

Representations of Men and Women in Introductory Economics Textbooks

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In this paper we ask: how are women represented in introductory economics textbooks? Do students learning from these texts see gender diversity in economic actors and their actions? Do economic textbooks describe a world that feels familiar to both male and female students?

Economics is a male-dominated discipline. Men outnumber women at every level of study from high school economics through to full professor. While many other fields—including STEM-related fields—have seen women grow as a share of students and faculty, economics has stagnated, with little improvement at any level over the past fifteen years.¹ This fact both makes it likely that economics textbooks are male-dominated and suggests that concrete steps need to be taken to understand why

economics is not attracting female students. One part of the answer may be that women do not see themselves, their interests, and their lives described in economics textbooks.

The lack of women in economics textbooks is in conflict with a goal of many in the profession: to demonstrate that economics is helpful for understanding the world around us. Textbooks promise to do this, arguing that they will explain the behavior of “individuals who make up the economy”, the “choices people make to attain their goals”, and “the ordinary business of life.”²

We find that textbooks instead demonstrate a world with few women. Women are underrepresented in fictionalized accounts, in choice of pronoun, and in the real people that enliven and motivate discussion of economic phenomena.

Instructors are faced with the challenge of preparing students for the future, having themselves been educated in the past. As a

¹ See the CSWEP (2017) annual report for details on women’s share of undergraduate students, graduate students, and faculty.

² Mankiw (2018) p.4; Hubbard and O’Brien, (2016) p.4; Alfred Marshall quoted in Krugman and Wells, (2015) p.1.

result, teaching material can often be backward looking, reflecting the world as the author experienced it. Yet, from the students' perspective they may desire teaching materials to be forward-looking, so that they are educated about the world they are likely to encounter. Additionally, one might argue that all types of students should be able to see themselves and their lives reflected in the examples and discussions they see when they study economics. Therefore, one could argue that textbooks not only should be representative of the actual world, but reflect the diversity of the student body we would ideally like to attract.

I. From Text to Data

To examine how women and men appear in introductory economics textbooks, we construct a dataset summarizing the main text of eight leading principles of economics textbooks.³

For each textbook, we code each mention of a person the first time they appear in an episode.⁴ People show up in examples, both fictionalized and non-fictionalized, in the discussion of economic history and economic

research, and in motivational discussions. For each appearance of a person, we note their gender. In most cases, a gendered pronoun is used, even when the example begins with a name. In occasional cases, authors make specific efforts to use gender neutral language such as “he or she” or “his or her”. These cases were coded as gender-neutral.

For each person mentioned, we code whether the person is a fictionalized or “ordinary” person (perhaps friends, family, or neighbors of the author, but clearly not a well-known individual), an economist, a policy maker, a business leader, or a celebrity.⁵ Economists include those who made important, historic contributions to economics regardless of their education, such as Thomas Malthus and Marquis de Condorcet. Public policy makers include economists when they are discussed in relation to a public policy position, such as the Chair of the Federal Reserve Board. That means that when Alan Krueger is discussed in relation to the employment effects of the minimum wage, he is coded as an economist. When he is mentioned as Chairman of the Council of Economic Advisers, he is coded as

³ We referred to sales data provided by Nielson PubTrack to ensure that we captured texts that would reflect what a majority of students are learning from, however these eight do not necessary make up the top eight in terms of sales. The eight books covered are: Acemoglu et al. (2017), Bade and Parkin (2017), Hubbard and O'Brien (2015), Krugman and Wells (2015), Mankiw (2018), McConnell et al. (2017), Parkin (2015), and Schiller and Gebhardt (2015).

⁴ Our data focuses on mentions in the main text. We excluded people who appeared in footnotes, endnotes, table sources, and end-of-chapter problems. If the person reappears at another time in the textbook they are coded again, but they are only coded once in a given discussion.

