THE "BOOMER" EFFECT: THE AGING POPULATION IMPACT ON THE LOW SKILL LABOR MARKET

Nicholas J. Hill, Claflin University
Dorian D. Williams, Alcorn State University

ABSTRACT

This research examines the wage impact of individuals born during the period of 1946 to 1964, known as "baby boomers," who are employed in the low skill labor market, specifically the retail industry. Using data from the Current Population Survey-Merged Outgoing Rotation Group (MORG) (2008-2017), we use a generalized least squared method to estimate the wage effect and the wage differential for baby boomers versus non-baby boomers. Our results suggest that there is a significant wage differential, but overall wage effects are small. This research further suggests the market may view baby boomers to be substitutes for non-baby boomers. **JEL Classification:** J14, J31, J32, J82

INTRODUCTION

The generational influence on labor supply and labor demand has become an important and captivating issue concerning employment. It has been a major topic of discussion for economists for many years but regained interest following the financial crisis of 2007-2008 and the U.S. subprime mortgage crisis of 2007-2009. During these periods, the scarcity of valuable assets in the market and the collapse of the financial sector in the world economy influenced the labor decisions of workers and businesses. Considering the largest generational group, known as the baby boomers, have reached retirement age, numerous studies have begun to evaluate the employment decisions of this group (Toossi 2013; Aughinbaugh 2013; Burtless 2012). Specifically, is there a wage effect or wage differential which exists between the baby boomers and non-baby boomers as a result of the number of available retirees remaining in the workforce? Moreover, how do employers perceive these potential retirees in comparison to non-retirees in the retail industry?

It is assumed that potential retirees possess additional knowledge that contributes to increased productivity for businesses, therefore creating an environment in which knowledge can be transferrable to younger workers and ultimately affecting wages. Mincer (1958) makes the argument that the choice among human capital is based primarily on the length of time it requires to obtain additional knowledge versus increased wages. Further suggesting, experience on the job, age, and increased training result in productivity increases as well as increases in earnings. Additionally,

employers have also recognized the need to retain the older workers to deal with the void that may be created as a result of potential knowledge that would be forgone due to employee retirement (Chang et al. 2016). This research observes these potential effects on wages as a result of changes to the supply of labor due to variations in baby boomer participation, specifically the retail industry. Furthermore, the researchers attempt to answer the questions: Is there an effect on wages within the retail industry due to changes in the density of baby boomers? What is the wage differential of baby boomers versus non-baby boomers? Are baby boomers' substitutable inputs for non-baby boomers' workers? The detailed analysis conducted in this research will assist in expanding the empirical studies which exist concerning generational groups' effect on wages. The remainder of the paper is organized into five additional sections – Literature Review, Data, Empirical Analysis, Results, and Conclusion.

REVIEW OF RELATED LITERATURE

The issue with retirement for this cohort is subject to multiple situations that may have resulted in the questionable retirement desires of these individuals. Burtless (2012) investigated this lack of commitment of older workers to retire and found that the educational gap compared to prime-age workers was closing, resulting in older workers willingness to remain in the workforce, as well as, Social Security retirement benefits now provide fewer and smaller disincentives to work after workers reach the benefit-claiming age. The elimination of many employer-funded retiree health plans combined with steep increases in the cost of health insurance also made it riskier for workers too young for Medicare to leave jobs that provide a health plan (Burtless and Quinn 2000; Anderson et al. 1999). Likewise, improved health compared to their predecessors can also contribute to the willingness of the elderly to remain employed longer (Freedman et al 2002; Manton et al. 1997; Manton and Gu 2001). Home equity reduction and high foreclosure rates among baby boomers also contribute to the willingness of this cohort to remain employed (Aughinbaugh 2013).

As the generational gaps continue to grow and decisions among older individuals to remain employed continue to influence retirement, the effects of generational decisions will impact the labor wages of younger generational groups. Mosisa and Hipple (2006) suggest the baby boom generation and the concomitant rise in participation of women have had an enormous impact on overall participation.

