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## How Opting Out Among Women With Elite Education Contributes to Social Inequality

Joni Hersch\*

### INTRODUCTION

Women's labor force participation grew rapidly in the second half of the twentieth century, rising from 33.9% in 1950 until peaking at 60% in 1999.<sup>1</sup> Since then, women's labor force participation rate has been flat and has even slightly declined.<sup>2</sup> Between 2000 and 2009, the rate varied between 59.9% and 59.2%, with a slight downward trend.<sup>3</sup> After that, the rate further dropped to 58.6% in 2010, 58.1% in 2011, and 57.7% in 2012.<sup>4</sup>

The possibility that women's attachment to the labor force had reversed course starting in the late 1990s gave rise to a flurry of articles in the popular press and introduced the term "opting out" into the popular lexicon. The term "opt-out revolution" was coined by Lisa Belkin in her 2003 *New York Times Magazine* cover

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1. *Changes in Men's and Women's Labor Force Participation Rates*, BUREAU OF LABOR STATISTICS, U.S. DEP'T OF LABOR (Jan. 10, 2007), <http://www.bls.gov/opub/ted/2007/jan/wk2/art03.htm> [hereinafter *Changes*]. Notably, men's labor force participation rates have steadily declined from 1950 to present, *id.*, although the labor force participation rate for men is always higher than the rate for women in the same year, U.S. BUREAU OF LABOR STATISTICS, U.S. DEP'T OF LABOR, REPORT 1049, *WOMEN IN THE LABOR FORCE: A DATABOOK 10–14 tbl.2* (2014) [hereinafter U.S. DEP'T OF LABOR, REPORT 1049]. For example, the rates for men were 86.4% in 1950, 79.7% in 1970, 76.4% in 1990, and 73.3% in 2005. *Changes*, *supra*.
2. U.S. DEP'T OF LABOR, REPORT 1049, *supra* note 1, at 11–12 tbl.2.
3. *Id.* at 12 tbl.2.
4. *Id.* at 12 tbl.2. This downward trend has been widely reported and analyzed. *See, e.g.*, Diane J. Macunovich, *Reversals in the Patterns of Women's Labor Supply in the United States, 1977–2009*, 133 MONTHLY LAB. REV. 16, 16 (2010).

article.<sup>5</sup> Belkin's article profiles a group of female Princeton graduates and MBAs who left successful careers in order to care for their children. Many more reports of highly educated women leaving, or planning to leave, careers to care for their children have been followed in the media. For one example, Louise Story profiled Yale undergraduates, reporting that "[m]any women at the nation's most elite colleges say they have already decided that they will put aside their careers in favor of raising children."<sup>6</sup> Linda Hirshman reported that "[h]alf the wealthiest, most-privileged, best-educated females in the country stay home with their babies rather than work in the market economy."<sup>7</sup> Joan C. Williams, Jessica Manvell, and Stephanie Bornstein provided a review and analysis of the substantial media coverage generated by the possibility that women are leaving high-status careers to care for their children.<sup>8</sup> Furthermore, interest in whether successful women are curtailing their labor market activity has not abated. In fact, the question has remained prominent as the dueling positions of Sheryl Sandberg (*Lean In*) and Anne-Marie Slaughter (*Why Women Still Can't Have it All*) have captured the public eye and generated substantial debate.<sup>9</sup>

To economists, the possibility that an opting-out revolution is underway seems counterintuitive. The gender pay gap has narrowed considerably, and occupations previously off-limits to women have opened up.<sup>10</sup> Highly educated women face a very high opportunity cost of exiting market employment.<sup>11</sup>

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5. Lisa Belkin, *The Opt-Out Revolution*, N.Y. TIMES MAG. (Oct. 26, 2003), <http://www.nytimes.com/2003/10/26/magazine/26WOMEN.html>.

6. Louise Story, *Many Women at Elite Colleges Set Career Path to Motherhood*, N.Y. TIMES (Sept. 20, 2005), [http://www.nytimes.com/2005/09/20/national/20women.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2005/09/20/national/20women.html?pagewanted=all&_r=0).

7. Linda Hirshman, *Homeward Bound*, THE AM. PROSPECT (Nov. 21, 2005), <http://prospect.org/article/homeward-bound-0>.

8. JOAN C. WILLIAMS, JESSICA MANVELL & STEPHANIE BORNSTEIN, CTR. FOR WORKLIFE LAW, "OPT OUT" OR PUSHED OUT?: HOW THE PRESS COVERS WORK/FAMILY CONFLICT (2006).

9. Facebook COO Sheryl Sandberg maintains in her best-selling book, published in March 2013, that in order for women to progress professionally, they need to "lean in" and work harder to overcome their insecurities. See SHERYL SANDBERG, *LEAN IN: WOMEN, WORK, AND THE WILL TO LEAD* (2013). In contrast, Anne-Marie Slaughter argues in her widely-discussed *Atlantic* article that high-level workplaces are so demanding that work-family balance is not possible and forces women to curtail their labor market activity. See Anne-Marie Slaughter, *Why Women Still Can't Have It All*, THE ATLANTIC (June 13, 2012), <http://www.theatlantic.com/magazine/archive/2012/07/why-women-still-cant-have-it-all/309020/6/>.

10. See Claudia Goldin, *The Quiet Revolution That Transformed Women's Employment, Education, and Family*, 96 AM. ECON. REV. 1, 12 (2006).

11. See, e.g., Julie L. Hotchkiss, M. Melinda Pitts & Mary Beth Walker, *Labor Force Exit Decisions of New Mothers*, 9 REV. ECON. HOUSEHOLD 397, 409 (2011) (discussing education as a main factor in the opportunity cost of not working); Christine Percheski, *Opting Out? Cohort Differences in Professional Women's Employment Rates from 1960 to 2005*, 73 AM. SOC. REV. 497, 500 (2008) (discussing how professionals have higher opportunity costs when not working).

Economists have typically considered it unlikely that educated women would make investments in their future careers only to leave them to care for their children. Indeed, academic studies published in the 2000s concluded that there was no evidence that highly educated women were opting out of the labor force.<sup>12</sup> However, as the media coverage cited earlier indicates, the media attention has not been on highly educated women generally, but instead has primarily focused on graduates of elite colleges and universities.<sup>13</sup> Because the majority of women are not graduates of elite institutions,<sup>14</sup> the overall rate of opting out can be low even if the rate among graduates of elite institutions is high. Whether labor market activity differed by status of undergraduate institution had not been addressed in the research that dismissed the possibility that opting out was an important phenomenon.

In my 2013 publication, *Opting Out Among Women with Elite Education*, I provided the first evidence about whether labor market activity differed by college or university status.<sup>15</sup> My analysis confirmed that, overall, highly educated women have high labor force participation.<sup>16</sup> But, importantly, I found that the group that has received the most media attention—graduates of elite colleges and universities—does show signs of opting out.<sup>17</sup> Relative to their counterparts who are graduates of non-elite institutions, women who are graduates of elite institutions are less likely to be employed at all, less likely to work full time, and they generally have lower labor force attachment.<sup>18</sup>

In this Article, I expand on my 2013 publication in two broad directions. First, I provide new statistics on the relationships among the status of the undergraduate institution and family background, likelihood of earning a professional or graduate degree, and earnings. I also provide new information on whether there is evidence of the start of a trend in opting out on the basis of elite education. Because only one year of relevant data was available at the time my 2013 paper was completed,

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12. Many papers examine the opting out hypothesis by comparing women's employment rates by cohort, education, presence of children, or occupation, and generally find little evidence of a trend in labor force exit of more educated mothers. *See, e.g.*, Heather Antecol, *The Opt-Out Revolution: Recent Trends in Female Labor Supply*, in 33 RESEARCH IN LABOR ECONOMICS 45 (Solomon W. Polachek & K. Konstantinos Tatsiramos eds., 2011); HEATHER BOUSHEY, CTR. FOR ECON. & POL'Y RESEARCH, ARE WOMEN OPTING OUT? DEBUNKING THE MYTH (2005), [http://www.cepr.net/documents/publications/opt\\_out\\_2005\\_11\\_2.pdf](http://www.cepr.net/documents/publications/opt_out_2005_11_2.pdf) [hereinafter BOUSHEY, DEBUNKING THE MYTH]; Heather Boushey, "Opting Out?" *The Effect of Children on Women's Employment in the United States*, 14 FEMINIST ECON. 1, 22 (2008) [hereinafter Boushey, *Opting Out*]; Goldin, *supra* note 10, at 17; Hotchkiss et al., *supra* note 11, at 412; Percheski, *supra* note 11, at 513–14.

13. *See supra* notes 5–9 and accompanying text.

14. *See* Joni Hersch, *Opting Out Among Women with Elite Education*, 11 REV. ECON. HOUSEHOLD 469, 471 (2013).

15. *Id.*

16. *Id.* at 488, 490.

17. *Id.* at 498.

