

Data Science for Business - Replication Project

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About This Project

This is part of a research exercise for replicating graphs and tables from ([Brown & MacKay, 2023](#)) using **R** and **Quarto**.

We focus on:

- Summary statistics
 - Replication code using R
 - Data cleaning and transformation
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Research Replication

We aim to replicate tables and charts taken from the paper *Competition in Pricing Algorithms* ([Brown & MacKay, 2023](#)), that was Published in *American Economic Review: Microeconomics*

Please follow the next link to find the replication package and further information:

DOI: [10.1257/mic.20210158](https://doi.org/10.1257/mic.20210158)

Tools Used

- **R** (data analysis & visualization)
- **Quarto** (reproducible publishing)
- **GitHub Pages** (to share everything online)
- **Libraries:**

-**haven::** this library created by Wickham, Miller, et al. (2025) allows R to read and write data files from statistical software like Stata, SPSS, and SAS.

-**dplyr:** Wickham, François, et al. (2025) provides a grammar of data manipulation, making it easy to filter, select, summarize, and transform data frames.

-**ggplot:** As stated by Wickham (2016) powerful and flexible system for creating static data visualizations using the grammar of graphics.

- **janitor:** Offers simple functions for cleaning and formatting data, especially column names and tabular summaries.

Repository

View the full repository here:

github.com/christianfcasas/ProjectData

Tony's Repositories:

- [Code and Replication](#) - [Presentation](#)

View the Presentation

Click on the presentation you want to view:

[Christian](#)

[Tony](#)

Downloadable Version ('pdf' and 'html')

pdf:

[Index PDF Version](#)

[Presentation PDF Version](#)

html:

[Index PDF Version](#)

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Next Steps

- Expand replication to additional tables
- Align replication figures tables to those in the paper
- Fix replication issues
- Create an academic-style appendix

Brown, Z. Y., & MacKay, A. (2023). Competition in pricing algorithms. *American Economic Journal: Microeconomics*, 15(2), 109–156. <https://doi.org/10.1257/mic.20210158>

Wickham, H. (2016). *ggplot2: Elegant graphics for data analysis*. Springer-Verlag New York. <https://ggplot2.tidyverse.org>

Wickham, H., François, R., Henry, L., Müller, K., & Vaughan, D. (2025). *Dplyr: A grammar of data manipulation*. <https://dplyr.tidyverse.org>

Wickham, H., Miller, E., & Smith, D. (2025). *Haven: Import and export 'SPSS', 'stata' and 'SAS' files*. <https://haven.tidyverse.org>