

Women's employment, education, and the gender gap in 17 countries

Data from the Luxembourg Income Study show that, among married or cohabiting mothers, better educated women are more likely to be employed; gender inequality in annual earnings is thus less extreme among the well educated than among those with less education, driven largely by educated women's higher employment

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One commonsense view of women's employment is that working-class women have always been more likely to work for pay than other women because of their families' need for their paycheck. But in fact, recent evidence shows higher levels of employment for highly educated women than for the less educated, despite the fact that well-educated women typically have higher earning husbands. This article uses data from a number of high- and middle-income countries to investigate how women's employment and hours worked, and the gender gap in annual and hourly earnings, vary by educational level. Focusing on commonalities across countries, the analyses presented are limited to adults 25 to 54 years of age who have a marital or cohabiting partner of the other gender and, for some considerations, to the subset of these adults who have children in the household. The countries examined are Austria, Brazil, Canada, the Czech Republic, Estonia, Germany, Greece, Guatemala, Ireland, Israel, Luxembourg, Mexico, the Netherlands, Spain, the United Kingdom (U.K.), the United States (U.S.), and Uruguay.¹

Education and women's employment

Recent research on both the United States and a number of European countries shows that women's employment is higher at higher educational levels.² In the United States,

the pattern of well-educated women having higher employment than less educated women dates back to at least 1950.³ Moreover, the positive effect of women's own education on their employment has increased steadily, while the negative effect of their husbands' earnings has declined.⁴ A similar decline over time in the impact of husbands' earnings on wives' employment occurred in Sweden.⁵ What is lacking, however, is an examination of whether the pattern of more educated women having higher employment levels holds across a large range of affluent countries.

What do theories tell us about whether more educated or less educated women would be expected to be employed at higher rates and about the effect of their husbands' earnings on women's employment? Economic theory offers two competing principles: income and price effects. Price effects are also called price-of-time effects or opportunity-cost effects. Women with more education have higher earning power; thus, the dollar value of what they would forego by staying home with a child is greater for them. On the basis of these higher opportunity costs, well-educated women are expected to have higher employment.⁶ By contrast, the "income effect" refers to the fact that the more sources of income individuals have other than their own earnings, the less they will work for pay.⁷ Income in the form of a spouse's earnings can be used to "buy" lei-

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sure or homemaking time. Given marital homogamy—the tendency to marry persons of similar education and earning power⁸—these two effects operate at cross-purposes on any given woman. The highly educated woman typically has the higher earning husband, so her own education encourages her employment while his earnings discourage it. The less educated woman typically has the lower earning husband, so her own education discourages her employment while his low earnings increase her need to be employed. Thus, it is an empirical question which of the two effects predominates. When people say that working-class or poor women work for pay because their families need the money, they are saying, in lay language, that the income effect predominates over the opportunity-cost effect. Past research showing that better educated women are more likely to be employed is consistent with the opportunity-cost effect predominating.

Sociologists focus at least in part on nonmonetary motivations for employment, such as whether one can get an interesting, meaningful, or identity-enhancing job.⁹ The strong cultural construction of motherhood as the responsibility of, and source of meaning for, women requires that paid work be meaningful in order to compete for women's focus.¹⁰ If the only jobs one can get are demeaning, full-time child rearing may seem a more meaningful option if it can be afforded even minimally. This reasoning, too, would suggest that more highly educated women, who have access to more interesting and fulfilling jobs, have higher employment levels. Such reasoning is consistent with a broader opportunity-cost argument than is typically used by economists. In this broader view, what is foregone by staying home with children includes not only wages, but also identity and the satisfaction of having interesting, meaningful work.¹¹ In addition, sociologists have pointed out that education inculcates gender-egalitarian attitudes; thus, highly educated women are expected to have higher employment levels for this ideological reason as well.¹²

Another factor affecting which women are employed is the cost of childcare. If mothers, rather than fathers, are the ones responsible for care, then the benefits of a woman's job have to outweigh her childcare costs in order for it to make economic sense that she take the job. Given this cost-benefit analysis, highly educated women are more likely to be employed than less educated women because they can earn more, net of childcare costs. Note, however, that childcare costs cannot be the only factor affecting women's employment: if it were, we would not expect an educational gradient on employment in countries that provide large subsidies for childcare.

Education and the gender earnings gap

If nonearners are included in the analyses that follow (let their earnings be 0), then any group that has higher women's employment would be expected to have greater gender equality in annual earnings. But what about hourly earnings (i.e., wages)? On the one hand, past research shows that some, though surely not all, of the gender gap in wages flows from women's employment interruptions,¹³ so if more educated women are employed more continuously relative to men, then the gender gap in wages among the employed should be less at high educational levels. On the other hand, demand-side gender discrimination against women as a whole or against mothers may be greater at higher educational levels, as is suggested by "glass ceiling" arguments. Moreover, the extra-hours demands of jobs at the top are more difficult to reconcile with mothering. Together, these two factors suggest a larger gender gap in wages or annual earnings at higher educational levels.