18. *Id.* at 492–93.

it was unknown whether my reported findings supported the possibility of a trend in opting out among those with an elite education. A second year of data, collected seven years after the original data period, is now available.<sup>19</sup> These data show that the gap in labor market activity on the basis of educational status was largely unchanged between 2003 and 2010, confirming the lower labor market activity of women with elite education relative to their counterparts who are graduates of non-elite institutions.<sup>20</sup>

Second, I discuss what the greater opting out of women with elite education implies for social inequality on two dimensions. One question is whether women are pushed out of demanding jobs by inflexible work requirements, and if so, whether institutional changes would lead to greater retention of women in high-profile careers. I argue that because women with the greatest career options—graduates of elite institutions—are more likely to leave the labor force, inflexible work requirements are not the driving force behind their lower labor force activity. Another key question relates to competition for limited slots in elite institutions. Women graduates of elite institutions who opt out of the labor market displace someone else who may have used their degree to stay in the labor market. And these highly educated stay-at-home mothers have more time to support enrichment activities for their children. These additional investments in their children increase the likelihood that their children will be accepted to the same types of elite institutions their mothers attended. Social welfare may be improved by greater efforts to place students from lower-income families into elite institutions if they are more likely to remain in the labor market.

## I. BACKGROUND ON LABOR FORCE PARTICIPATION

Before turning to my original data analysis, in this section I provide some background information on overall labor market activity and earnings by educational attainment, drawn from data collected by the U.S. Bureau of Labor Statistics. This background provides context on underlying trends in labor force participation and education, and highlights the challenges in identifying whether trends show that highly educated women are exiting the labor force to care for their children.

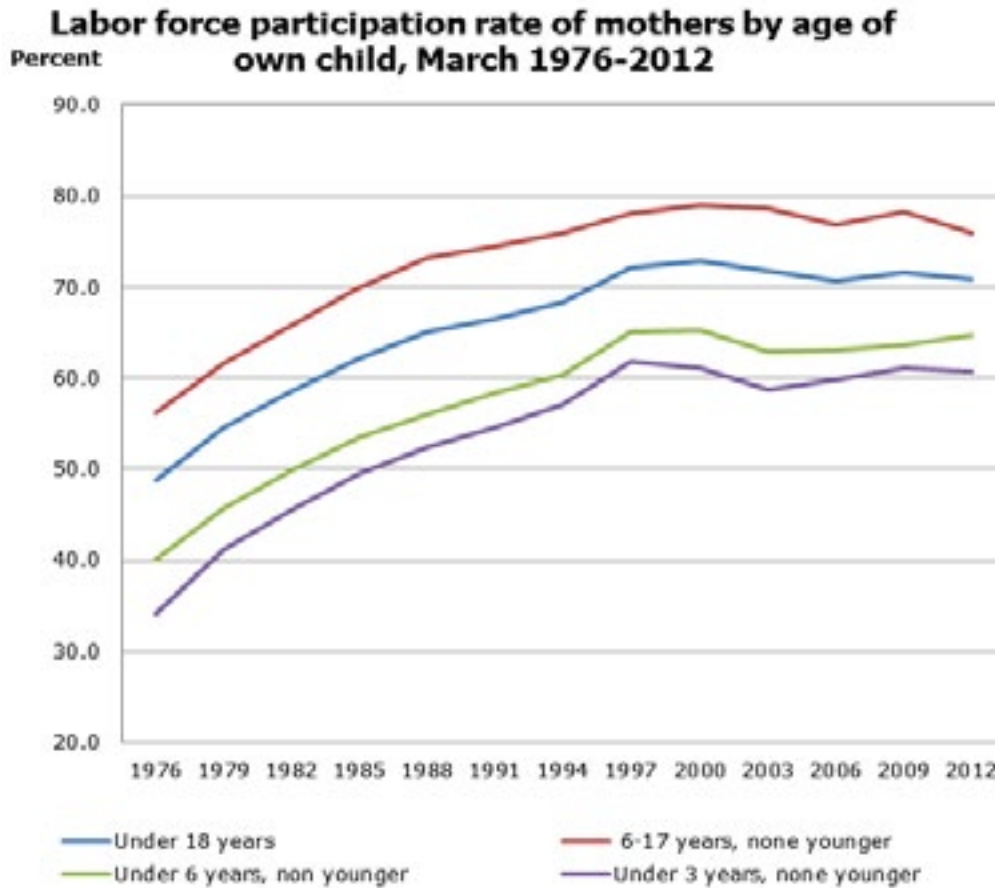
Figure 1 below shows the trend in mothers' labor force participation from 1976 to 2012. In each year studied, mothers of younger children had lower labor force participation than mothers of older children, but until the mid-to-late 1990s, the trend in labor force participation for mothers was clearly upward. But by the mid-to-late 1990s, the growth in mothers' labor force participation seemed to stall

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19. NAT'L SCI. FOUND., NATIONAL SURVEY OF COLLEGE GRADUATES (2010), *available at* <http://sestat.nsf.gov/datadownload/> [hereinafter NSCG (2010)].

20. *Compare* NAT'L SCI. FOUND., NATIONAL SURVEY OF COLLEGE GRADUATES (2003), *available at* <http://sestat.nsf.gov/datadownload/> [hereinafter NSCG (2003)], *with* NSCG (2010), *supra* note 19.

or even decline. Because the stalling started before 2000, this reversal of the earlier periods of growth is not simply a consequence of the Great Recession that started in the late 2000s, but instead shows signs of being a sustained reversal from earlier rapid growth in mothers' labor force participation.



**Figure 1.**<sup>21</sup>

Although Figure 1 raises the possibility that the upward trend in increased labor force participation of mothers has reversed course, the data do not take into account the role of education. As shown in Table 1, men and women with more education are more likely to be in the labor force than their same-sex counterparts with less education, and among those employed, earnings are far higher for those with more education (although only statistics for 2012 are shown, the pattern holds over time). Both labor force participation and earnings are lower for women than for men with the same level of education. But it is clear that education has a substantial financial payoff for both men and women.

21. *Facts Over Time: Women in the Labor Force*, U.S. DEP'T OF LABOR, [http://www.dol.gov/wb/stats/facts\\_over\\_time.htm#labor](http://www.dol.gov/wb/stats/facts_over_time.htm#labor) (Sept. 24, 2014).

**Table 1.**<sup>22</sup>

Labor Force Participation Rates and Median Earnings, By Education Attainment and Gender

	Labor force participation rate of the civilian non-institutional population 25–64 years of age (%)		Median usual weekly earnings of full-time wage and salary workers 25 years and older (\$)	
	Women	Men	Women	Men
Total	70.9	84.3	727	910
Less than high school diploma	47.5	73.5	386	508
High school graduates, no college	65.3	81.2	561	735
Some college or associate's degree	73.6	84.5	659	857
College graduates, total	79.8	91.2	1,001	1,371
Bachelor's degree	78.2	90.9	931	1,246
Master's degree	82.1	90.9	1,122	1,545
Professional degree	83.0	93.1	1,411	1,896
Doctoral degree	87.6	93.5	1,413	1,778

Furthermore, the following table shows that within the labor force, women's educational attainment has risen rapidly relative to men's educational attainment, and women in the labor force are now more likely than men in the labor force to be college graduates.

**Table 2.**<sup>23</sup>

Percent Distribution of the Civilian Labor Force 25-64 Years of Age, by Educational Attainment and Gender, Selected Years 1970–2012

	High School		College	
	<i>Less than 4 years</i>	<i>4 years, no college</i>	<i>1–3 years</i>	<i>4 years or more or college graduate</i>
<u>Women</u>				
1970	33.5	44.3	10.9	11.2
1992	10.3	37.4	27.3	25.0
2012	6.5	25.0	30.4	38.1
<u>Men</u>				
1970	37.5	34.5	12.2	15.7
1992	13.7	34.2	24.3	27.8
2012	10.0	29.6	26.2	34.1

22. WOMEN IN THE LABOR FORCE: A DATABOOK, REPORT 1049, U.S. BUREAU OF LABOR STATISTICS 26 tbl.8, 59–60 tbl.17 (2014), <http://www.bls.gov/cps/wlf-databook-2013.pdf> (2012 annual averages).

23. *Id.* at 28–30 tbl.9. Values are annual averages from the March Current Population Survey (CPS) in specified year. Until 1992, the CPS reported number of years of school completed. Data beginning in 1992 report number of years or highest diploma or degree.



