

# Fred Meyer of Portland Structural Pay Equity Study

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## Introduction

**Olympic Analytics was commissioned by UFCW Local 555 to conduct this Fred Meyer of Portland - Structural Pay Equity Study ("SPES") to identify, measure and explain potential gender disparities in pay for grocery contract employees at Portland-area Fred Meyer stores.** This study investigates observations that female employees are more likely to occupy jobs in lower-paying Schedule B departments under the grocery contract at Fred Meyer. The SPES is an independent, transparent, objective analysis of recently acquired employee data to analyze whether a gender pay gap exists and what factors might explain it.

**The SPES utilizes data for grocery contract employees provided by Fred Meyer to UFCW Local 555 to analyze gender pay equity.** The data set consists of individual-level data on hourly wage, gender, age, years of Fred Meyer experience, job title, store, department, seniority and lead status for 1,919 Fred Meyer employees working under the grocery contract at Portland-area Fred Meyer stores. While gender pay disparities may also exist under other Fred Meyer contracts, the SPES focuses on disparities driven by the grocery contract's Schedule A and Schedule B wage scales that correspond to historically gender-differentiated work with a significant pay gap as described in the Background section.

**SPES data and regression analyses of employee data shows that differences in the gender composition of Schedule A and B departments drive a gender pay gap.** The Data Analysis section explores gender differences in hourly pay, age, experience, full-time/part-time status, seniority, lead status, wage schedule and department for employees in the grocery contract sample universe. The Regression Analysis section includes three models – unadjusted, partially adjusted and adjusted – that measure the contribution of each variable to hourly wages, providing insight on the gender pay gap. The Possible Explanations and Further Research section considers explanations for why women are more likely to be hired into lower-paid Schedule B departments than higher-paid, majority-male Schedule A departments, and why positions in Schedule B departments pay less than Schedule A departments.

## *Acknowledgments*

The author would like to thank Will Toasperm for his comprehensive edits of the SPES and valuable research assistance with a review of the relevant literature. The author would also like to acknowledge the contribution of the Martin P. Catherwood Library at the Industrial and Labor Relations School at Cornell University for hosting a large collection of historical collective bargaining agreements that were integral in understanding the history of gender and union representation in the Portland grocery market.

## SPES Sections

### The SPES is organized into seven sections:

1. *Executive Summary:* A summary of the key findings from the SPES.
2. *Background Section:* This section describes Fred Meyer's ownership and departmental structure, outlines historic union organizing and current union representation, provides an overview of the historically gendered work within grocery contract departments, and provides a brief review of relevant literature and similar analyses.
3. *Quantitative Analysis Overview:* This section outlines the data set used in the SPES analysis, describes the relevant variables, and explains the data and regression analysis methodology used in the SPES.
4. *Data Analysis:* This analysis of the data set examines gender differences in age, Fred Meyer experience, full-time/part-time status, seniority, lead status, department and wage schedule under the grocery contract. Each subsection includes a review of the gender pay gap for each variable.
5. *Regression Analysis:* The regression analysis builds three models – unadjusted, partially adjusted and adjusted – to precisely estimate the contributions of variables like gender, age, experience and wage schedule to employee hourly wages.
6. *Possible Explanations and Further Research:* This section explores possible explanations to two important theoretical questions raised by the SPES' quantitative results – why are women more likely to be placed in Schedule B positions than Schedule A positions and why are Schedule B positions paid less than Schedule A positions?
7. *Conclusion:* The SPES concludes with a brief summary of the Study's findings.

