ✓

€120 on Each ✓

BC2 [€300] ✓

Help Clear All

Explanation: Open

- Interactive assessment materials tailored to match studied material closely.
- Comprehensive explanations available for all questions once grades released.
- Straightforward matching to relevant sections of the e-book to encourage post-reflection self study.

Promotion of Self-Regulated Study and cohort mixing

- Teaching Block 1
 - Working on a previous examination sample to clearly outline the end goal for the unit.
 - Complementary exercises to establish a path to achieving that goal.
- Teaching Block 2
 - Working in a mixed ability/engagement group on a short presentation.
 - Capitalising on positive peer effects.
 - Investigating (very) current issues that are closely linked with the material that has been covered.

Promotion of Self-Regulated Study and cohort mixing

The Competition and Markets Authority – a British government department responsible for competitiveness in markets – has announced its preliminary findings on a proposed Sainsbury's-ASDA merger and said that such a merger would “result in a substantial lessening of competition”. Analyse this issue.

In early 2019, the Bundeskartellamt – Germany's Federal Cartel Office – imposed restrictions on Facebook regarding their data collection and combining of data from its subsidiaries (Instagram and WhatsApp) to create extremely detailed user profiles. Discuss how the collection and use of data links with competition law and the establishing of a dominant market position.

Huawei is facing scrutiny regarding potential backdoors built into their technology that would allow the Chinese government to obtain information on users. In the UK, BT has already removed some Huawei equipment from its network and the US, Australia and New Zealand have moved to block the use of Huawei equipment. Discuss the market implications of the bans issued/being considered on the use of Huawei equipment in mobile networks around the world.

Preliminary Observations

- The VLE, seminar exercises and their format were well-received
 - Engaging, useful and conducive to self-assessment.
 - Most utilised by those without significant prior experience with economics.
- Consolidation Week exercises (particularly in TB2) had a limited impact and relatively poor engagement.
- Importance of “external” factors
 - Staff turnover.
 - Establishing personal rapport with students.
 - Acknowledging and celebrating the students’ key role in the learning process.

Preliminary Observations

- Class engagement appears to be lower (in an anecdotal comparison to previous years).
 - *The end of the “conventional” seminar?*
 - *Self-study and self-regulation are of increasing importance to a student body of (increasingly) diverse ability.*
 - *Students’ ability to understand feedback as well as form own feedback should now be considered a key skill to be developed.*
- Dis-engagement appears to be evenly distributed, mitigating the impact at the top and bottom.
 - *Not possible to rule out a cohort effect.*

Table 1: Descriptive Statistics

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|-------------------------|------------|-------------|------------------|------------|------------|
| UCAS | 122 | 100.89 | 19.27 | 64 | 168 |
| BTEC qualification | 122 | 0.11 | 0.32 | 0 | 1 |
| Econ A Level | 122 | 0.71 | 0.45 | 0 | 1 |
| Maths A Level | 122 | 0.47 | 0.50 | 0 | 1 |
| Maths GCSE <C | 122 | 0.03 | 0.18 | 0 | 1 |
| Class attendance | 122 | 0.53 | 0.25 | 0.05 | 0.98 |
| Time on VLE | 122 | 1987.43 | 1350.69 | 168 | 7439 |
| VLE quizzes attempted | 122 | 7.28 | 1.30 | 3 | 8 |
| Seminar self reflection | 122 | 9.93 | 9.38 | 0 | 42 |
| VLE Quizzes | 122 | 66.46 | 19.51 | 14.74 | 93.42 |
| Essay grade | 122 | 54.91 | 14.39 | 0 | 80 |
| Exam grade | 122 | 56.48 | 18.55 | 0 | 96 |
| Year average | 122 | 55.43 | 14.06 | 14 | 81 |

Table 2: Engagement

| VARIABLES | (1) Class attendance | (2) Time on VLE | (3) VLE quizzes attempted | (4) Seminar self reflection |
|--------------------|----------------------------|--------------------|---------------------------------|-----------------------------------|
| UCAS | 0.000571 | 0.600 | -0.00194 | 0.104** |
| BTEC qualification | 0.0462 | -84.70 | 0.529 | -2.109 |
| Econ A Level | -0.0152 | -618.6* | 0.144 | 1.170 |
| Maths A Level | 0.111** | 301.2 | 0.723*** | 3.719** |
| Maths GCSE <C | -0.0558 | -290.6 | -1.263 | -6.713*** |
| Constant | 0.433*** | 2,247*** | 7.014*** | -2.627 |
| Observations | 122 | 122 | 122 | 122 |
| R-squared | 0.048 | 0.049 | 0.110 | 0.085 |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Academic Attainment

| VARIABLES | (1) VLE Quizzes | (2) Essay grade | (3) Exam grade | (4) Year average grade |
|-------------------------|--------------------|--------------------|-------------------|---------------------------|
| UCAS | -0.0100 | 0.105* | 0.141 | 0.128** |
| BTEC qualification | -1.065 | 0.497 | -8.496* | -4.142 |
| Econ A Level | 2.663 | 6.039** | 10.91*** | 2.742 |
| Maths A Level | 8.657*** | 1.586 | 10.95*** | 11.36*** |
| Maths GCSE <C | -12.12*** | -8.367 | -10.63 | -7.742 |
| Class attendance | 10.91*** | 12.50** | 17.04** | 16.08*** |
| Time on VLE | 0.00275*** | 0.00152* | 0.000861 | 0.00169*** |
| VLE quizzes attempted | 9.155*** | 4.253*** | 2.020 | 3.680*** |
| Seminar self reflection | 0.0811 | -0.0693 | -0.142 | -0.0321 |
| Constant | -16.69*** | -0.489 | 6.602 | -2.471 |
| Observations | 122 | 122 | 122 | 122 |
| R-squared | 0.852 | 0.414 | 0.376 | 0.718 |

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Thoughts on the future

- *Previous attainment -> Engagement -> Performance?*

Continue using the stepped materials

- Refine the 'self reflection' element within the classroom.
- Perhaps include in grade.

Continue using VLE and quizzes

- Perhaps add self reflection (or confidence) element at point of answer.

Panel data

- Enabling use of fixed effects.