So even if the apparent downward trend in women's overall labor participation continues, the trend does not necessarily imply that highly educated women are leaving the labor force. Instead, a greater share of less-educated women may have been leaving the labor force, lowering the average labor force participation rate. Accordingly, a main focus in the studies cited earlier of whether women were opting out compared labor market activity between groups of women with more and less education.<sup>24</sup> These studies concluded that there was little evidence that more-educated women were opting out.<sup>25</sup>

But the focus on opting out has been on whether those with elite degrees are leaving the labor force, not simply whether college graduates in general are doing so. The biggest challenge in identifying whether labor market activity differs by whether a woman is a graduate of an elite institution is data availability. Although the large-scale, government-funded data sets used to study economic outcomes provide information on educational attainment, the information is generally limited to the highest grade completed or the type of degree (bachelor's, master's, professional, and doctoral). These large-scale data sets do not provide any information on specific institutions awarding the degrees. The few data sets with any information on degree status are limited by their small number of observations, inclusion of only recent college graduates, or analysis of only graduates of elite institutions.<sup>26</sup> Small samples reduce the statistical power of tests that compare groups, recent college graduates have not been out of school long enough to make a decision about opting out, and it is impossible to compare elite to non-elite outcomes in samples comprised only of elite graduates. It is also worthwhile emphasizing that because, by definition, elite graduates comprise a small share of the population, a large sample will be necessary for statistical tests to have sufficient power to detect statistically significant differences in labor market activity between elite and non-elite graduates.

In the next section I describe the data set I used and the procedure I developed to categorize individuals on the basis of the status of their college degrees. Based on my categorization, I provide information on family background, educational outcomes, and earnings. I then provide information on employment status based on academic achievement, and provide new statistics for 2010 to supplement my results based on 2003 data. Both 2003 and 2010 data show that married mothers who are graduates of elite institutions have lower labor market activity than their counterparts.

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24. See Antecol, *supra* note 12; BOUSHEY, DEBUNKING THE MYTH, *supra* note 12; Boushey, *Opting Out*, *supra* note 12; Goldin, *supra* note 10; Hotchkiss et al., *supra* note 11; Percheski, *supra* note 11.

25. *Id.*

26. Hersch, *supra* note 14 (providing a review of the relevant data sets and academic research based on these data sets).



## II. DATA DESCRIPTION AND TIER CLASSIFICATIONS

My statistical analyses are based on micro-level data on individuals drawn from the 2003 and 2010 waves of the National Survey of College Graduates (NSCG).<sup>27</sup> This survey is representative of the U.S. population of college graduates and includes more than 177,000 college graduates residing in the United States who were ages twenty-one through seventy-five when surveyed in 2003 or 2010.<sup>28</sup> Individuals selected to participate in the NSCG survey reported detailed information on their education and degrees, occupations, earnings, and personal characteristics, including marital status, number of children, and parents' education.<sup>29</sup>

The NSCG has the virtue of being a large data set with fairly comprehensive labor market information and with unusually detailed information on field of education and degrees. However, the NSCG does not report information on specific institutional quality or selectivity. What it does report is the 1994 Carnegie Classification of Institutions of Higher Education for respondents who are graduates of U.S. institutions if their degree-awarding institution is one of the 3,595 institutions accredited by an agency recognized by the U.S. Secretary of Education as of 1994, and if it is classified in the 1994 revision of the Carnegie classification system.<sup>30</sup>

To group institutions into categories, I compared by name the institutions in the 1994 Carnegie classifications to Barron's Profiles of American Colleges for 1994.<sup>31</sup> Barron's ratings are specifically designed as a measure of selectivity, and places colleges into categories ranging from most competitive to non-competitive based on quality indicators of entering classes (ACT or SAT, high school GPA and class rank, and percent of applicants accepted). As I show in Table 3 below,

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27. NSCG (2010), *supra* note 19; NSCG (2003), *supra* note 20.

28. The NSCG is based on a stratified sample design, where selection probabilities are based on demographics and whether the respondent has a science and engineering (S&E) degree or S&E occupation. I use sampling weights throughout to account for differential selection probabilities. The sample weights also adjust for nonresponse and under coverage of smaller groups and assure that the sample is representative of the college-educated population in the United States.

29. For a compilation of NSCG surveys see *National Survey of College Graduates: Questionnaires*, NAT'L SCI. FOUND., <http://www.nsf.gov/statistics/srvygrads/#qs> (Sept. 29, 2014).

30. Ernest L. Boyer, *Foreword* to CARNEGIE FOUND. FOR THE ADVANCEMENT OF TEACHING, A CLASSIFICATION OF INSTITUTIONS OF HIGHER EDUCATION, at vii, vii (1994). The highest degree awarded in 41% of the classified institutions is an associate's degree, and those with highest degree less than bachelor's are not included in the NSCG sample. *Id.* at x. Another 20% are specialized institutions (also called special focus), which offer degrees in a narrow set of fields (for instance, schools of art and design, and also schools such as the United States Air Force Academy). *Id.* at vii–xx. There is no way to use available data to match these schools to measures of selectivity. Likewise, there is no way to match non-U.S. institutions to measures of selectivity. These institutions are not considered in forming my tier categories.

31. *Compare* CARNEGIE FOUND. FOR THE ADVANCEMENT OF TEACHING, *supra* note 30, with BARRON'S EDUC. SERIES, BARRON'S PROFILES OF AMERICAN COLLEGES (20th ed. 1994).

there is a high correlation between Carnegie classification in the 1994 system and selectivity as indicated by Barron's.

Specifically, I group institutions into four categories that are constructed so that the share of schools rated by Barron's as most competitive or highly competitive is significantly different between groups.<sup>32</sup> This grouping results in four categories that I refer to as "tiers." Tier 1 institutions are private Research I and private Research II universities; Tier 2 institutions are private Liberal Arts I colleges; Tier 3 institutions are public Research I universities; and Tier 4 institutions are the remaining four-year colleges and universities, excluding specialized institutions that focus on a narrow curriculum. I similarly group graduate degrees into tiers, although it should be noted that liberal arts colleges offer few graduate degrees, and many professional degrees are offered by specialized institutions that do not fall into Tiers 1–4 defined above.

Table 3 below shows the comparison of Carnegie classification to Barron's competitiveness categories, as well as the number of institutions within each tier, with labels indicating the institutions that are categorized into Tiers 1–3.

**Table 3.**<sup>33</sup>

Comparison of Carnegie Classifications and Barron's Selectivity Categories

Carnegie classification	Public			Private		
	Barron's competitiveness category		Number in Carnegie classification	Barron's competitiveness category		Number in Carnegie classification
	Most	Highly		Most	Highly	
Research I	1	10	59	16	7	29
Research II	0	0	26	2	7	11
Doctoral I	1	1	28	1	1	23
Doctoral II	0	2	38	2	1	22
Master's I	0	4	249	0	3	186
Master's II	0	0	26	0	1	68
Liberal Arts I	0	1	7	14	40	159
Liberal Arts II	0	0	79	0	1	392

*Note:* The table includes handwritten annotations: a red oval around the Public Research I row (1, 10, 59) with a label "Tier 3" pointing to it; a blue oval around the Private Research I and II rows (16, 7, 29 and 2, 7, 11) with a label "Tier 1" pointing to it; and an orange oval around the Private Liberal Arts I row (14, 40, 159) with a label "Tier 2" pointing to it.

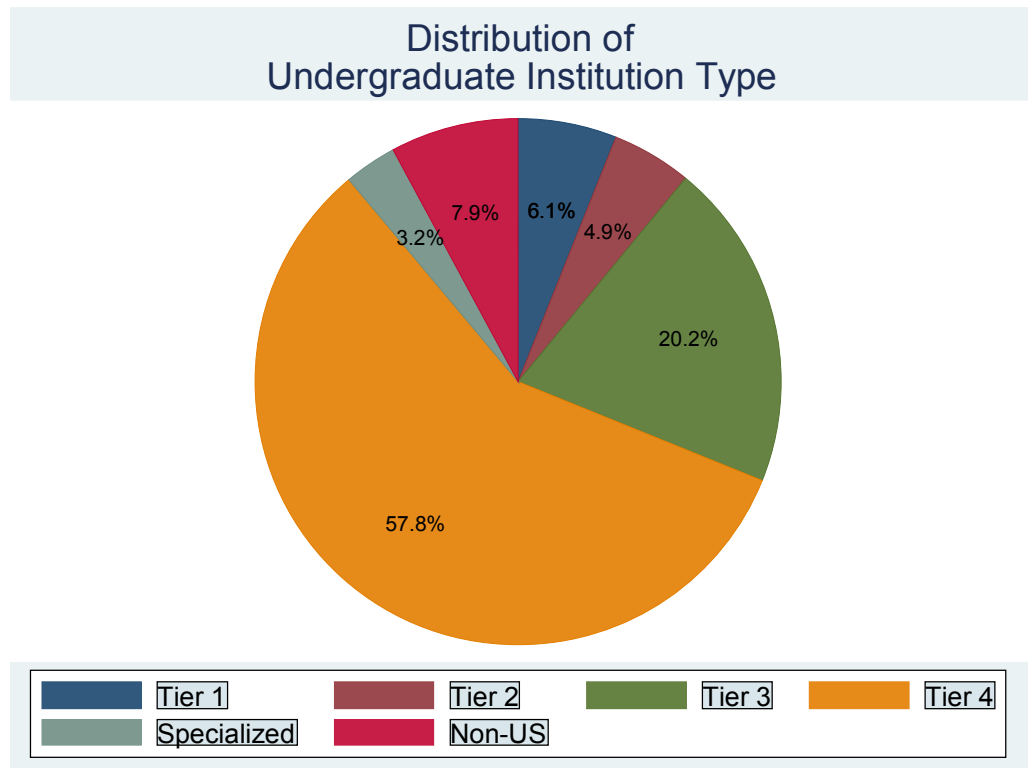
Table 3 reports by Carnegie classification and public or private institutional control the total number of institutions awarding bachelor and higher degrees and the number of institutions that are classified by Barron's as "most competitive" or "highly competitive."<sup>34</sup>

32. See generally Hersch, *supra* note 14, at 480.

33. BARRON'S EDUC. SERIES, *supra* note 31; CARNEGIE FOUND. FOR THE ADVANCEMENT OF TEACHING, *supra* note 30. For a list of institutions grouped into tiers, see JONI HERSCH, LIST OF TIER 1–3 SCHOOLS CLASSIFIED IN JONI HERSCH, "OPTING OUT AMONG WOMEN WITH ELITE EDUCATION," REVIEW OF ECONOMICS OF THE HOUSEHOLD (2014), [http://law.vanderbilt.edu/phd/faculty/joni-hersch/Institutions\\_classified\\_by\\_tier\\_062414.pdf](http://law.vanderbilt.edu/phd/faculty/joni-hersch/Institutions_classified_by_tier_062414.pdf).

