

Incorporating Racial Justice Topics into an Econometrics Course*

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Abstract

Racial justice has been at the forefront of the public discourse and although economists in academia have been coming to the realization that racial justice is not adequately addressed in the undergraduate economics instruction, topics related to race and racism remain rare in economics courses. This paper shows how to incorporate racial justice topics into an econometrics course. Students select journal articles about race in the economy, present the articles to the class and lead a discussion. Students benefit by strengthening their econometrics skills and using evidence-based approach to gain knowledge of the role that racism has played in the economy.

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1 Motivation

Racial justice has been at the forefront of the public discourse for a decade since the shooting of a Black teenager Trayvor Martin (Hajela 2022) by a private citizen in 2012 and the subsequent establishment of the Black Lives Matter movement (*Black Lives Matter* 2022) with the U.S. nationwide protests against racial injustices spreading around the world (Gunia, Nugent, Moon, Shah, and Haynes 2021). Racism has been pointed out by policy-makers such as Raphael Bostic, the Federal Reserve Bank of Atlanta President, as harmful for economic growth (Bowman 2020), and economists in academia have been coming to the realization that racial justice is not adequately addressed in the undergraduate economics instruction, sparking efforts to incorporate topics related to race into economics courses. However, topics related to race remain rare in economics courses: Asarta, Chambers, and Harter (2021) find in a 2020 survey of instructors teaching introductory economics courses at U.S. institutions that activities and lessons addressing diversity and inclusion were almost never used in classrooms,¹ confirming results from previous studies such as a 2010 survey by Watts and Schaur (2011).

This paper shows how to incorporate racial justice topics into an econometrics course.² Students select journal articles about race in the economy (for example, articles about racism in the housing and credit markets), present the articles to the class and lead a discussion about them. The presentations include econometric aspects of the articles, which opens op-

¹567 respondents indicated that they never use such activities and lessons, 30 respondents indicated that they use them rarely, and only 23 respondents indicated that they use them occasionally.

²This idea was inspired by the “Racial Justice Teaching Challenge” at my institution that “...called on faculty members to devote a significant portion of the educational content in their courses to focusing on (a) the lives and experiences of Black folks in North America and/or the African diaspora, or (b) substantive engagement with issues of race and racism.”

opportunities to discuss issues related to race such as how race is measured in the data, whether race plays a role in explaining the dependent variable, and shortcomings of the research. In a given class meeting, the presenting students receive a grade for their presentation and the non-presenting students receive a grade for their participation in the discussion. Students benefit by not only strengthening their econometrics skills but also using an evidence-based approach to gain knowledge of the role that racism has played in the economy.

The econometrics course offers a unique opportunity to integrate racial justice topics into the undergraduate economics curriculum for three reasons. First, because the course is about theory behind econometric techniques and application of the techniques to economic data rather than about a particular economics field, the journal article readings can focus on any topic such as racial justice topics. Second, Johnson, Perry, and Petkus (2012) shows that econometrics is widely taught and therefore provides a large audience of economics students.³ Finally, the course enrolls more advanced students with stronger technical skills than, for example, introductory courses, allowing students to study racial justice topics on a deeper level.

This paper contributes to five strands of the instruction literature. First, several sources show how to include topics related to race and racism in undergraduate economics instruction. For example, Weisman (2017) provides guidance for in-class discussions in microeconomics and industrial organization courses about three topics related to race⁴, Wolfe (2020)

³Johnson et al. (2012) find that among 1,428 universities and colleges listed in the 2010 U.S. News World Report rankings, 807 schools had an economics major and offered 1,642 economics major programs. Approximately 81% of these schools offered at least one econometrics course and approximately 40% of the economics major programs required an econometrics course. Johnson et al. (2012) also show that econometrics courses have become more common, offering an ever-increasing audience of economics students.

⁴The three topics are whether racial preferences should be eliminated in college admissions, whether preferences in hiring should be given to minorities, and whether universities should strive to achieve uniform representation of minority faculty across departments.

provides instructions on how to incorporate the topic of racial disparities into an introductory macroeconomics course using data analysis activities, and the website Diversifying Economic Quality offers general suggestions for making economics courses more diverse and inclusive (*Diversifying Economic Quality* 2022). This paper contributes to this literature by showing how to incorporate racial justice topics into an econometrics course.