During the 1970s and 1980s, baby boomers moved into age cohorts typically exhibiting very high levels of labor force participation. After being stagnant over the 1950s and 1960s, the aggregate labor force participation rate during the 1970s and 1980s rose rapidly, primarily because of the movement of baby boomers into these high-participation-rate ages and the increase in participation among women (Fullerton Jr., 1999). After the economy entered the recession in March 2001, the labor force participation rate fell, with declines occurring among individuals aged 16 to 24 years and 25 to 54 years. The largest decline in labor force participation between March 2001 and March 2006 occurred for persons aged 16 to 24 years (Mosisa and Hipple 2006).

The participation rate for this group fell by 5.3 percentage points. In fact, in the 2001 recession and through much of the recovery to date, the rate trended down, to 75.3 percent by March 2006. Partially offsetting the declines in participation among

the other age groups, the labor force participation rate for individuals aged 55 years and older rose sharply (by 4.7 percentage points) over the most recent recession and the 4½ years that followed (Mosisa and Hipple 2006).

Various studies have shown that individuals in the labor market have experienced a negative effect on wages and a sizeable negative long-term effect on employee wages due to unfavorable entry conditions as well as labor supply shocks (Brunner and Kuhn, 2014; Morin, 2011; Brunner and Kuhn, 2010). Nevertheless, new entrants into the workforce are experiencing lower wage rates relative to their counterparts and a relative labor supply shock in numerous industries. The difficulties which many of the new entrants have experienced have resulted from the recessionary shocks which resulted in the early 2000s. As a result of the financial difficulties and housing collapse which resulted in 2007, many baby boomers relied on the housing equity which took a considerable percentage of their financial security in retirement (Lusardi, 2007). As a result, the labor participation rate of this generation is continuing to remain steady even though many of these individuals should be quickly approaching retirement age. Researchers such as Brunner and Kuhn (2010) have studied the impact labor market conditions would have on employee wages, human accumulation and job decisions. The quickly approaching decisions to retire of baby boomers have now increased the need to examine this issue of employee wages, human accumulation, and job decisions that face many businesses and employees.

As for mentioned the labor participation among the baby boomers has been affected by factors such as the increase in health outcomes, reduction in the educational gap, the disincentives to retire due to low Social Security benefits, and the investment in housing. It is because of these factors quantity demand for labor has increased. Roger Arnold (2014) suggests quantity demanded of labor is inversely directly related to the real wage. This assertion would suggest that as baby boomers elect to remain employed, the real wage for younger employees would fall. Wolters (2018) further examined this notion by observing the effects baby boomers had on hours per capita after the global financial crisis. This study found the financial crisis roughly coincides with the beginning of the retirement wave of the baby boomer cohort. This decreased aggregate hours per capita because the population share of individuals of ages 65 and over increased and thus work much fewer hours than prime-age workers.

DATA

This research uses individual worker data collected by the Current Population Survey-Merged Outgoing Rotation Group (MORG) files from 2008 through 2017 to examine the wage compensation patterns for baby boomers (BB) and non-baby boomers (nBB). This study uses the sample by removing the imputed wage using a similar technique by McGregory and Peoples (2013). This data includes weekly and hourly earning ethnicity, gender, age, level of educational attainment, marital status, full-time status, hours worked per week, central city residency status, regional residency, metropolitan statistical area residency location and size, occupation of employment (retail), industry of employment (retail), baby boomers (BB) and non-baby boomers (nBB). Therefore, each observation in this sample is exclusive and limited to the retail industry when calculating the estimation of substitutability. A sample of 103,777 of (nBB) and 15,687 (BB) are obtained for this research.

