Executive Summary

Currently women in Mississippi who work full-time earn approximately 27 percent less than men who work full-time. There are many reasons for this gap. The purpose of this study is to determine how much of Mississippi’s wage gap can be attributed to measurable factors such as education and choice of occupation. The study also discusses some of the possible reasons a wage gap still persists after these measureable factors are taken into consideration. This study follows a forthcoming study by Blau and Kahn. Blau and Kahn find that the wage gap in the U.S. is approximately 8 percent after taking certain measurable factors into consideration. Unfortunately, the data set used by Blau and Kahn does not include enough Mississippians to be used for a Mississippi only study. Using a different data set with a large sample of Mississippi residents, this study finds a wage gap of approximately 18 percent in Mississippi after taking measurable factors into account. The factors taken into consideration include industry, occupation, education, age and race. A portion of the 18 percent wage gap that remains may be due to discrimination, however there are other unmeasurable factors that may also cause a portion of the 18 percent gap, such as choice of college majors and work-life balance decisions.
The Gender Wage Gap in Mississippi

Introduction

Although the gender pay gap has narrowed over the past thirty years, it still persists. The goal of this paper is to examine the gender pay gap in the state of Mississippi with the objective of finding a way to compare the wages of men and women in the fairest manner possible. This goal is complicated by the fact that women tend to work part-time jobs more than men and that even on an hourly basis, part time jobs tend to pay less than full time jobs. Further complicating the matter is that men tend to work more overtime at hourly jobs and work more hours per week at salaried jobs. Women are also more likely to take breaks from their jobs for caretaking responsibilities, which may put them behind their male peers in years of experience. In an attempt to overcome as many of these issues as possible, this study follows Blau and Kahn (forthcoming) by focusing on full-time workers, who worked at least twenty-six weeks in 2010 and worked at least thirty-five hours on average each week. The workers in this study participated in the Census Bureau’s American Community Survey (ACS). The survey asks questions on a wide range of issues for a nationally representative sample of individuals. For this paper, we focus only on those survey participants who selected Mississippi as their state of residence.

Data

This study follows Blau and Kahn (forthcoming) in both the selection of variables and methodology. However, this study uses the Census Bureau’s American Community Survey (ACS) while Blau and Kahn use the Panel Survey of Income Dynamics (PSID). The PSID has a smaller nationwide sample that contains too few Mississippians to conduct a study on Mississippi alone. The ACS surveyed over 10,000 Mississippians in 2010. The individuals in the ACS were asked how many hours they worked per week on average as well as which weeks they worked in 2010 and how much they earned that year. The first step in examining equal pay is to put everyone’s pay in the same format. To begin, the number of weeks worked is
multiplied by the number of hours worked in an average week\(^1\) to get the annual number of hours worked. Annual income is then divided by the annual number of hours worked. The final number is the hourly wage for the worker. Any workers earning an average of less than $3.00 per hour were dropped from the sample.

Blau and Kahn use education, experience, race, union membership, industry and occupation to help determine the wage gap for the US. Following their lead, this study uses the number of years of education reported and indicators for whether the person has an associates, bachelors, and/or advanced degree to gauge the effect of education on wages. The data set Blau and Kahn use provides information about work experience. The data set this study uses does not so age is used instead. Age is a flawed measure of work experience, but in general, older individuals are expected to have more work experience than younger individuals. Age squared is used in the model in addition to the age variable. This is common in economics research in order to account for any non-linear effect of age. The race variable used in this study is simply an indicator for whether the person is non-white. No indicator for Hispanic origin is included. Also included are fourteen industry indicators and twenty-four occupation indicators based on Census classifications as well as a separate indicator for whether the person is a government employee. Blau and Kahn also include an indicator for whether the person is a member of a union; however the data set used for this paper does not include that information.

Table 1 offers a look at the data in the sample by gender. Males are overrepresented in the sample relative to the percentage of males between the ages of twenty-five and sixty-four in the 2010 Census. This overrepresentation has less to do with the number of males surveyed and more to do with the way the sample was chosen. Recall that everyone who didn’t work at least twenty-six weeks for at least thirty-five hours per week

<table>
<thead>
<tr>
<th></th>
<th>2010 Census</th>
<th>Sample</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage</td>
</tr>
<tr>
<td>Male</td>
<td>742,796</td>
<td>48.7</td>
</tr>
<tr>
<td>Female</td>
<td>783,705</td>
<td>51.3</td>
</tr>
</tbody>
</table>

This table shows both the population and the sample by gender for the 25-64 age group.

