A LABOR ECONOMIST'S RESPONSE TO HANNA ROSIN'S "END-OF-MEN" HYPOTHESIS

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INTRODUCTION

Hanna Rosin's "end-of-men" hypothesis asserts that women are better suited than men to post-industrial society.[1] The shift in labor demand toward "soft skills" and away from "hard skills" has benefited women more than men.[2] Rosin argues that these shifts have produced a world that requires and rewards nimbleness and flexibility.[3] Men, whom she labels "Cardboard Men," are having difficulty adapting, while women, whom she labels "Plastic Women," have been better able to adapt to this "new economy."[4] Men, especially older

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[1] *See* HANNA ROSIN, THE END OF MEN: AND THE RISE OF WOMEN 5 (2012).

[2] *See id.* at 135.

[3] *Id.* at 7.

[4] *Id.* at 7-8 ("Plastic Woman has during the last century performed superhuman feats of flexibility . . . . Cardboard Man, meanwhile, hardly changes at all.").

men, have had a more difficult time acquiring newly demanded skills, such as communication, social intelligence, and team working skills, which women are more likely to possess.[5] Rosin profiles the efforts of a jobless man, Calvin, to transition to a new identity.[6] Calvin was a casualty of the Great Recession and the economy's longer-term structural shifts from a goods-producing economy to a service-oriented economy.[7]

Rosin's hypothesis relies primarily on four key facts about the labor market. First, women have become the majority of the labor force.[8] Second, most managers are now women.[9] Third, the Great Recession disproportionately hurt men.[10] Finally, the occupations projected to grow the most over the next ten years are predominately female.[11] As a variety of scholars, journalists, and public intellectuals have commented, the trends and underlying dynamics to support these claims are well documented.[12]

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[5] *See id.* at 117.

[6] *Id.* at 2-4.

[7] *See id.* at 4 (attributing Calvin's unemployment to the Great Recession, in which "three-quarters of the 7.5 million jobs were lost by men" and the industries hit hardest "were overwhelmingly male, and deeply identified with macho: construction, manufacturing, [and] high finance").

[8] *Id.* at 117.

[9] *Id.*

[10] *Id.* at 124.

[11] *Id.* at 4.

[12] *See, e.g.*, DAVID AUTOR, THE POLARIZATION OF JOB OPPORTUNITIES IN THE U.S. LABOR MARKET: IMPLICATIONS FOR EMPLOYMENT AND EARNINGS 7 (2010) (stating that "since the late 1970s and early 1980s, the rise in U.S. education levels has not kept up with the rising demand for skilled workers, and the slowdown in educational attainment has been particularly severe for males," and examining the change in the gender balance of the American workforce); Jesse Rothstein, *The Labor Market Four Years into the Crisis: Assessing Structural Explanations*, 65 INDUS. & LAB. REL. REV. 467, 473 (2012) ("[U]nemployment rates rose by somewhat more (in percentage terms) for men than for women at each education level. This pattern has led some commentators to refer to the Great Recession as a man-cession."); Andrew Sum et al., *No Country for Young Men: Deteriorating Labor Market Prospects for Low-Skilled Men in the United States*, 635 ANNALS AM. ACAD. POL. & SOC. SCI. 24, 52 (2011) ("The findings on the labor market experiences of many groups of young men in recent years, especially those with no to few completed years of postsecondary schooling, are quite bleak. Substantial losses in employment and earnings have taken place for key educational subgroups of these young men, and widening disparities in employment and earnings outcomes have taken hold across educational groups."); Catherine Rampell, *As Layoffs Surge, Women May Pass Men in Job Force*, N.Y. TIMES, Feb. 5, 2009, at A1 ("The proportion of women who are working has changed very little since the recession started. But a full 82 percent of the job losses have befallen men, who are heavily represented in distressed industries like manufacturing and construction. Women tend to be employed in areas like education and health care, which are less sensitive to economic ups and downs, and in jobs that allow more time for child care and other domestic work.").

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When I arrived at the U.S. Department of Labor in January 2000 to serve as Chief Economist, then Labor Secretary Alexis Herman had just released the Department's report, *Futurework: Trends and Challenges for the 21st Century*.[13] The report showed that how we work, where we work, and with whom we work have changed.[14] Shortly after my arrival, I added that *when* we work has also changed. The primary catalysts for these changes are technology and globalization.[15] The introduction and expansion of computers and the Internet simultaneously changed the production process and altered the education, skills, and competencies needed to compete in the "new" twenty-first-century economy. For example, only a few technicians are now needed to operate a manufacturing plant's robotic system. IT inventory systems can manage the "just-in-time" process of supplying parts.[16] Increased global competition shifted the labor demand toward highly skilled jobs and away from low-skilled jobs.[17] *Futurework* reported that imports and mechanization led to widespread job loss in manufacturing industries such as textiles/apparel and steel.[18] The report is quick to show, however, that the growth in new and emerging industries offsets these losses.[19]

These structural shifts in the labor market started in the 1980s, accelerated during the 1990s, and continued through the Great Recession.[20] The Great Recession, however, overshadowed the structural shifts and led to widespread permanent job loss.[21] Rosin finds that during the modest expansion from 2001 to 2007 and the subsequent Great Recession and current weak recovery, the

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[13] U.S. DEP'T OF LABOR, FUTUREWORK: TRENDS AND CHALLENGES FOR WORK IN THE 21ST CENTURY (1999), *available at* http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1066&context=key_workplace [hereinafter FUTUREWORK].

[14] *See generally id*. (describing the shifts in types of work, skills, employees, and physical workplaces that have occurred in recent years).

[15] *Id*. at 60, 71.

[16] *Id*. at 62.

[17] *Id*. at 64-65 (explaining that with the growth in the high tech and computer industry, individuals occupying jobs such as administrators must also be technologically capable, and "'[o]ld school' auto mechanics can forget about getting a job if they lack the skills to use computer-based diagnostic tools now standard in repair shops").

[18] *Id*. at 73.

[19] *Id*. This phenomenon, called "creative destruction," was developed by economic historian Joseph Schumpeter. *See* Herbert Hovenkamp, *Competition for Innovation*, 2012 COLUM. BUS. L. REV. 799, 804-05 (describing Schumpeter's theory of "creative destruction" as the process of "new technologies repeatedly upending older ones in an unpredictable but dramatic fashion that produced far more economic growth than the ordinary forces of price competition").

[20] *See* FUTUREWORK, *supra* note 13, at 63-64.

[21] *See* ROSIN, *supra* note 1, at 4 ("Some of these jobs have come back, but the dislocation is neither random nor temporary. The recession merely revealed – and accelerated – a profound economic shift that has been going on for at least thirty years, and in some respects even longer.").

manufacturing sector lost almost six million jobs, more than a third of its total workforce.[22] Over this same period construction employment contracted.[23] These contractions are important because manufacturing and construction are the two primary industries in which "hard skills" dominate soft skills.

Futurework concluded that several challenges have emerged.[24] The first challenge is for American workers to become "skilled, not stuck in the new economy."[25] Opportunities will be prevalent for those with the newly demanded skills, or those who can retool themselves.[26] The second challenge is one of "flexibility and family."[27] Many employers argue that in order to compete in the global economy, they need flexibility in hiring and firing and thus need to reshape the employer-employee compact.[28] Employers also want more flexibility in deciding whether to offer benefits at all and, if they do, the type of benefits to offer.[29] Many employees, meanwhile, are also seeking greater flexibility in their work schedules.[30]

Why have the gender-neutral structural changes (technology and globalization) and gender-neutral cyclical changes (the Great Recession) that have occurred over the last three decades had a more adverse impact on men than women? Three things happened. First, men were concentrated in industries that bore the brunt of the structural and cyclical decline in labor demand.[31] Second, the economic returns from the education and skills relevant to these industries fell.[32] Last, there was an increase in the economic returns from education and skills relevant to emerging industries and occupations in

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[22] *Id.* at 85.

[23] Adam Hadi, *Construction Employment Peaks Before the Recession and Falls Sharply Throughout It*, MONTHLY LAB. REV., Apr. 2011, at 24, 26 (showing that both residential and nonresidential construction employment experienced an overall decline from 2001 to 2011, despite first climbing from the 2001 levels).

[24] FUTUREWORK, *supra* note 13, at 3.