Table 1 provides the descriptive statistics of the sample based on BB and nBB. It can be seen that BB wages differ slightly than nBB with the weekly earnings around $255 and $245, respectively. Also, the largest percentage of residency for BB are in the South Atlantic Region (11%) where the state of Florida is located. This area has been considered a retirement area. However, the sample has a relatively equal distribution of respondents from each area of the US. The nBB has a higher percentage that are fulltime employed at approximately 50% versus BB that is around 45%. Lastly, the demographics differences observed suggest that the majority of our sample is White with approximately 80% of the nBBs' and 90% BBs'.

EMPIRICAL ANALYSIS

Equation (1) listed below is estimated to analyze baby boomers and non-baby boomers wage differentials of retail workers employed in the US.

$$ln\ W_{it} = \beta_0 + \beta_1 X_{it} + \beta_2\ BOOM_{it} + \beta_3 TIME_t + \varepsilon_{it} \quad (1)$$

where $ln\ W_{it}$ is the natural log of real hourly earnings adjusting for inflation using the consumer price index, the matrix X_{it} contains a set of observable retail industry job and demographic characteristics for individual i, and observation year t. Variables included in the vector set of individual worker characteristics identified in Table 1. The set X_{it} also includes variables measuring metropolitan area annual unemployment rates and the size of the local area where the worker resides. [i] *TIME* represented by YEAR is a set of year dummies that is included to account for potential annual changes in wages. The variable of consideration, BOOM, is a dichotomous variable indicating if you are above the age of 59. Given the presence of heteroscedasticity, a gamma based generalized linear method (GLM) is used to estimate the log-wage equations to compute consistent estimates.[ii]

Similar to the work of Ottavoi and Peri (2012) and Murthy (2008) this research estimates the process of the elasticity of substitution. Furthermore, this approach was used by Hill, McGregory and Peoples (2018) that examined wage effects for non-citizen health care workers. Using equation 1, a worker's wage variation across MSA is added to change it slightly to

$$ln\ W_{it} = \beta_0 + \beta_1 X_{it} + \beta_2\ BOOM\ *MSA_{it} + \beta_3 TIME_t + \varepsilon_{it} \quad (2)$$

where MSA is a vector of dummy variables identify the workers within an MSA and Boom is whether the worker is a baby boomer. All the variables in the vector X are the same as the previous. [iii]

Secondly, this research estimates the wage effect of boomers on non-boomers in the retail industry. Using the equation below, one can estimate the effect if any that baby boomers have on the wage share for non-boomers given the residency location. [iv]

$$ln\ W_{it} = \theta_0 + \theta_1 X_{it} + \theta_1\ (\%BB_{at}) + \theta_2 TIME_t + \varepsilon_{it} \quad (3)$$

Lastly, this research develops the CES production function depicted by the equation below.[v] This shows the relationship between the BBs' and their work in the

retail industry.

$$Q_m = A\,(a(nBB)_m|+\,(1\,-\,a)\,BB^{\rho}{}_m)^{\,1/\rho} \tag{4}$$

where $Q_m \equiv$ *retail worker service in metro area 'm'*
$nBB_m \equiv$ *# of nBB* retail workers who reside in metro area '*m*'
$BB_m \equiv$ *# of BB retail workers in residing metro area 'm'*
$\rho = (1 - 1/\sigma)$ *where* σ *denotes the elasticity of substitution and* $\sigma = 1/(1-\rho)$

For the production function described by equation (4) the respective marginal productivities for BBs (MBB) and nBB (MnBB$_m$) are depicted by equations (5) and (6)

$$MPBB_m = {}^{\partial Q_m}/_{\partial BB_m} = \frac{1}{\rho}A\left(\alpha nBB_m^{\rho} + (1-\alpha)BB_m^{\rho}\right)^{\rho-1/\rho}\rho(1-\alpha)BB_m^{\rho-1}$$

$$MPBB_m = \frac{1}{\rho}A\left(\alpha nBB_m^{\rho} + (1-\alpha)BB_m^{\rho}\right)^{\rho-1/\rho}(1-\alpha)BB_m^{\rho-1} \tag{5}$$

and

$$MPnBB_m = \frac{1}{\rho}A\left(\alpha nBB_m^{\rho} + (1-\alpha)BB_m^{\rho}\right)^{\rho-1/\rho}\alpha nBB_m^{\rho-1} \tag{6}$$

where α is the share parameter, which depicts non-baby boomers' employment share that arises when the nBB/BB retail worker ratio has a value of unity. The symbol *A* is the factor productivity parameter for labor inputs. For the production function described by equation (4) the respective marginal productivities for BBs (MBB) and nBB (MnBB$_m$) are depicted by equations (5) and (6).