⁵ Across the eight books there were also three journalists and 52 science, social science, and humanities scholars mentioned. We exclude these from much of our analysis. All but one of these 55 are male, so this is the category with the least female representation.

a policy maker. Identifiable business leaders include CEOs of Fortune 500 companies, but it is a broader category that also includes small business owners—like the owner of a record store in Texas—inventors, and entrepreneurs. Celebrities include artists, authors, Hollywood stars and producers, athletes, media personalities, and famous historical figures (such as notorious criminals, playwrights, and explorers).

We also record the occupation of the person and the setting they are in. In many situations in which a person appears in the textbook, they do not have a clear occupation or necessarily a concise setting. For example, if an author describes a person buying a bond, we have no occupation for the person, but the setting is the bond market.

For each episode we note the type of action the person is taking. We consider whether they are making an active authoritative decision or consumption decision, an analysis of a preexisting decision, or whether they are a bystander who is having a decision made for them or partaking in no action.

To record the gender dynamic within examples, we note the number of men and women involved in each example. Finally, we classify each example as numeric or non-numeric, based on its quantitative composition.

II. Empirical Analysis

Table 1 shows that across the eight books that we analyze, 77 percent of people mentioned in introductory economics textbooks are male. The male share of people in the most male-dominated text is 90 percent and the female share in the most female-dominated textbook is 25 percent (that book has a 66 percent male-share and nine percent of the examples are gender neutral).

TABLE 1 — GENDER COMPOSITION OF PEOPLE MENTIONED IN TEXTS

	Gender			Observations
	Men	Women	Neutral	
Total	77%	18%	6%	2,858
Fictional or “ordinary” people	48%	35%	17%	966
Economists	93%	7%	-	832
Business leaders	94%	6%	-	248
Policy makers	92%	8%	-	542
Celebrities	76%	24%	-	208

Notes: Data is constructed from the following textbooks: Acemoglu et al. (2017), Bade and Parkin (2017), Hubbard and O’Brien (2015), Krugman and Wells (2015), Mankiw (2018), McConnell et al. (2017), Parkin (2015), and Schiller and Gebhardt (2015).

A. Fictionalized Examples and Celebrities

Authors have more choice when it comes to fictional or “ordinary” people than for any other type of people. Not surprisingly, the share of women is largest in this category. Women are a third of fictional or “ordinary” people. However, 17 percent of fictionalized people are explicitly mentioned in gender-neutral terms. If you exclude these from the analysis, women are 42 percent of the remaining. This is similar to the share of students who are female in introductory economics courses, but far from the 57 percent of college students who are

female. To provide another baseline, women are 51 percent of the United States population.

Seventy-six percent of celebrities mentioned in textbooks are male. Female celebrities are most likely to be entertainers—singers or movie stars—while male celebrities are most likely to be athletes. Celebrities are a broad category and are used in textbooks for a number of reasons, but primarily for making the material more interesting or relatable for students. For example, in Hubbard and O'Brien (2016), Zack Geinke (baseball player) is used to illustrate the concept of marginal revenue product. Schiller and Gebhardt (2015) refer to tax avoidance behavior by the Rolling Stones and U2. To illustrate the principle of diminishing marginal utility, Krugman and Wells (2016) point to the shift of oysters from poverty to luxury food, using a quote from Charles Dickens.

In each of these cases, there are many other choices that authors could make to motivate learning. This partially explains the wide variation in the gender share among celebrities mentioned across books: the book with the highest share of female celebrities is 43 percent female, while the book with the lowest share of female celebrities mentioned is eight percent female. In sum, authors essentially have as much choice in gender representation among celebrities as with fictionalized examples. With

celebrities, however, an author would need to be more actively engaged in ensuring that they were using a diverse set of celebrities given that celebrities—unlike fictionalized accounts—are not interchangeable in examples.

B. Business Leaders and Policy Makers

Economists, policy makers, and business leaders are the three categories in which men outnumber women more than nine to one. Some of this male dominance may reflect the historical fact that these three categories have been dominated by men for centuries and remain domains in which women are outnumbered by men.

