

# Women Earn Less Than Men. Why?



# WOMEN EARN LESS THAN MEN IN HAMPTON ROADS. WHY?

The average full-time female worker earns less than the average full-time male worker in Hampton Roads. Of course, women and men don't hold the same jobs and they are dissimilar in other respects (experience, continuous length of time in the labor market, hours worked, education, etc.). When such differences do exist, they constitute legitimate economic (and usually legal) reasons why the wages of men and women will differ.

However, in some situations, men and women appear to be identical in terms of their legitimate labor market characteristics, yet women nevertheless earn less than men. If all relevant labor market characteristics actually have been taken into account, then it is customary to assume that a residual wage differential that cannot be explained by the legitimate labor market characteristics is due to discrimination. That is, such a differential constitutes a *prima facie* case in favor of the existence of discrimination.

In this chapter, we examine the earnings gap that exists between women and men in Hampton Roads. This gap is the difference between the earnings of women and men and is usually expressed as the percentage of men's wages earned by women. **U.S. Census data reveal that women, on average, earn only 80 percent of what men earn. Does this constitute evidence of discrimination? For the most part, the answer is no, but some of this gap may well reflect gender discrimination not based upon any legitimate labor market characteristics.**

The goal of this chapter is to show what is true in Hampton Roads. In so doing, we will consider the major explanations for the earnings gap, see where Hampton Roads stands, and finally compare the Hampton Roads and Richmond metropolitan areas.

## Labor Force Participation, Education and Other Factors

Beginning in World War II, the proportion of women in the labor force began to increase significantly and, in more recent years, there also has been a noticeable increase in the quality of those jobs. Between 1970 and 2004, the percentage of adult women in the labor force grew from 43 percent to almost 60 percent. At the same time, we have seen an increase in the percentage of women holding college degrees. In 1970, about 10 percent of women in the United States had earned a college degree. By 2003, this had grown to 29 percent. In 1970, the share of men with bachelor's degrees or higher was 50 percent greater than that of women, but that percentage now is approximately equal.

When women do earn collegiate degrees, there is a significant economic return to them. National data tell us that women with college degrees earned 75 percent more than those whose education ended at high school. As a consequence, the importance of female earnings to household income has changed. In the early 1970s, wives' income was approximately one-quarter of family income. By 2003, this contribution had grown to one-third.

Nevertheless, far more working women live in poverty than working men. Further, occupational segregation exists such that women dominate certain occupations, most of which (services, education and health services) are not known for their high wage rates. In addition, relative to men, a greater proportion of women occupy part-time jobs and women are less likely to be members of labor unions than men. All of these factors act to reduce women's incomes relative to men.

# A Bit of Economic Theory

Perhaps no other topic has been studied in labor economics more often than the earnings gap between men and women. What are the explanations for this gap?

One interpretation is offered by Marxist economists, who suggest that the gender earnings gap exists because women are being exploited. Women, they argue, don't own sufficient income-generating capital because men have historically had more control over capital. A variant of this is offered by certain feminist economists who assert that systems of patriarchy keep men dominant and hence do not allow women to earn the true economic value of their work efforts.

The conventional economic explanation of the gender earnings gap is labeled the human capital model, a term that was coined by 1992 Nobel Laureate in Economics Gary Becker of the University of Chicago. Becker views a family as a single economic unit and assumes that family members make choices to have children. Whoever is making the decision, when women do have children, they frequently leave the labor market. Hence, we should expect that the average woman will, at any adult age, have accumulated fewer years in the labor force. This results in lower earnings for women relative to men.

Add to this the impact of the marriage income tax penalty that the federal government assigns to married couples and the human capital model predicts lower labor force participation rates for women. And, in fact, this is what census data indicate. About 75 percent of all men older than 16 are in the labor force, compared to only 60 percent of all women.

The human capital model also recognizes that women and men may prefer different types of jobs. Women, especially those with families, often prefer occupations that offer more flexible working schedules. The resulting self-selection tends to produce occupational segregation. For example, women with children may prefer teaching positions that allow them to spend summers with their families in preference to 12-month, non-education jobs that might pay more.

Data from the 1999 Current Population Survey reveal that women are much more prevalent in occupations such as nursing, elementary school teaching and dental hygiene, while men dominate engineering, dentistry and pilotage. In the service arena, women dominate nursing and child care, while men occupy a larger share of police and firefighting jobs. Labor economics texts routinely report that about one-third of the earnings gap between men and women can be explained by existing occupational segregation (for example, Bradley Schiller, "The Economics of Poverty and Discrimination").