To date, the empirical literature has addressed the issue of education and the gender earnings gap only indirectly, by examining gender differences in rates of return to education. If the percentage by which wages go up for each increment of education is higher for men than women, then the gender pay gap at higher educational levels must be larger in percentage terms. By contrast, if rates of return to education are higher for women, then the gender gap in pay would be smaller at higher educational levels. The evidence is mixed in Europe, but most U.S. studies find that women receive a higher percent return for each year of education.¹⁴ Of course, higher returns to education for women than for men do not imply that women earn higher wages than men at high education levels: when women's returns are higher, generally the finding is that men earn more than women at every educational level but the gap is smaller at higher educational levels.

Data and methods

The data that follow are from the Luxembourg Income Study (LIS), a compilation of microdata—primarily national probability samples of households—from 45 countries. LIS data are unique in that a team collects and harmonizes datasets from the various countries in order to facilitate cross-national research.¹⁵ Each dataset provides household- and individual-level data and is rich in demographic, employment, and income information. The LIS datasets vary with regard to the definition of "employment": some define "employment" as "having any paid activity" (even if only 1 hour during the reference

period), whereas others define “employment” on the basis of whether it is the respondent’s main activity (so that a woman who says that her main activity is homemaking, but who works for pay several hours a week, would not be said to have employment). LIS datasets also differ as to whether the reference period is the present, as opposed to a longer reference period, such as the previous year. Rates of employment will be higher when what is measured is employment in the previous year versus current employment, particularly for women. Thus, to maximize cross-national comparability, the subsequent analyses are limited to 17 high- and middle-income countries for which there are data on whether persons are currently employed (i.e., the reference period is the present), according to the standard of having *any paid* activity (rather than employment being the *main* activity). This measure is then used to define “employment.” (Thus, persons classified as “not employed” include both the unemployed and those not in the labor force.) The analyses use the most recent LIS data available: data from 2004 and 2006 for the 17 countries examined. Individual adults are the units of analysis, and all results are weighted to be representative of the given country’s population.

The aim of the analyses to be presented is to examine educational differences (or their absence) in women’s employment rates, women’s and men’s hours worked per week, and gender inequality in both annual and hourly earnings. The sample comprises adults between the ages of 25 and 54 who are married or cohabiting. That age range was chosen because by 25 most individuals have finished schooling and by 54 few individuals have retired. The analyses are limited to married and cohabiting men and women (hereafter, often “husbands and wives,” for brevity) because of the article’s focus on women’s employment and because it is largely among women with partners that there is some tradition of opting out of employment. Of course, opting out of employment is most common when women have young children. Thus, when descriptive statistics are presented, for each educational level, on the percentage of women who are employed, and on their hours worked, the sample is further delimited to only married or cohabiting parents who have at least one child younger than 7 in the household. This type of arrangement is most likely to have a breadwinner and a homemaker. Note, however, that the descriptive statistics examining the gender gap in annual and hourly earnings include all married and cohabiting individuals, because sample sizes for partnered individuals with a child under 7 and with hourly earnings are small in the lowest educational group in some countries. Similarly, the subsequent logistic regression analysis predict-

ing women’s employment uses all married and cohabiting women, but includes the age of the youngest child as a control variable in assessing the effects of education and the male partner’s earnings on women’s employment.¹⁶

Because, as just mentioned, the analyses that follow are limited to men and women with a marital or cohabiting partner of the other gender, the partners had to be identified in the data. Thus, household heads (with partners of the other gender) and the partners of heads were selected. This construction leaves some imprecision, failing to capture a small number of partners: adults who live with partners, but who are neither the head, nor the partner of the head, of their household (e.g., a married couple living with one of their parents who is the head of the household). In addition, as discussed earlier, some of the analyses to be presented are further limited to parents with a child under 7 in the household. The subsample for these analyses might include some partnered nonparents mistakenly identified as parents: household heads with partners, or partners of heads, living with children who are neither their nor their partner’s children. However, in the vast majority of cases, it seems safe to assume that the persons identified as parents are either parents or stepparents. Of course, a number of male stepparents are undoubtedly in the sample, because women tend to retain coresidence with their children from previous relationships.

A number of the descriptive statistics to be presented focus on proportions or central tendencies for individuals of various educational levels. For each country examined, the percentage of women employed at each level of their own education is shown, as is the percentage of women employed at each level of their male partners’ education. For those who are employed, the average number of hours usually worked per week is shown, by education, separately for women and men. How gender inequality in earnings varies by education is demonstrated in two ways. First, the ratio of women’s to men’s average annual earnings is computed, with those not employed for the entire year assigned the value 0. Second, to examine earnings inequality among just those who are currently employed, the ratio of women’s to men’s average hours-adjusted earnings—annual earnings divided by 48 (the typical number of weeks worked per year) and then divided by usual hours worked currently per week—is displayed. The latter is the closest number to an hourly wage rate obtainable from the LIS data; its limitation is that it captures differences in hourly earnings only to the extent that all workers worked the same number of weeks the previous year. To avoid thorny issues of how to render the currencies of various countries comparable (e.g., deciding between exchange rates

and purchasing parity), average annual earnings or wages are shown simply as ratios of women's to men's earnings or wages in some currency, not as separate amounts for men and women. The presentation of ratios goes directly to the article's concern with gender equality. These two types of male–female ratios—the ratio of women's to men's average annual earnings and the ratio of women's to men's average hours-adjusted earnings—are shown for each education level.