34. BARRON'S EDUC. SERIES, *supra* note 31; CARNEGIE FOUND. FOR THE ADVANCEMENT OF TEACHING, *supra* note 30.

Figure 2 below shows the distribution of the NSCG respondents across institution type. More than half the college graduates (57.8%) graduated from colleges and universities in Tier 4. The share of the U.S. population that enroll in Tier 4 schools is actually far higher than in the more selective institutions in Tiers 1 through 3, because graduation rates are far lower in these schools than in the more-selective institutions in Tiers 1 through 3.<sup>35</sup>



**Figure 2.**<sup>36</sup>

35. Among full-time, first-time students seeking bachelor's degrees in Fall 2006, the six-year graduation rate for those attending a four-year institution based on applicant acceptance rate is the following: 90% or more accepted, graduation rate is 48%; 75–89.9% accepted, 56% graduation rate; 50–74.9% accepted, 60% graduation rate; 25–49.9% accepted, 72% graduation rate; less than 25% of applicants, 86% graduation rate. NAT'L CTR. FOR EDUC. STATISTICS, INSTITUTIONAL RETENTION AND GRADUATION RATES FOR UNDERGRADUATE STUDENTS 3 fig.3 (2014), [http://nces.ed.gov/programs/coe/pdf/coe\\_cva.pdf](http://nces.ed.gov/programs/coe/pdf/coe_cva.pdf).

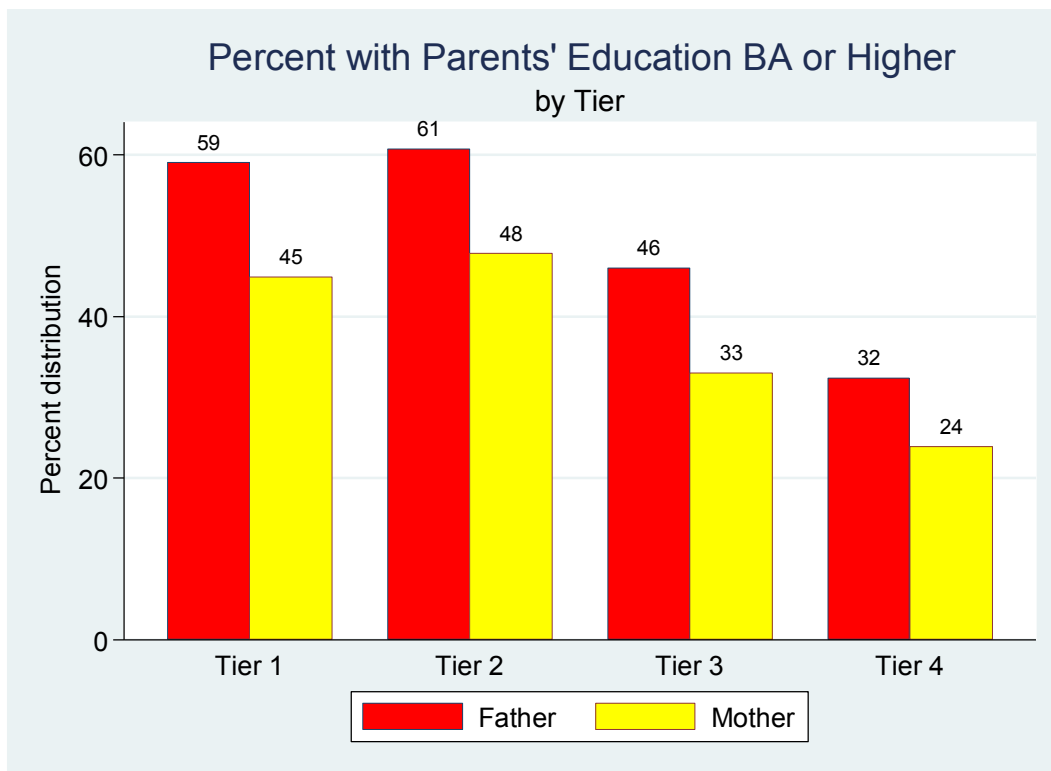
36. Calculations based on data collected from NSCG (2010), *supra* note 19; NSCG (2003), *supra* note 20.

### III. EDUCATION AND EARNINGS BY TIER

In this section, I stratify the sample by tier and report statistics on parents' educational background, own educational outcomes, and earnings.

#### A. Parents' Education

The figures below demonstrate that there is a substantial difference in parents' educational attainment by tier. Graduates of Tier 1 and Tier 2 schools are nearly twice as likely as graduates of Tier 4 schools to have parents who are college graduates. For example, 59% of Tier 1 graduates had fathers with a bachelor's degree or higher, while only 32% of Tier 4 graduates had fathers with a bachelor's degree. Parents' educational background is similar for graduates of Tiers 1 and 2, and parents' educational background for Tier 3 graduates falls between Tiers 1 and 2 and Tier 4.



**Figure 3.**

Clearly, parents' education is strongly related to the type of colleges that their children attend. While grades and standardized test scores are certainly important determinants of whether an applicant is admitted to a selective institution, family

background plays a role independent of actual qualifications. An important recent study shows that students from low-income families are less likely to even apply to selective colleges than are equally qualified children from privileged families.<sup>37</sup> The smaller share of college-graduate parents among Tier 3 graduates is likely due to the combination of two factors. First, about 80% of students attend college in the state they are from.<sup>38</sup> Second, Tier 3 universities are publicly funded, and in-state tuition and other financial support makes attending these selective schools feasible for high-ability students from a broader range of backgrounds than for the private colleges and universities that are grouped into Tiers 1 and 2.

### *B. Own Highest Degree by Tier*

In addition to differences in parents' educational background by tier, there are also considerable differences by tier in the likelihood that an individual will earn a post-baccalaureate degree. The NSCG reports field and type of degrees (bachelor's, master's, professional, and doctorate) for up to five degrees.<sup>39</sup> Combining information on field of study and type of degree, I created eight mutually exclusive categories for highest degree: PhD, MD, JD, MBA, master of education, master's degree in a field other than education or business, other professional degree, and bachelor's degree.

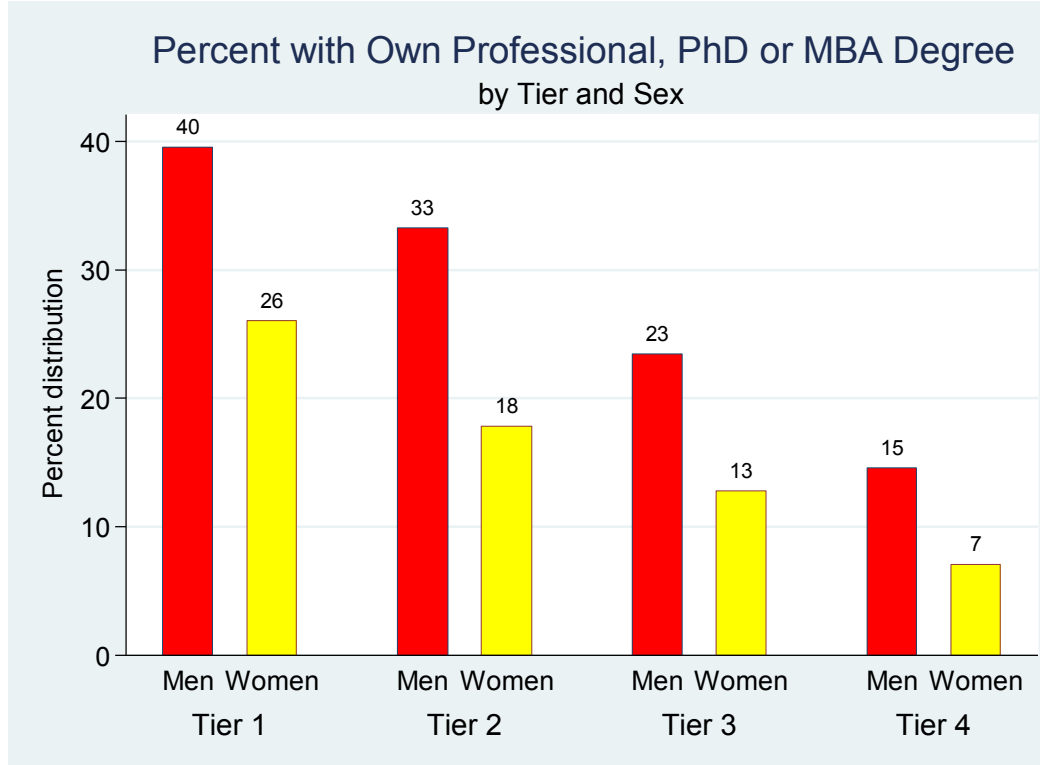
The likelihood of earning a post-baccalaureate degree, and the selectivity of the institution awarding graduate degrees, depends strongly on undergraduate institution. There are stark differences by tier in the share of graduates that earn advanced degrees. Figure 4 below gives the share by tier and sex of college graduates with highest degree PhD, MBA, or other professional degree such as MD or JD. As this chart shows, looking within sex, the share of college graduates with a professional degree or a PhD drops steadily as one moves from Tier 1 to Tier 4. Men in Tier 1 are nearly three times as likely to earn a professional degree or PhD as men in Tier 4, and women in Tier 1 are nearly four times as likely as women in Tier 4 to do the same.