\(^1\) There was one small complication with this process. In the public use ACS data, the exact number of weeks worked is not given. Instead, the data is divided into six categories – less than 14 weeks, 14-26 weeks, 27 to 39 weeks, 40 to 47 weeks, 48 to 49 weeks and 50 to 52 weeks. Categories with less than 26 weeks were removed, which left 4 categories. Because the number of hours each individual worked is unknown, 33 hours were assigned to the first group, 43 hours to the second group, 48 hours to the third group and 52 hours to the fourth group.
was removed from the sample. Approximately 29 percent of females were removed, while only 27 percent of males were removed. Table 2 shows the data by race. Note that whites are also overrepresented in the sample. In this case 28 percent of both whites and non-whites are removed from the sample, so there may be some sampling error at play. Table 3 shows educational attainment by gender and indicates females have higher levels of educational attainment than males.

**Table 2**

<table>
<thead>
<tr>
<th></th>
<th>2010 Census</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage</td>
</tr>
<tr>
<td>White</td>
<td>1,754,684</td>
<td>59.1</td>
</tr>
<tr>
<td>Non-White</td>
<td>1,212,613</td>
<td>40.9</td>
</tr>
<tr>
<td>Black</td>
<td>1,098,385</td>
<td>37.0</td>
</tr>
</tbody>
</table>

This table shows the number of people in MS according to the 2010 Census as well as the number of people in the survey by race.

**Table 3**

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than High School Diploma</td>
<td>451</td>
<td>11.8</td>
</tr>
<tr>
<td>High School Diploma/ GED</td>
<td>2,083</td>
<td>54.5</td>
</tr>
<tr>
<td>Associate’s Degree</td>
<td>349</td>
<td>9.1</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>615</td>
<td>16.1</td>
</tr>
<tr>
<td>Advanced Degree</td>
<td>322</td>
<td>8.4</td>
</tr>
</tbody>
</table>

This table shows the educational breakdown of the sample by gender.

**Model**

The method used to determine the wage gap is the Blinder-Oaxaca decomposition. The goal of the decomposition is to determine how much of the wage gap can be explained by observable factors like education and experience. The portion of the gap not explained by observable characteristics are generally assumed to be due to discrimination, although as discussed later in the paper, it’s not quite that simple.

To determine what part of the wage gap can be explained, the decomposition estimates two wage equations. One equation includes only men and the other only women. The model then asks what women’s wages would be if women had the same observable characteristics as
men. The increase in women’s wages due to observable factors is the ‘explained’ portion of the wage gap, while the remainder of the gap is considered ‘unexplained.’ Using the decomposition, we are also able to determine how much responsibility each factor has for explaining the wage gap.

Results

Using only the individuals who fit our criteria, we find the gender pay gap to be approximately 27 percent. After taking age, education, race, occupation and industry into consideration, the gender pay gap falls to approximately 18 percent. The results of the decomposition are listed in Table 4. The largest contributor to the reduction of the wage gap is industry, which reduces the wage gap in Mississippi by approximately 8 percent. This result implies that if the distribution of females in each industry was the same as the distribution of males the wage gap would decrease by 8 percent. Occupation follows industry as a leader in explaining the wage gap accounting for 3 percent of the wage gap. Notice that education explains a negative 4 percent of the wage gap, which means that if women had the same distribution of education as men the wage gap would increase by 4 percent. This finding makes sense when one examines Table 3 which indicates a higher percentage of women have degrees than men. The final factor of significance is race which explains approximately 2 percent of the wage gap in Mississippi. If women in the workforce had the same racial make-up as men in the workforce, the gender pay gap would be 2 percent smaller. Table 5 shows the number and percentage of men and women by race. Figure 1 shows the unadjusted and

<table>
<thead>
<tr>
<th>Table 4</th>
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<tbody>
<tr>
<td><strong>MISSISSIPPI</strong></td>
</tr>
<tr>
<td>Gender Pay Gap</td>
</tr>
<tr>
<td>Wage Gap</td>
</tr>
<tr>
<td>Explained</td>
</tr>
<tr>
<td>Unexplained</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Explained Breakdown</th>
<th>Explained Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.27</td>
</tr>
<tr>
<td>Race</td>
<td>2.33</td>
</tr>
<tr>
<td>Education</td>
<td>-4.41</td>
</tr>
<tr>
<td>Government Employee</td>
<td>0.05</td>
</tr>
<tr>
<td>Industry</td>
<td>8.12</td>
</tr>
<tr>
<td>Occupation</td>
<td>2.95</td>
</tr>
<tr>
<td>Region</td>
<td>0.16</td>
</tr>
</tbody>
</table>

This table shows the results of the Blinder-Oaxaca decomposition.
adjusted gender wage gap in Mississippi compared it to the unadjusted and adjusted gender wage gap in the U.S.