The descriptive analyses reveal higher women's employment with more education, but these are only bivariate relationships. Accordingly, logistic regression analyses are carried out to assess effects of women's education and their male partners' earnings on the women's employment, controlling for other variables. The earnings of male partners are divided into seven ordered categories, with all male partners given a score for the percentile into which their earnings fall within the distribution of the earnings of other male partners in their country's sample. Then the part of the 0–20th percentile made up of men with no earnings is separated out as one distinct category, followed by the remaining men in the 0–20th percentile, those in the 20th–39th percentile, the 40th–59th percentile (the reference category in the

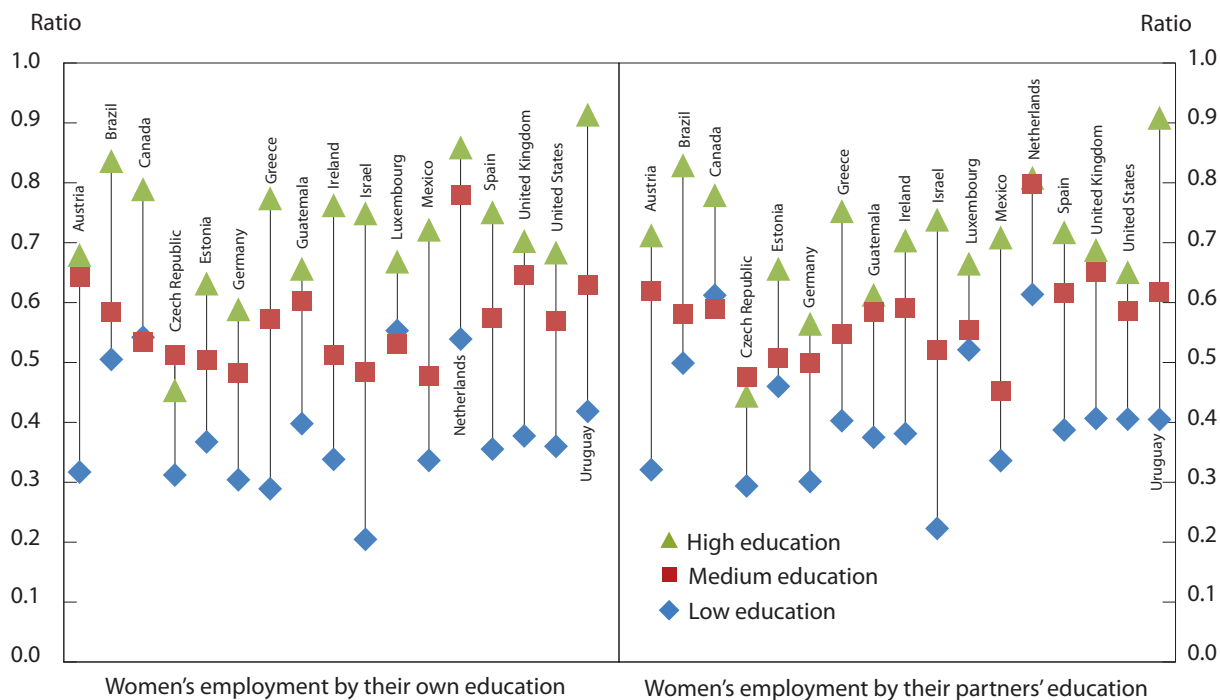
logistic regression), the 60th–79th percentile, the 80th–94th percentile, and, to capture the very top earners in each country, the 95th–100th percentile.

Educational attainment is measured as low, medium, or high on the basis of one of the standardized variables provided by LIS; persons of low educational attainment are those who have not completed upper secondary education (an international designation that corresponds roughly to what in the United States would be called high school), persons of medium educational attainment are those who have completed upper secondary education and/or some form of nonspecialized vocational education, and persons of high educational attainment are those who have completed any specialized vocational or postsecondary education, or more.¹⁷

Results: education and employment

Chart 1 shows, for each country and each of the three education groups examined, the percentage of partnered women with a child under 7 who are employed. In all the countries but one (the Czech Republic), the group of partnered mothers with high education has the highest percent employed, and in all but two countries (Canada and

Chart 1. Proportion employed among cohabiting or married 25- to 54-year-old women with a child younger than 7, by their own and their partners' education



SOURCE: Luxembourg Income Study.