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37. Caroline Hoxby & Christopher Avery, *The Missing "One-Offs": The Hidden Supply of High-Achieving, Low-Income Students*, BROOKINGS PAPERS ECON. ACTIVITY, Spring 2013, at 1.

38. COLLEGE BOARD ADVOCACY & POLICY CTR., TRENDS IN COLLEGE PRICING 2012, at 33 fig.24A (2012).

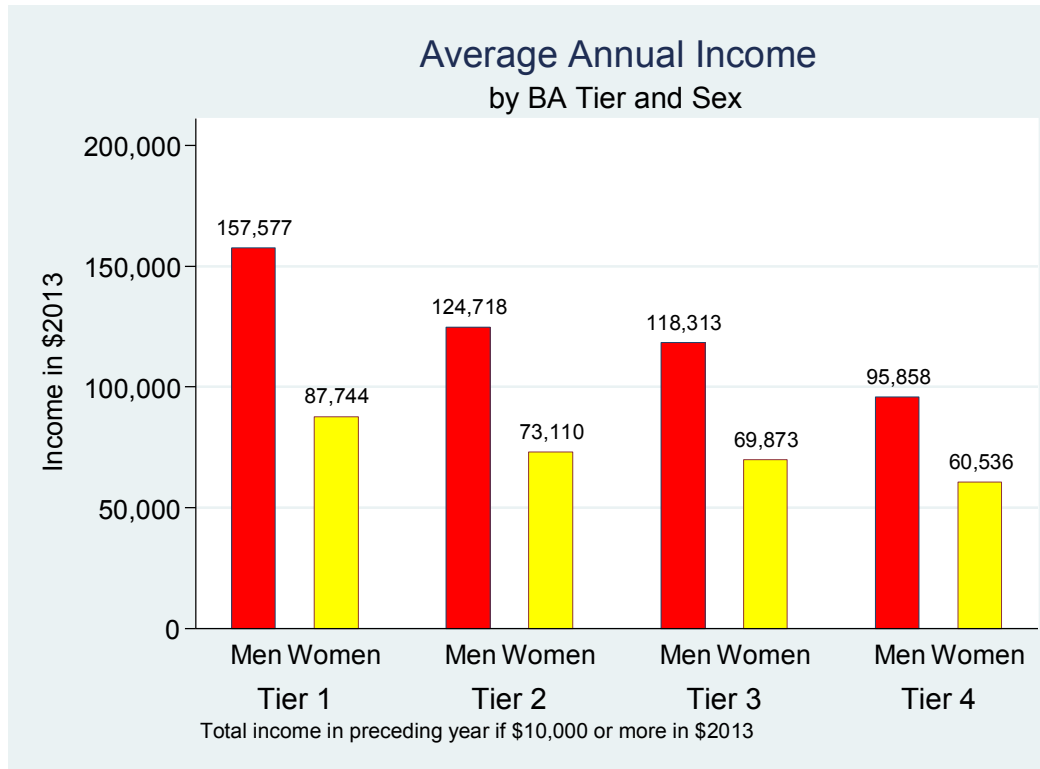
39. NSCG (2010), *supra* note 19; NSCG (2003), *supra* note 20.



**Figure 4.**

A number of studies show that earnings are higher for graduates of elite institutions.<sup>40</sup> Figure 5 below provides information on average earnings by tier of undergraduate institution and sex. The income axis is defined as annual earnings (converted to real 2013 dollars) from all sources in the preceding year, which is comprised of salary, bonuses, and commissions. The sample is restricted to those with annual earnings of at least \$10,000 in the preceding year, in order to examine only those with substantial labor market activity.

40. Dan A. Black, Kermit Daniel & Jeffrey A. Smith, *College Quality and Wages in the United States*, 6 GERMAN ECON. REV. 415 (2005); Dan A. Black & Jeffrey A. Smith, *Estimating the Returns to College Quality with Multiple Proxies for Quality*, 24 J. LAB. ECON. 701, 701–28 (2006); Dominic J. Brewer, Eric R. Eide & Ronald G. Ehrenberg, *Does it Pay to Attend an Elite Private College?*, 34 J. HUM. RESOURCES 104 (1999); Stacey B. Dale & Alan B. Krueger, *Estimating the Payoff to Attending a More Selective College: An Application of Selection on Observables and Unobservables*, 117 Q.J. ECON. 1491 (2002); Stacey B. Dale & Alan B. Krueger, *Estimating the Effect of College Characteristics Over the Career Using Administrative Earnings Data*, 49 J. HUM. RESOURCES 323 (2014); Mark C. Long, *Changes in the Returns to Education and College Quality*, 29 ECON. EDUC. REV. 338 (2010); James Monks, *The Returns to Individual and College Characteristics Evidence from the National Longitudinal Survey of Youth*, 19 ECON. EDUC. REV. 279 (2000).



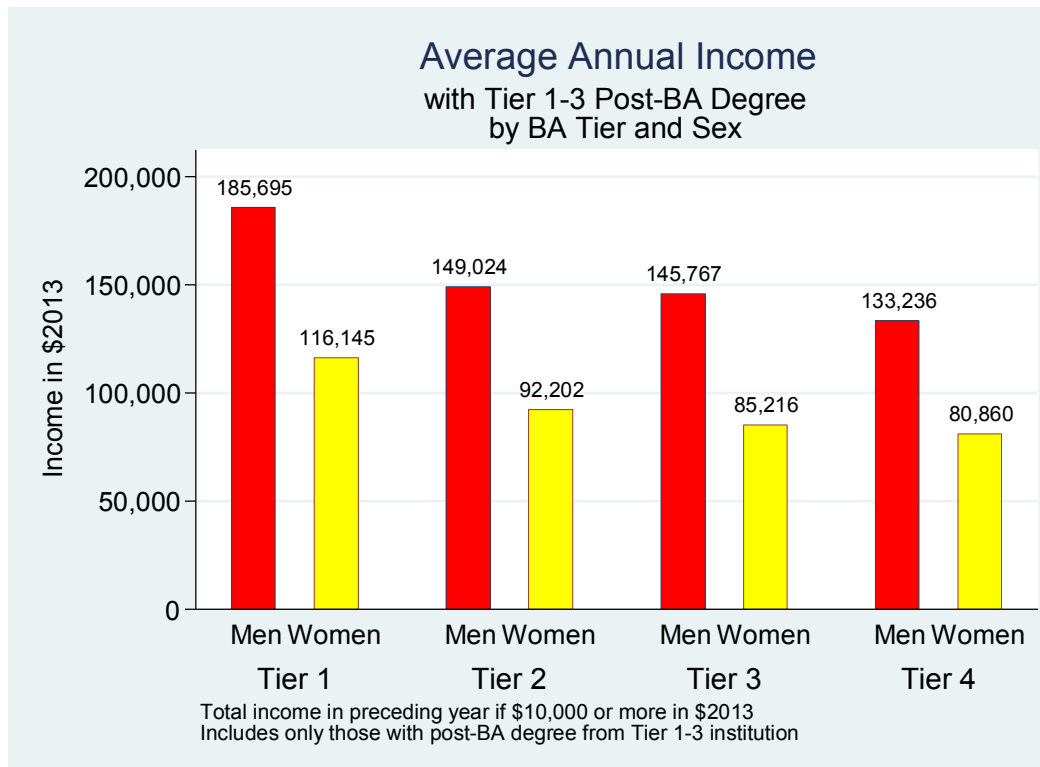
**Figure 5.**

Clearly, graduating from a higher-tier institution pays off financially, with male graduates of Tier 1 institutions earning, on average, 26% more than male Tier 2 graduates, 33% more than male Tier 3 graduates, and 64% more than male Tier 4 graduates. For women, the same pattern of higher average pay that declines when moving from Tier 1 to Tier 4 holds. However, the magnitude of the premium to a higher tier is smaller for women than for men. Tests show that all comparisons of average earnings between pairs of tiers are statistically significant, with p-values under 0.01.