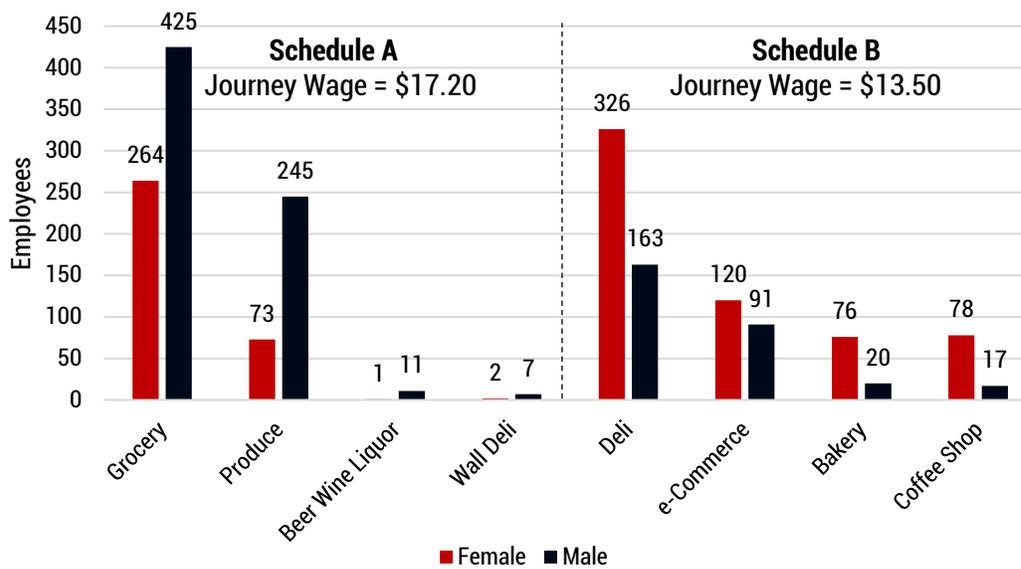
## Key Terms

<b>SPES</b>	Fred Meyer of Portland - Structural Pay Equity Study
<b>CBA</b>	A Collective Bargaining Agreement is an employment contract negotiated by union members and one or more employers, and voted on by union members, setting out terms and conditions for employment. CBAs typically include wage scales, premium pay rates, health benefits, pension benefits and provisions related to working conditions. The UFCW Local 555 – Fred Meyer grocery contract is a CBA analyzed in the SPES.
<b>Wage Scale</b>	A series of wage rates/steps guaranteed by a CBA that increase with hours worked. The grocery contract's Schedule A and Schedule B wages scales are analyzed in the SPES.
<b>Journey person</b>	Journey persons are employees who have reached a Journey level of seniority or tenure that corresponds to the top step (with the exception of leads and department heads) of the wage scale. Under the grocery contract, roughly three-quarters of employees are journey persons.
<b>Apprentice</b>	Apprentices are employees who have reached a seniority level that corresponds to a lower-paid wage step below Journey. Under the grocery contract, roughly one-quarter of employees are apprentices.

## Executive Summary

The large majority of Fred Meyer employees in Portland are represented by UFCW Local 555, with different occupations and departments covered by different wage scales. Fred Meyer meat, grocery, produce and delicatessen employees first organized in the 1930s. Since then, collective bargaining agreements (“CBAs”) have evolved over time to include separate wage scales for different departments and positions. Under the UFCW Local 555-Fred Meyer grocery contract, employees in the majority-male grocery, produce, cold wall, wall deli and beer, wine and liquor departments are paid according to the Schedule A wage scale, with a journey wage of \$17.20/hour, while employees in the majority-female bakery, deli, cheese, coffee shop and e-commerce departments are paid according to the Schedule B wage scale, with a journey wage of \$13.50/hour. (See Background Section)

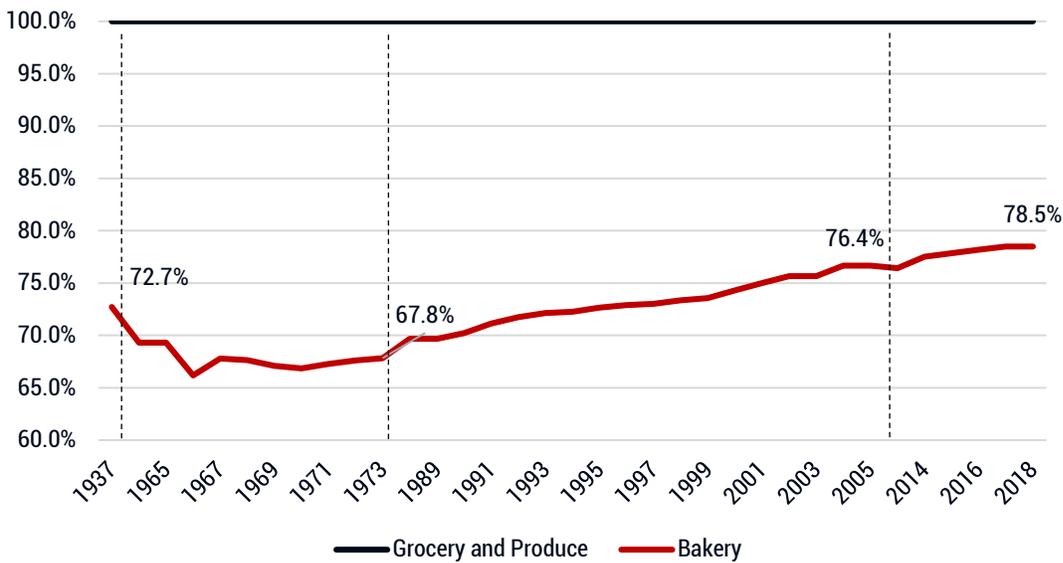
**Figure A. Schedule A and Schedule B Departments by Gender and Journey Wage**



*Note: The Cheese department has been included with the Deli, and Cold Wall/Dairy with the Wall Deli in the data analysis.*