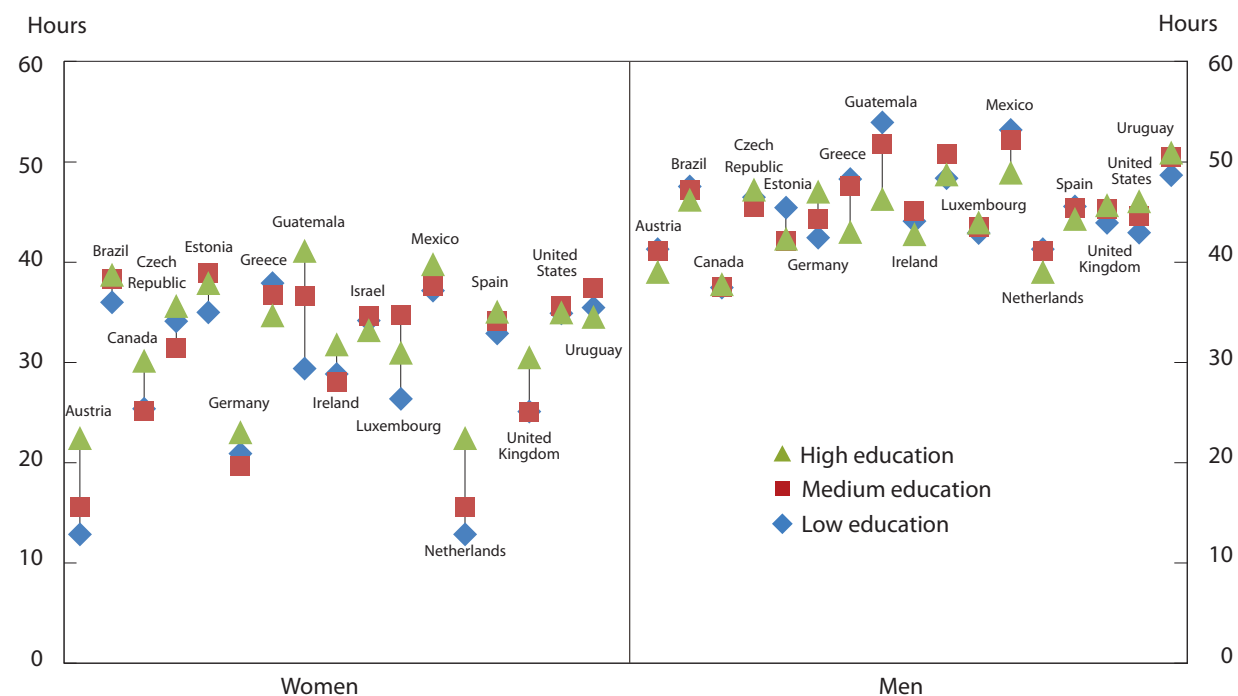
Luxembourg) those with the lowest education have the lowest percent employed (in the two exceptions, women with low and medium education do not differ much in employment). Arranging these mothers of young children by their husband's (or cohabiting partner's) education reveals a similar pattern: women are more likely to be employed if their partners have more education. This pattern is striking because male partners with more education generally have higher incomes; nonetheless, female partners of men with higher education are not any less likely to be employed, probably because of the strong correlation between the man's education and that of his female partner. (These results are, of course, limited to partnered women with a child under 7, but the same positive relationship between education and employment holds for all partnered women.) In sum, more educated women are more likely to be employed.

What about hours worked in the market for those who are employed? Clearly, from chart 1, well-educated women are more likely to be employed, but among the employed, do they work more hours per week? As chart 2 indicates, hours worked among the employed vary little by education for women or men, and the direction of whatever differences there are varies by country.¹⁸ (The same absence of relationship between education and hours worked holds

if the sample includes all men and women partnered to a member of the other gender, rather than just parents of young children.) One possible explanation for why more educated women would be employed at higher rates, but not work more hours if employed, is that people generally have more control over whether or not they are employed than they do over their hours. In some countries, there is limited demand for part-time or other reduced-hours work and almost none in more remunerative sectors.

Table 1 presents results obtained from regression analyses examining education–employment linkages while controlling for women's male partner's annual earnings, presence of children, and age of youngest child. As expected, the presence of young children deters women's employment.¹⁹ The analyses show that, in every country, women in the medium education category are more likely than those in the lowest category to be employed. The odds ratios range from 1.24 in Luxembourg, indicating that a woman with a medium level of education has a 24-percent-higher likelihood of employment than a woman with low education, to 3.69 in Guatemala, indicating that the former is more than 3 times as likely to be employed as the latter. More dramatically, in every country, the most educated women are most likely to be employed, with the smallest odds ratio (for this group's

Chart 2. Mean weekly hours of paid work for employed 25- to 54-year-olds who are married or cohabiting and have a child younger than 7, by education, separately for women and men



SOURCE: Luxembourg Income Study.

Table 1. Odds ratios from logistic regression predicting the employment of married or cohabiting women¹