Second, because the student choice of the journal articles is a key component of this assignment, the paper contributes to the authentic assignments literature such as Meyer (1992) and Newmann and Wehlage (1993). It also contributes to the culturally relevant pedagogy that has been linked to positive student outcomes in numerous areas as summarized by Aronson and Laughter (2016).

Third, readings beyond the textbook, such as news articles or journal articles, are commonly used in economics courses. Allgood and McGoldrick (2021) survey 218 economics instructors and find that over 90% of them use readings beyond the textbook. About a third of the instructors using readings beyond the textbook indicated that their students identify their readings, for example, to conduct research for a project. This paper extends this literature by describing a course where the *entire* reading list is selected by students and it is done specifically to address racial justice topics.

Fourth, the paper is also related to the literature on student-led discussions. For example, in Button et al. (2021) the instructors select three to five readings with contrasting views in upper-level economics courses. Students then discuss the papers in groups during class meetings. These activities take up approximately 45-minutes and occur in two or three class meetings during the semester. Students read mainly the abstract, introduction, and conclusion to avoid technical details and econometrics. This paper offers an alternative for

the student-led discussions by using econometrics as the foundation for the discussions.

Fifth, the paper contributes to the literature on teaching econometrics. This literature includes papers on teaching specific topics;⁵ implementing pedagogies such as the flipped classroom pedagogy in R. Becker and Proud (2018) and invention activities in McKee and Orlov (2021); fulfilling the capstone experience in Klein (2013) and Conaway, Clark, Arias, and Folk (2018); and addressing the disconnect between what students learn in econometrics and what they need to know after graduating in their jobs in Kassens (2019) and how empirical econometric research is done in Angrist and Pischke (2017). This paper contributes to this literature by showing that the econometrics course can be focused on a particular topic, such as racial justice topics, using the student-led reading list.⁶

The paper proceeds as follows. Next section presents information about the course and grading. The following section provides background for the student-led readings focused on racial justice. Resource requirements, benefits, and additional suggestions for implementation are then discussed. The last section concludes and discusses potential of this student-led reading approach for incorporating other topics into the econometrics courses.

⁵These papers include Briand and Hill (2013) on using Monte Carlo experiments to teach about the least squares estimator unbiasedness and confidence intervals, O'Hara (2014) on implementing instructor-written macros to teach sampling using bootstrapping examples, Hansen (2017) on teaching time-series econometrics, O'Hara (2019) on utilizing simulated distributions to teach hypothesis testing, and Stewart (2019) on teaching simultaneous equations.

⁶Button et al. (2021) also introduce contemporary topics into upper-level economics courses. In their approach, the instructor selects three to five readings with contrasting views on a topic. Students read mainly the abstract, introduction, and conclusion to avoid technical details and econometrics. Students then discuss the papers in groups during class meetings. These activities take up approximately 45-minutes and occur in two or three class meetings during the semester. This paper differs by the readings being selected by the students, focusing on econometrics, presentations for the whole class, and being structured as more frequent, shorter activities.

2 Course Information and Grading

This econometrics course was taught in the spring of 2021 at a four-year, liberal arts college. The college uses 13-week semesters. The course is capped at 18 students. The course is a three-credit, elective course that meets twice a week for 80 minutes during a 13-week semester. It is focused on the theory behind econometric techniques and application of the techniques to economic data. There are five prerequisites for this course: introduction to microeconomics, introduction to macroeconomics, calculus I, statistics, and either intermediate microeconomics or intermediate macroeconomics. Typically, students are in their third year, although there can also be second-year and fourth-year students. The econometrics course uses a standard econometrics textbook and covers topics standardly taught in econometrics courses. It begins with the regression topic followed by topics such as functional forms, heteroskedasticity, and panel data. The Stata software is used for processing data and estimating econometrics models.

Grading consists of four homework assignments, two projects where students replicate original research using the Stata software, midterm exam, final exam, and participation during in-class Stata activities. These components comprise 20%, 20%, 15%, 20%, and 10% of the course grade, respectively. The remaining 15% of the grade consists of 10% for the presentations of the journal articles selected by students about racial justice topics and 5% for participation during the journal article discussions.