Business leaders—Many business leaders appear in textbooks for similar reasons as celebrities: they are interesting and engage readers. However, some business leaders may provide quintessential examples of important economic phenomena. For example, Microsoft and thus Bill Gates is mentioned in many books in discussions of antitrust. So it is important to ask whether the business leaders that appear are so central that most authors mention them. The answer is no: 84 percent of business leaders mentioned in books appear in only one book. There are five male business leaders who appear in more than half the books: Steve Jobs, Bill Gates, Mark Zuckerberg, Henry Ford, and John D. Rockefeller. Excluding these five men raises the share of women among business

leaders mentioned from six percent to nine percent. Most mentions of business leaders are thus more like celebrities—bringing interest and real world people to the lesson—than quintessential examples of economic phenomena.

To continue to explore how real-world gender shares may be driving the share of women among business leaders mentioned in texts, we code business leaders into once or former CEOs of Fortune 500 companies; CEOs of smaller companies; entrepreneurs and inventors; and other business leaders which include those working at big and small companies and small business owners. Table 2 shows that among Fortune 500 CEOs mentioned, 97 percent are male. To put this in context, Fortune listed 32 women among the Fortune 500 in 2017, a share that is close to double the mentions in textbooks. None of the textbooks mention any of the top five women in the Fortune 500.

More than half of the business leaders mentioned in texts are not CEOs of Fortune 500 companies. Among CEOs or business owners of smaller companies, Table 2 shows that nine percent are women. For a point of comparison,

in 2016, 27 percent of all CEOs in the United States and 36 percent of small business owners were women.⁶ Among inventors or entrepreneurs who are mentioned, five percent are women. To put this in context, 19 percent of patents are held by women and 17 percent of entrepreneurs are women.⁷

TABLE 2 — MENTIONS OF BUSINESS LEADERS

	Men	Women	Observations
All Business Leaders	94%	6%	248
Fortune 500 CEOs	97%	3%	100
Non-Fortune 500 CEOs	91%	9%	35
Inventors & Entrepreneurs	95%	5%	81
Other	84%	16%	33

Policy Makers—Among policy makers mentioned in textbooks only eight percent are women. One explanation for this may be that introductory textbooks frequently refer to U.S. Presidents who are all male. Indeed, nearly half of the mentions of policy makers refer to a current or former U.S. President. Thus, excluding Presidents from the sample raises the female fraction among mentioned policy makers to 15 percent.

Another frequently referenced type of policy maker is Federal Reserve Chairs. However, excluding Federal Reserve Chairs from the analysis reduces the share of women mentioned as policy makers to five percent. At the time many of these books were last revised, Janet Yellen was the chair of the Federal Reserve.

⁶ Bureau of Labor Statistics (2017). Data are from Table 11. Employed Persons by Detailed Occupation, Sex, Race, and Hispanic or Latino Ethnicity. U.S. Small Business Administration (2017). Data are from Table 1. U.S. Businesses, Sales, Employment, and Payroll by Business Owner's Gender.

⁷ Zarya (2016) shows data from 2010 on women as primary and non-primary inventors on patents; Teare (2017) shows that 17 percent of venture-backed companies have been women founded since 2012.

Mentions of Janet Yellen account for 45 percent of all female policy makers mentioned in these textbooks.

Excluding U.S. Presidents and Federal Reserve chairs, policy makers who are mentioned in textbooks span a large range of positions from international heads of state to U.S. cabinet members to more minor policy players. It is difficult to know what is an appropriate gender baseline for mentions of policy makers. However, some useful baselines to consider are: women were 27 percent of the cabinet members of U.S. Presidents in the 21st century; women were 19 percent of the 115th Congress; and in September 2017 women were 21 percent of the mayors of larger cities.⁸

C. Economists

Economists are mostly male, particularly historically. As such, some may wonder if the primary reason that men make up the majority of economists is because textbooks are relying on the founding fathers of the field. However, we find only three economists are mentioned in every book, and another 17 men are mentioned in the majority of books. (The only woman to appear in all books is Christina Romer—but sometimes in her capacity as an economist and sometimes in her capacity as Chair of the Council of Economic Advisers).