Category	Austria	Brazil	Canada	Czech Republic	Estonia	Germany	Greece	Guatemala	Ireland
Education (reference category = low):									
Medium	2.64	1.78	1.50	2.70	1.42	2.29	1.97	3.69	2.43
High	4.33	8.52	3.17	4.47	2.40	2.67	8.37	5.40	6.04
Age of youngest child (reference category = no children):									
Younger than 6	.28	.62	.56	.12	.28	.20	.98	.54	.28
6–12	.68	.91	.86	.91	1.54	.62	1.42	² .99	.46
12–18	.71	1.05	1.24	1.22	1.73	1.14	1.69	² 1.03	.59
Partner's earnings ³ (reference category = 40th–59th percentile):									
No earnings	.82	.47	.68	.13	.58	.65	1.04	.57	.26
Below 20th percentile	1.24	.95	.79	.58	1.15	1.02	⁴ .98	1.17	.28
20th–39th percentile	1.32	1.09	1.06	1.11	1.03	.85	1.19	1.26	.81
60th–79th percentile	1.19	.84	.88	.63	1.86	.70	1.21	.94	.60
80th–94th percentile	.82	.55	.70	.78	.78	.90	.70	.66	.46
Above 94th percentile	.84	.35	.51	.63	.87	.51	.33	.42	.43
Category	Israel	Luxembourg	Mexico	Netherlands	Spain	United Kingdom	United States	Uruguay	
Education (reference category = low):									
Medium	3.54	1.24	2.13	2.66	2.73	2.51	2.80	2.50	
High	10.03	2.99	6.67	5.61	6.36	3.80	5.63	17.59	
Age of youngest child (reference category = no children)									
Younger than 6	.41	.51	.68	.48	.68	.24	.41	.59	
6–12	.91	.70	.98	.53	.68	.60	.71	.78	
12–18	1.14	.56	1.10	.82	.98	.81	1.08	1.13	
Partner's earnings ¹ (reference category = 40th–59th percentile):									
No earnings	.73	1.69	1.33	.34	.77	.16	1.28	1.33	
Below 20th percentile ²	(⁵)	3.39	1.19	1.05	² 1.00	.65	.86	1.18	
20th–39th percentile	.69	2.22	1.10	1.15	.96	.83	1.04	1.16	
60th–79th percentile	1.38	.82	.87	.84	.89	.88	.75	² 1.03	
80th–94th percentile	1.10	² .99	.68	.79	.78	.56	.43	.87	
Above 94th percentile	1.14	.32	.62	.39	.50	.28	.25	.70	
¹ All entries are statistically significant at $p < .001$, except where otherwise indicated.				⁴ Statistically significant at $p < .01$.					
² Not statistically significant.				⁵ Because of the low male employment-to-population ratio in Israel, men in the 0–20th percentile of earnings all have zero earnings and are captured in the zero-earnings category.					
³ Percentiles of the distribution of annual earnings among the male cohabiting or married partners of the women in the analyses.				SOURCE: Luxembourg Income Study.					

odds relative to the odds of those with low education) being Estonia's 2.40 and seven countries having odds ratios greater than 6. In other words, in all countries women in the high education category are more than 2 times as likely to be employed as women in the lowest education category, and in some countries they are more than 6 times as likely.

Net of other variables, are women with male partners more likely to be homemakers (or not employed for

other reasons) if their male partners earn more relative to other male partners in their country? The logistic regressions in table 1 show that the effect of male partners' earnings is *nonmonotonic*, changing direction across the range of men's earnings. (All of the odds ratios presented show effects of being in the category in question relative to having a husband whose earnings are in the middle of the distribution: between the 40th and 59th percentile of

married or cohabiting men's earnings for the country.) In 12 out of the 17 countries examined (the exceptions being Greece, Luxembourg, Mexico, the United States, and Uruguay), women are less likely to be employed if their husband was not employed all year (and thus had earnings of 0). Odds ratios for these 12 countries with negative effects range from .16 to .82, indicating that women's odds of employment if their partners had no earnings during the previous year are between 16 percent and 82 percent of what the odds are (or, equivalently, between 84 percent and 18 percent less) for women with partners in the middle income category.

These findings for couples with men at the bottom of the income distribution are counterintuitive and not predicted by any theory. It would seem more plausible that, in households where the man has no or extremely low earnings, the woman would feel more of a need to seek employment, but these women actually have unusually low employment rates. Possibly, this finding results from the effects of some unmeasured variables on which partners are similar. For example, geographically specific recessions will create pockets where both spouses are unemployed. Or it may be that persons who are unable to work because of disability may disproportionately cohabit with or marry each other, sometimes producing two nonemployed persons supported by means-tested income maintenance programs or extended family assistance.