[25] *Id.*

[26] *Id.*

[27] *Id.*

[28] *Id.* at 9 (suggesting that for many employers, offering alternative working arrangements for workers with families makes sense, and that "[t]he goal is to create a balance between the need to furnish workers with fair wages and benefits and the ability to care for their families, while providing employers the flexibility they need to be competitive in the global economy").

[29] *Id.* at 94.

[30] *Id.*

[31] *See* Rampell, *supra* note 12 (explaining that the recession impacted men disproportionately because male-dominated industries, such as manufacturing, were hit particularly hard).

[32] Alejandra Cancino, *Paychecks Fall Short for Many Factory Jobs*, CHI. TRIB., Oct. 3, 2012, at 1 (comparing past and present pay rates of manufacturing workers, thereby showing that workers earn far less than employees in similar positions once did).

which men had a smaller presence and women had a greater one.[33] From a labor economist's perspective, one net effect of interest is whether these changes led to a convergence in the gender wage gap.[34] To model whether the wage gap converged, social scientists use an analytical method called a wage decomposition to summarize changes in male-female labor market differences and quantify the sources of the changes.[35]

Part I summarizes the major labor market evidence that has been used to support the end-of-men hypothesis. Part II places this end-of-men hypothesis in a wage-decomposition framework. I update an influential study by Francine Blau and Lawrence Kahn[36] that decomposes changes in the gender wage gap into the various contributing factors. Blau and Kahn's study shows that compared to the 1980s, the gender wage gap slowed in its convergence.[37] They conclude that "occupational upgrading and deunionization had a larger positive effect on women's relative wages in the 1980s than in the 1990s, explaining part of the slower 1990s convergence."[38] But they show that the largest factor was a much faster reduction of the "unexplained" gender wage gap in the 1980s than in the 1990s.[39] The slowing convergence of this unexplained gender wage gap, they explain, may have resulted from "changes in labor force selectivity, changes in gender differences in unmeasured characteristics and in labor market discrimination, and changes in the favorableness of supply and demand shifts."[40] The discussion connects these findings to the end-of-men hypothesis.

In Part III, I use Census Bureau statistics and Bureau of Labor Statistics (BLS) employment projections to assess the prospects of women and men over the next ten years. I explore whether women's employment opportunities and

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[33] Francine D. Blau & Lawrence M. Kahn, *The U.S. Gender Pay Gap in the 1990s: Slowing Convergence*, 60 INDUS. & LAB. REL. REV. 45, 45 (2006) [hereinafter Blau & Kahn, *1990s Gender Pay Gap*].

[34] A large literature has shown how from the 1970s through the 1980s, the gender wage gap narrowed much faster than it narrowed during the 1980s and early 1990s. *See, e.g.*, Blau & Kahn, *1990s Gender Pay Gap*, *supra* note 33; Francine D. Blau & Lawrence M. Kahn, *Gender Differences in Pay*, 14 J. ECON. PERSP. 75, 76 (2000); Francine D. Blau & Lawrence M. Kahn, *Swimming Upstream: Trends in the Gender Wage Differential in the 1980s*, 15 J. LABOR ECON. 1, 1-2 (1997); Nicole M. Fortin & Thomas Lemieux, *Rank Regressions, Wage Distribution, and the Gender Gap*, 33 J. HUMAN RESOURCES 610, 638 (1998); Ebru Kongar, *Is Deindustrialization Good for Women? Evidence from the United States*, 14 FEMINIST ECON. 73, 74 (2008).

[35] For a summary of the methods, see Yana van der Meulen Rodgers, *A Primer on Wage Gap Decompositions in the Analysis of Labor Market Discrimination*, *in* HANDBOOK ON THE ECONOMICS OF DISCRIMINATION 11 (William M. Rodgers III ed., 2006).

[36] Blau & Kahn, *1990s Gender Pay Gap*, *supra* note 33.

[37] *See generally id.*

[38] *Id.* at 65.

[39] *Id.*

[40] *Id.*

wages will continue to converge toward those of men. One piece of evidence that is used to argue that the prospects look better for women is that the BLS projections indicate that the bulk of the twenty-one million jobs created over the next ten years will be in fields dominated by women. I show, however, that a feature of these jobs is that they tend to pay at or below the U.S. median wage. Women may continue to gain with respect to employment, but gains in pay will be modest, suggesting little to no convergence in the gender wage gap.

I further demonstrate that the fastest growing jobs have more occupations that are in traditionally "male-oriented" trades. The wages in these occupations tend to be above the U.S. median wage. For the gender wage gap to narrow further, more young women will need to move into these higher-paying jobs, while more young men move away from these occupations.

In Part III, I also present evidence on gender differences in offshoring and discuss what this means for the future. I link economist Alan Blinder's "offshorability index" to micro data in the Outgoing Rotation Files of the Current Population Survey.[41] The preliminary evidence suggests that the continued offshoring of jobs could slow the gender wage gap's convergence. Men will be adversely impacted, but my findings indicate that women are at greater risk of having their jobs offshored. Workers at all levels of educational attainment are at risk. I do find, however, that unions and public-sector employment seem to mediate the higher odds of having one's job offshored.

I.   THE END-OF-MEN LABOR MARKET CLAIMS AND BASIC EVIDENCE

The following four pieces of labor market evidence are used to support the end-of-men hypothesis: (1) women have become the majority of the labor force,[42] (2) most managers are now women,[43] (3) the Great Recession disproportionately hurt men,[44] and (4) the occupations projected to grow the most over the next ten years are predominately female.[45] This Part summarizes the evidence.[46]

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[41] Alan S. Blinder, *How Many U.S. Jobs Might Be Offshorable?* (Princeton Univ. Ctr. for Econ. Policy Studies, Working Paper No. 142, 2007).

[42] ROSIN, *supra* note 1, at 117.

[43] *Id*.

[44] *Id*. at 124.

[45] *Id*. at 4.

[46] The information referenced throughout this Part is heavily based on the author's own calculations and data analysis, on file with the author, of published statistics from *Labor Force Statistics from the Current Population Survey*, U.S. DEP'T LAB., BUREAU LAB. STAT., http://www.bls.gov/cps/ (last visited May 21, 2013), and *Data Access Tools*, U.S. DEP'T LAB., BUREAU LAB. STAT., http://www.census.gov/main/www/access.html (last visited May 21, 2013).

A. *Most Future Job Growth Will Take Place in Female-Dominated Occupations*[47]

The BLS forecasts that from 2010 to 2020, the economy will add slightly over twenty million jobs.[48] The top ten occupations will account for 24% of total growth.[49] Heavy and tractor-trailer truck drivers and laborers; freight, stock, and material movers; and postsecondary teachers are the only "male-dominated" occupations.[50] When the list is expanded to include the largest twenty occupations, it comprises 37% of total growth.[51] This expansion adds the male-dominated occupations of landscaping and groundskeeping workers and construction laborers.[52] Expanding to the largest forty occupations (52% of projected growth) adds roughly another eight occupations that are male dominated. Thus, even if we expand the list, Rosin's claim that the bulk of future job growth will not be in male-oriented or -dominated jobs is supported.

B. *Women Are the Majority of the Labor Force*

The percentage of women in the labor force has risen sharply since 1948. According to the household-based Current Population Survey (CPS) conducted by the BLS, women comprised 28.1% of the labor force in 1948 and steadily increased to 46.1% in 1995. The rate has remained between 46 and 47% ever since. The employer-based Current Employment Statistics (CES) reveal a similar pattern: women reached 50% of the labor force during the Great Recession. The data from the CES series is used to support Rosin's end-of-men hypothesis.[53]

What drove women's increased presence in the labor force? To answer this question, we must use the household-based CPS data statistics disaggregated by gender, age, race, and educational attainment, which are only available in the household survey. With respect to age, the percentages of the labor force that are female by age (16 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, and 65

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[47] I interpret the "most" to mean the occupations that will add the largest *number* of jobs, as opposed to the largest *percent*, over the next ten years.

[48] *Employment Projections: Industry-Occupation Matrix Data, by Industry*, U.S. DEP'T LAB., BUREAU LAB. STAT., http://www.bls.gov/emp/ep_table_109.htm (last modified Feb. 1, 2012).

[49] *Employment Projections: Occupations with the Largest Job Growth*, U.S. DEP'T LAB., BUREAU LAB. STAT., http://www.bls.gov/emp/ep_table_104.htm (last modified Feb. 1, 2012).

[50] *Compare id.*, *with Labor Force Statistics from the Current Population Survey: Employed Persons by Detailed Occupation, Sex, Race, and Hispanic or Latino Ethnicity*, U.S. DEP'T LAB., BUREAU LAB. STAT., http://www.bls.gov/cps/cpsaat11.htm (last modified Feb. 5, 2013).