3 Student-Led Reading List Focused on Racial Justice

This section describes the student-led readings focused on racial justice. At the beginning of the semester, the instructor selects the class meetings during which the journal article presentations will take place and provides these dates on the syllabus. The instructor also assigns students to the presentation dates. Each student then knows ahead of time the date on which they will be presenting as well as the dates on which they will be participating in presentations by other students.⁷ The presentations are spread out over the semester. There are no presentations scheduled for the first three weeks of the semester to allow the instructor to cover the regression topic before the presentations begin.

Students then select journal articles about race in the economy that they will present. Table A1 in the Appendix shows the instructions for selecting the journal articles. In addition, it is helpful to provide information about how to post the journal article in the course management system. The instructions require: “The article has to be from a peer-reviewed economics journal. If you want to select an article from another source (for example, a working paper series), check with me to ensure that it is an appropriate source.” While students are welcome to contact the instructor if they have questions when selecting the article, the students typically manage this entire process on their own without involving the instructor.⁸

⁷Depending on the class size and the number of presentations that the instructor wants, students can work individually or in teams. For example, if there are ten weeks during which presentations are taking place and there is one presentation per week, there will be ten presentations in total. If the class size is small (ten students or less), students can work individually. If there are, for example, twenty students, they can work in teams of two. Suggestions for larger class sizes are discussed below. If teams are used, depending on instructor preference a variety of team formation approaches can be used such as allowing students to form their own teams or following the team-based learning pedagogy described by, for example, Michaelsen and Sweet (2008).

⁸If the instructor prefers providing more guidance during the journal article selection, this additional guidance could be provided in four ways. First, the instructor could provide a list of peer-reviewed journals that the students can use for selecting the journal articles. Second, the instructor could provide examples of journal articles on racial justice topics, so that students can see what their selected articles should look

Table 1 shows the list of fascinating articles selected by the students. Students can choose articles from any economics field, depending on their interests. The articles are from a variety of fields. Urban economics is the most commonly selected field with three articles. Gabriel and Spring (2019) studies migration decisions of couples with children and finds that mixed-race couples are likelier to select higher-diversity neighborhoods. Harris and Yelowitz (2018) studies the impact of racial climate on homeownership and finds that worse racial climate leads to lower Black homeownership. Shertzer, Twinam, and Walsh (2016) studies how racial and ethnic composition of neighborhoods in Chicago in the 1920s affected local zoning and finds that neighborhoods with higher percentages of Southern born Blacks or first-generation immigrants are likelier to be designated for industrial use. One article was from financial economics: Asiedu, Freeman, and Nti-Addae (2012) analyzes the effect of applicant's race on denial of loans for small businesses and finds that the loan denial is higher for minority-owned firms with an especially high denial for Black firms. One article was from experimental economics: Edelman, Luca, and Svirsky (2017) conducts an experiment on the Airbnb accommodation rental website and concludes that guests with African American names are less likely accepted for accommodation by hosts. Two articles were from sports economics: Price and Wolfers (2010) finds that basketball players are given more personal fouls when the game referees are of the opposite race, but Hamrick and Rasp (2015) does not find strong evidence of umpires discriminating based on race in baseball.

One week before the article is presented during the class meeting, the student(s) who

like. Third, while the instructions in Table A1 require that the article not be a reading from another course or the econometrics replication projects to encourage students to read new articles, this requirement could be eliminated if the instructor wants students to use readings that they have previously read. Fourth, if the instructor prefers approving the journal article selection, an additional step could be added to the instructions requiring the students to obtain the instructor's approval. The instructor's approval would also allow for a low-stakes intervention to ensure that the article is appropriate before the article is posted.