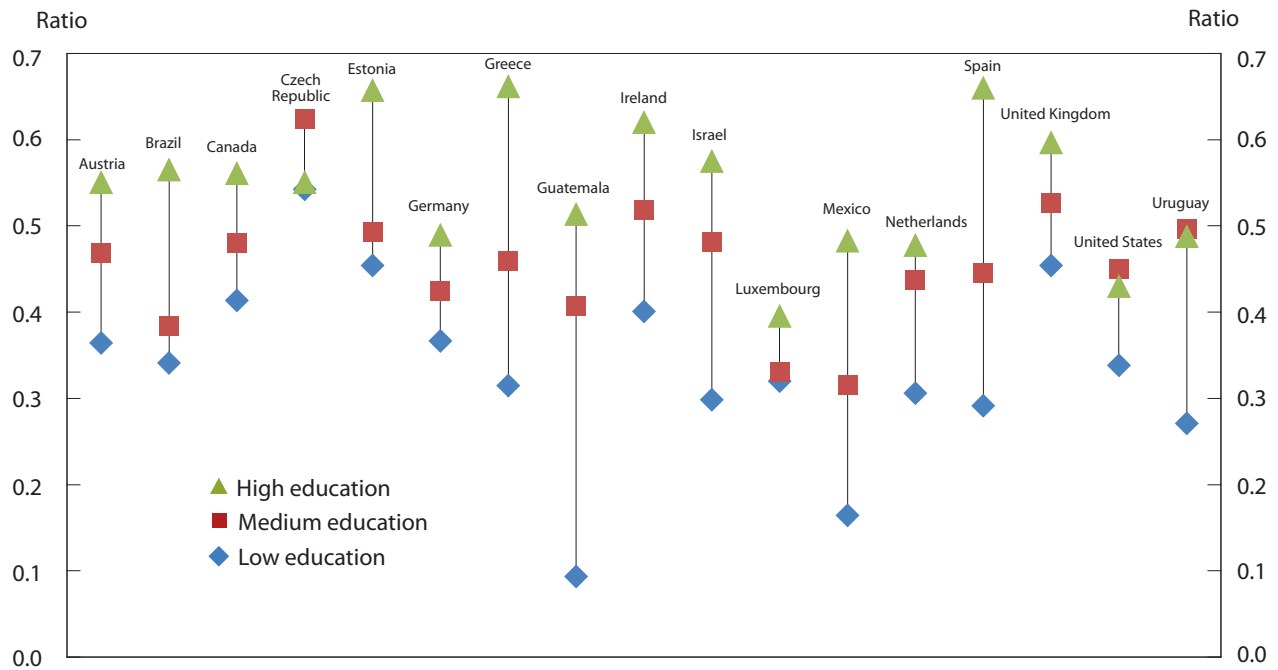
The group of countries examined is split about half and half as to whether the men in the bottom 20th percentile of earnings—but who have some earnings—have female partners with lower or higher employment than do men in the middle of the earnings distribution. Above the middle, the findings are largely what would be expected from the income effect: in most countries, the higher men's incomes above the middle of the distribution, the less likely their female partners are to be employed (controlling for women's own education). The only exception is Israel, where women with male partners earning in the top three categories (above the 94th, from the 80th to the 94th, and from the 60th to the 79th percentiles) are more likely to be employed than women whose partners are in the middle of the male earnings distribution. In sum, women are less likely to be employed as their partner's earnings go up, but with two large exceptions: women whose partners have no (or, in about half the countries, extremely low) earnings and women with high-earning partners in Israel.

Results: education and the earnings gap

Chart 3 shows the ratio of women's to men's annual earnings, with those without earnings assigned 0 in the averages, for all partnered individuals. With three exceptions (the Czech Republic, the United States, and Uruguay), women's median annual earnings relative to men's are higher for the higher education groups. However, chart 4 makes it clear that this educational differential comes mostly from highly educated women being more likely to be employed relative to men at the same level of education, not from a lower gender hourly earnings gap among those with high education. To approximate a wage rate, annual earnings are divided by 48 weeks and then divided by usual hours currently worked per week, limiting the analysis at this point to the employed.²⁰ Chart 4 shows the ratio of women's to men's hours-adjusted earnings for the employed. There is no clear pattern: out of 17 countries, in 8 the ratio of partnered women's to men's wages is highest among the highly educated group, but in 7 countries (Austria, Brazil, Germany, Mexico, the Netherlands, the United States, and Uruguay) this female-to-male ratio is lowest for the highly educated. Moreover, in many countries, including the United States, the gap does not differ much by education. So, why does the more continuous employment of highly educated women not translate into hourly earnings that are higher relative to those of men in the same education group, given past findings²¹ showing that employment experience is an important component of the gender pay gap? One possibility is that there is a counteracting factor such that the right-hand tail of the earnings distribution is more extreme among men than among women. Or, in more familiar language, highly educated women are the ones most likely to encounter the glass ceiling.

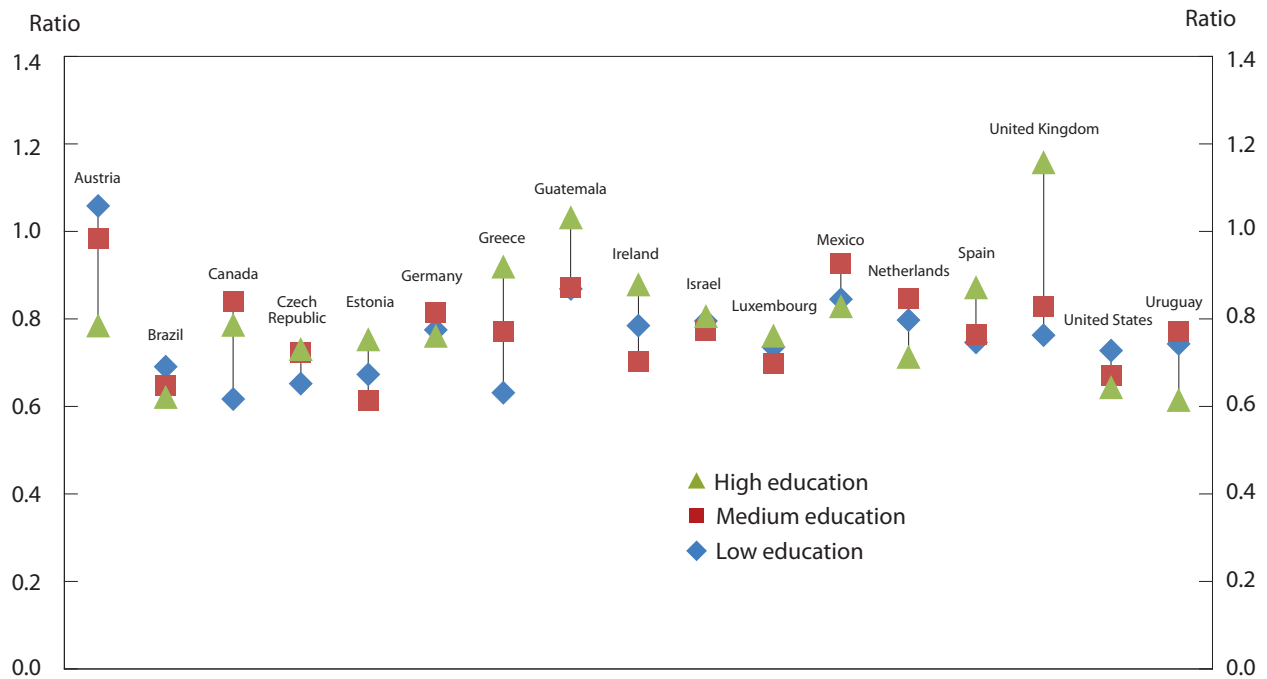
IN EACH OF THE 17 HIGH- AND MIDDLE-INCOME countries examined in this article, women with more education are more likely to be employed than women with less education. Effects of men's earnings on the employment of their female partners vary by country and are not consistently negative across the range of men's earnings. Although gender inequality in wage rates varies little by education, when those who are not employed are included in the analysis, gender inequality in annual earnings is seen to be smaller among those with higher education, largely because more of the women with high education are employed. □