In addition, the estimated coefficient on the local residence parameter presented in equation (3) (B_2) denotes $\partial(\ln(W_{it}) / \partial\ln(\text{Boom}\times MSA_{i,at})$. The equation (3) is the wage of workers who are residing in location '*a*' at time '*t*' and the term $\partial(\ln(W_{it})/\partial\ln(\text{Boom}\times MSA_{i,at})$ is the log wage difference in BB and nBBs' wages across metropolitan residences. It can be derived for the following:

$$\partial(\ln(W_{it})/\partial\ln(Boom\times MSA_{i,at}) \equiv \ln(\,w_{BB}/w_{nBB}) = \ln((1-\alpha)/\alpha) + (\rho-1)\ln((BB_{nBB}/nBB_{nBB}) \tag{7}$$

Setting $(\rho-1) = \lambda_1$, and therefore $\rho = \lambda_1 + 1$, and also setting $\lambda_0 = \ln((1-\alpha)/\alpha)$, and therefore $\exp^{\lambda 0} = (1-\alpha)/\alpha$, and noting that the estimate of $\partial(\ln(W_{it}) / \partial\ln(\text{Boom}\times MSA_{i,at})$ is () from equation (3) gives the following equation:

$$= \lambda_0 + \lambda_1[ln\ (BB/nBB)_{msa}] + \varepsilon_a \tag{8}$$

The estimated coefficient λ_{1a} is then used to compute the elasticity of substitution between BB retail workers and nBB retail workers, and λ_0 is used to calculate workers who are nBB' labor share if the nBB/BB employment ratio were equal to one. The elasticity of substitution is calculated using the following equation, $\sigma = -1/\lambda_{1a}$. The formula $(1/(\exp^{\lambda 0}+1)) = \alpha$ denotes workers who are nBBs' labor share if the nBB/BB employment ratio were equal to one. The value derived when computing this formula allows testing whether the estimation results depict an accurate representation of the nBB/BB labor share ratios.

RESULTS

For the information provided in Table 2, it aims to address the question of whether a wage differential is present between baby-boomers and non-baby-boomers. It can be seen from Table 2 that the variable of consideration, *Boom*, suggests a positive and significant wage difference than other employees in the retail market. Although small, it does suggest that BB makes approximately 7.1% more than nBBs. Further results show a positive wage difference between areas/regions that have been deemed to have a higher population of boomers. Lastly, the estimation suggests the majority of the demographic's information are consistent with expectation such as race, sex and education.

Table 3 is used to examine whether there is a wage effect due to the share of baby boomers present in the labor market. This model examines the relative variables for nBB and provides the wage effect for the increase share of BB in the area. The variable of BB density was logged and the estimated coefficient of .009 was given. This suggests that for every 1% increase in the share of BB in an area, wages for nBB increase by .009%. While small and statistically significant, it is suggested that BBs do affect (positive) wages of nBB in local labor markets. The other relative variables have the expected coefficients similar to previous expectations.

Table 4 below provides the estimation of substitutability of BBs to nBB. The estimated coefficient for (λ) is -0.0226, the log of the BB/nBB employment ratio to calculate the elasticity of substitution. Taking the negative of the inverse of the values indicates that σ= 44.2. The limited MSAs sampled, BB workers are weak substitutes for the nBBs given the small value for σ.