Table 1: Journal Articles Selected by Students

Author (Year)	Title	Field
Asiedu et al. (2012)	Access to Credit by Small Businesses: How Relevant Are Race, Ethnicity, and Gender?	Financial Economics
Edelman et al. (2017)	Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment	Experimental Economics
Gabriel and Spring (2019)	Neighborhood Diversity, Neighborhood Affluence: An Analysis of the Neighborhood Destination Choices of Mixed-Race Couples With Children	Urban Economics
Hamrick and Rasp (2015)	The Connection Between Race and Called Strikes and Balls	Sports Economics
Harris and Yelowitz (2018)	Racial Climate and Homeownership	Urban Economics
Price and Wolfers (2010)	Racial Discrimination Among NBA Referees	Sports Economics
Shertzer et al. (2016)	Race, Ethnicity, and Discriminatory Zoning	Urban Economics

will be presenting post the selected article on the course website. They also post questions about this article. The other students who will not be presenting the article are responsible for reading the article and preparing answers to the questions.⁹ Table 2 shows questions for the Gabriel and Spring (2019) journal article as an example. The questions include general questions about main research question and previous research (questions 1 and 2), data questions (questions 3 through 5 about the sample period, sample size, and variables), models (questions 6 through 9), tables (questions 10 through 14), and results (questions 15 and 16). In the questions about econometrics, students are required to ask questions about topics that we have already covered in our class meetings, such as question 6 about why the ordinary least squares (OLS) regression is not appropriate for estimating the equation in this article. In addition, students are required to ask a question about an econometrics topic that we have not covered in our class meetings yet, such as questions 7 and 8 about the multinomial logit. These questions are usually the most challenging ones for the presenting students to write and for the non-presenting students to answer. To foster independent

⁹The instructor does not collect the answers from the non-presenting students; however, the instructor could choose to collect them and grade them as an additional assignment.

Table 2: Questions for the Gabriel and Spring (2019) Journal Article

#	Question
1	What is the main research question?
2	What did the previous research conclude about this question?
3	What were the observation years for this research?
4	What was the sample size?
5	What variables were used for this research?
6	Why cannot traditional regression methods (OLS) work for this research?
7	What are multinomial logit models?
8	How many coefficients are being used in the logistic regression equation?
9	How many equations are there and what do they estimate?
10	What does Table 1 represent?
11	Explain Table 2 including what the numbers mean.
12	Explain Table 3 including what the numbers mean.
13	Explain Table 4 including what the models represent.
14	Explain Table 5 including what the models represent.
15	What is the most significant explanation for the result?
16	Could there be other explanations for the result?

learning of econometric models not covered in our class meetings, which is a skill useful for other courses, graduate school as well as careers, the students are encouraged to look up information about the more advanced econometrics on the Internet and learn it to the best of their abilities. Naturally, students presenting early in the semester might select articles with more basic econometrics such as the ordinary least squares regression, whereas students presenting later in the semester might select articles with more advanced econometrics such as panel data econometrics, which underscores the cumulative learning that students experience during the semester.

The presenting student(s) prepare a PowerPoint presentation that includes the questions about the article. They then present the article to the class and lead a discussion about it. Typically, the presenting students will start the presentation by briefly summarizing the topic of the article and explaining why they selected this particular article. They will then pose the first question that they had posted on the course website and call on the non-presenting

students to answer it. If the question is straightforward, for example, question 3 shown in Table 2 about the observation years, it is usually sufficient for one non-presenting student to answer the question. Such questions will take a minute or less for presenting students to ask and non-presenting students to answer. If the question is more complex, for example, question 16 shown in Table 2 about other possible explanations for the result, multiple non-presenting students might offer their answers. Such questions might take several minutes to ask and answer. The presenting student(s) lead this discussion, offering their own answers since they are most familiar with the article.¹⁰ This process continues until all questions have been discussed. Typically, this takes approximately 25 minutes, leaving plenty of time in the 80-minute class meeting for the instructor to cover other material. The presenting students receive a grade for their presentation and the non-presenting students receive a grade for their participation in the discussion, which provides motivation for the non-presenting students to participate in the discussion. The instructor can occasionally engage in the discussion, for example, by pointing out econometrics concepts from the journal article that are relevant for the course material.¹¹

The presentations open opportunities to discuss issues related to race such as how race is measured in the data, whether race plays a role in explaining the dependent variable, and shortcomings of the research. Students can bring knowledge from other courses that they

¹⁰As Table 2 shows, answering questions does not require knowledge of the U.S. history. A vast majority of the questions (questions 1 through 15) can be answered by reading the article or looking up information about econometric estimation methods in the textbook or on the Internet. The exception is question 16 that is more open-ended but even this question can be answered by, for example, discussing possible omitted variables. Therefore, the discussion is accessible to not only domestic but also international students.