[51] *See Employment Projections: Occupations with the Largest Job Growth*, *supra* note 49.

[52] *Id.*

[53] *See* ROSIN, *supra* note 1, at 117.

and older) exhibit patterns similar to the data series for those aged 16 years and older. All rapidly increase from the 1950s to the 1980s and plateau during the early 1990s.

The growth in the presence of married women in the labor force (as a percentage of married individuals in the labor force) is similar to that in the general population: a rapid increase followed by a slowdown and then stability. It is important to observe that the increase from the 1950s to the 1990s was faster than observed in the general population. Since the 1990s a 3-to-4 percentage-point gap exists (47% versus 44% in 2011).

Shifting to race, BLS began to publish the statistics of women in the workforce for African Americans and Latinos in 1972.[54] From 1972 to present, the percentage of women comprising the African American labor force has exceeded the percentages of white women, Asian women, and Latina women. In 1972 African American women already made up 45% of the African American labor force, compared to white women, who comprised only 38% of white workers. African American women reached the 50% mark in 1986, shortly after the recession of 1981 to 1982, which at that time was the worst recession since the Great Depression. That percentage jumped higher to 53% in 2000 and has since hit a plateau. By 2000 white and Asian women's percentages increased to 46% and have remained constant at this level. The percentage of Latina women in the Latino labor force has been fairly constant at 40% since 1972.

The trends in educational attainment are quite revealing and might suggest where future increases in women's labor force attachment could occur. BLS began to disaggregate by gender and educational attainment in 1992. The plateau seen in the previous comparisons may be due to a continued increase in the percentage of women that comprise the college-graduate labor force, but steep declines in the percentage of women that make up the high school dropout and graduate labor forces. In 1992 women college graduates made up 42% of the college-graduate labor force. By the start of the early 1990s recession, the share had risen to 48%. It has remained constant since 2007. By contrast, the percentages for high school dropouts and graduates started at 38% and 47%, respectively, in 1992 and trended downward to 35% and 45%, respectively, at the start of the recession. The high school dropout percentage remained stable during the recession and recovery, but the percentage of

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[54] *Labor Force Statistics from the Current Population Survey*, U.S. DEP'T LAB., BUREAU LAB. STAT., http://data.bls.gov/pdq/querytool.jsp?survey=ln (last visited May 21, 2013) (select "Women" under Sex; select "Black or African American" under Race; select "All Origins" under Ethnic Origin; select "16 and over" under Age; select "All educational levels" under Education (twenty-five years and older only); select "All marital statuses" under Marital Status; select "Civilian noninstitutional population" under Labor Force Status; click "Get Data"; on next page, click date dropdown menu for "From" which begins at year 1972).

women high school graduates in their labor force continued to trend downward. In 2011 the percentage fell to 43%.

C.   *Most Managers Are Now Women*

Occupational data from the 2011 American Community Survey indicate that women comprise 39% of all managers compared to 47% of all occupations.[55] When the broad category of managers is disaggregated, substantial variation emerges. Over one-half of human resources managers and financial managers are women,[56] while only 27% of top executives[57] and 30% of operations specialist managers[58] are women. Farmers, ranchers, and other agricultural managers have the lowest presence of women at 14%.[59] These estimates provide mixed support for the end-of-men hypothesis.

Even though the presence of women in managerial occupations is close to the average of all occupations, occupation segregation is still quite large in the important technical, health, and education career fields. For example, 2 to 3% of pipe layers, plumbers, pipefitters, and steamfitters;[60] carpenters;[61] vehicle

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[55] U.S. CENSUS BUREAU, S2401, OCCUPATION BY SEX AND MEDIAN EARNINGS IN THE PAST 12 MONTHS (IN 2011 INFLATION-ADJUSTED DOLLARS) FOR THE CIVILIAN EMPLOYED POPULATION 16 YEARS AND OVER (2011), http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" follow "Go" hyperlink; follow table name hyperlink).

[56] U.S. CENSUS BUREAU, EEO-ALL02W, DETAILED CENSUS OCCUPATION BY SEX, AND RACE/ETHNICITY FOR WORKSITE GEOGRAPHY, TOTAL POPULATION (2006-2010), http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "0136"; follow "Go" hyperlink; follow table name hyperlink); *id*. (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "0120"; follow "Go" hyperlink; follow table name hyperlink).

[57] *Id*. (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "0010"; follow "Go" hyperlink; follow table name hyperlink).

[58] *Id*. (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "0020"; follow "Go" hyperlink; follow table name hyperlink).

[59] *Id*. (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "0205"; follow "Go" hyperlink; follow table name hyperlink).

[60] *Id*. (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "6440"; follow "Go" hyperlink; follow table name hyperlink).

[61] *Id*. (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "6230"; follow "Go" hyperlink; follow table name hyperlink).

and mobile-equipment mechanics;[62] motor-vehicle electronic-equipment installers and repairers;[63] and electricians are female.[64] At the other extreme, elementary and middle school teachers[65] and registered nurses[66] are 80% and 91% female, respectively. This evidence is referenced here to counter the end-of-men hypothesis.

D. *The Great Recession Hurt Men: In fact, It Was Called the "Mancession"*

Did the Great Recession deliver the knockout punch to men? The National Bureau of Economic Research (NBER) defined the recession as the period between December 2007 and June 2009.[67] Over this period, real GDP contracted by 5%, compared to an average 2.9% contraction during the six previous recessions.[68] The private sector lost 7.7 million or 6.6% of its jobs. As a result, the U.S. unemployment rate almost doubled from 5.0% to 9.5%. Many analysts labeled the recession as a "mancession" because the affected industries were largely in the male-dominated industries of construction and manufacturing.[69]

Three preconditions made the ensuing effects so severe. First, Americans entered the recession in a very vulnerable state: as the recession began, debt-to-income ratios were at higher levels than at the start of previous recessions.[70] Second, no real employment gains occurred from 2001 to 2007. In fact, the U.S. employment-to-population ratio was lower than at the start of the

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[62] *Id.* (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "7220"; follow "Go" hyperlink; follow table name hyperlink).

[63] *Id.* (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "7110"; follow "Go" hyperlink; follow table name hyperlink).

[64] *Id.* (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "6355"; follow "Go" hyperlink; follow table name hyperlink).

[65] *Id.* (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "2310"; follow "Go" hyperlink; follow table name hyperlink).

[66] *Id.* (under Topics, select "People," then "Age & Sex," then "Sex"; beside "Refine your search results" select "occupation" and type "3255"; follow "Go" hyperlink; follow table name hyperlink).

[67] For details on the process of labeling the business cycle, see *The NBER's Business Cycle Dating Procedure: Frequently Asked Questions*, NAT'L BUREAU ECON. RES., http://www.nber.org/cycles/recessions_faq.html (last visited May 23, 2013).

[68] *Current-Dollar and "Real" GDP*, BUREAU ECON. ANALYSIS, http://bea.gov/national/xls/gdpchg.xls (last modified Apr. 26, 2013).

[69] ROSIN, *supra* note 1, at 4.

[70] *2010 SCF Chartbook*, BD. GOVERNORS FED. RESERVE SYS. (July 19, 2012), http://www.federalreserve.gov/econresdata/scf/files/2010_SCF_Chartbook.pdf.

recovery. Third, earnings for the typical American stagnated during the recovery period prior to the Great Recession.

The unemployment rates of men and women were at approximately the same point when the recession began. This was true regardless of race and ethnicity, except for African Americans. White men and white women started the Great Recession with unemployment rates of 4.4% and 4.5%, respectively. White men's unemployment rate jumped to 9.8%, while white women's jobless rate only increased to 7.5%. African American men's jobless rate started at 9.9%, compared to 8.1% for African American women. The former's jobless rate jumped to 17.5% and the latter's only increased to 12.7%. Latino men and women started the recession at 6.3% and 6.4%, respectively. Latino men's unemployment rate climbed to 13.9%, compared to an increase of only 11.3% for Latina women.