### Table 5

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th></th>
<th>Non-White</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Male</td>
<td>2,675</td>
<td>70</td>
<td>1,145</td>
<td>30</td>
<td>3,820</td>
<td>100</td>
</tr>
<tr>
<td>Female</td>
<td>2,187</td>
<td>59</td>
<td>1,534</td>
<td>41</td>
<td>3,721</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>4,862</td>
<td>64</td>
<td>2,679</td>
<td>36</td>
<td>7,541</td>
<td>100</td>
</tr>
</tbody>
</table>

This table shows the number of Whites and Non-Whites by gender for the sample.

![Figure 1. 2010 Gender Wage Gap](image)

**Discussion**

Several factors affecting the gender pay gap cannot be measured. For example, women may trade lower pay for more flexible schedules. If women are willing to take lower pay so that they can work hours more suitable to their family’s needs, then discrimination is not at play. However, if employers assume all women are willing to take lower pay for more flexible hours and therefore do not offer women other options, discrimination could exist. We will use the section below to discuss what other researchers have learned about the gender pay gap and how their findings might affect the measurement of the gender pay gap in this paper.
Selection Bias

Economists often discuss selection bias, which is the idea that determining the effect of a particular factor is difficult in the presence of unknown/unmeasurable factors. For example, suppose a high school offers free after-school tutoring and the students who attend tutoring increase their GPA by a full point. Does that mean that if the school required everyone to attend tutoring everyone’s GPA would increase by one point? Probably not. There’s probably something different about the teenager who’s willing to volunteer for after-school tutoring. A portion of the increase in GPA must be attributed to the student’s unknown/unmeasurable characteristics. Many researchers apply the same logic to the gender pay gap. Those individuals included in this study are included because they made choices that caused them to fit the necessary criteria (for this paper working at least thirty-five hours per week for at least twenty-six weeks in 2010; other papers have various criteria). The question becomes how the gender wage gap would look if there was no selection bias. No selection bias would mean all women (and men) who can work do work at least 35 hours per week. Whether this would bring more high earning women or low earning women into the job market depends on the reason for the current selection of women into the job market. If the women currently working full-time ‘selected’ into work because they are relatively high earners, one would expect new women coming into the labor market to be lower earning and the wage gap to widen. However, if women who are currently ‘selected’ into the market are relatively low earners we would expect the new women coming into the market to be higher earners and the wage gap to close. No clear answer exist as to whether high earners or low earners would have the largest impact on the wage gap if all women were forced to work full-time. Another debate pertains to how much of women’s selection into certain fields is based on selection and how much is based on discrimination. Women may attempt to find jobs in high-paying male-dominated fields but fail to receive any offers, or women as a group may have little interest in working in those fields. For more in-depth discussions see, for example, Blau and Beller (1988); Blau and Kahn (2006); Jacobsen, Khamis and Yuksel (2014); Meyer and Rosenbaum (2001), Mulligan and Rubinstein (2008).
**Education**

Education is probably the most complicated factor affecting the gender wage gap. Women now hold more degrees than men. One idea that has been used to explain why women have surpassed men in higher education is that women may have a higher affinity for school. Researchers use evidence that boys tend to get more referrals for disciplinary action in K-12 settings to support the idea that more women may go to college simply because the opportunity cost of doing so is lower. Men may need more motivation to go to college and therefore only attend if they expect substantial rewards for doing so. This could explain why men tend to be more concentrated in majors that lead to higher-paying jobs in disciplines such as science, technology, engineering and mathematics (STEM). Researchers have questioned whether colleges and universities discourage women from entering STEM fields. Another possibility is the existence of feedback effects. For example, assume 100 percent of welders are male. If a female becomes a welder and is not well-received in the job market or at the workplace, she will tell others about her experience. Because of this experience, other females considering a welding certification may choose another degree program. Other issues in education include the effects of math scores and jobs available without formal education. Having great math skills is a requirement for many well-paying jobs. Researchers are questioning whether men’s dominance in math scores could explain the bulk of the wage gap. Even with all of these possibilities, there still exists the question of whether discrimination leads to this distribution of women across certain college degrees and careers. For more details on each of these issues see Bailey (2006); Becker, Hubbard, and Murphy (2010); Black, Haviland, Sanders, and Taylor (2008); Blau, Ferber and Winkler (2014); Bronson (2015); Ceci, Ginther, Kahn, and Williams (2014); England and Li (2006); Fortin (2008); Fortin (2015); Goldin and Katz (2002); Goldin, Katz, and Kuziembo (2006); Pope and Sydnor (2010) and Spencer, Steel, and Quinn (1999).