¹¹If the instructor prefers providing more guidance on how to conduct the presentations, the instructor could conduct the first presentation to set an example of what the PowerPoint slides should look like and how the related discussion should be organized. In addition, the instructor could require that the PowerPoint slides be submitted to the instructor ahead of time to allow for another low-stakes intervention, ensuring that the slides are appropriate before the presentation takes place.

have taken, such as courses that include models of discrimination. Very often the liveliest discussion occurs at the end of the presentation when discussing questions such as what other explanations for the results could exist.

4 Required Resources, Benefits, and Additional Suggestions for Class Discussions

This section begins with a discussion of required resources related to the preparation time, grading time, and class time. It then presents benefits and shows how the student-led readings about racial justice support the student learning outcomes. Finally, it offers additional suggestions for the class discussions.

4.1 Required Resources

Strasser and Wolfe (2014) point out that for any teaching idea to be successful, it needs to be feasible for the instructor. In this econometrics course, the resource constraints consist of the preparation time, grading time, and class time.

The preparation time required is minimal, consisting only of providing instructions on the syllabus at the beginning of the semester. Table A1 in the Appendix shows the instructions that were provided. While students are welcome to contact the instructor if they have questions when selecting the article, writing the questions and preparing the PowerPoint presentations, the students typically manage this entire process on their own without involving the instructor.

Grading time is also minimal. Grading of the presentations by the presenting students can be made efficient by a grading rubric as recommended in McGoldrick and Peterson (2013). Table 3 shows the grading rubric that was used in this course. Grading of the participation by the non-presenting students can be done using a simple grading rubric, such as 0 and 1 where 0 is no participation and 1 is participation; or 0, 1, and 2 where 0 is no participation, 1 is limited participation, and 2 is excellent participation. Grading of both the presenting and non-presenting students can then be accomplished during the presentations, resulting in no additional grading time outside of the class meeting.

Perhaps the biggest resource requirement has to do with dedicating class time to the journal article presentations. The econometrics course is already packed with topics that instructors want to cover. Instructors might therefore ask themselves whether introducing the student-led readings focused on racial justice is feasible. For example, if there were seven presentations of 25 minutes, the presentations would take up 175 minutes, which translates into approximately one week of class time, assuming that there are two 80-minute classes in a week. The following subsection discusses the benefits of the student-led readings and argues that the benefits are worth the class time.

Since the COVID-19 pandemic has led many institutions to utilize virtual learning, feasibility of the student-led readings about racial justice in the virtual format deserves a special mention. This course was taught in person but the approach can be implemented virtually. Any application, such as the commonly used Webex and Zoom, that allows for screen-sharing and involvement by participants makes it possible for the presenting students to share their slides and discuss the article with the non-presenting students.

Since the student-led readings about racial justice were implemented in a small class,

Table 3: Grading Rubric for the Student-Led Journal Article Presentations

	Percent
The article is from a peer-reviewed economics journal.	5
The article and questions are posted on our course website discussion board at least one week before the presentation.	10
Presenters introduced themselves and their topic.	2.5
Presenters explained why the article is interesting/relevant.	2.5
The article is sufficiently long/difficult and includes appropriate econometrics topics.	15
Enough questions are posted for everyone to have an opportunity to participate in the discussion.	10
Questions about data/econometrics are included.	20
Presentation is well-structured.	5
Presentation is interesting.	5
PowerPoint slides are clear. (There is not too much text, font size is appropriate, colors do not obscure the text, etc.)	7.5
Presenters lead a productive discussion during the class meeting.	10
Transition between presenters is smooth.	2.5
Presentation has good timing. (It is not too short or long).	5
Total	100

implementation in larger classes should also be discussed. If the number of students in the class does not allow for teams of two students, students can present in teams of, for example, three students, to keep the number of presentations manageable. In a large class, it is possible that some non-presenting students would not have an opportunity to answer a question asked by the presenting students. To ensure that the non-presenting students did read the article and answer the questions, the instructor could require students to submit their answers before class. If the size of the class did not allow for students to present in teams at all, the student-led readings about racial justice topics could still be implemented as an assignment completed fully outside of the class meetings. For example, students could still select the article, share it with other students and prepare questions to be answered. The other students could submit answers to the questions as a homework assignment. The benefits of the student-led readings about racial justice described in the next subsection would still maintain.