**Schedule B departments, historically and in the present day, have been majority-female and paid less at Fred Meyer and other major grocers.** Between 1937 and 1981, many Fred Meyer CBAs included separate, lower-paid wage scales for Schedule B departments employing “Bakery and Delicatessen Girls” or simply “Women.” Female employees were provided additional breaks in line with those give to minors, and contracts routinely stated that “women shall not be allotted tasks disproportionate to their strength.” Meanwhile, Schedule A departments like grocery and produce were male-dominated with higher pay. In 2018, 79.2% of bakery department employees and 73.4% of bakery new hires were women, continuing the historic trend. Over the past 80 years, the pay gap between grocery and produce clerks, and these lower-paid, majority-female bakery clerks has closed only slightly, falling from 27.3% in 1937 to 21.5% in 2018. (See Historically Gendered Departments and Wage Scales at Fred Meyer Subsection)

**Figure B. Journey Pay in the Bakery as a Pct. of Journey Pay in Grocery and Produce (1937 – 2018)**

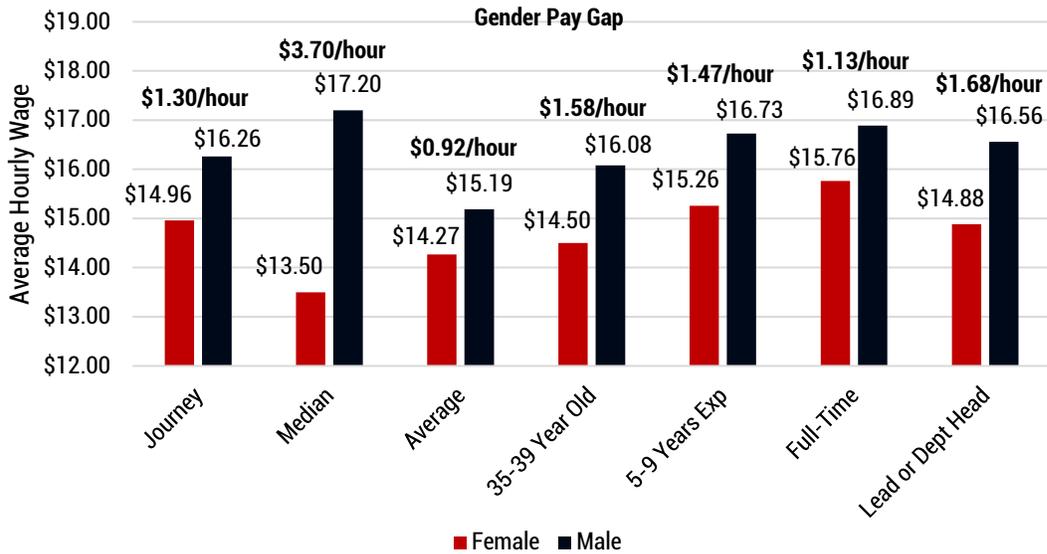


Note: Contract wage scales were not available for the periods 1938 – 1963; 1974 – 1987; 2007 – 2013.

**Women working under Fred Meyer's grocery contract in the present day still face a gender pay gap driven by lower Schedule B pay rates.** While women are more likely to have earned journey status than men (75.6% vs. 72.3%), the median female grocery contract employee is paid \$13.50/hour, the Schedule B journey rate, while the median male grocery contract employee earns \$17.20/hour, the Schedule A journey rate. In fact, over half of all journeywomen (52.5%) earn \$13.50/hour, while 69.6% of all journeymen earn \$17.20/hour. This disparity generates a median wage gap of \$3.70/hour. Across both wage schedules, the average hourly pay for female journeypersons is \$1.30/hour less than male journeypersons, while the gender pay gap for all employees including apprentices is \$0.92/hour.

**Female employees have nearly identical levels of Fred Meyer experience, seniority and full-time status as male employees, but the gender pay gap exists across all categories of women.** For instance, 35 to 39-year-old women earn \$1.58/hour less than males of the same age, while 60 to 64-year-old women make \$1.91/hour less than comparable males. Male and female employees have the same average experience (6.3 years), but female employees with 5 to 9 years' experience earn \$1.47/hour less than males, and those with 15 to 19 years' experience earn \$1.67/hour less than their male counterparts. Women are more likely to work full-time in both Schedule A (31.5% vs. 27.9%) and Schedule B (16.0% vs. 9.3%) positions, but under the grocery contract female employees working full-time earn an average of \$1.13/hour less than male employees working full-time. Women are also almost twice as likely to be placed in lead or department head positions, but female leads earn an average of \$14.88/hour doing so compared to \$16.56/hour for male leads. (See Data Analysis Section)

