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Biracial Wage Differentials in an
Increasingly Cosmopolitan America

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1 Introduction

America's historical and future discourse is inseparable from the influence of racial discrimination. From the germination of American colonial slavery, to the internment of the Japanese during World War II, to affirmative action, American society is constantly shifted by racial dynamics. Although America has long accepted immigrants from all around the world, the country was founded by Caucasians. Due to this, those not of the hegemonic Caucasian race have been subjected to centuries of social, political and economic disadvantage. Past studies have shown that racial minorities with the same qualifications receive lower wages than their white counterparts. There is a dearth of research, however, concerning the economic welfare of Americans who view themselves as biracial. This study will attempt to analyze the wage differential trends amongst biracial individuals. Further, this study will examine these wage differentials with respect to American geographical areas. Foremost, the stereotype that the south still clings to old racist ideologies concerning African Americans will be put to the test. Additionally, the wages of biracial individuals who identify as Asian will be analyzed with respect to the west and northeast regions of America. These regions were selected because they are the regions most commonly associated with the cosmopolitan nature of America's demographic makeup, specifically in regards to Asian Americans.

America has long been considered a cultural melting pot. It is a likely scenario that the proportion of America's population who self-identify as biracial and multiracial will increase. Long established distinct racial lines will muddle with each other. This will undoubtedly result in a futuristic America where citizens are connected with multiple racial communities. It is important to study the economic status with respect to income of biracial American residents to identify reproduction patterns and tendencies of this emerging demographic. If the wage differential of biracial individuals is less than the wage differential of non-white individuals who identify with a single race, then perhaps this is good news, as the biracial fraction of America's population is increasing.

It is the researchers' hypothesis that this regression analysis will reveal that people of biracial identity, on average, will earn less than their Caucasian counterparts, especially in the South, where the forces of racism are generally stereotyped to be greater

than the rest of the country. However, the authors predict that biracial individuals will earn more income than non-white individuals who identify as a single race.

2 Literature Review

A plethora of literature exists that attempts to answer impending questions posed by the troubling trend that is the widening income gap between American ethnic groups. The amount of literature concerning wages of biracial individuals in America, however, is underdeveloped, and the specific topic of biracial income gap in regards to the South even more so. However, there is a high volume of literature focused on the racial implications of wage inequality with respect to individuals who identify with just a singular race. The literature reviewed in this section proves to be relevant to the examination of wage differences and causes thereof in the biracial population of America and will effectively provide a firm foundation for this study.

Economist Sharpe and Abdel-Ghany's 2006 work on the determinants of income differentials between Whites, Blacks and Asians served as a starting framework for the present study. They find that Blacks are more susceptible to racial discrimination in the labor market than both Whites and Asians. They also conclude that four of the six Asian groups have higher levels of average annual household income than whites. The authors construct a narrative as to how social and political factors concerning Asian communities have enabled Asian-Americans to drastically decrease the wage gap between themselves and their White counterparts. This study looked at the country's income inequalities without taking geographical areas into account in the same way as the present study. Sharpe and Abdel-Ghany measured the effect on income of geographical region (South, Northeast, Midwest), however they did not interact these regions with the racial variables. Therefore, while the Sharpe and Abdel-Ghany basic study design will benefit the present study, it did not address the main focus of the present study of whether or not certain geographical regions are more racist.

Kate Antonovics' 2002 economic literary work on persistent racial wage inequality aims to understand the forces that have lead to persistent racial wage inequality by developing a dynamic model of statistical discrimination that accounts for the

transmission of earnings across generations (Antonovics, 2002). Antonovics theorizes that the persistence of the racial wage gap can be attributed to the relative difficulty that non-white workers have in signaling their productivity.

Antonovics' model is sensible for the most part as it considers both individual worker behavior and firms' hiring behavior. The model's time horizon is infinite and individuals are organized into families composed of one parent and one child. Individuals only live for two periods: in the first individuals are children and consequently do not participate in the workforce and in the second period they become parents who receive income by selling their leisure in the labor market. As parents individuals value their own consumption and the future wages their child will earn as an adult. Parents can influence their child's future wage by investing in their child's human capital in the form of market goods and time alike i.e. tutoring, sending kids to summer camps, or purchasing a house in an excelling school district.