**Fringe Benefits**

Generally, when wage studies are conducted, fringe benefits are ignored. This is true for this study as well. The available data does not include the cost of fringe benefits. Even if we
did have the cost of the benefits to the employer, we still might not know the value of the benefits to the employee. For example, an insurance policy with a $0 deductible may cost an employer $2,500 a year, but could be valued at $5,000 a year to an employee who has a medical condition that requires expensive medication. It is possible that women seek out jobs with certain fringe benefits more than men because they find those benefits more valuable. It is also very likely that employers who provide fringe benefits must pay lower wages in order to afford to provide those benefits. Several studies address this possibility in more detail including Lowen and Sicilian (2009); Solberg and Laughlin (1995) and Perman and Stevens (1989).

**Risk Aversion**

Risk aversion is the measure of how much risk a person is willing to take. If a person is very risk averse, he is not willing to take on much risk. If a person is not very risk averse, he is more willing to take on a great deal of risk. Choosing to pursue certain occupations can be very risky. For example, jobs in sales tend to be very risky because many sales jobs base the employee’s pay on the quantity of items sold. This means that there may be a great variance in the amount of pay received each month. If a person is very risk averse, he will avoid sales jobs and jobs with similar pay structures. Some studies have suggested that women may be more risk averse than men and more likely to avoid occupations that come with high pay coupled with large risk. See for example, Dohmen and Falk (2011); Le, Miller, Slutske and Martin (2011); Laasch and Conaway (2009) and Eckel and Grossman (2008).

**Work Life Balance**

The idea that women’s lower pay could be due to their higher desire for flexibility has been widely studied as well. Researchers in this area examine whether women choose careers, jobs, and even particular firms based on flexibility and whether they are willing to take lower pay for such flexibility. Another work-life balance factor widely studied is whether women are more likely to put their careers second when they are in a relationship. Such a willingness could mean moving at times that are ideal for their partner’s career but not their own, locating in an area that is better suited for their partner’s career, and/or interrupting their career at times
that aren’t ideal in order to care for others. In addition women are more likely to work part-time and more likely to work fewer hours than their male counterparts. These factors are also usually a result of a need for greater work-life balance. For more in-depth discussion see Aigner and Cain (1977); Albanesi and Olivetti (2009); Altonji and Blank (1999); Becker (1985); Bell (2005); Benson (2014); Betrand, Goldin, and Katz (2010); Bertrand and Hallock’s (2001); Blank (1990); Blau, Ferber and Winkler, chapter 7 (2014); Blau and Kahn (1997); Blau and Kahn (2006); Blau and Kahn (2013); Ceci, Ginther, Kahn, and Williams (2014); Compton and Pollak (2007); Cooke, Boyle, and Couch (2009); Correll, Benard, and Paik (2007); Costa and Kahn (2000); Ehrenberg, Jakubson, Martin, Main, and Eisenberg (2012); Gayle, Golan and Miler (2012); Ginther and Kahn (forthcoming); Goldin (2014); Goldin and Katz (2012); Hersch and Stratton (2002); Hirsch (2005); Kurtulus and Tomaskovic-Devey (2012); Light and Ureta (1995); Mincer and Polachek (1974); Noonan, Corcoran and Courant (2005); O’Neill and Polachek (1993); Phelps (1972); Polachek (1981); Royalty (1996); Shin (2012); Spivey (2005).

Conclusion

The gender pay gap has persisted in the United States for many years. It’s difficult to know the exact role various factors play in maintaining the gender pay gap. A great deal of this difficulty arises because most research focuses only on the job market and not the discrimination girls and young women may face prior to entering the job market. Some of the factors that lead girls and young women to focus on less lucrative careers may have more to do with cultural norms and less to do with discrimination. However, women who attempt to go against those cultural norms may then face discrimination. Complicating this analysis is that cultural norms are difficult to measure. This study attempts to show only measureable differences in the gender pay gap in the labor markets; however much more research needs to be conducted to understand why approximately 18 percent of the gender wage gap in Mississippi cannot be explained by the measurable factors used in this study.
Works Cited