CONCLUSION

The generational debate on labor supply and labor demand has caused numerous inquiries as to its influence on younger adults. In the United States, in the context of delayed retirement by older workers as a result of the Great Recession, increased attention on the potential wage effect in which baby boomers and non-baby boomers began to take fold. For the United States retail industry, this research uses the generalized least square method to investigate whether wages for non-baby-boomers (nBBs) were impacted by the employment of baby-boomers (BBs). Estimating the log-wage as well as developing a CES production function which shows the relationship between baby boomers and their work in the industry, found while the retail labor market does experience high turnover, the benefits of the baby-boomers does suggest a slight but significant wage differential and wage effect. Moreover, the idea that baby boomers serve as an alternative or complementary training tool for non-baby boomers given the transfer of knowledge and skill was also shown to be inconsistent. Research showed that baby boomers were substitutes for younger workers and in areas with higher populations of baby boomers, there was a positive wage effect. The patterns toward demographic information are consistent with expectations such as race, sex and education.

Convincing employers and policymakers that baby boomers employment does affect the wages of non-baby boomers are important, given the state of the U.S. retirement system and the need for people to work longer to have a secure retirement

in the United States. Employers already have reservations about increased wages and their effect on productivity, so adding the relief of retaining older workers and their influence on wage suppression will only increase industry labor demand and potentially industry productivity. Findings research extends the literature to the role that the baby-boomers have on labor market wages.

ENDNOTES

[i]These local residency variables are included to account for labor market characteristics varying by metropolitan statistical area (MSA) and year. Annual MSA unemployment rates are computed using annual CPS-ORG files and the estimates by that census.

[ii]A Breusch-Pagan and a White test for homoscedasticity was calculated and both were rejected suggesting a Chi squared p-values =.000. Given this value, it is determined that there is a presence of heteroscedasticity. Therefore, a GLM is recommended to correct for this.

[iii] The coefficients in equation 2, are the baby boomers log wage differential for each MSA Locality.

[iv]One limitation of the study is using the standard empirical approach to estimate the wage, this might introduce bias and inconsistency if the share of BB to nBB labors market was endogenous. Given this endogeneity problem, a Durban-Watson test may be needed.

[v]This research follows a similar method of the work that was done by Hill, McGregory and Peoples (2018).

REFERENCES

Anderson, P. M., Gustman, A. L., & Steinmeier, T. L. (1999). Trends in male labor force participation and retirement: Some evidence on the role of pensions and social security in the 1970s and 1980s. *Journal of Labor Economics*, *17*(4), 757-783.

Arnold, R. A. (2011). *Principles of Economics*. South-Western, Cengage Learning.

Aughinbaugh, A. (2013). Patterns of homeownership, delinquency, and foreclosure among youngest baby boomers. *Beyond the Numbers: Special Studies and Research*, vol. 2 no. 2 (U.S. Bureau of Labor Statistics)

Brunner, B., & Kuhn, A. (2014). The impact of labor market entry conditions on initial job assignment and wages. *Journal of Population Economics*, *27*(3), 705-738.

Brunner, B., & Kuhn, A. (2010). The impact of labor market entry conditions on initial job assignment, human capital accumulation, and wages. *University of Zurich Institute for Empirical Research in Economics Working Paper*, (520).

Burtless, G. (2012). Who is delaying retirement? Analyzing the increase in employment at older ages. *Association for Public Policy Analysis and Management (APPAM), Baltimore, Maryland. Retrieved August 28*, 2013.

Burtless, G., & Quinn, J. F. (2000). Retirement trends and policies to encourage work among older Americans. *Working Papers in Economics*, 175.

Chang, C. F., Wang, P., & Liu, J. T. (2016). Knowledge spillovers, human capital and productivity. *Journal of Macroeconomics*, *47*, 214-232.

Freedman, V. A., Martin, L. G., & Schoeni, R. F. (2002). Recent trends in disability and functioning among older adults in the United States: a systematic review. *JAMA*, *288*(24), 3137-3146.