Human capital models also take note of "compensating wage differentials" that arise when one worker occupies a job that is less pleasant, or more risky to health and safety, than another worker's job. Competitive labor markets usually award wage premiums to workers who wash windows on the upper floors of skyscrapers, or who must endure high levels of pressure and tension. Data from the National Longitudinal Survey of Youth indicate that men are much more likely to be in occupations that are hazardous or unpleasant, or which have minimum strength requirements, or where the work is done outdoors (June O'Neill, "The Gender Gap in Wages," American Economic Review Papers and Proceedings, May 2003).

Wage premiums often also are awarded to workers whose employment is highly variable, or unpredictable. For example, the work of employees at the Northrop Grumman Shipyard in Newport News is primarily funded by contracts from the federal government. If these contracts disappear, then layoffs will likely occur. Contrast the Northrop Grumman experience with occupations such as education and nursing that are often dominated by women. These occupations are not as prone to layoffs and, holding other things constant, employees in those occupations will earn lower wages than those in less predictable occupations.

Human capital theory also takes note of the reality that part-time workers in general are not paid proportionately as much as full-time workers. Adjunct faculty who teach single courses at universities know this tendency well. Since women tend to occupy part-time positions more often than men, this works to their wage disadvantage. In addition, data from the National Longitudinal Survey indicate that women more frequently prefer jobs that offer more flexibility and fringe benefits rather than jobs that might offer higher pay, but reduced flexibility and less attractive fringe benefits.

Finally, human capital theory also addresses the impact of the influx of women into the workforce that has occurred in recent years because of the work requirements of the Welfare Reform Act of 1996. Heads of households are required to work in order to receive Temporary Assistance for Needy Families (TANF) benefits. Whatever the intent, this has pushed more women into the labor force and has exerted downward pressure on their wages in certain occupations.

# A Brief Look at National Economic Evidence

Between 1979 and 2005, the earnings gap between women and men fell from approximately 40 percent to about 20 percent. **Decades of empirical studies have addressed this gap and the consensus is this: if women and men possessed the same human capital profiles (that is, similar education, experience, work histories, etc.), and if women made the same occupational choices as men, then an unexplained wage gap between 2 percent and 9 percent nevertheless still exists** (see discussion in "Modern Labor Economics: Theory and Public Policy," Ehrenberg and Smith, 2006). **That is, a prima facie economic case can be made in support of the proposition that between 2 percent and 9 percent of the 20 percent national earnings gap between men and women workers is a function of gender discrimination against women.**

## The Gender Wage Gap in Hampton Roads

Virginia has the 19th-highest female/male wage ratio and the 10th-highest female/male earnings ratio among the 50 states and Washington, D.C. The Commonwealth ranks below Maryland and Washington, D.C., in this regard. Why is the mid-Atlantic region different from the rest of the United States? The relatively large proportion of women in the region with bachelor's degrees, the large public-sector share of employment in Virginia, and the strong higher education and health sectors in the region are usually cited as the reasons.

However, what about Hampton Roads specifically? Let's examine one of the primary factors – occupational segregation and crowding – that is suggested by the human capital model as a determinant of gender wage and earnings gaps. The model predicts that when large numbers of people migrate into an occupation, if nothing else changes, there will be downward pressure on wages for everyone in that occupation because the supply of labor has increased. Further, migration out of one labor market or occupation reduces the supply of labor there and so wages and earnings there will increase. Hence, if a couple moves to Hampton Roads and the wife chooses to work in an occupation that is dominated by women, then this will exert downward pressure on wages and earnings in that occupation. Of course, gender discrimination could be among the reasons women opt for certain occupations, but regardless, the supply/demand situation will deteriorate for women workers if nothing else changes.

Let's initially examine the Hampton Roads labor force to determine what types of organizations women work for. The U.S. Census Bureau identifies seven different classes of employers. Table 1 indicates that the female share of the labor force in Hampton Roads in the seven classes of employers is, for the most part, similar to the United States as a whole. The only employer type in which the share of women in Hampton Roads is significantly less than the rest of the country is in jobs

**TABLE 1  
LABOR FORCE CHARACTERISTICS OF WOMEN BY TYPE OF EMPLOYER, HAMPTON ROADS AND THE U.S., 2006**

Employer Classification	U.S. Women's Labor Force Share	Hampton Roads Women's Labor Force Share	U.S. Female/Male Earnings Ratio	Hampton Roads Female/Male Earnings Ratio
Private for Profit	43.4%	44.1%	.7501	.7124
Private Nonprofit	65.6%	63.6%	.8275	.8062
Local Government	60.2%	60.2%	.8062	.9236
State Government	57.3%	57.0%	.7922	.7426
Federal Government	42.8%	33.5%	.8700	.7631
Self Employed	37.5%	36.0%	.6303	NA

Sources: American Community Survey 2006 and U.S. Census Bureau

associated with the federal government category. The likely reason for this is the large number of male military personnel located in our region.