Of course, because academic aptitude and grades are important determinants of admission to selective schools, much of the financial premium associated with elite education may derive from higher job-related ability of those who graduate from elite institutions. One way to control, at least in part, for differences in ability is to compare average income among those who earn a graduate degree from institutions in Tiers 1, 2 and 3. Ability differences should be reduced among those admitted to and graduating from similarly selective graduate programs, and this should lead to a smaller disparity in earnings on the basis of undergraduate tier. Or, if those Tier 4 bachelor's degree holders that graduate from elite post-baccalaureate programs are the most motivated and ambitious, the earnings pattern on the basis of undergraduate tier could even be reversed.



Figure 6 below shows that on average, this expectation is generally not realized. Average earnings are indeed higher for those with graduate degrees relative to the full sample, because the full sample combines those with a bachelor's as their highest degree, as well as those with graduate degrees. But tests show that with few exceptions, average earnings between pairs of tiers remain statistically significant, with p-values under 0.01. The exceptions are as follows: for men, the difference between Tiers 2 and 3 is not statistically significant; for women, the differences between Tiers 2 and 3 and between Tiers 3 and 4 are not statistically significant.



**Figure 6.**

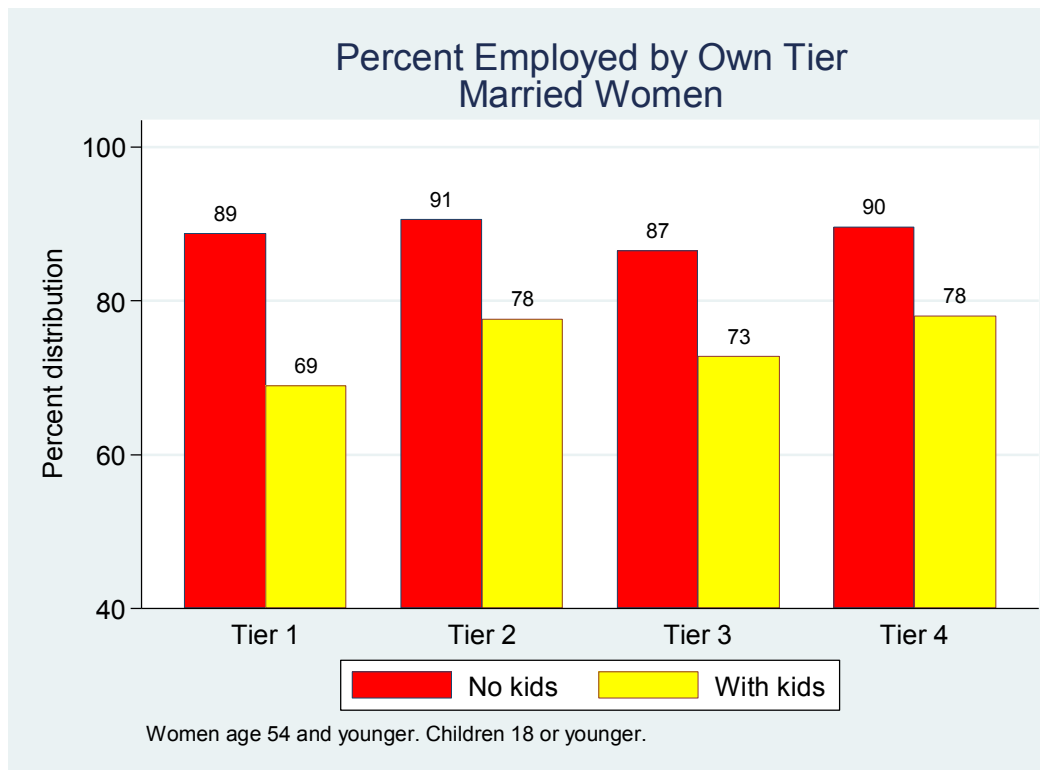
#### IV. EMPLOYMENT OF MARRIED WOMEN BY TIER

Based on combined data from 2003 and 2010, the charts below show the percentage of married women age fifty-four or younger who are employed at all or are employed full time, based on tier of their undergraduate institutions and whether there are children ages eighteen and younger in their household. As demonstrated in my prior work, there is little difference by tier in employment status among women who are not married,<sup>41</sup> so only statistics for married women are reported in this Article. There is also little variation by tier in labor market activity among male

41. Hersch, *supra* note 14, at 488.

college graduates,<sup>42</sup> so employment statistics for men are not reported in this Article.

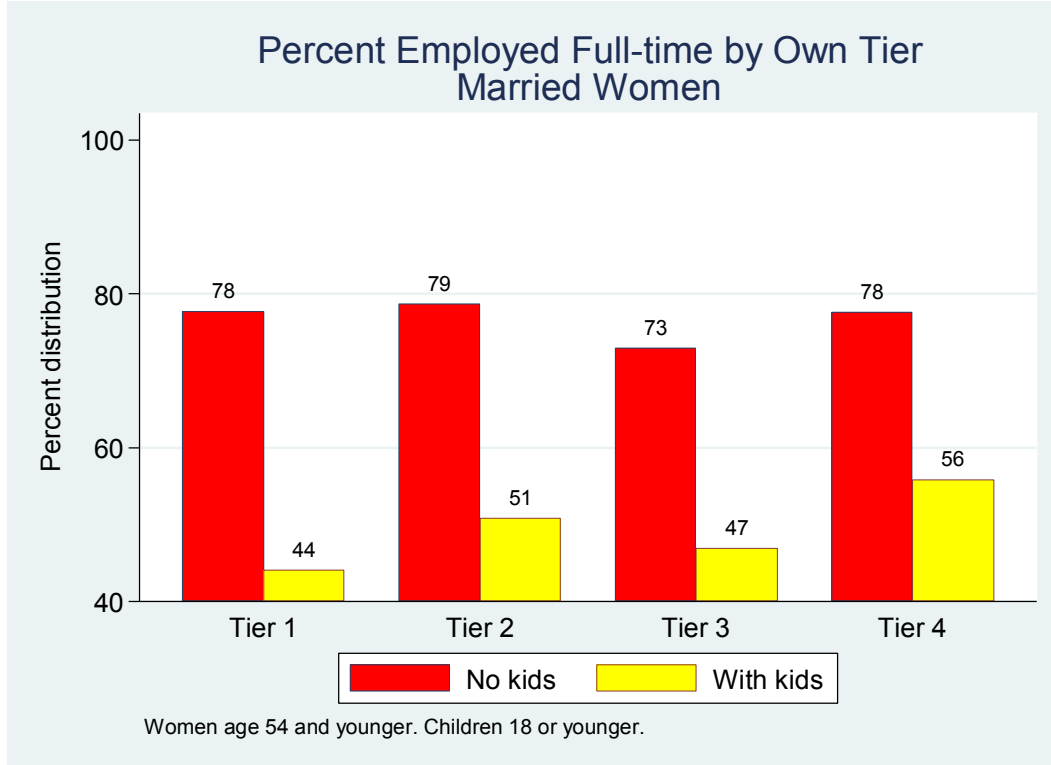
As is widely established and indicated in the charts below, the likelihood of employment is considerably lower for women with children in the household. However, when considering the likelihood of employment, the gap between married women who have children and those who do not is far greater for women in Tier 1 than those in Tier 4. Married mothers who are graduates of Tier 1 institutions are 9% less likely to be employed, and 12% less likely to be employed full-time than are married mothers who are graduates of Tier 4 institutions. My previous work reports regression estimates for six alternative measures of labor market activity using the 2003 NSCG; the results uniformly show that married mothers who are graduates of elite institutions have far lower labor market activity than their counterparts who are not graduates of selective institutions, even when taking into account detailed factors that affect their own expected earnings, their husband's potential earnings, their family background, and the age of their children.<sup>43</sup> Corresponding regression estimates using the pooled 2003 and 2010 samples show similar results to the 2003 estimates alone.