The NBER has marked June 2009 as the beginning of the recovery.[71] The recovery has two distinct segments: the "jobless recovery" that ran from June 2009 to February 2010, and what I call the "pothole recovery," which has run from February 2010 to the present. During the jobless recovery there was modest real GDP growth of 2.3%.[72] Although national income was expanding, it was not at a level strong enough to shift employers from increasing hours and using temporary workers to meet orders. During the "pothole" phase of the recovery, real GDP grew at 3%.[73]

What characterizes a jobless recovery as opposed to a pothole recovery? The former is characterized by continued job losses, whereas the latter is characterized as having anemic private-sector growth. During the jobless recovery, real GDP contracted by 1.1%; during the pothole recovery, it increased by 2.6%.[74] Job growth has returned, but has amounted to an average growth of only about 140,000 new jobs per month. One consequence of having job growth at or below the 130,000-to-150,000 break-even threshold has been an elevated unemployment rate that is slow to fall. In fact, a significant portion of the decline in the unemployment rate has been due to people leaving the labor force to attend school, enroll in training, file for disability, retire, or simply ceasing to seek employment.

What are the gender contours of the recovery? Have they served to offset the adverse effects of the Great Recession? Over five million private-sector jobs have been added since February 2010, while just over 500,000 public-sector jobs have been lost. A disproportionate share of the private-sector jobs have gone to men, while the public-sector losses have had a disproportionate impact on women. Most of the gains were in temporary help services, education and health services, leisure, and durable manufacturing. The pace of the public

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[71] For details on the process of labeling the business cycle, see *The NBER's Business Cycle Dating Procedure: Frequently Asked Questions*, *supra* note 67.

[72] *Current-Dollar and "Real" GDP*, *supra* note 68.

[73] *Id*.

[74] *Id*.

sector's shedding of jobs has slowed, with local education still the main source of cuts.

II.   An Analytical Framework and Indirect Test of the End-of-Men Hypothesis

Rosin claims that women are better suited than men to the post-industrial economy.[75] From a labor economist's perspective, the phrase "better suited" has several possible interpretations. First, it may mean that women possess education, skills, and competencies in greater "quantities" than men. It might also mean that women receive higher economic returns from their education, skills, and competencies than men. In either case these advantages have grown over time (for example, in pre- and post-industrial economies). A third understanding may be that, due to affirmative action laws, anti-discrimination laws, and changes in consumer demand and the production process, it is harder for employers en masse to discriminate against women. As a result, the gender earnings gap would be expected to narrow. Women may have closed the gap in productive attributes relative to men, or gender differences in the economic returns to these attributes may have narrowed. Another possibility is that the attributes in which women have always had an advantage are now seeing an increase in their market payoff.

Let's be more specific. Prior to the economy's structural shift from a manufacturing to an information-services economy, Rosin argues, physical strength and stamina were more economically desirable than attributes such as social intelligence and open communication (that is, soft skills). In this world, it would be predicted that women would earn less for two reasons.[76] First, on average, men have larger "quantities" of physical strength and stamina. Second, the market payoff for physical strength, regardless of gender, would be larger than the market payoff for open communication and social intelligence.

Rosin asserts, however, that as the economy's structure changed, several changes developed. Women not only narrowed the physical strength-stamina gender gap, they also expanded their advantage in areas of communication and social intelligence.[77] While they were expanding their advantage in the latter, the market began to place a greater premium on communication and social intelligence.[78] As a result, the gender wage gap narrowed.

Economists have developed a useful tool for illustrating the dynamics of how the gender wage gap has narrowed due to changes in the attributes of women and men, and the economic returns to their attributes.[79] The tool is

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[75] Rosin, *supra* note 1, at 5.

[76] *Id.*

[77] *Id.*

[78] *Id.*

[79] The technique used in this Article is attributed to Chinhui Juhn, Kevin Murphy, and

called a wage decomposition. Wage equations for women and men ($i = m, f$) are estimated as follows:

(1) $lnW_i = \beta_i X_i + \gamma_i Z_i + \sigma_i \varepsilon_i,$

where lnW_i denotes the natural logarithm of hourly earnings, X_i denotes a matrix of observed attributes associated with physical strength and stamina, Z_i denotes a matrix of attributes that measure open communication skills and social intelligence, β_i and γ_i denote the vector of regression coefficients that capture the economic returns of each attribute, and ε_i is the standardized residual (meaning that it is distributed with a mean of zero and variance of one) and σ_i is the residual standard deviation of wages.

The gender wage gap can then be constructed by differencing the men and women's equations. Doing so leads to the following expression:

(2) $lnW_m - lnW_f = \left(X_m\beta_m - X_f\beta_f\right) + \left(Z_m\gamma_m - Z_f\gamma_f\right) + \sigma_m(\theta_m - \theta_f),$

where

(3) $\theta_m = \frac{(lnW_m - X_m\beta_m)}{\sigma_m} = \varepsilon_m$

(4) $\theta_f = \frac{(lnW_f - X_f\beta_f)}{\sigma_f}.$

The left-hand side is the log wage gap between men and women. The first two terms on the right-hand side capture the predicted log wage gap due to differences in attributes associated with strength and stamina, and the predicted log wage difference associated with gender differences in social intelligence and open communication. The third term measures the residual gap, which depends on the residual prices and the error terms. When evaluated at the mean, the residual gap in each case depends on the amount of male residual wage inequality (σ_m) and the mean female's position in the male residual wage distribution (σ_f).

To illustrate Rosin's argument, we need to add a time dimension. Let t denote a period prior to the structural change in the economy and let Δ correspond to the male-female difference within a year in the outcome and attribute that follow. The decompositions in year t and t' are written as follows:

Brooks Pierce. *See* Chinhui Juhn et al., *Accounting for the Slowdown in Black-White Wage Convergence*, *in* WORKERS AND THEIR WAGES: CHANGING PATTERNS IN THE UNITED STATES 107 (Marvin H. Kosters ed., 1991). It has its origins in the work of Ronald Oaxaca and Alan Blinder. *See* Alan S. Blinder, *Wage Discrimination: Reduced Form and Structural Estimates*, 8 J. HUM. RESOURCES 436 (1973); Ronald Oaxaca, *Male-Female Wage Differentials in Urban Labor Markets*, 14 INT'L ECON. REV. 693 (1973).

(5) $\Delta lnW_t = \Delta X_t \beta_{mt} + \Delta Z_t \gamma_{mt} + \sigma_{mt}\Delta\theta_t.$

(6) $\Delta lnW_{t'} = \Delta X_{t'} \beta_{mt'} + \Delta Z_{t'}\gamma_{mt'} + \sigma_{mt'}\Delta\theta_{t'}.$

The rate of change in the gender wage gap before and after the structural change can be described as follows:

(7) $\Delta lnW_t - \Delta lnW_{t'} =$
$\left(\Delta X_t \beta_{mt} - \Delta X_{t'}\beta_{mt'}\right) + \left(\Delta Z_t\gamma_{mt} - \Delta Z_{t'}\gamma_{mt'}\right) + \left(\sigma_{mt}\Delta\theta_t - \sigma_{mt'}\Delta\theta_{t'}\right)$

Finally, we choose year *t'* and male prices as the reference wage structure by adding and subtracting the term $(\Delta X_t\beta_{mt'} + \Delta Z_t\gamma_{mt'} + \sigma_{mt'}\Delta\theta_{t'})$ from the right-hand side. This manipulation yields the following trend decomposition equation:

(8) $\Delta lnW_t - \Delta lnW_{t'} =$
$\left(\Delta X_t - \Delta X_{t'}\right)\beta_{mt'} + \left(\Delta Z_t - \Delta Z_{t'}\right)\gamma_{mt'} + \Delta X_t\left(\beta_{mt} - \beta_{mt'}\right) + \Delta Z_t(\gamma_{mt} - \gamma_{mt'}) + \sigma_{mt'}\left(\Delta\theta_t - \Delta\theta_{t'}\right) + (\sigma_{mt} - \sigma_{mt'})\Delta\theta_t.$

The first and second terms on the right-hand side are measured quantities associated with physical strength and stamina and open communication skills and social intelligence. The terms represent changes across time in observed gender-specific attributes, holding market returns fixed. The wage gap may narrow across time because women's physical strength relative to men narrows. The wage gap may also narrow because women's advantage with open communication skills grows. The third and fourth terms, labeled measured prices, capture changes in market returns, holding observed characteristics fixed. For example, an increase over time in returns to communication skills will cause the overall wage gap to narrow if women on average have better communication skills. The fifth term is labeled "residual quantities." This term measures changes in unobserved gender-specific characteristics, which result in changes in the percentile ranking of women in the male residual wage distribution. Such unmeasured characteristics can include gender differences in labor force attachment due to intermittency, differences in unobserved skills, and wage discrimination by gender. As an example, reduced gender differences in these attributes could cause the ranking of the average female residual wage to rise from the thirty-fifth percentile to the fortieth percentile of the male residual wage distribution, all else being equal. The final term, labeled "residual prices," reflects changes in male residual wage inequality. One can think of the last term as a change in the wage penalty for having a position below the mean of the male residual wage distribution.