**Figure C. Average Hourly Wage and Pay Gap by Gender and Category**



**The differential gender employment ratios in higher-paid Schedule A departments and lower-paid Schedule B departments explain the gender pay gap.** Male and female journeypersons working in the same department under the same Schedule earn roughly equivalent wages. However, two-thirds of higher-paid Schedule A employees are men, while two-thirds of lower-paid Schedule B employees are women. This difference in gender ratios, rather than any difference in age, experience, full-time work or seniority, drives the \$3.70/hour median wage gap and \$1.30/hour journeyperson wage gap. The gender wage gap is likely to continue as gendered hiring patterns persist. Women make up 59.0% of new hires into Schedule B departments and are more likely to be hired into every Schedule B department than men, while men make up 69.2% of new hires into Schedule A departments. The hiring and placement of a disproportionate number of women into Schedule B departments appears to explain the large majority of the gender pay gap.

**There are many potential reasons why women are more likely to be hired into Schedule B departments and why Schedule B positions pay less, but testing them is beyond the scope of the SPES.** It may be that hiring managers place women in gendered roles, that employers hire women into lower-paid work, or that women request to work in these roles. Schedule B positions may be paid less because they're historically female-dominated or thought of as having lower productivity (**See Possible Explanations and Further Research Section**). An examination of the history of these departments provides some insight, but a more thorough answer to these questions will require additional future research.

## Background

### *Fred Meyer Stores*

**Fred Meyer operates 132 stores in Oregon, Washington, Idaho and Alaska<sup>1</sup> as a division of Kroger Co., the world's largest supermarket chain.<sup>2</sup>** Kroger acquired Fred Meyer in 1999 for \$12.8 billion in stock and debt.<sup>3</sup> Fred Meyer Stores President Dennis Gibson<sup>4</sup> and Fred Meyer Jewelers President Peter Engel<sup>5</sup> serve as 2 of 27 Kroger operating unit heads alongside the leaders of other Kroger chains like Harris Teeter, King Soopers, Fry's Food & Drug, Food 4 Less, Dillons, QFC, Ralphs and Roundy's.<sup>6</sup> While Kroger does not report itemized financial data for its Fred Meyer division, it does provide information for its full portfolio of 2,764 supermarkets.<sup>7</sup> As a whole, Kroger generated \$121.2 billion in sales in fiscal year ("FY") 2018, an increase of 23.2% over the past 5 years, and earned \$3.1 billion in profits, a 63.1% jump from FY 2017.<sup>8</sup> Kroger has also returned billions to shareholders in recent years, including \$1.6 billion in share buybacks and \$444 million in dividend payments in 2017,<sup>9</sup> and an additional \$2.2 billion in buybacks authorized in 2018.<sup>10</sup>

**Kroger's Fred Meyer multi-department stores offer a large selection of grocery, prepared food, home, apparel, health and beauty, electronics and other items sold through different departments.** According to Kroger, Fred Meyer stores average over 161,000 square feet<sup>11</sup> and carry more than 225,000 products.<sup>12</sup> Departments are physically and operationally separated to a greater degree than in many grocery stores, a setup described by Kroger as "a collection of specialty stores woven together seamlessly under one roof."<sup>13</sup> This departmental differentiation resulted, historically, in a number of different unions representing different store departments, and in the present day in a number of separate contracts negotiated for employees working in the same store.

### *UFCW Local 555 Members at Fred Meyer*

**Beginning in the 1930s, Portland-area Fred Meyer employees organized with multiple unions which merged to form UFCW Local 555 in 1983.** In 1937, the recently formed Retail Clerks International Protective Association Local Union 1092 ("Local 1092") bargained its first<sup>14</sup> collective bargaining agreement ("CBA") with Food Employers, Inc., a grocery industry association representing Fred Meyer, Safeway and other large Portland grocers.<sup>15</sup> Local 1092 represented employees working in the grocery, produce, bakery, delicatessen, cold wall, wall deli<sup>16</sup> and eventually pharmacy<sup>17</sup> and non-food<sup>18</sup> departments. The Amalgamated Meat Cutters and Butcher Workmen of North America, Local 143 ("Local 143") signed their first contract with Safeway and the Oregon Meat Council in 1939.<sup>19</sup> In 1983, five unions, Local 1092, Local 143, UFCW Local 303 in Eugene, UFCW Local 942 in Vancouver, WA and Meat Cutter Local 1011 merged to form UFCW Local 555.<sup>20</sup>

**Since the formation of UFCW Local 555, employees in additional Fred Meyer departments have joined together to bargain with the Local under a number of different contracts.** In addition to union members in the grocery, produce, wall deli, delicatessen, bakery, pharmacy and non-foods departments, employees in the cheese, beer and wine, coffee bar and e-commerce departments decided to join UFCW Local 555. Other departments, such as the playland childcare center and the Chinese Kitchen, remain unrepresented.