4.2 Benefits

This subsection discusses the benefits of the student-led readings focused on racial justice. The advantage of letting students select the journal articles is that they select articles from fields that interest them rather than fields preferred by the instructor, which seems to motivate the students to be more engaged in the learning process. While the student-led readings enhance a variety of important skills such as critical thinking, analytical reasoning, and presentation skills,¹² the main benefits are bringing racial justice topics into the course while strengthening econometrics skills.

The econometrics skills are strengthened both for the presenting and non-presenting students. All students have to carefully read the articles to ask or answer questions about econometrics topics that we have discussed in our class meetings. This reinforces learning the material covered in our class meetings. For example, every presentation discusses interpretation of coefficients and statistical significance, so the instructor does not have to spend time reviewing these topics. The students also have to ask and answer questions about econometrics topics that we have not discussed in our class meetings yet. This challenges the students to independently learn about new econometrics topics, a skill that is valuable when students conduct independent research in their academic and work careers.

Topics of race and racism are brought into the course in many ways. For example, in a journal article that uses data that classifies individuals into White, Black, or Other categories, students might discuss that this classification does not capture nuances of race

¹²For example, in the Hart Research Associates (2013) survey of college graduate employers, 82% of employers indicated that colleges should place more emphasis on critical thinking and analytical reasoning skills and 82% of employers indicated that colleges should place more emphasis on the ability to effectively communicate orally.

with which the individuals might identify. When discussing journal articles where race plays a role in explaining outcomes in the housing market, students might discuss redlining, a discriminatory practice of financial institutions not providing mortgages to individuals living in particular neighborhoods. In addition, in any article the students can discuss shortcomings of the research, such as other variables that could be included in the model to further explain the dependent variable or extending the research to other sample periods or locations. Because the course enrolls more advanced students with stronger technical skills than, for example, introductory courses, the students can study racial justice topics on a deeper level using evidence-based approach where causal effects are clearer and more convincing than in discussions about race that are not evidence-based.

This econometrics course has seven student learning outcomes: 1) understand the theory behind basic econometric techniques used in empirical economics research, 2) understand how these techniques are used to answer research questions, 3) know how to choose the appropriate technique, 4) estimate econometric models using Stata, 5) critically interpret estimates from these models, 6) complete projects using economic data and econometrics, and 7) gain a better understanding of economics journal articles. While the student-led readings support all the student learning outcomes, they are particularly useful for achieving outcomes 2), 3), 5), and 7).¹³ Students improve their understanding of how econometric techniques are used to answer research questions when they read about the journal article research questions and see what variables are used in the articles (for example, indicator variables and interaction terms), how coefficients on the variables are interpreted, etc. Students also

¹³The student learning outcome 1) is mainly achieved during lectures and homework assignments. The student learning outcome 4) is achieved by in-class Stata exercises, homework assignments, and replication projects that also achieve the student learning outcome 6).

learn how to choose appropriate econometric techniques, for example, when the articles explain why the ordinary least squares regression is not appropriate and another technique such as instrumental variables has to be implemented. Students learn to critically interpret estimates from the econometric models, for example, when the articles conduct robustness checks. Overall, students gain a better understanding of how economics journal articles are organized by reading all sections of the articles: not only the abstract, introduction, and conclusion, but also the methodology, data, results, and robustness checks including figures and tables.

4.3 Additional Suggestions for Class Discussions

This subsection offers additional suggestions for conducting the class discussions. Given that the journal articles are about the role that racism has played in the economy, it is useful for the instructor to reflect on their positionality in social hierarchies and practice reflexivity in teaching the econometrics course before starting the class discussions. If the course syllabus contains a section on diversity and inclusion, it is helpful to review this section with the students on the first day of the class presentations. If the course syllabus does not contain such a section, it is helpful to bring up the topics of diversity of inclusion on the first day of the class presentations, acknowledge that the role that racism has played in the economy is a difficult topic and set expectations for appropriate discussions.