Blau and Kahn come closest to testing the end-of-men hypothesis. They use the Michigan Panel Study of Income Dynamics to estimate the slowdown in

the convergence of the gender wage gap that occurred during the 1990s.[80] They are not able to control for the vector of Z. Thus, their decomposition has the following form:

(9) $\Delta lnW_t - \Delta lnW_{t'} =$
$(\Delta X_t - \Delta X_{t'})\beta_{mt'} + \Delta X_t(\beta_{mt} - \beta_{mt'}) + \sigma_{mt'}(\Delta\theta_t - \Delta\theta_{t'}) + (\sigma_{mt} - \sigma_{mt'})\Delta\theta_t.$

As a result, the impacts of changes in the quantities and returns to soft skills show up in the third and fourth terms.

Blau and Kahn show that changes in educational attainment, a measured quantity, fail to explain why the gender wage gap's convergence slowed.[81] This is because women's relative educational attainment had improved comparably in the prior two decades.[82] Blau and Kahn conclude that "occupational upgrading and deunionization had a larger positive effect on women's relative wages in the 1980s than in the 1990s, explaining part of the slower 1990s convergence."[83] They show that the largest factor was a much faster reduction of the "unexplained" gender wage gap in the 1980s than in the 1990s.[84] Changes in labor-force selectivity, changes in gender differences in unmeasured characteristics and in labor market discrimination, and changes in the favorableness of demand shifts each may have contributed to the slowing convergence of the unexplained gender wage gap.[85]

How do Blau and Kahn's results connect to the end-of-men hypothesis? They are unable to include in their decompositions actual measures of the attributes that capture social intelligence, open communication, and changes in the favorableness of demand shifts. Thus, these factors enter Blau and Kahn's study as residual quantity and price terms.

To illustrate that Blau and Kahn's indirect evidence supports Rosin's hypothesis and assess whether the slowdown has continued since the late 1990s, I estimate the log weekly wage gap between men and women that are employed in full-time and full-year jobs. Table 1 reports the log-point wage gap based on samples of men and women ages eighteen to sixty-four from the

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[80] Blau & Kahn, *1990s Gender Pay Gap*, *supra* note 33, at 45.

[81] *Id.* at 64-65.

[82] *Id.*

[83] *Id.*

[84] *Id.* at 46-47.

[85] *Id.* at 54. In a related study, Ebru Kongar shows that the expansion of the gender wage gap in the service sector led to the slowdown in the gender wage gap's convergence. Kongar, *supra* note 34, at 75. Within the service sector, two occupational dynamics generated the expansion. First, women expanded their presence in male-dominated occupations, which typically have higher wages. *Id.* Second, the gender pay gap within these occupations expanded as women's presence increased. *Id.* at 86.

March CPS files.[86] It shows the familiar pattern of rapid convergence from 1979 to 1989, followed by a period of slower convergence from 1989 to 1998[87] and 1990 to 2001.[88] The more recent evidence in the Table reveals that since 2001 the gap's convergence has stagnated. Table 1 also shows the wage gap by potential experience. The wage gaps within experience should be interpreted with caution because of the well-known biases associated with using potential experience versus actual experience. Further, since 1991 educational attainment is measured in degree attained. To construct an estimate of years of schooling, I use the February 1991 CPS file. As a part of the BLS and the Census Bureau transition to a degree-attained measure of educational attainment, respondents were asked the old "years of schooling" question and the new "degree attained" question. I compute the average years of schooling for a given degree attained and assign that value to respondents who report that degree.[89]

With these caveats expressed at the outset, Table 1 does reveal that the wage gap is smaller among worker groups with the least experience and that the gap narrowed across all experience categories.[90] The trend analysis will precisely depict the relative sizes of the improvement, slowdown, and stagnation.

Table 1 reports the decomposition results from estimating Equation (9).[91] To address the common index problem that plagues this type of decomposition, I replace the *t'* values with the series average of each component (series length = 37).[92] Thus, each component captures the change in a component's year *t* value relative to its average over the whole period. Table 1 reports the wage gap's convergence from 1976 to 1989 and from 1989 to present.[93] The overall wage gap narrows at 1.48% per year from 1976 to 1989, but slows to a narrowing of 0.39% per year from 1989 to 2012.[94] Women's progress has slowed considerably. In both sub-periods, residual and measured quantities are the main contributors to the gender wage gap's narrowing; their contribution,

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[86] Self-employed individuals are excluded. *See infra* Table 1.

[87] Blau & Kahn, *1990s Gender Pay Gap*, *supra* note 33, at 47.

[88] Kongar, *supra* note 34, at 92.

[89] The values are as follows: Fourth grade or less = 0.512; Fifth or Sixth grade = 2.642; Seventh or Eighth grade = 6.732; Ninth grade = 8.446; Tenth grade = 9.389; Eleventh grade = 10.369; Twelfth grade, no diploma = 11.042; High school graduate, diploma or equivalent (GED) = 11.480; Some college but no degree = 12.937; Associate degree, occupational/vocational = 13.599; Associate degree, academic program = 13.861; Bachelor's degree = 15.646; Master's degree = 17.164; Professional school degree = 17.203; Doctorate degree = 17.288.

[90] *See infra* Table 1.

[91] *See infra* Table 1.

[92] *See, e.g.*, Rodgers, *supra* note 35.

[93] *See infra* Table 1.

[94] *See infra* Table 1.

however, has been cut by more than half since 1989.[95] Yet improvements in education, recognition of unobserved skills, and a decrease in discrimination were strong enough to offset the continued pressure that increased wage inequality (residual prices) placed on the wage gap.

These decomposition results are consistent with Rosin's hypothesis. The impact of soft skills and changing values toward women's work shows up in the residual quantities term, which is the most important contributor to women's relative wage gains. The key insight here is that Rosin's hypothesis is still supported by the data for the post-1989 period, but in a much weaker form than in the period prior to 1989.

Another way to test Rosin's hypothesis is to decompose the wage gap by potential experience category. Table 1 reports the decompositions for the following potential experience categories: less than ten years, eleven to twenty years, and twenty-one to thirty years.[96] If Rosin's hypothesis is supported, we would expect the wage gap's convergence to be larger for younger women. The decompositions show a different pattern, however, suggesting a refutation of Rosin's hypothesis. Post-1989 convergence was larger among men and women with eleven to twenty and twenty-one to thirty years of potential experience.[97] If men with the most experience are having the greatest difficulty adjusting to the "new economy," women in their cohort would catch up faster than women in younger cohorts. Simultaneously, new-entrant men (ten years of experience or less) have been able to adapt and acquire the newly demanded skills. In fact, since 1989 residual quantities play no role in explaining the wage gap's narrowing among men and women with less than ten years of potential experience. This suggests that the initial burst in women's gains during the 1970s and 1980s has slowed since 1989, even for young women.

III.   WHAT DOES THE FUTURE HOLD FOR MEN AND WOMEN?

Parts I and II, which reviewed employment projections, indicate that the largest growing jobs will not be in male-dominated occupations.[98] This Part delves into the BLS projection data.[99] For example, if we examine the annual wages for the top fifteen occupations expected to have the largest growth, we

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[95] *See infra* Table 1.

[96] The decompositions for men and women with thirty-one to forty and forty-one to fifty years of potential experience were constructed. They generate results similar to the group with twenty-one to thirty years of potential experience.

[97] *See infra* Table 1.

[98] ROSIN, *supra* note 1, at 124 ("Of the thirty professions projected to add the most jobs over the next decade, women dominate twenty, including nursing, accounting, home health assistance, child care, and food preparation.").

[99] The information in this Part is heavily based on the author's own calculations and data analysis, on file with the author, of published statistics from *Employment Projections*, U.S. DEP'T LAB., BUREAU LAB. STAT., http://www.bls.gov/emp/ (last visited May 21, 2013).

come to a different conclusion about continued convergence in labor market opportunities.