Although Fred Meyer's unionized departments in the Portland-area are all represented by UFCW Local 555, they are organized under four different contracts with a number of different wage scales. (See Figure 1.)

**Figure 1. Contract and Wage Scale by Portland-Area Fred Meyer Department**

Contract	Department	Wage Scale	Journey Wage
Grocery	Beer, Wine, Liquor and Growler	Schedule A	\$17.20/Hour
	Grocery		
	Produce		
	Dairy/Cold Wall		
	Wall Deli		
	Bakery	Schedule B	\$13.50/Hour
	Coffee Bar		
	Deli		
	Cheese		
	e-Commerce and Online Ordering		
Meat	Meat Cutter	Schedule A	\$19.64/hour
	Meat Wrapper		\$17.20/hour
	Butcher Block	Schedule B	\$13.85/hour
	Seafood		
CCK	Front End Cashier	CCK	\$15.00/hour
Non-Food	Home - Hardlines, Electronics, Photo	Schedule A	\$13.40/hour
	Apparel		
	Drug & General Merchandise		
	Floral		
	Fuel Center		
	Furniture		
	Pharmacy	Pharmacy Tech	\$17.28/hour
	Salvage Center	Salvage Center	\$13.95/hour



**Grocery contract departments analyzed in the SPES**

Note: The Cheese department has been included with the Deli, and Dairy/Cold Wall with the Wall Deli in the data analysis. "Schedule A" and "Schedule B" wage scales differ for each contract.

**Grocery contract employees in Schedule A and Schedule B have a variety of different and overlapping job responsibilities.** Grocery clerks are responsible for stocking and organizing grocery shelves, building displays, providing customer service and working as cashiers in the grocery section. Produce clerks break down loads of product, stock and clean fruit and vegetable bins, rotate product to ensure it's fresh, update price labels, provide customer service and cut and prepare fresh fruit in some stores. Deli clerks slice deli meat, cook and fry hot food, stock hot food trays, serve prepared food to customers, work as cashiers in the deli and provide customer service, while Cheese department employees stock cheeses and provide cheese recommendations. Wall deli clerks stock meats, cheeses and cold prepared food in the cold deli, while Cold Wall and Dairy clerks stock the dairy freezers. Bakery clerks stock baked goods sections, bake breads and

pastries, work the bakery cash register and help customers. e-Commerce or Clicklist clerks receive and fulfill online orders from customer, while coffee shop employees fulfill all the duties of a barista at Fred Meyer's in-store Starbucks. Beer, wine and liquor clerks stock shelves in their department, help customers with wine selection and refill growlers. While each position has its own set of responsibilities, many employees in both Schedule A and B departments stock shelves, prepare food, work as cashiers and provide customer service.

**Each UFCW Local 555 – Fred Meyer contract has a separate wage scale that sets the minimum wage rates for union employees at a given level of seniority.** The grocery contract has two primary wage scales – Schedules A and B – as well as a wage rate for courtesy clerks. All employees working in Schedule A departments progress up a different wage scale with higher paid steps toward the top than employees in Schedule B departments. For instance, a produce clerk working under Schedule A will earn \$17.20/hour after achieving 8,840 hours of seniority to become a journeyman, while a Schedule B bakery clerk or coffee shop barista will earn \$13.50/hour as a journeyman after achieving the same level of seniority. Union employees in the meat and seafood departments have separate wage scales by position that are set by the Meat contract, which provides for higher wages for certified meat cutters. Front-end cashiers, customer service clerks, some office employees and front-end courtesy clerks are all covered by the CCK contract, which provides one wage scale for all employees, while the non-foods contract covers employees under the non-foods Schedule A, Pharmacy Tech and Salvage Center wage scales. Although many contracts have wage scales called Schedule A and Schedule B, these wage scales have different wage steps and journey rates under each contract. It's important to note that for comparison purposes, the SPES only looks at data for grocery contract departments taken from June 2018, the date of the primary employee-level dataset used in the data and regression analyses.

**Contracts provides minimum wage rates for each level of seniority, measured in hours, that are often binding in practice.** Employees progress up each wage scale as they reach accumulated hours tiers, although they can also be brought in at a rate above entry level or receive raises after they've started work. As of the June 2018 analysis period, Schedule A and B grocery wage scales have identical wage steps for the first 6,240 hours that employees work, reaching a wage rate of \$11.60/hour. Schedules A and B then diverge, with the highest level of Schedule A apprentices earning \$14.00/hour for 7,801 to 8,840 hours worked, and Schedule B employees earning \$11.75/hour for the same level of seniority. After 8,840 hours, the scales reach their highest degree of wage separation at the journey level, where Schedule A employees earn \$17.20/hour compared to \$13.50/hour for Schedule B employees. These steps are technically minimums, but in practice they often set pay rates. Hourly pay raises above scale appear to be uncommon and are an unlikely source of gender pay inequity. For instance, in Schedule A, only 6 of 496 non-lead journeymen (1.2%) are paid above the journey rate. The rate among Schedule B employees is slightly higher, with 50 of 494 non-lead journeymen (10.1%) paid above the standard journey rate, but 38 of the 50 were paid \$14.00/hour in the cheese department, which reflects a standardized management practice rather than a series of discretionary promotions or raises.