Excluding any economist mentioned in more than half the texts raises the share of women among remaining economist mentions from eight percent to ten percent. As with policy makers and business leaders, economists who appear in most books are a small share of the economists mentioned.

However, because the share of women in economics grew over the 20th century we next divide our data into four categories: deceased economists; living economists who completed their PhD prior to 1975, who completed between 1975 and 1990; and those who earned their PhD post-1990.⁹

TABLE 3 — MENTIONS OF ECONOMISTS IN TEXTBOOKS

	Men ^a	Women	Observations
Economists	93%	7%	832
Economists exc. frequently mentioned	90%	10%	596
Deceased	98%	2%	316
Living economists, PhD pre-1975	96%	4%	249
Living economists, PhD 1975-1990	90%	10%	130
Living economists PhD 1991-2016	82%	18%	193

Not surprisingly, women are a higher share among more recent cohorts of economists mentioned in textbooks. Table 3 shows among economists mentioned in introductory textbooks, women are two percent of deceased economists, four percent of living economists who earned their PhD before 1975, 10 percent of those earning their PhD between 1975 and 1990, and 18 percent of those who earned their PhD in 1991 or later. This share from the most recent period is lower than the share of women

⁸ Center for American Women and Politics (2017).

⁹ We use CVs and other biographical information that is publically available to date their year of PhD and/or death.

receiving PhDs—which is close to a third—but one might argue that the relevant baseline is related to publications. Since 1990 women have been an author on 19 percent of articles published in the top four journals in economics.¹⁰

The highest female share of economists mentioned in the books we analyze is 13 percent, while the lowest is zero. The books with a larger share of female economists mentioned tend to emphasize data analysis and empirical research and thus draw from a more recent literature.

D. Actions and Settings

Finally, we return to fictionalized examples to assess the roles that women play in economics and the various settings in which they appear.

When we look at what these fictionalized men and women are doing, we see some familiar gender patterns. Men are more likely to be analyzing or making a decision, and in agriculture, business, sports, and policy. Women are more likely to have a decision being made for them. Women are more likely to be engaging in a domestic setting, or in education or entertainment. Finally, women—or female pronouns—are less likely to be used in a numeric example.

Even in settings that are stereotypically female-dominated (such as furniture, fashion, and food), women are not in leading positions. The Symons test, a tool used to analyze business case studies, employs three criteria to evaluate gender equality: whether an example includes a woman, in a leadership position, who speaks to another woman about business.¹¹ There is not a single example across all texts that meets these criteria.

In general, when there are multiple people mentioned in an episode, men outnumber women 68 percent of the time. The two most common scenarios for male-majority examples involve multiple male economists and policy makers, while the two most common scenarios for female-majority examples involve fictional or “ordinary” people or public figures. Two-thirds of female-majority examples are composed of fictional or “ordinary” people, compared with 20 percent of male-majority examples.

III. Discussion

Women are less than a quarter of all mentions of people in introductory economics textbook. It is beyond the scope of this paper to ask both whether the lack of gender diversity we

¹⁰ Data provided by Erin Hengel for the QJE, AER (excluding the May P&P issues), ECA, and JPE.

¹¹ Symons and Ibarra (2014).

document is a contributor to the lack of diversity among students enrolling in economics, or whether such inequities create a false sense of the business and professional domain economics students will enter upon graduation. However, there is a large literature on stereotype threat that suggests that an inability for women to see themselves in economics may make them less interested in the field. Most promisingly, a recent study showed that brief exposure to female economics alumnae led more women to continue on to a further economics class (Porter and Serra, 2017). Our hope is that our analysis will further spark discussions and research into these types of questions.

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