The largest growing jobs tend to pay wages at or below the median U.S. annual wage of $33,840, and men hold more highly paid jobs.[100] I computed the average of the median wages for the top ten, twenty, thirty, and forty largest growing jobs. The averages are $32,386, $30,007, $36,458, and $40,666 per year, respectively. The average does not exceed the overall U.S. median wage until physicians and surgeons and software developers are added. These high-paying occupations are respectively ranked twenty-ninth, thirty-third, and thirty-eighth in terms of job growth. Physicians and surgeons earn in excess of $166,000 per year.[101] Applications software developers earn $87,790 per year.[102] Systems software developers earn $94,180 per year.[103] Men comprise 66% of physicians and surgeons and 81% of software developers.[104]

Another way to assess the employment component of the end-of-men hypothesis is to study the *fastest* growing occupations, as measured by percent change. The fastest growing jobs may indicate skills and labor shortages, which translate not only into job openings, but also higher earnings. Market forces place upward pressure on the occupation's wage structure.

The median growth rate from 2010 to 2020 is 11.4% for all 674 occupations for which BLS computes forecasts. Even among the occupations projected to grow the fastest, the employment advantage tilts toward women.[105] Compared to the largest growing occupations, however, there are more occupations that are male dominated or have higher male concentrations.[106] In particular, those jobs are career-technical occupations, such as carpenters and brick masons.[107]

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[100] *See Employment Projections: Occupations with the Largest Job Growth*, *supra* note 49.

[101] *Occupational Outlook Handbook: Physicians and Surgeons*, U.S. DEP'T LAB., BUREAU LAB. STAT. (Mar. 29, 2012), http://www.bls.gov/ooh/healthcare/physicians-and-sur geons.htm.

[102] *Occupational Outlook Handbook: Software Developers*, U.S. DEP'T LAB., BUREAU LAB. STAT. (July 18, 2012), http://www.bls.gov/ooh/Computer-and-Information-Technology /Software-developers.htm#tab-5.

[103] *Id*.

[104] *See* BUREAU OF LABOR STATISTICS, REPORT 1040, WOMEN IN THE LABOR FORCE: A DATABOOK 32, 34 (2013), *available at* http://www.bls.gov/cps/wlf-databook-2012.pdf.

[105] *See Occupational Outlook Handbook: Fastest Growing Occupations*, U.S. DEP'T LAB., BUREAU LAB. STAT. (Mar. 29, 2012), http://www.bls.gov/ooh/fastest-growing.htm (listing personal care aide, physical therapist assistant, and occupational therapy assistant as being among the fastest growing occupations).

[106] *Compare Employment Projections: Fastest Growing Occupations*, U.S. DEP'T LAB., BUREAU LAB. STAT., http://www.bls.gov/emp/ep_table_103.htm (last modified Feb. 1, 2012), *with Employment Projections: Occupations with the Largest Job Growth*, *supra* note 49.

[107] *See Occupational Outlook Handbook: Fastest Growing Occupations*, *supra* note 105; *see also* BUREAU OF LABOR STATISTICS, *supra* note 104, at 38 (reporting that women

Still, the list is mostly comprised of service occupations that are either female dominated or fairly equal in their gender composition.

As compared to the largest growing jobs, the fastest growing occupations have median wages that exceed the U.S. median of $33,840.[108] The two fastest growing occupations (personal care and home health aides) are low-wage occupations. They have median wages that are below $21,000. The average of the medians, however, increases from $36,500 to $57,200 as we move from the ten fastest to the forty fastest growing occupations. For example, jobs in physical therapy pay above the U.S. median annual wage of $33,840.[109]

The evidence on the fastest growing occupations suggests a continued employment advantage for women, but on the wage front, women's advantage could diminish if younger cohorts of men increase their pursuit of opportunities in career-technical positions. It is difficult, however, to convince parents to send their children to career-technical facilities. This is the adjustment process to which Rosin refers.[110] And yet, wage convergence could accelerate if younger men do not hasten their pursuit of career and technical positions, or if women continue to make inroads in these male-dominated areas of employment paying above the median wage.

To summarize, the employment gains of women, both in absolute and relative terms, will likely continue; the question as to whether the wage gap will narrow or expand, however, depends on the career decisions of younger cohorts. In particular, will career-technical jobs such as those held by plumbers, HVAC, or auto technicians become popular? Many communities, educational systems, and parents still place greater emphasis on "college prep" courses of study. This situation could change, however, depending on how young adults and their parents react to the uncertainties created by globalization, technology, the "Great Recession," and even Congress's inability to compromise on key domestic fiscal issues, such as funding for higher education.

Another approach for predicting future employment and wage prospects is to estimate whether there is a gender gap in the likelihood of one's job of being offshored. Information technology has helped international trade play a major role in generating the labor-demand shifts that have disadvantaged American workers, especially men. Will this trend continue? If so, who is at the greatest risk of having their occupation offshored?

To answer these questions, I link economist Alan Blinder's index of an occupation's potential of being offshored[111] to individual-level micro data in the 2006 Outgoing Rotation Group files of the CPS.[112] Using the BLS's O*Net

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constitute 1.9% of carpenters and 0.9% of brick masons).

[108] *See Employment Projections: Fastest Growing Occupations*, *supra* note 106.

[109] *Id.*

[110] *See* ROSIN, *supra* note 1, at 5-6.

[111] Blinder, *supra* note 41, at 19-26.

[112] Data, on file with author, from *Current Population Survey (CPS)*, U.S. CENSUS

occupation data, Blinder created an ordinal cross-section ranking of 817 occupations by their likelihood of being offshored.[113] Based on this ranking, he forecasts that between 2006 and 2016, 22% to 29% of U.S. jobs are potentially "offshorable."[114] Blinder sorts the 817 occupations into four categories. Occupations with an index from 76 to 100 have the highest potential for "offshorability."[115] Fifty-nine occupations comprise this "highly offshoreable" group and make up 8.2 million jobs.[116] The second category includes occupations designated as "offshorable."[117] They have index values that span from 51 to 75.[118] The category consists of 151 occupations and a total of 20.7 million workers.[119] The third category is designated as "non-offshorable." Its index values range from 26 to 50, and 74 occupations comprise this category.[120] Almost nine million workers are in this category.[121] The fourth and largest category, which Blinder labels "highly non-offshorable," includes 533 occupations and totals almost ninety-three million jobs.[122] Blinder does not assign these occupations unique index values, because their odds of being offshored are extremely low.[123]

Thus, my initial approach is to match the index values of categories I, II, and III to the three-digit occupations in the micro data of the CPS Outgoing Rotation Group files. Ideally, we would want to use the most recent CPS data; however, Blinder explicitly says that his index is constructed to answer the question: "How many of the 2004 U.S. jobs are or might become potentially offshorable within, say a decade or two?"[124]

Table 2 reports estimates of models that regress a respondent's offshorability index on a gender dummy variable that equals 1 if the respondent is male, and 0 if the respondent is female.[125] The unadjusted models only include the gender dummy variable.[126] The adjusted models add a respondent's potential experience, union membership, worker class,

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BUREAU, http://www.census.gov/cps/ (last visited May 23, 2013).

[113] Blinder, *supra* note 41, at 9 ("[T]his paper creates and presents a two-digit "offshoreability" index number for each of 817 occupations. But *the scale is ordinal, not cardinal*.").

[114] *Id*. at 26.

[115] *Id*. at 19.

[116] *Id*.

[117] *Id*.

[118] *Id*.

[119] *Id*.

[120] *Id*.

[121] *Id*.

[122] *Id*.

[123] *See id*.

[124] *Id*.

[125] *See infra* Table 2.

[126] *See infra* Table 2.

educational attainment, and census division.[127] Although not shown, the models control for a respondent's race and marital status.[128] Robust standard errors are in parentheses.[129] The column labeled "OLS" includes ordinary least-squares models.[130] These estimates are based on categories I, II, and III, which exclude the highly non-offshorable occupations, which comprise over 66% of the 817 occupations.[131] One obvious concern with the OLS estimates will be that they are potentially biased due to restricting or truncating the distribution to exclude category IV, the highly non-offshorable occupations.

To assess whether ignoring the truncation of the distribution biases the OLS results, Table 2 presents estimates from Tobit and quantile regression models that include Blinder's category IV, the highly non-offshorable occupations.[132] These occupations are given an index value of 25. This labeling presents the additional problem of censoring. There is no variation in the index for occupations that Blinder designates as highly non-offshorable. The quantile regressions must be estimated at percentiles above the 66th percentile because the highly non-offshorable observations comprise 66% of the sample. Estimating the model at any quantile at or below the 66th percentile (for example, at median) would not generate a unique gender difference. Table 2 reports the results for the quantile regression at the 75th quantile.[133] I also estimate the quantile regressions at the 80th and 90th quantiles and obtain qualitatively similar estimates to those at the 75th quantile.[134] Based on these models, the censoring of highly non-offshorable occupations does not change the following conclusions from the OLS models.