**The 2016 Oregon state minimum wage law will soon set binding minimum wage rates for the grocery contract's Schedule A and B apprentice wage steps, leaving journey wages as the primary remaining source of wage inequality between the Schedules.** In 2016, UFCW Local 555 and other members of the Raise the

Wage Oregon Coalition<sup>21</sup> pushed the Oregon legislature to pass Senate Bill 1532, which established a series of annual minimum wage rate increases through 2022.<sup>22</sup> The minimum wage in Portland overtook the highest Schedule B apprentice step (\$12.50/hour) in July 2019, and will overtake the highest Schedule A apprentice step (\$14.00/hour) in July 2021.<sup>23</sup> The legal minimum wage supersedes contract minimums, so after these dates, grocery contract apprentices will all be paid the Oregon minimum wage plus a contractually guaranteed \$0.10/hour.<sup>24</sup> While this will promote wage equality for the 26.1% of Schedule A and B employees currently on the apprentice steps, the gender wage gap driven by the difference in Schedule A (\$17.20/hour) and Schedule B (\$13.50/hour) journey wages will remain for the 73.9% of employees who earn journey wages or higher.

**The UFCW Local 555 – Fred Meyer grocery contract also includes a number of wage premiums and fringe, health and retirement benefits that are beyond the scope of the SPES analysis, which focuses on hourly wages.** The Portland-area Fred Meyer grocery contract protects employees from working split shifts, provides for overtime pay if employees work six days in a week, mandates advanced notification for on-call shifts, includes Sunday, evening and night wage premiums, provides for 6 paid holidays, ensures up to 4 weeks paid vacation, includes up to 48 hours sick leave, and provides for holiday, jury duty, birthday, and funeral pay.<sup>25</sup> Additionally, the CBA mandates that Fred Meyer contribute \$5.02/hour to fund employee health insurance and up to \$0.57/hour for employee pensions. While these wages and benefits are a critical component of total compensation, the SPES focuses on hourly wages because they are standardized for all employees (assuming equivalent hours) and the data is available for the relevant grocery contract universe.

### *History of Gendered Departments and Wage Scales at Fred Meyer*

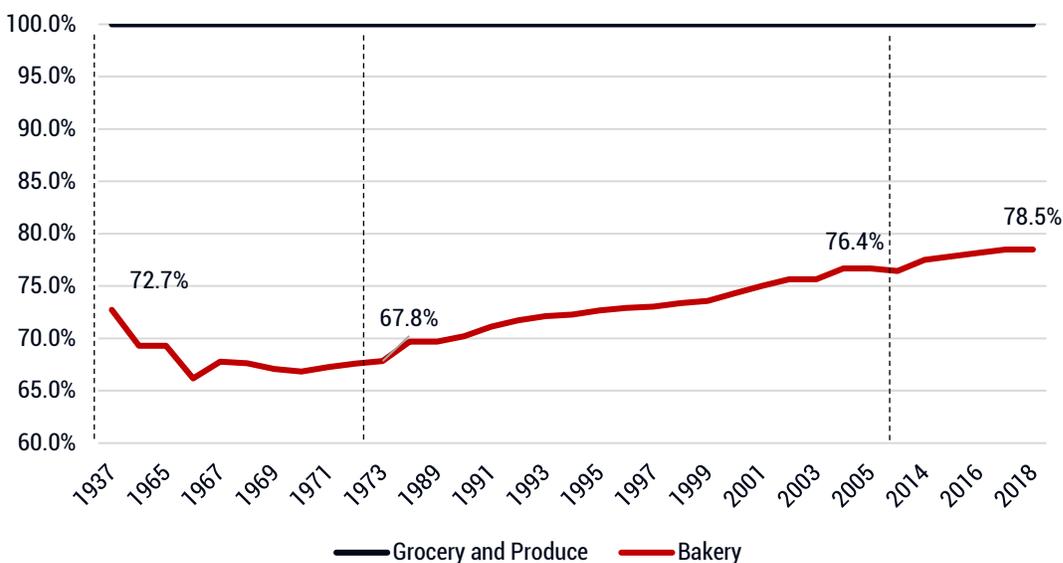
**Starting in the 1930s and continuing into the 1980s, contracts for Fred Meyer employees contained differential rates of pay by gender, female-designated departments like the bakery and delicatessen, and gendered work requirements.** The 1937 CBA between Fred Meyer, Safeway, other large Portland grocers and Local 1092 established a “Bakery and Delicatessen Girls” wage scale that paid 20.0% less to start, and 27.3% less at the top, than the regular Clerk scale.<sup>26</sup> A 1942 CBA between Fred Meyer, Safeway and Piggly Wiggly and Retail Clerks Local 992 in Salem contains two separate wage scales, one labeled “women” and one “men”, with women journeypersons paid 21.4% less than men.<sup>27</sup> A 1962 CBA between Food Employers, Inc. and Local 1092 stated that “Delicatessen Sales girls shall devote their time exclusively to that department,” provided lower wage scales for the delicatessen than the grocery and vegetable (produce) departments, mandated that women receive more frequent breaks, and stipulated that “women shall not be allotted tasks disproportionate to their strength.”<sup>28</sup> In 1972, the CBA between Local 201 in Eugene and employers including Fred Meyer designated the top step of the Schedule B bakery wage scale as the “Head Sales Girl” position.<sup>29</sup> As late as 1980, a contract between Allied Employers, Inc. (which includes Fred Meyer) and UFCW Local 1105 in King County, Washington provided that “any Store-to-store [bakery] demonstrator will receive the head girl/demo. rate of pay.”<sup>30</sup>