**Figure 7.**

42. See *supra* Table 1.

43. Hersch, *supra* note 14, at 498.



**Figure 8.**

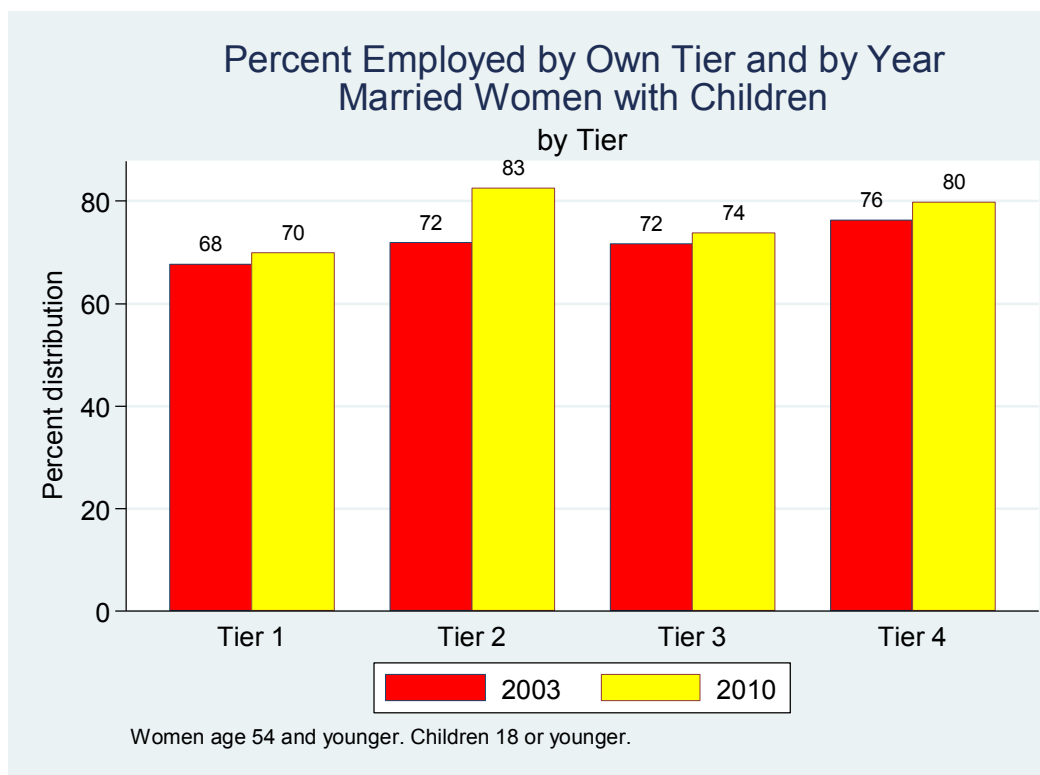
The NSCG 2010 data became available after the research reported in my previous work on the subject was completed.<sup>44</sup> To examine whether there is evidence of a trend in opting out among women with elite education, Figures 9 and 10 below show by tier and by year the likelihood that a woman is employed or is employed full-time. These charts are based on data including only married women with children ages eighteen and younger because, as demonstrated in the preceding charts, the differences in employment status among women without children under age eighteen on the basis of tier are small.

The pattern suggests that employment and full-time employment for these highly educated women are higher in 2010 than in 2003 within each tier. However, rather than presaging a trend in increased labor force activity for highly educated women, this increase in labor market activity may be a consequence of the Great Recession, which appeared to have driven highly educated women back into the workforce to buffer financial losses to their families—including losses for those whose husbands were laid off or had their salaries cut, and for those in which the value of family investments fell.<sup>45</sup>

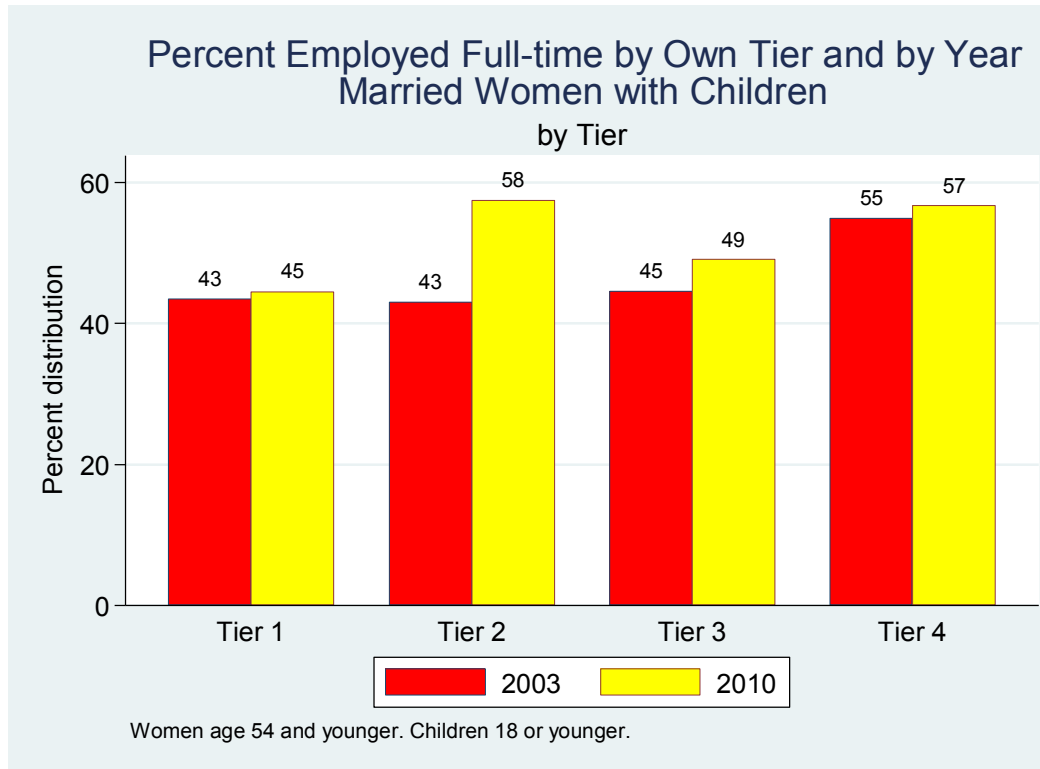
44. NSCG (2010), *supra* note 19; Hersch, *supra* note 14.

45. Steven Greenhouse, *Recession Drives Women Back to the Work Force*, N.Y. TIMES (Sept. 19, 2009), [www.nytimes.com/2009/09/19/business/19women.html](http://www.nytimes.com/2009/09/19/business/19women.html).

Testing for statistically significant differences between years for women in the same tier shows that the difference in employment and full-time between 2003 and 2010 is not statistically significant for Tier 1 graduates, while all other tiers show a statistically significant increase between 2003 and 2010 at the 10% level. To the extent that inferences about a trend can be made based on only two years of data, these findings show no change in labor market activity for married mothers who are graduates of Tier 1 institutions at the time that labor market activity increased for graduates of Tiers 2, 3 and 4. Most notably, if these two years of data presage a trend, the implication is that the gap in labor market activity between Tier 1 and graduates of Tiers 2–4 will become larger over time.



**Figure 9.**



**Figure 10.**

## V. IMPLICATIONS FOR SOCIAL INEQUALITY

My research shows that married mothers who are graduates of elite colleges have lower labor market activity than their counterparts from less-selective institutions. That is to say, there is support for the opting-out hypothesis among graduates of elite colleges, as featured by media reports. In this section, I discuss the societal implications of greater opting out among women with elite education in two related dimensions: (1) whether women exit the labor force because of inflexible workplaces that make combining career and family incompatible; and (2) whether competition for limited slots in selective institutions, especially with respect to the role of maternal employment in child development, causes similar opting out.<sup>46</sup>

It is widely recognized that combining labor market employment with

46. See the exchange between Gary Becker and Richard Posner about admitting fewer women to elite colleges and professional schools. Gary Becker, *Comment on Careers of Educated Women*, BECKER-POSNER BLOG (Sept. 25, 2005, 7:56 PM), <http://www.becker-posner-blog.com/2005/09/comment-on-careers-of-educated-women-becker.html>; Richard Posner, *Elite Universities and Women's Careers*, BECKER-POSNER BLOG (Sept. 25, 2005, 9:17 PM), <http://www.becker-posner-blog.com/2005/09/elite-universities-and-womens-careers--posner.html>.

family responsibilities presents formidable challenges, and that the bulk of family responsibilities are borne by women.<sup>47</sup> The lower labor market activity of women with children relative to those without children is often interpreted as evidence that workplaces are inflexible in ways that make combining family and career incompatible.<sup>48</sup> But if inflexible workplaces are a primary cause of lower labor market activity among mothers, employment should not differ by college selectivity. If anything, graduates of elite institutions should have the best workplace options available to them, and their employers should be most likely to attempt to retain their workers by offering flexible work options. One would therefore expect that if lack of workplace flexibility is the driving force behind labor force exits, graduates of elite institutions would have higher (or at least not lower) employment rates than their counterparts from less-selective colleges.

Further insight into whether the source of lower labor market activity among women with elite educations is the challenge of combining work with family responsibilities can be gleaned from the responses of those respondents to the NSCG who were not employed. Respondents to the NSCG who are not employed were asked to report their reasons for not working.<sup>49</sup>

Unsurprisingly, most mothers reported family responsibilities as a reason for not working.<sup>50</sup> But the difference by tier of undergraduate institution for this response is statistically significant only in a comparison of Tier 1 to Tier 4 graduates. In contrast, when considering whether a mother reported to be unemployed due to there being no need to work, there is a substantial and statistically significant difference between those in Tier 4 and the three other tiers. For example, relative to Tier 4 graduates, mothers who are Tier 1–3 graduates are from eight to 11% more likely to report that they did not need to work. For those women who choose not to work in paid employment because they do not need to, it seems unlikely that increased workplace flexibility would change that decision.