Table 2 contains a wealth of information. To make the discussion manageable, I limit it to the overall gender difference in offshorability and differences across potential experience, educational attainment, union membership, class of worker, and census division. Women's indices of offshorability in the OLS models are 3.8 points higher than men's indices, even after controlling for worker characteristics, meaning that women have a higher chance of their occupation being offshored.[135] The gap expands with potential experience, moving from 2.96 (less than ten years) to 7.28 (forty-one to fifty years).[136] Given the ordinal nature of Blinder's index, however, caution must be exercised when placing an interpretation on the size of the estimated gender differences.

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[127] *See infra* Table 2.

[128] These estimates are on file with author.

[129] *See infra* Table 2.

[130] *See infra* Table 2.

[131] *See infra* Table 2.

[132] *See infra* Table 2.

[133] *See infra* Table 2.

[134] These estimates are on file with author.

[135] *See infra* Table 2.

[136] *See infra* Table 2.

There are several explanations for the finding that the occupations of women are more offshorable. First, the estimates are from a 2006 CPS cross-section, which comes after the 1980s and 1990s offshoring that took a greater toll on the occupations in which men were concentrated.[137] Second, men have greater presence in the career and technical trades, which remain harder to offshore, while women are concentrated in clerical and office-support occupations, which are now more susceptible to offshoring.[138] To verify these assertions, it would be ideal if Blinder's index covered a more extended period of time. Third, the offshoring gap between younger men and women is smaller than the gap between older men and women.[139] Alternatively, younger cohorts of men may have been choosing fewer career and technical occupations than older men have chosen. Instead, the younger cohorts may have been choosing professional business services occupations, which are likely more offshorable in absolute and relative terms. Younger men may also have less difficulty than older men in acquiring soft skills. They may have better access to curricula that teach soft skills, and their parents may have included an education in such skills as a part of their upbringing. At the other end of the experience spectrum, older men may be more resistant to learning new skills, especially if those skills are viewed as "feminine."

The most startling finding is that women's higher relative offshoring indices are found among non-college graduates.[140] Women high school dropouts and graduates and those with some college have indices that are higher than men with the same educational attainment, while women with college and advanced degrees have significantly lower offshoring indices than men with college degrees.[141] Female members of unions experience a disadvantage relative to male union members; however, this disadvantage is slightly smaller than women's disadvantage in the private sector.[142] Women's disadvantage in the private sector is significantly larger than that faced by women in the public sector.[143] The institutional features of unions and public-sector employment, such as how layoffs are decided, may dampen women's higher odds of having their occupation offshored.

The estimated gender differences for each census division all indicate that women have a higher likelihood of their job being offshored than men. Women's higher odds are largest in the West North Central, West South Central, Mountain, and Pacific divisions.[144] The bulk of the outsourcing that

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[137] Data, on file with author, from *Current Population Survey (CPS)*, *supra* note 112.

[138] In 2001 most women working in the service sector remained employed in clerical jobs that are low paying. Kongar, *supra* note 34, at 86.

[139] *See infra* Table 2.

[140] *See infra* Table 2.

[141] *See infra* Table 2.

[142] *See infra* Table 2.

[143] *See infra* Table 2.

[144] *See infra* Table 2.

hit manufacturing occupations and thus hurt men may have run its course. Today, the greatest potential for offshoring is concentrated in service occupations.

Thus, going forward, women are most likely to find their jobs offshored.[145] If this occurs, improvements in the wage gap will continue to slow and, as shown in Table 1, just remain unchanged.[146] Depending on the pace of offshoring, the wage gap could even expand. If wages and employment are the metric by which to judge Rosin's end-of-men hypothesis, then they suggest less support for the hypothesis.

Another way to further assess whether empirical support for the Rosin hypothesis will weaken is to estimate which types of women and men face the greatest risk of having their job offshored. To do this, I estimate the previous models by gender.[147] For example, limiting the sample to women, I regress a female respondent's offshorability index on their potential experience and dummy variables that capture race, union membership, class of worker, marital status, educational attainment, and census division of residence.[148] The excluded groups are whites, non-union members, private-sector workers, married respondents, respondents with some college, and New England respondents.[149] Panel A of Table 3 reports the estimates for women, and Panel B reports the estimates for men.[150] Table 3 also reports estimates of the models by gender, but restricts the samples to different educational attainments, union members, public-sector respondents, private-sector respondents, and respondents that live in the East North Central and West North Central Census divisions.[151] These are the Midwestern states that experienced the most offshoring in the past.

The first column of Panel A indicates that among women, potential experience does not seem to be related to the odds of offshoring.[152] Minority women work in occupations that have higher potential for offshoring.[153] Union membership and public-sector employment are associated with lower offshorability odds.[154] Compared to women with some college education,

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[145] *See infra* Table 2.

[146] *See infra* Table 1.

[147] *See infra* Table 3.

[148] *See infra* Table 3.

[149] The exclusion of one group in each category is required for the regression to function. I chose to exclude these groups because if interested in the relationships captured in the coefficients, it is easier to interpret the estimated differences between groups.

[150] *See infra* Table 3.

[151] *See infra* Table 3.

[152] *See infra* Table 3.

[153] *See infra* Table 3.

[154] *See infra* Table 3.

women with the least and most education have lower offshorability indices.[155] No consistent pattern emerges for women by census division.

For men, experience is positively related to offshorability. Men with more experience are at greater risk. White men and non-black minority men have higher offshorability indices.[156] Public-sector employment does not seem to be related to reducing the chances of an occupation's offshorability.[157] Surprisingly, men with the most education (associate's, bachelor's, and advanced degrees) are more at risk of having their occupation offshored.[158] Men in the Midwest have higher indices of offshorability compared to men in New England.[159]

One consistent finding that deserves discussion is that union membership is associated with a lower offshorability index.[160] There may be several explanations for this result. First, highly unionized occupations, particularly in manufacturing, are at lower risk of being offshored today because those with the greatest odds were offshored in the 1980s and 1990s, prior to the data that Blinder used to construct his index and before the data used in this Article's analysis. The occupations were at the front end of the workplace restructuring. It may have been easier to implement labor-saving IT applications in these occupations. Second, the result represents collective bargaining's ability to reduce the chances of offshoring. How could this occur? To answer that question, we have to remind ourselves of Blinder's approach. Blinder constructs the indices based on an occupation's features in the O*Net database: tasks, knowledge, skills, abilities, work activities, work context, interests, work style, work values, and work needs. Based on this information, Blinder asks whether the service can be provided electronically, and if so, what the quality of the service is.[161] As part of the contract-negotiation process or a more general management-labor conversation, the union works with management to implement more efficient electronic-delivery processes, but in a way that minimizes the displacement of workers.

The remainder of this Part presents estimates for men and women by educational attainment, union membership, public-sector status, and potential experience, as well as for the Midwestern census regions. The goal is to develop a full portrait of the men and women who are at the greatest risk of having their occupations offshored. This descriptive work might help policymakers and advocacy groups proactively target workers at greatest risk

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[155] *See infra* Table 3.

[156] *See infra* Table 3.

[157] *See infra* Table 3.

[158] *See infra* Table 3.

[159] *See infra* Table 3.

[160] *See infra* Table 3.

[161] Blinder, *supra* note 41, at 1-2 (discussing the fact that the key factor for determining offshoreability is whether the services can be rendered electronically without a decrease in quality).

of offshoring, with the goal of providing assistance that then minimizes offshoring's negative personal, family, and community impacts.