Fullerton Jr, H. N. (1999). Labor force participation: 75 years of change, 1950-98 and 1998-2025. *Monthly Labor Review*, *122*, 3-12

Hill, N., McGregory, R., & Peoples, J. (2018). Noncitizen Employment and the Wages of Healthcare Support Workers in the US. *Journal of Labor Research*, *39*(4), 433-461.

Lusardi, A., & Mitchell, O. S. (2007). Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth. *Journal of Monetary Economics*, *54*(1), 205-224.

Manton, K. G., & Gu, X. (2001). Changes in the prevalence of chronic disability in the United States black and nonblack population above age 65 from 1982 to 1999. *Proceedings of the National Academy of Sciences*, *98*(11), 6354-6359.

Manton, K. G., Corder, L., & Stallard, E. (1997). Chronic disability trends in elderly United States populations: 1982–1994. *Proceedings of the National Academy of Sciences*, *94*(6), 2593-2598.

McGregory, R., & Peoples, J. (2013). Compensation of Foreign and Domestic Nurses in the US. *Journal of Labor Research*, *34*(2), 203-223.

Mincer, J. (1958). Investment in human capital and personal income distribution. *Journal of Political Economy*, *66*(4), 281-302.

Morin, L. P. (2015). Cohort size and youth earnings: evidence from a quasi-experiment. *Labour Economics*, *32*, 99-111.

Mosisa, A., & Hipple, S. (2006). Trends in labor force participation in the United States. *Monthly Labor Review*, *129*, 35-57

Murthy, S. (2008). Foreign born nurses: an analysis of effects on the US Nursing Labor Market. *Department of Economics, University of South Carolina*.

Ottaviano, G. I., & Peri, G. (2012). Rethinking the effect of immigration on wages. *Journal of the European Economic Association*, *10*(1), 152-197.

Toossi, M. (2013). Labor force projections to 2022: The labor force participation rate continues to fall. *Monthly Labor Review*, *136*, 1.

Wolters, M. H. (2018). How the baby boomers' retirement wave distorts model-based output gap estimates. *Journal of Applied Econometrics*, *33*(5), 680-689.

TABLE 1. SUMMARY STATISTIC

	Non-Baby-Boomers		Baby-Boomers	
	Mean	*STD*	*Mean*	*STD*
Weekly Earning	245.1721	-245.8781	255.0227	-244.6241
Union	1.9698	-0.1711	1.9663	-0.1804
Age	33.1850	-12.8435	65.4998	-5.7158
Mid Atlantic	0.0592	-0.2361	0.0553	-0.2286
New England	0.0692	-0.2538	0.0702	-0.2555
East North	0.0754	-0.2641	0.0686	-0.2528
West North	0.0735	-0.2610	0.0764	-0.2656
South Atlantic	0.1118	-0.3151	0.1109	-0.3140
East South	0.0294	-0.1688	0.0285	-0.1664
West South	0.0567	-0.2313	0.0412	-0.1989
Mountain	0.0658	-0.2480	0.0637	-0.2442
Pacific	0.0956	-0.2940	0.0697	-0.2547
Public	0.0133	-0.1144	0.0203	-0.1409
Private	0.9394	-0.2385	0.8703	-0.3359
Nonprofit	0.0107	-0.1027	0.0161	-0.1260
Full Time	0.4957	-0.5000	0.4594	-0.4984
Married	0.3691	-0.4826	0.6324	-0.4822
Female	0.5753	-0.4943	0.5331	-0.4989
Black	0.1160	-0.3202	0.0464	-0.2104
White	0.7942	-0.4043	0.8983	-0.3022
Other race	0.0897	-0.2857	0.0553	-0.2285
Elementary	0.0117	-0.1077	0.0177	-0.1319
High school	0.1259	-0.3318	0.0402	-0.1963
Diploma	0.3166	-0.4651	0.3542	-0.4783
College	0.2665	-0.4421	0.2137	-0.4100
Associate	0.0780	-0.2682	0.0961	-0.2948
BA Grad	0.2012	-0.4009	0.2780	-0.4480
Big Metro	0.2535	-0.4350	0.1925	-0.3942
t2008	0.1091	-0.3118	0.0962	-0.2949
t2009	0.1103	-0.3133	0.0938	-0.2915
t2010	0.1095	-0.3123	0.0978	-0.2970
t2011	0.1086	-0.3112	0.1014	-0.3018
t2012	0.0705	-0.2560	0.0690	-0.2535