**Union members and equal pay activists fought against gender discrimination through the 1960s, and by the late 1970s, many contracts had removed explicit gender references.** In 1965, members of Retail Clerks Local 1188 in Southwest Oregon “voted not to accept an employers’ offer which would retain a pay differential for women and men workers,” which management argued was “justified on the basis of ‘light and

heavy duty' work."<sup>31</sup> According to news reports at the time, "women are regulated and fall into the light-duty category."<sup>32</sup> Union members unsuccessfully struck for equal pay during that contract cycle, but in 1971 Safeway issued a declaration that the CBA would be modified to "eliminate differentials between light and heavy duty clerks" and "fix the rate of pay for food clerks at the heavy duty clerk rate" in response to a Local 1188 lawsuit in U.S. District Court.<sup>33</sup> Other CBAs also began removing explicitly gendered employment conditions. Food Employers Inc.'s 1978 CBA with Local 1092 stipulates that "any reference to gender in this Agreement includes both genders" and removes explicit mentions of women and girls.<sup>34</sup> A 1979 CBA between Fred Meyer, other Eugene grocers, and Local 201 similarly excludes explicit gender references.<sup>35</sup>

**Despite the abolition of explicit gender discrimination, since 1937 the pay gap between traditionally male-dominated Schedule A departments like grocery and produce, and traditionally female-dominated Schedule B departments like the bakery, has narrowed only slightly (See Figure 2.), while traditional gender employment ratios have persisted.** In 1937, the Food Employers, Inc. CBA required that "Girls having not less than 6 mo[nths] experience" in the bakery be paid \$17.00/week compared to \$20.00/week for similarly situated grocery clerks.<sup>36</sup> There were no journey person designations of equivalent seniority, but grocery head clerks earned \$27.50/week compared to bakery department heads, who earned \$20.00/week, a 27.3% pay gap.<sup>37</sup> In 1964, when the Food Employers, Inc. – Local 1092 CBA stipulated that "women shall not be allotted tasks disproportionate to their strength" and "no female... shall be required to work more than 3 hours without a 10 minutes rest period," journey bakery clerks earned \$1.975/hour (\$16.35/hour in 2019 dollars) while journey grocery and produce clerks earned \$2.85/hour (\$23.59/hour in 2019 dollars).<sup>38</sup> This represented a grocery-and-produce-to-bakery wage pay gap of 30.7%. Currently, journey bakery clerks earn \$13.50/hour, while journey grocery and produce clerks earn \$17.20/hour, representing a 21.5% pay gap. Even as explicitly gendered differences in pay between departments disappeared, the pay gap between those departments, and their gendered composition, persisted.

**Figure 2. Journey Pay in the Bakery as a Pct. of Journey Pay in Grocery and Produce (1937 – 2018)**



Note: Contract wage scales were not available for the periods 1938 – 1963; 1974 – 1987; 2007 – 2013.