A.   *Educational Attainment*

Panel A of Table 3 indicates that minority women who do not possess a high school diploma have higher offshorablity indices than white women who do not possess a high school diploma.[162] Union membership helps reduce the offshorability indices of female high school dropouts.[163] Women who do not hold a high school diploma and reside in the Middle Atlantic, East North Central, West North Central, South Atlantic, and West South Central census divisions have lower offshorability indices than women high school dropouts women in New England.[164] The key result for female high school graduates is that union membership is associated with lower offshorability odds.[165] Middle Atlantic and South Atlantic high school graduates have lower indices.[166] For women with college degrees, the consistent finding is that public-sector women have jobs that are less like to be offshored than private-sector women with the same educational attainment.[167]

As for men, Panel B in Table 3 reveals that less-educated African American men have lower offshoring odds than less-educated white men.[168] Union membership is associated with lower offshoring indices for men with high school diplomas, some college, an associate's degree, and a bachelor's degree, but higher for men who dropped out of high school and those with advanced degrees.[169] The impact of union membership is strongest for men with associate's degrees and bachelor's degrees.[170] Midwestern high school-dropout men – that is, in the East North Central and West North Central census divisions – have much higher offshoring odds than male high school dropouts in New England.[171]

B.   *Union Membership*

Union membership insulates minority men more from offshoring compared to white men.[172] I find no similar impact among female union members.[173]

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[162] *See infra* Table 3.

[163] *See infra* Table 3.

[164] *See infra* Table 3.

[165] *See infra* Table 3.

[166] *See infra* Table 3.

[167] *See infra* Table 3.

[168] *See infra* Table 3.

[169] *See infra* Table 3.

[170] *See infra* Table 3.

[171] *See infra* Table 3.

[172] *See infra* Table 3.

[173] *See infra* Table 3.

Male and female union members who work in the public and non-profit sectors have lower offshoring-index values than male and female non-union members in the private sector.[174] Female union members who are high school dropouts or possess an advanced degree have lower potential for offshorability than female union members with some college.[175] Male union members across all levels of educational attainment have higher indices of offshorablity than male union members with some college.[176]

C.   *Public-Sector Workers*

Public-sector men and women who are union members have lower odds of offshoring.[177] The benefits of union membership are stronger for men.[178] Public-sector men with college degrees have higher offshoring indices than public-sector men with some college.[179] Table 3 suggests virtually the opposite for public-sector women.[180] There is mild evidence that public-sector women with advanced degrees have lower offshoring indices relative to public-sector women with some college.[181] The opposite is the case for public-sector, high school-graduate women.[182] They have a higher index of offshorability relative to public-sector women with some college.[183]

D.   *Private-Sector Workers*

If the sample is limited to private-sector women, minority women have significantly higher offshorability indices compared to white women. Union members have lower odds of being offshored than non-union members. The difference is measured with precision among women but not men.[184] Less-educated women and men in the private sector have lower offshorability indices than private-sector workers with some college, while men with college degrees have higher indices.[185] All women except those with associate's degrees have lower offshoring indices than private-sector women with some college.[186] Midwestern men in private-sector firms have higher indices than

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[174] *See infra* Table 3.
[175] *See infra* Table 3.
[176] *See infra* Table 3.
[177] *See infra* Table 3.
[178] *See infra* Table 3.
[179] *See infra* Table 3.
[180] *See infra* Table 3.
[181] *See infra* Table 3.
[182] *See infra* Table 3.
[183] *See infra* Table 3.
[184] *See infra* Table 3.
[185] *See infra* Table 3.
[186] *See infra* Table 3.

private-sector men in New England.[187] Midwestern women are not at greater risk.[188]

E.   *Midwestern Workers*

Midwestern women and men who are union members have lower offshorability indices than women and men who are non-union members in these regions.[189] These estimates, however, lack precision. Public-sector women and men in these Midwestern states have lower indices than private-sector men living in these states.[190] With respect to educational attainment, I find similar patterns as discussed in the education sub-section.[191] Midwestern women with both the least (high school graduates) and highest educational attainment (college graduates) have lower odds of offshorability compared to women with some college.[192] Men with no more than a high school degree have lower indices than men with some college.[193] Midwestern men with college degrees have higher indices than Midwestern men with some college.[194]

IV. DISCUSSION AND CONCLUSIONS: THE FUTURE FOR MEN AND WOMEN

The U.S. economy is facing several major cyclical and structural challenges. Cyclically, the economy and labor market are recovering from the worst recession since World War II.[195] Structurally, the link between productivity and wage growth has been severed.[196] Labor's share of output has fallen, plummeting 8.8% since 2000. In 2011 that figure was at a historical low. But of greater concern is that after peaking in 1982, labor's share has trended downward, even though productivity has continued to increase. As a result, not only has the growth in real hourly compensation slowed, income inequality has expanded.

My major concern is that a new surge in U.S. income inequality will emerge. A portion of inequality growth's reemergence could be due to a

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[187] *See infra* Table 3.

[188] *See infra* Table 3.

[189] *See infra* Table 3.

[190] *See infra* Table 3.

[191] *See infra* Table 3; *supra* Part III.A.

[192] *See infra* Table 3.

[193] *See infra* Table 3.

[194] *See infra* Table 3.

[195] Analysts believed that sharp economic downturns were in the past. Recessions were characterized as having shallow downturns followed by jobless recoveries. Instead, the Great Recession and recovery brought a major economic contraction followed by a jobless recovery and slow job growth.

[196] *See, e.g.*, Susan Fleck et al., *The Compensation-Productivity Gap: A Visual Essay*, MONTHLY LAB. REV., Jan. 2011, at 57, 59 (illustrating how hourly compensation has grown more slowly than productivity).

slowdown or stagnation in the narrowing of the wage gap between men and women or even an expansion in the gender wage gap. The source of this new surge could be either globalization and IT adoption or the Great Recession and the subsequent weak recovery. Long-term unemployment and underemployment caused by the Great Recession could potentially morph into structural detachment from the labor market.

   The question facing researchers and policymakers is not only how to re-ignite the job creation machine of the 1990s expansion, a period when over twenty-two million jobs were added, but also how to create broad-based prosperity that counters the structural changes that have led to claims of the end of men. In the context of the end-of-men hypothesis, the question is, how do we improve the employment and earnings prospects of men? Although preliminary, this Article's evidence indicates that as measured by wages, women's progress has stalled since the late 1990s. Further, women, not men, are at greater risk of having their occupations offshored. Therefore, the challenge is as follows: how do we minimize the erosion in employment and earnings prospects of all Americans?

   First, we have to prevent today's near-record levels of long-term unemployment and underemployment from becoming structural. As of 2011 the percentage of men and women who are long-term unemployed (that is, unemployed for twenty-seven weeks or more) is very similar. Forty-four and 43% of men are long-term unemployed. Across all ages, the percentage of long-term unemployment has risen. Except for the segment of the unemployed that is sixty-five and older, men and women have virtually identical percentages. There is no gender gap by race and marital status. From this evidence one might conclude that the emergence of structural unemployment may not differ by gender. This will depend, however, on men like Calvin, whom Rosin profiles to illustrate her end-of-men hypothesis,[197] and the answers that emerge to the following questions:

   Will men's preferences toward jobs that are viewed as "female" change?

   Will there be increased investment in soft skills, such as social intelligence and open communication skills?

   What will be men's relative exposure to unfavorable demand shifts created by globalization and technology?

   Will men start to prefer higher-paying, faster-growing, and more stable career-technical occupations?

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   [197] *See* ROSIN, *supra* note 1, at 1-4 (discussing how Calvin does not serve as a breadwinner and is removed from the lives of his daughter and her mother).

The emergence of structural unemployment and underemployment will also depend on women's labor market experiences and answers to questions such as the following:

Will women's higher indices of *potential* offshorability manifest themselves as real job losses?

Will younger women continue to move into trade occupations? If so, as Kongar and others have found,[198] will those jobs' wages fall as the percentage of women increases?

Will further inroads in childcare (and, going forward, in eldercare) be made such that women and men can maintain their labor force attachment and, if needed, increase it?

From a labor economist's perspective, with the uncertainty and increased risk that American families are now facing, it is too early to conclude whether men's pace of decline and women's pace of improvement will continue at their current rates. Whatever paths emerge, they will require men and women to be flexible and nimble and become lifelong learners, as observed by the Department of Labor.[199]

Greater uncertainty will necessitate that all levels of government assist individuals, families, and their communities in navigating the increased economic risks. With the real and increasing threats to public investments in human priority investments,[200] the role of social service nonprofits will take on even greater importance.

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[198] *See supra* note 85.

[199] FUTUREWORK, *supra* note 13, at 39 (observing that flexibility is needed to help workers meet family and other obligations); *see also* ROSIN, *supra* note 1, at 263 ("Over this century, women have proven themselves adept at shifting and remaking and sometimes contorting themselves to fit the times, and that very flexibility and responsiveness has come to define success in our era.").

[200] Examples include government social benefits to persons, social insurance funds, housing and community services, health recreation and culture, education, libraries, and income security.