Chart 3. Female-to-male ratio of mean annual earnings for cohabiting or married 25- to 54-year-olds (including the nonemployed)



SOURCE: Luxembourg Income Study.

Chart 4. Female-to-male ratio of wages of cohabiting or married 25- to 54-year-olds who are employed



SOURCE: Luxembourg Income Study.

Notes

¹ The article studies “high” and “middle” income countries, as indicated by the World Bank classification system, which is based on per capita gross national income. At the time the datasets were constructed, 13 of the 17 countries examined were considered high-income countries and 4—Brazil, Guatemala, Mexico, and Uruguay—were classified as middle-income countries. In what follows, the term “affluent” encompasses both high- and middle-income (as opposed to low-income) countries.

² See Paula England, Carmen Garcia-Beaulieu, and Mary Ross, “Women’s Employment among Blacks, Whites, and Three Groups of Latinas: Do More Privileged Women Have Higher Employment?” *Gender & Society*, August 2004, pp. 494–509; Marie Evertsson, Paula England, Irma Mooi-Reci, Joan Hermsen, Jean de Bruijn, and David Cotter, “Is Gender Inequality Greater at Lower or Higher Educational Levels? Common Patterns in the Netherlands, Sweden, and the United States,” *Social Politics*, summer 2009, pp. 210–241; Jill Rubery, Mark Smith, and Collette Fagan, eds., *Women’s Employment in Europe: Trends and Prospects* (New York, Routledge, 1999); Chinhui Juhn and Kevin M. Murphy, “Wage Inequality and Family Labor Supply,” *Journal of Labor Economics*, January 1997, pp. 72–97; and “Women at Work: Who are They and How are They Faring?”, Chapter 2 in *OECD Employment Outlook 2002* (Paris, OECD, 2002), pp. 74, 80, 84.

³ David A. Cotter, Joan M. Hermsen, and Reeve Vanneman, *Gender Inequality at Work* (Washington, DC, Population Reference Bureau, 2004), see especially Table 4, p. 9.

⁴ Philip N. Cohen and Suzanne M. Bianchi, “Marriage, children, and women’s employment: what do we know?” *Monthly Labor Review* December 1999, pp. 22–31.

⁵ Ursula Henz and Marianne Sundström, “Partner Choice and Women’s Paid Work in Sweden: The Role of Earnings,” *European Sociological Review*, September 2001, pp. 295–316.

⁶ See, for example, Claudia Goldin, *Understanding the Gender Gap: An Economic History of American Women* (New York, Oxford University Press, 1990), pp. 119–158; and James P. Smith and Michael P. Ward, “Time-Series Growth in the Female Labor Force,” *Journal of Labor Economics*, January 1985, pp. S59–S90.

⁷ Goldin, *Understanding the Gender Gap*.

⁸ For discussions of this phenomenon, see Robert D. Mare, “Five Decades of Educational Assortative Mating,” *American Sociological Review*, February 1991, pp. 15–32; Michael Rosenfeld, “Racial, educational and religious endogamy in the United States: A comparative historical perspective,” *Social Forces*, September 2008, pp. 1–31; Christine R. Schwartz and Robert D. Mare, “Trends in Educational Assortative Marriage from 1940 to 2003,” *Demography*, November 2005, pp. 621–646; Jeroen Smits, “Social Closure Among the Higher Educated: Trends in Educational Homogamy in 55 Countries,” *Social Science Research*, June 2003, pp. 251–277; Jeroen Smits, Wout Ultee, and Jan Lammers, “Educational Homogamy in 65 Countries: An Explanation of Differences in Openness Using Country-Level Explanatory Variables,” *American Sociological Review*, April 1998, pp. 264–285.

⁹ Kathleen Gerson, *Hard Choices: How Women Decide About Work, Career, and Motherhood* (Berkeley, CA, University of California Press, 1985).

¹⁰ Sharon Hays, *The Cultural Contradictions of Motherhood* (New Haven, CT, Yale University Press, 1996).