Investment is assumed to be a binary choice thus a worker whose parent has invested in them is deemed "qualified", and deemed "unqualified" if they have not been invested in. Workers with higher productivity signals earn higher wages and higher productivity signals are accrued with parental investment. Hiring firms take the assumption that "qualified" workers are more productive than "unqualified" workers. Individuals are also categorized into one of two identifiable groups, whites and Blacks. In the model, firms form beliefs about the probability that members from each group are qualified based upon the observation of a given worker's racial identity and the productivity signal.

The data used are from the 1970 and the 1990 Census and utilizes a 1-in-100 random sample of the U.S. population. Assuming that a generation is 25 years the 1970 sample is restricted to workers between the ages of 40 and 50 to capture workers near the top of their age-earnings profile. These are the parents. The 1990 sample only includes individuals between the ages of 35 to 45; they are the children who are invested in and later become workers in the labor force. Both samples are limited to natives of the United States and are classified into three racial groups with all other racial groups excluded from the sample: Blacks, Whites and Hispanics.

Ultimately, the paper concludes that racial wage inequality in 1990 can primarily

be attributed to racial differences in the precision with which workers from signal their productivity (Antonovics, 2002). Most notably, that qualified Blacks and Hispanics have the most trouble signaling their productivity. This conclusion about Blacks and Hispanics is based on the tendency for employers to prejudge minority workers, as “unqualified workers from these groups have relatively noisy productivity signals”(Antonovics, 2002). The paper frames the inability for the minority workers to signal their productivity as just that, an inability. In reality, it is the imperfect screening of the employers that leads to racial wage inequality in this model. Whether or not this is due to ‘noisy productivity signals’, or employer racism can only be described tenuously by the Antonovics’ model.

We present Antonovics’ study because the source of racial wage discrimination is important. If an employer actually believes one race is naturally superior and thus refuses to pay other races equally, then that type of racial wage discrimination will be more difficult to correct, and thus this distinction has major social implications. Unfortunately, our study will not be able to identify whether or not the source of racial wage inequality is due to employer racism, or an inability for certain racial groups to signal their skills. For the reader of this study, this distinction is still important to keep in mind, as our results do not have the statistical power to label a region as racist or bigoted.

3 Regression Methodology

Regression Equation for South and black/white comparison:

$$\begin{aligned} \text{Logwage} = & \beta_0 + \beta_1 \text{ age} + \beta_2 \text{ female} + \beta_3 \text{ married} + \beta_4 \text{ marr_female} + \beta_5 \text{ strict_asian} + \\ & \beta_6 \text{ strict_asian} + \beta_7 \text{ strict_black} + \beta_8 \text{ biracial} + \beta_9 \text{ black_white} + \beta_{10} \text{ South} + \beta_{11} \\ & \text{black_South} + \beta_{12} \text{ white_black_South} + \beta_{13} \text{ hs_grad} + \beta_{14} \text{ bach_degree} + \\ & \beta_{15} \text{ mast_degree} + \beta_{16} \text{ doc_degree} + \beta_{17} \text{ occupation} + \text{error} \end{aligned}$$

(1)

Regression Equation for West and asian/white comparison:

$$\begin{aligned} \text{Logwage} = & \beta_0 + \beta_1 \text{age} + \beta_2 \text{female} + \beta_3 \text{married} + \beta_4 \text{marr_female} + \beta_5 \text{strict_asian} + \\ & \beta_6 \text{strict_asian} + \beta_7 \text{strict_black} + \beta_8 \text{biracial} + \beta_9 \text{asian_white} + \beta_{10} \text{West} + \beta_{11} \\ & \text{asian_West} + \beta_{12} \text{asian_white_West} + \beta_{13} \text{hs_grad} + \beta_{14} \text{bach_degree} + \beta_{15} \\ & \text{mast_degree} + \beta_{16} \text{doc_degree} + \beta_{17} \text{occupation} + \text{error} \end{aligned}$$

(2)