The instructors could take advantage of the website Diversifying Economic Quality that lists resources for teaching anti-racist courses (*Diversifying Economic Quality* 2022). The instructor might also want to guide the students to ask questions that will challenge students

to contemplate econometrics in an antiracist way. This subsection provides examples of such questions about four aspects of the journal articles that students are likely to encounter: data measurement, data collection, model specification, and interpretation of results.

In the discussion of data measurement, students could consider how race is measured. What elements are omitted when race is measured as a categorical variable? What do the race categories used in the article that is being discussed capture and what do they not capture? In the selected journal article, does the race variable capture individuals' biological differences or their differences in social experiences?

Regarding data collection, students could be encouraged to think about how data was collected in the journal article that is being discussed. Was data collected in an ethical and anti-racist way? Were some racial or ethnic groups undercounted in the data? How could econometric models account for undercounting of some racial or ethnic groups?

Related to model specification, student could consider whether race was added to the econometric model as an independent variable without an explanation of why race would cause differences in the dependent variable. If demographic variables in the journal article are limited to a race variable, students could be guided to think about intersectionality. For example, following Apodaca (2009), introducing interaction terms into the econometric model where the race variable is interacted with a gender variable allows the researcher to distinguish between race-gender groups and thus embrace intersectionality and reduce essentialization. In another approach, intersectionality theorists such as Sprague (2016) and Scott and Siltanen (2017) emphasize the importance of estimating separate models for different demographic groups, rather than, for example, including indicator variables or interaction terms for measures such as race or gender. These authors argue that separate

models allow investigating how the mix of explanatory variables changes across groups and comparing the models' explanatory power across the intersections.

In interpretation of results, students could discuss framing of the results. If indicator variables and interaction terms are used to measure race and gender, students could discuss which race-gender group is used as the reference group. Would the results be interpreted differently if low-income women of color were used as the reference group instead of high-income White men? This *studying up*¹⁴ rather than *studying down* might allow the researcher to discuss the privileges of the dominant economic groups instead of the problems of the groups with lower economic status.

5 Conclusion

This paper shows how to incorporate racial justice topics into an econometrics course. Students select journal articles about race in the economy (for example, articles about racism in the housing and credit markets), present the articles to the class and lead a discussion about them. Students benefit by not only strengthening their econometrics skills but also using evidence-based approach to gain knowledge of the role that racism has played in the economy.

While the topics focus on “the lives and experiences of Black folks in North America and/or the African diaspora” due to being inspired by the Racial Justice Teaching Challenge at my institution, this approach could be broadened to incorporate other races by focusing on, for example, Native American rights discussed by Blanchflower and Feir (2022)

¹⁴S. Becker and Ariello (2013) provides a definition of studying up.

and Anti-Asian Hate movement discussed by Lee (2022). This approach could also be extended to include wider topics of diversity, equity, and inclusion (DEI) with topics of gender equity, LGBTQ+ rights, disability rights, immigration, income inequality, poverty, and various topics related to social justice.

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A Appendix

Table A1 shows the instructions provided on the syllabus about the student-led journal article presentations.

Table A1: Instructions about the Student-Led Journal Article Presentations

We will read economics journal articles to see how econometric techniques are used in empirical economics research. These articles will focus on racial justice topics. Follow the below instructions.

Instructions for selecting and posting the article:

- Your team will choose the journal article.
- Select an article related to racial justice.
- The article cannot be a reading from another course or the readings for our replication projects.
- Choose an article that you find interesting and want to share.
- The article has to be from a peer-reviewed economics journal. If you want to select an article from another source (for example, a working paper series), check with me to ensure that it is an appropriate source.
- The article has to include econometrics topics that we have discussed in our class meetings.
- The article has to include econometrics topics that we have not discussed in our class meetings yet.
- Post the article on our course website discussion board at least one week before your presentation.
- Post enough questions about the article for all students to have an opportunity to participate in your discussion.
- Include multiple questions about data and econometrics.

Instructions for leading the in-class discussion about the article:

- Your team will present the article and lead a discussion about it during our class meeting.
- Prepare a PowerPoint presentation about the article.
- Lead a discussion during our class meeting using the questions that you had posted on our course website.

Instructions for students who are not presenting:

- If you are not presenting, you are expected to read the article before our class meeting and be prepared to discuss all the posted questions during our class meeting.
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