¹¹ Although economists generally ignore nonpecuniary features of jobs when discussing opportunity costs, their theory of “compensating differentials” also entails a claim that jobs are chosen for both pecuniary and nonpecuniary reasons. (On compensating differentials, see,

e.g., Paula England, *Comparable Worth: Theories and Evidence* (New York, Aldine de Gruyter, 1992), chapter 2.)

¹² Often, studies measure egalitarian gender ideology in part by how favorable respondents are to the—once controversial—notion that women’s having employment is appropriate. The idea is that a favorable attitude indicates a rejection of the traditional notion that only men should be breadwinners and only women should be homemakers. (See Karin L. Brewster and Irene Padavic, “Change in Gender-Ideology, 1977–1996: The Contributions of Intracohort Change and Population Turnover,” *Journal of Marriage and the Family*, May 2000, pp. 477–487; Pi-Ling Fan and Margaret Mooney Marini, “Influences on Gender-Role Attitudes during the Transition to Adulthood,” *Social Science Research*, June 2000, pp. 258–283; Matthijs Kalmijn and Gerbert Kraaykamp, “Social Stratification and Attitudes: A Comparative Analysis of the Effects of Class and Education in Europe,” *British Journal of Sociology*, December 2007, pp. 547–576; and Knud Knudsen and Kari Waerness, “National Context, Individual Characteristics and Attitudes on Mothers’ Employment: A Comparative Analysis of Great Britain, Sweden and Norway,” *Acta Sociologica*, January 2001, pp. 67–79.)

¹³ Alison J. Wellington, “Accounting for the Male/Female Wage Gap Among Whites: 1976 and 1985,” *American Sociological Review*, December 1994, pp. 839–884.

¹⁴ See, for example, Colm Harmon, Ian Walker, and Niels Westergaard-Nielsen, eds., *Education and Earnings in Europe: A Cross-Country Analysis of the Returns to Education* (Cheltenham, U.K., Edward Elgar, 2001), Table 1.2; and Christopher Dougherty, “Why are the Returns to Schooling Higher for Women than for Men?” *Journal of Human Resources*, fall 2005, 969–988.

¹⁵ See “Assessing Income Inequality, Measuring Poverty, Comparing Employment Outcomes, Analysing Assets & Debt, Researching Policy Impacts” (Luxembourg City, Luxembourg, Cross-National Data Center, 2010–2012), <http://www.lisproject.org>.

¹⁶ All the descriptive and regression analyses undertaken in this article exclude individuals who are in the military, those engaged in agriculture, and the self-employed; the reason is that in these groups there is substantial “noise” in reports of hours worked.

¹⁷ The educational attainment recode provided by LIS is based on the International Standard Classification of Education, known as ISCED97. One challenge that comparative researchers often grapple with is the placement of vocational education programs, because the distinction between nonspecialized and specialized vocational education is not always straightforward and because many surveys do not distinguish between the two. In fact, the U.S. survey that is the source of the U.S. data in LIS, the Current Population Survey (CPS), is an example of the latter. The 2004 CPS has only one category that refers to vocational education, and it is labeled “associate degree, occupational.” In accordance with the ISCED97 guidelines, the category is classified as “high” in the LIS recode. In other countries’ surveys, there are vocational education categories that correspond to “basic” or “secondary” vocational education; ISCED97 would code these categories as “medium” educational attainment.

¹⁸ One striking finding that emerges from chart 2 is that married or cohabiting men with children report exceedingly long weekly hours in most of the countries examined. Nearly everywhere, these fathers’ mean weekly hours are well above 40 per week and, in some cases, above 50 per week. This level of worktime exceeds the normal workweek in most of these countries, suggesting that fathers often work overtime and/or hold multiple jobs. Such a finding indicates

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that the widespread gaps in work hours between employed men and women are shaped both by mothers' short hours (their mean hours are mostly below 40 per week) and by fathers' long hours (usually 40 and above). That said, as noted earlier, there is a weak relationship between employed persons' hours and their educational attainment, so men's remarkably long workweeks contribute to the gender gap in hours across the educational spectrum.

¹⁹ For an examination of how the relationship between children and women's employment has changed differentially between single and married women in recent years in the United States, see Saul D. Hoffman, "The changing impact of marriage and children on women's labor force participation," *Monthly Labor Review*, February 2009, pp. 3–14, <http://www.bls.gov/opub/mlr/2009/02/art1full.pdf>.

²⁰ Although the LIS data include the number of weeks worked in

the previous year for some countries, that variable is not available for all of the countries examined. Thus, in reporting gender gaps in wage, it is assumed that women and men worked the same number of weeks that year—an assumption that is understood to be problematic. In many countries, workers have the option to take off substantial time for vacation and family leave. In most cases, these days or weeks are paid (by social insurance), so the fact that women and men utilize the programs involved at different rates is likely to introduce limited bias into the results obtained. Of more concern is that, on average, women are employed fewer weeks per year, in part because women are more likely than men to have just entered employment. Thus, the gender differential in wages is undoubtedly overstated, more in some countries than in others. The situation is mitigated somewhat by the absence of a clear relationship between education and the gender gap in wages.

²¹ Wellington, "Accounting for the Male/Female Wage Gap."