Regression Equation for Northeast and asian/white comparison:

$$\begin{aligned} \text{Logwage} = & \beta_0 + \beta_1 \text{age} + \beta_2 \text{female} + \beta_3 \text{married} + \beta_4 \text{marr_female} + \beta_5 \text{strict_asian} + \\ & \beta_6 \text{strict_asian} + \beta_7 \text{strict_black} + \beta_8 \text{biracial} + \beta_9 \text{asian_white} + \beta_{10} \text{NEast} + \beta_{11} \\ & \text{asian_NEast} + \beta_{12} \text{asian_white_NEast} + \beta_{13} \text{hs_grad} + \beta_{14} \text{bach_degree} + \beta_{15} \\ & \text{mast_degree} + \beta_{16} \text{doc_degree} + \beta_{17} \text{occupation} + \text{error} \end{aligned}$$

(3)

logwage= log of individual's annual income from wages

age= age of individual (limited to 18-95)

female= gender dummy variable, 1 if female, 0 if male

occupation= controls for individual's primary occupation

married = marital status dummy, 1 if married, 0 if not married

black= dummy for those who identify as solely black, 1 if identified as such, 0 if otherwise

black_white= dummy for those who biracially identify as black and white, 1 if so, 0 if otherwise

South= region dummy variable, 1 if located in South, 0 if located in other area of country,
Southern states are those that formed the Confederacy and include: Virginia,
Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina,
South Carolina, Texas, Kentucky

black_south= dummy interaction term for black individuals in the South

black_white_south= dummy interaction term for black/white biracial individuals who

live in the South, 1 if individual is biracially black/white and resides in the South, 0 if otherwise

hs_grad= dummy control for individuals who have a high school degree, 1 if highest level of education attained is high school degree, 0 if otherwise

bach_degree= dummy control for individuals who have a bachelor's degree, 1 if highest level of education attained is bachelor's degree, 0 if otherwise

mast_degree= dummy control for individuals who have a master's degree, 1 if highest level of education attained is master's degree, 0 if otherwise

doc_degree= dummy control for individuals who have a doctorate degree, , 1 if highest level of education attained is doctorate degree, 0 if otherwise

4 Data

All of the data is obtained from the American Community Survey: 2011 Sample via the Integrated Public Use Microdata Series website. The data sample includes 1,271, 505 individuals who are in the labor force, which means that they are employed or are seeking employment. The following is a breakdown of our data:

Demographic Characteristic (dummy variable name)	Approximate Percentage of Sample Pool w/Trait	Approximate # of observations w/ Trait
Female (female)	48.77%	620,105
Married (married)	57.43	730,183
Married female (marr_female)	26.22	333,367
Identify solely as black (strict_black)	10.20	129,718
Identify solely as asian (strict_asian)	5.16	65,610
Identify w/ 2 races (biracial)	1.87	23,796
Identify as black & white (black_white)	0.29	3,724
Identify as asian and white (asian_white)	.39	4,944

Live in the South (South)	34.59	439,815
Identify solely as Black and reside in South (black_South)	5.62	71,447
Identify as black & white and reside in South (white_black_South)	.09	1, 149
Live in the West (West)	14.78	187,963
Identify solely as Asian and reside in the West (asian_West)	2.29	29,114
Identify as Asian & white and reside in the West (asian_white_West)	.16	1, 982
Live in the Northeast (NEast)	19.45	247,302
Identify solely as Asian and reside in the Northeast (asian_NEast)	1.08	13,698
Identify as Asian & white and reside in the Northeast (asian_white_NEast)	.05	671
Earned high school diploma (hs_grad)	25.83	328, 413
Earned bachelor's degree (bach_degree)	20.63	262, 267
Earned master's degree (mas_degree)	8.76	111, 436
Earned professional degree (prof_degree)	2.29	29, 143
Earned doctoral degree (doc_degree)	1.50	19, 129

1. Average wage income of sample = \$44,4489 2. Mean age of sample = 43.1 years, min=18 and max=95, all active in the labor force at the time of the survey 3. South defined as former Confederate states: Virginia, Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, Kentucky 4. West defined as following states: California, Oregon, Washington, Alaska and Hawaii 5. Northeast defined as following states: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New Jersey, New York and Pennsylvania