The final two columns of Table 1 record female/male earnings ratios for six of the employer classifications. Here we do find some large differences between Hampton Roads and the United States. **The relative earnings of women to men are lower in Hampton Roads in all but one of the six employer categories. The largest difference occurs in the federal government employer category, where the ratio between women and men trails the national average more than 10 percent. Contrast this to the local government employer category, where women in Hampton Roads are 12 percent better off than women who work for local government in the rest of the country.**

Next, let's focus on the female/male earnings ratio by occupations rather than by types of employers. Table 2 presents data on the size of the women's workforce, the share of the workforce composed of women, the median earnings of women and the female/male earnings ratio for 26 occupations. The data are arranged by the size of the female workforce in each occupation. Within our region, the occupation claiming the largest absolute number of women is office support workers, with almost 90,000 women workers in 2006. Women constitute about 77 percent of the workforce in this occupational category, but earn, on average, only 76 percent of what men earn. Recall that human capital theory suggests that women likely will fare better in job categories that are not dominated by women because there is less crowding in those occupations.

We're now going to sort the data in Table 2 in four different ways in order to highlight extremes in female/male earnings ratios and female employment shares. The four selected combinations are signaled by different colors. Recall that we expect earnings to be relatively lower in occupations in which the proportion of women in the workforce is relatively high due to the occupational sorting and/or discrimination.

First, consider women in occupations that have relatively high female/male earnings ratios (above .86) and relatively small female workforce shares (less than 25 percent). These are coded green in Table 2. Occupations in this category include material moving, construction/extraction, repair and maintenance, and law enforcement.

Note that women earn almost 99 percent of what men do in the repair and maintenance occupation, but they comprise only about 5 percent of the workforce there. Similarly, in construction/extraction, women again make up about 5 percent of the workforce; however, they earn 86 percent of what men earn. A characteristic these occupations have in common is that they have been male-dominated historically, perhaps because of the physical labor involved and/or the degree of physical risk inherent.

The second classification, highlighted in orange, reflects occupations in which less than 25 percent of the workforce is female and female earnings are less than half of male earnings. Occupations in this category include motor vehicle operators and transportation workers (other than drivers). In four of the six occupations in this sorting, there is evidence that women in our region do relatively better in occupations dominated by men (which is what human capital theory predicts).

Our third sorting highlights occupations where women constitute more than one-half of the workforce and earn almost the same as men. These occupations are highlighted in blue. One of the jobs in this category, food preparation and serving, typically does not require high levels of formal education and often constitutes an entry-level job. The social service category, on the other hand, typically requires significant higher education. Further, many social service employers are local governments, which we already have identified as producing higher female/male earnings ratios.

The fourth sorting, coded in purple, identifies occupations in which more than half of all jobs are held by women and the female/male earnings ratio is below .50. Health-care providers occupy this category, probably reflecting the reality that many women are dental hygienists, nurses and health-care assistants, while medical doctors and dentists historically have been male. Sales workers also appear in this category and a ready economic explanation is not so obvious. However, the gender earnings differential apparent here sometimes is attributed to the more aggressive, competitive sales techniques of men, whether genetic or learned.

**TABLE 2  
LABOR FORCE CHARACTERISTICS OF WOMEN IN HAMPTON ROADS BY OCCUPATIONS, 2006**

<b>Occupation</b>	<b>Women in the Work Force</b>	<b>Percentage of Women</b>	<b>Women's Annual Earnings</b>	<b>Female/Male Earnings Ratio</b>
Office Support	89,908	76.90%	24,197	0.7590
Sales	51,041	61.00%	16,354	0.4160
Education	38,288	75.60%	32,566	0.7617
Management	30,275	42.50%	41,196	0.6683
Food Preparation and Serving	24,339	57.90%	10,130	0.9713
Business and Financial	22,122	61.70%	39,776	0.7323
Personal Care and Service	18,293	82.90%	14,737	0.8516
Health-care Providers	18,099	74.80%	46,804	0.3900
Production	13,442	33.40%	22,134	0.6166
Buildings and Grounds	12,446	43.90%	13,804	0.6878
Health-care Support	12,056	86.60%	20,433	0.7989
Health-care Technologists	11,987	88.80%	28,256	0.7735
Social Services	7,571	62.00%	31,649	0.9826
Arts, Entertainment and Media	7,198	59.80%	28,866	0.7664
Computer	5,751	28.20%	46,470	0.8075
Material Moving	4,558	23.70%	19,000	0.8684
Legal Occupations	4,060	57.10%	36,018	0.3584
Motor Vehicle Operators	3,772	19.90%	12,929	0.4279
Protective Services	3,465	26.90%	17,006	0.4554
Architecture and Engineering	2,709	12.60%	51,681	0.8053
Scientist (life, physical and social)	2,695	48.50%	47,058	0.7441
Construction/Extraction	1,872	3.30%	27,186	0.8602
Repair and Maintenance	1,594	5.00%	37,613	0.9871
Law Enforcement	1,452	16.50%	36,729	0.9305
Transportation (other than drivers)	1,345	20.00%	24,634	0.4962
Natural Resources and Farming	704	26.10%	7,933	0.4969