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47. There are countless examples documenting national interest in work-family interactions, including the first White House Summit on Working Families, held June 23, 2014. Speaking at this summit, President Obama called for paid parental leave and other family-friendly policies. Office of the Press Secretary, *Fact Sheet: The White House Summit on Working Families*, THE WHITE HOUSE (June 23, 2014), <https://www.whitehouse.gov/the-press-office/2014/06/23/fact-sheet-white-house-summit-working-families>.

48. See JANE LEBER HERR & CATHERINE WOLFRAM, *WORK ENVIRONMENT AND “OPT-OUT” RATES AT MOTHERHOOD ACROSS HIGH-EDUCATION CAREER PATHS* 36–37 (Nat’l Bureau of Econ. Research, Working Paper No. 14717, 2009); WILLIAMS ET AL., *supra* note 8.

49. *National Survey of College Graduates: Questionnaires*, *supra* note 29.

50. See NSCG (2010), *supra* note 19, at 250; NSCG (2003), *supra* note 20, at 217.

**Table 4.**<sup>51</sup>

## Reasons for Not Working in Paid Employment

	Tier 1	Tier 2	Tier 3	Tier 4	Tier differences
Family responsibilities (%)	79.8	76.0	76.6	73.5	1–4
Did not need or want to work (%)	44.1	47.1	45.9	36.1	1–4, 2–4, 3–4
Both family and no need (%)	31.9	35.0	30.8	24.2	1–4, 2–4, 3–4
<i>N</i>	414	282	1,241	2,700	

The sample in Table 4 is comprised of unemployed married women, aged fifty-four and younger, with a child or children ages eighteen or younger. Significant differences between tier pairs at the 5% level, based on a Bonferroni multiple comparison test, are indicated.

Anecdotal evidence suggests that the reason why many women leave the labor market to care for their children is because they believe that the quality of parental care which their children receive in this manner is superior to market alternatives. It is clear that a child whose parents are graduates of elite institutions starts life with many advantages: their parents have higher earnings, and their children have the benefit of those higher earnings, which may include substantial expenditures on goods and services that enhance their children's capabilities.<sup>52</sup> More educated mothers specifically tailor their time to meet their children's developmental needs.<sup>53</sup> Additionally, children whose parents are graduates of elite institutions also benefit from college admissions decisions that favor legacies. Hurwitz found that, in a survey of thirty selective private colleges, legacy status increased chance of admission by more than three times.<sup>54</sup>

Because mothers with elite education are less likely to be employed, the question of interest is whether the differential rates of employment of mothers on the basis of educational background provide additional advantages to their children. Some information on the role of maternal non-employment can be inferred from time spent on childcare. The amount of time mothers spend on their children's activities varies by employment status and also by level of education.<sup>55</sup> For those

51. NSCG (2010), *supra* note 296; NSCG (2003), *supra* note 20.

52. Miles Corak, *Income Inequality, Equality of Opportunity, and Intergenerational Mobility*, 27 J. ECON. PERSP. 79, 87–94 (2013).

53. Ariel Kalil, Rebecca Ryan & Michael Corey, *Diverging Destinies: Maternal Education and the Developmental Gradient in Time with Children*, 49 DEMOGRAPHY 1361, 1370–71 (2012).

54. Michael Hurwitz, *The Impact of Legacy Status on Undergraduate Admissions at Elite Colleges and Universities*, 30 ECON. EDUC. REV. 480, 486 (2011).

55. SANDY BAUM, JENNIFER MA & KATHLEEN PAYEA, COLLEGE BOARD, *EDUCATION PAYS 2013: THE BENEFITS OF HIGHER EDUCATION FOR INDIVIDUALS AND SOCIETY* 30 fig.1.19A & 1.19B (2013).



with the same employment status, more-educated mothers spend more time on their children's activities.<sup>56</sup> Table 5 below reports time on children's activities by mothers with a bachelor's degree or higher, by age of youngest child, and by the mothers' employment status. As the table below demonstrates, even among educated women, those who are not employed spend more time with their children than those who are employed.

**Table 5.**<sup>57</sup>

Total Time in Minutes Mothers Spend Per Day on Children's Activities, By Age of Youngest Child and Employment Status, Mothers with Bachelor's Degree or Higher.

<i>Age of youngest child</i>	<i>Time use</i>	Employed	Not employed
Under 18	Total time	113	188
Under 3	Play activities	50	88
Between 3 and 5	Play activities	21	38
Between 6 and 13	Management activities	39	54

The few studies that examine differences in child achievement among more-educated mothers suggest that there is an advantage to maternal non-employment or maternal time spent in child care. Datcher-Loury found that children benefit from maternal time in child care with highly educated mothers but not from time with low-educated mothers.<sup>58</sup> Bernal shows that maternal employment and use of child care lowers children's test scores, with high-ability children benefiting the most from a stay-at-home mother.<sup>59</sup>

Ramey and Ramey showed that higher-educated parents have substantially increased time spent on child care since the mid-1990s,<sup>60</sup> which they attributed to greater competition for the limited slots in highly selective colleges, in combination with an increase in the economic returns associated with graduating from a highly selective college.<sup>61</sup> Increased competition for those limited slots, which Ramey

56. *Id.*

57. Adapted from *id.* at 30 fig.1.19A & 1.19B. The values are based on the 2003–2012 American Time Use Surveys, whose results are limited to mothers ages twenty-five and older who have at least one “own child” of the indicated age in the household. “Play activities” include sports, arts and crafts, and general play. “Management activities” include: attending events; traveling; planning activities; and picking up, dropping off, and waiting for or with household children.

58. Linda Datcher-Loury, *Effects of Mother's Home Time on Children's Schooling*, 70 REV. ECON. STAT. 367, 371 (1988).

59. Raquel Bernal, *The Effect of Maternal Employment and Child Care on Children's Cognitive Development*, 49 INT'L ECON. REV. 1173, 1196–97 (2008).

60. Garey Ramey & Valerie A. Ramey, *The Rug Rat Race*, BROOKINGS PAPERS ON ECON. ACTIVITY, Spring 2010, at 129, 143.

61. *Id.* at 152–69. See also Caroline M. Hoxby, *The Changing Selectivity of American Colleges*, 23 J. ECON. PERSP. 95, 114–15 (2009).

and Ramey term “the rug rat race,” may explain why tier differences in labor market activity arises among married mothers, but not among married women without children.<sup>62</sup> That is to say, those who are themselves graduates of selective institutions place a higher value in placing their children in similarly selective institutions, and may willingly curtail their labor market activity in order to free up time to invest in enhancing their children’s credentials.

## CONCLUSION

The empirical evidence reported in this Article and in my prior work demonstrates that female graduates of elite institutions have lower labor market activity than their counterparts who are graduates of less-selective institutions.<sup>63</sup> Although graduates of elite institutions are far more likely to earn graduate degrees, have higher expected earnings, and marry and have children (all of which would tend to increase their labor market activity), the presence of children is associated with a greater drop in labor market activity compared to their counterparts who are not graduates of elite institutions.

There has been a great deal of discussion about why few women reach the highest levels of their professions. One reason is demonstrated here: that more women opting out means that there are simply fewer women in elite institutions generally, and therefore fewer opportunities for women to be the select employees who advance through the hierarchy of those institutions. The broader questions are why women with elite education have lower labor market activity, and whether institutional changes—such as greater parental leave or greater workplace flexibility—would lead to greater labor force attachment of highly educated women. Because graduates of elite institutions are likely to have a greater range of workplace options (or at least no fewer workplace options) than their non-elite counterparts and should be no less able to find a suitable job match that meets their preferences for work-family balance, I am not optimistic that institutional changes will have a large effect on retention of women with elite education. Employers seeking gender diversity at elite institutional levels may be more successful by looking beyond graduates of elite institutions.

In terms of inter-generational equity, the lower labor market activity of women with elite education is likely to contribute to further educational stratification. Non-employed mothers are able to use their free time to enhance their children’s prospects for admission to elite colleges and universities, even beyond the advantages their children possess just by being born to a parent with an elite education: financial resources and legacy status.

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62. Ramey & Ramey, *supra* note 60, at 130.

63. Hersch, *supra* note 14, at 470.

The pattern of intergenerational advantages of children from privileged families may be hard to disrupt in an era of greater competition for admission to selective institutions. Those from privileged families are more likely to attend elite colleges, and earning a bachelor's degree from an elite institution substantially increases the likelihood of admission to elite professional degree programs.<sup>64</sup> As I have shown in this Article, graduates of nonselective institutions do not, on average, catch up monetarily by graduating from elite graduate or professional programs, despite the fact that ability should be equalized among graduates of these elite institutions. Family background casts a long shadow.

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64. Brewer et al., *supra* note 40, at 119.