5 Results

VARIABLES	(1)	(2)	(3)
	logwage		
age	0.0144*** (6.78e-05)	0.0147*** (6.78e-05)	0.0147*** (6.78e-05)
female	-0.225*** (0.00279)	-0.225*** (0.00279)	-0.225*** (0.00279)
married	0.540*** (0.00270)	0.540*** (0.00270)	0.540*** (0.00270)
marr_female	-.308*** (.00366)	-.308*** (.00366)	-.308*** (.00366)
strict_asian	-.055*** (.00411)	-.091*** (.00543)	-.036*** (.00460)
strict_black	-.042*** (.00438)	-.090*** (.00302)	-.093*** (.00302)
biracial	-.126*** (.00722)	-.151*** (.00744)	-.142*** (.00744)
black_white	-.042** (.02119)		
South	-.033*** (.00204)		
black_south	-.083*** (.006)		
white_black_sout	.019 (.0359)		
West		.060*** (.00275)	
asian_white		.033* (.020)	.093*** (.01715)
asian_West		.050*** (.00842)	
asian_white_West		.064** (.02949)	
NEast			.074*** (.00234)
asian_NEast			-.072*** (.001)
asian_white_NEast			-.174*** (.04207)
hs_grad	-.026***	-.023***	-.028***

	(.00228)	(.00228)	(.00228)
bach_degree	.499***	.500***	.497***
	(.00254)	(.00254)	(.00254)
mas_degree	.659***	.662***	.655***
	(.00352)	(.00352)	(.00352)
prof_degree	1.053***	1.055***	1.050***
	(.00618)	(.00619)	(.00619)
doc_degree	.815***	.818***	.812***
	(.00756)	(.00757)	(.00756)
Observations	1,271,505		
R-squared	0.2478	0.2478	0.2480

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

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. hettest
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Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
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Ho: Constant variance
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Variables: fitted values of logwage
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chi2(1) = 14611.42
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Prob > chi2 = 0.0000
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The main variables of interest include white_black_south, asian_white_northeast, and Asian_white_west, as these variables can shed light on the wages of biracial individuals, with respect to these three geographical regions.

In the South, not surprisingly, those who identify as solely black make five percent less than their average southern counterpart. The variable for black/white biracial individuals is not statistically significant. In regression (1), the black/white biracial individuals had the same wage effect as the solely black individuals, negative four percent.

Our results show that Asian/white biracial individuals who live in the West make .4 percent more than their average western counterparts, and 6.4 percent more than the national average. These biracial individuals in the west make 3.1 percent more income than the national average for Asian/white biracial individuals. This could be due to the relatively large number of Asian Americans in the West. Perhaps biracial individuals are positively affected by the close proximity of members of their identifying races.

Interestingly, those who identify as solely Asian, in the West, make less than the average westerner in our sample. This results goes against the literature, where past studies have generally found Asians to make more than the average.

In the Northeast, being an Asian and being a White/Asian biracial individual has a negative correlation with income. The biracial individuals make over ten percent less than the solely Asian individuals, in contrast to the West where the biracial Asian individuals make more than those who identify solely as Asian.

Overall, the regression results paint an optimistic picture for the future of biracial individuals in America. Although all three regressions indicated that biracial individuals make on average more than ten percent less than the rest of the sample, in the West they earn a high income, relative to the average. The authors believe that this result is due to the fact that there are more Asians in the West, and thus these biracial individuals are more comfortable and able to earn a good wage. As America continues to become more racially mixed, this could have a similar positive effect on those racial minorities that have long felt marginalized.

References

Sharpe, D. L., & Abdel-Ghany, M. "Determinants of income differentials: Comparing Asians with Whites and Blacks". *Journal of Family and Economic Issues*, Vol. 27, No. 4 (2006), 588–600

Ashraf, Javed. "Differences in Returns to Education: An Analysis by Race". *American Journal of Economics and Sociology*. Vol. 53, No. 3 (Jul., 1994), 281-290

Fogel, Walter. "The Effect of Low Educational Attainment on Incomes: A Comparative Study of Selected Ethnic Groups". *Journal of Human Resources*, 1 (Fall 1966),

Antonovics, Kate. "Persistent Racial Wage Inequality." (n.d.): n. pag. Web.