Sources: American Community Survey 2006 and U.S. Census Bureau

**Color Key**

- Green: Women constitute less than 25 percent of all workers and the female/male earnings ratios exceeds .90.
- Orange: Women constitute less than 25 percent of all workers and the female/male earnings ratio is below .50.
- Blue: Women constitute more than 50 percent of all workers and the female/male earnings ratio is at least .90.
- Purple: Women constitute more than 50 percent of all workers and the female/male earnings ratio is below .50.
- Black: All other occupations.

# Hampton Roads Compared to Richmond

Graph 1 focuses on the earnings experience of women in Hampton Roads compared to those in Richmond for 2006. Richmond is a useful metropolitan area for comparison for several reasons. First, it is near Hampton Roads and therefore it would be relatively easy for individuals to migrate between the two metropolitan areas in response to earnings differentials. Second, Richmond clearly offers many state government jobs, which could influence the female/male earnings ratio.

The ratios of women's earnings in Hampton Roads to women's earnings in Richmond are plotted in 26 different occupations in Graph 1. In only two of the 26 occupations does the ratio exceed 1.2 (indicating women in Hampton Roads are doing noticeably better than those in Richmond), but in six of the 26 cases, the ratio is below .8 (signaling women in Hampton Roads are doing noticeably worse than those in Richmond). Further, the individual observations in Graph 1 tend to be clustered below the 1.00 break-even point between the two regions. **This tells us that in general, women in Hampton Roads tend not to earn as much as women in Richmond. Cost-of-living differences are minimal between the two regions and therefore don't explain these differences.**

Nor, should we add, do we see signs of women migrating to Richmond from Hampton Roads in response to relatively more favorable earnings in many occupations in Richmond. As we will argue below, many women in Hampton Roads appear to be place-bound.

Interestingly, women in law enforcement in Hampton Roads earn significantly more than comparable women in Richmond, while our region's women transportation workers (other than drivers) also do much better than their Richmond counterparts. At the other end of the scale, women in Hampton Roads in farming, fishing and forestry earn only 32 percent of similar women in Richmond (though there are fewer than 1,000 such workers in Hampton Roads).