t2013	0.1028	-0.3037	0.1031	-0.3042
t2014	0.1016	-0.3021	0.1062	-0.3081
t2015	0.0989	-0.2985	0.1102	-0.3131
t2016	0.0966	-0.2955	0.1119	-0.3152
t2017	0.0919	-0.2889	0.1105	-0.3135
N	103777		15687	

TABLE 2. GENERALIZED LINEAR MODEL CORRECTING FOR HETEROSCEDASTICITY

	(1)	
	GLM	
Log (Wage)		
Year	0.001	(0.00)
Union	-0.135***	(0.01)
Public	0.109***	(0.02)
Private	0.035***	(0.01)
Full Time	0.129***	(0.00)
Married	0.093***	(0.00)
High School	-0.087***	(0.00)
College	0.012***	(0.00)
Associate	0.049***	(0.01)
BA Grad	0.127***	(0.01)
Male	0.057***	(0.00)
White	0.032***	(0.01)
Black	-0.006	(0.01)
New England	0.027***	(0.01)
Mid Atlantic	-0.013**	(0.01)
East North	-0.020***	(0.01)
West North	-0.019***	(0.01)
South Atlantic	-0.024***	(0.01)
East South	-0.066***	(0.01)
West South	-0.074***	(0.01)
Pacific	0.057***	(0.01)
Metro (Large)	0.007**	(0.00)
Unemployment	-0.001*	(0.00)
Hours Worked	0.003***	(0.00)
Retail	-0.038***	(0.00)
Boom	**0.071*** **	**(0.00)**
Constant	4.998***	(1.44)
N	44221	

Standard errors in parentheses
* p<.10, ** p<.05, *** p<.01

TABLE 3. GENERALIZED LINEAR MODEL MEASURING FOR WAGE EFFECT

	(1)	
	GLM	
Log (Wage)		
Year	0.000	(0.00)
Union	-0.135***	(0.01)
Public	0.111***	(0.02)
Private	0.040***	(0.01)
Full Time	0.128***	(0.00)
Married	0.103***	(0.00)
High School	-0.084***	(0.00)
College	0.014***	(0.00)
Associate	0.051***	(0.01)
BA Grad	0.143***	(0.01)
Male	0.060***	(0.00)
White	0.030***	(0.01)
Black	-0.006	(0.01)
New England	0.020**	(0.01)
Mid Atlantic	-0.019***	(0.01)
East North	-0.024***	(0.01)
West North	-0.024***	(0.01)
South Atlantic	-0.028***	(0.01)
East South	-0.073***	(0.01)
West South	-0.076***	(0.01)
Pacific	0.055***	(0.01)
Metro (Large)	0.005	(0.00)
Unemployment	-0.001	(0.00)
Hours Worked	0.003***	(0.00)
Retail	-0.037***	(0.00)
Ln (BB Density)	**0.009***	**(0.00)**
Constant	5.918***	(1.53)
N	39338	

Standard errors in parentheses
* p<.10, ** p<.05, *** p<.01

TABLE 4. ELASTICITY OF SUBSTITUTION RESULTS

	Estimated Coef.	*Standard Errors*
Ln (Ratio)(λ)	-0.0226128	(0.0222348)
Constant	0.0196016	(0.0414673)
p= λ +1	0.97738	
σ=1/(1-p)=-1/λ	44.212	
N	180	