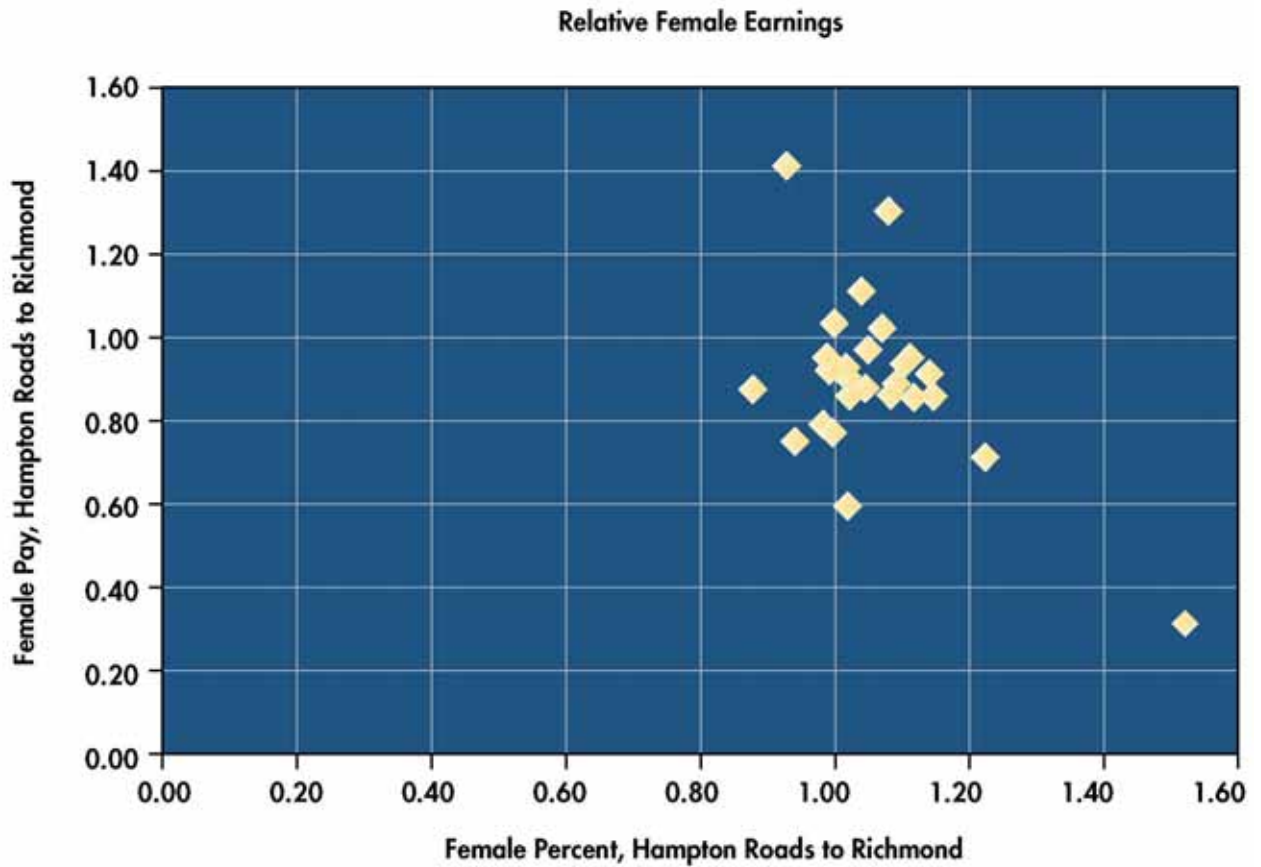
Does occupational segregation/crowding have anything to do with the earnings differentials we have just observed? Yes. **We did some reasonably sophisticated empirical work and found that a 1 percent increase in the Hampton Roads to Richmond women's employment ratio reduces the relative pay of Hampton Roads women to Richmond women by 1.5 percent. This means that crowding of women into specific occupations definitely makes a difference.**

Is there more crowding of women into occupations in Hampton Roads than in Richmond? Again, the answer is yes. In 18 of the 26 occupations, the percentages of women in these occupations in Hampton Roads are higher than the comparable percentages in Richmond. **Thus, there is more crowding of women into occupations in Hampton Roads than in the Commonwealth's capital city and, as the human capital model predicts, this results in relatively lower wages and earnings by women in our region.**

**Why is there more gender crowding in Hampton Roads? A plausible explanation is that Hampton Roads contains a larger proportion of women who follow their husbands here and end up competing for jobs in already crowded labor markets. Military personnel provide an obvious example; however, it is not commonly understood that Hampton Roads also is a large, though somewhat dispersed, "college town" that hosts approximately 100,000 students. The faculty and staff who serve these students often bring spouses and significant others with them, and the net result is increased occupational segregation and crowding.**

Finally, census data reveal that the typical woman in Hampton Roads is younger than the representative woman in Richmond and, for that matter, the average woman in the United States. This implies that Hampton Roads women workers are relatively less experienced than those in Richmond and in the United States, and this constitutes an economic reason why they might be paid less.

**GRAPH 1**  
**RATIOS OF WOMEN'S EARNINGS IN HAMPTON ROADS**  
**TO WOMEN'S EARNINGS IN RICHMOND, 2006**



Sources: American Community Survey 2006 and U.S. Census Bureau



# Final Thoughts

Our examination of gender wage and earning differentials in Hampton Roads reveals the following:

- Women in Hampton Roads earn less than men, and approximately 2 percent to 9 percent of the 20 percent earnings differential between men and women could be due to discrimination.
- Most of the wage and earnings differential between men and women in our region is explainable on the basis of economically and legally legitimate labor market characteristics, such as differences in levels of education, experience and labor market behavior.
- In terms of their earnings, women do best when they work in occupations not dominated numerically by women. Occupational segregation and the crowding of women into certain occupations, such as nursing, elementary school teaching and dental hygiene, reduce women's earnings relative to men's earnings.
- The typical woman in Richmond in a specific occupation earns more than a comparable woman in Hampton Roads, and much of this is due to higher levels of occupational segregation by gender in our region. Trailing military and higher education spouses appear to be responsible for much of this phenomenon.
- In terms of gender earnings equality, the best large employer is local government, while the worst is the federal government. It seems likely the distinctive mixes of positions each of these governmental units offers within our region is substantially responsible for this.