## *Literature Review and Similar Studies*

**Supermarket firms in the U.S. and around the world have faced allegations of gender segregation and unequal pay for decades.** In January 2019, workers at British grocery chain Asda won a Court of Appeal decision finding that “Asda shop floor jobs are comparable to those in the supermarket chain’s depots. Shop floor staff, who are mostly women, are paid less than depot staff, who are mostly men.”<sup>39</sup> In 2018, employees at U.K. chain Tesco claimed that shop-floor assistants, “three-quarters of whom are women, say they earn up to £3 an hour less than mostly male Tesco warehouse workers in similar roles.”<sup>40</sup> In 1997, Florida-based Publix Super Markets agreed to pay out a \$81.5 million settlement to “150,000 women who accused the grocery chain of relegating them to dead-end, low-paying jobs.”<sup>41</sup> In 1993, female employees at Northern California Lucky Stores won \$75 million in damages and \$20 million in affirmative action programs after filing a class-action lawsuit alleging that “they were channeled into dead-end jobs, either working the cash registers or relatively new departments like bakeries and delicatessens, rather than the main grocery and produce sections at the core of most supermarket operations, where jobs are generally better paid and can lead to promotions.”<sup>42</sup> The Equal Employment Opportunity Commission sued Fred Meyer, Safeway, Albertsons and Thrifty in 1986 “accusing them of bias against women in promotions and assignments.”<sup>43</sup> It is important to note that these specific allegations are outside the scope of the SPES and are meant to represent studies of the broader grocery industry.

**Many academic studies also find that gender segregation by occupation produces a gender wage gap.** A 2005 study of a Southwest grocery store chain conducted by economists Michael Ransom and Ronald Oaxaca found that occupational segregation at hire accounted for “virtually all sex differences in pay.”<sup>44</sup> The Study used data from 1976 to 1986 for the 55-store unionized grocer to estimate the gender pay gap which, controlling for seniority and age, was 8.3%.<sup>45</sup> The authors found that “although wages were set by a collective bargaining agreement that was, ostensibly, gender neutral, a large wage differential arose because women were placed in jobs different from those assigned to similar men.”<sup>46</sup> A 2009 study of Census data from 1950 to 2000 by Asaf Levanon, Paula England and Paul Allison found that, controlling for education, experience, racial demographics and geographic location, median wages in an occupation declined as the percentage of women working in that occupation increased.<sup>47</sup> A 1991 study of five industries by Erica L. Groshen in the *Journal of Human Resources* found that “the largest source of the female/male wage gap is the [negative] association between wages and proportion female in occupations, which accounts for 1/2 to 2/3 of the [gender pay] gap.”<sup>48</sup>

## **Quantitative Analysis Overview**

### *Methodology*

**The SPES attempts to identify, measure and explain the gender pay gap at Fred Meyer through data and regression analysis.** The regression analysis tests a hypothesis generated by the data analysis – that the distribution of male and female employees between Schedule A and Schedule B departments drives the gender pay gap.

**The data analysis provides evidence that the distribution of male and female employees within Schedule A and Schedule B departments ultimately creates the gender pay gap.** The data analysis section examines the pay gap based on age, experience, full/part-time status, seniority, lead status, department, and wage schedule of female and male employees, providing information on how each variable may contribute to the gender pay gap. The gender pay gap exists across all variables except schedule and department, which leads to a hypothesis that it is the overrepresentation of female employees in lower-paid Schedule B departments, and underrepresentation of female employees in higher-paid Schedule A departments, that ultimately drives the gender pay gap.

**The regression analysis uses statistical tools to test this hypothesis that the gender pay gap is driven by the gender composition of Schedule A and B departments, rather than other factors.** Regression analysis allows researchers to hold multiple variables constant to examine the relationship between a dependent variable (i.e. hourly wage) and an independent variable (gender, age, experience, wage schedule etc...). This technique facilitates the apples-to-apples comparison of similar employees who differ across only one dimension. It also separates the impact of multiple variables that may mask the real driver of a pay gap. For instance, if younger employees have far less experience than older employees, regression analysis may reveal that pay differences are related more to differences in experience rather than age.

**To test the Schedule A-B hypothesis, the SPES regression analysis examines the gender pay gap for Portland-area grocery contract employees at three levels of analysis:**

1. *Unadjusted Pay Gap:* The average hourly wage disparity between male and female grocery contract employees at Portland-area Fred Meyer stores controlling for nothing but gender.
2. *Partially Adjusted Pay Gap:* The average hourly wage disparity between Portland-area male and female grocery contract employees with the same age, Fred Meyer experience, full-time/part-time status and seniority level.
3. *Adjusted Pay Gap:* The average hourly wage disparity between male and female grocery contract employees with the same age, full-time/part-time status, seniority level, wage schedule, lead status and city/suburbs work location at Portland-area Fred Meyer stores.

The data and regression analyses provide strong evidence that the distribution of male and female employees across Schedule A and B departments is the primary contributor to the \$3.70/hour median wage and \$1.30/hour journeyman gender pay gap under Fred Meyer's grocery contract.

### *Data Background*

**The SPES examines data provided to UFCW Local 555 by Fred Meyer that includes gender, birth date, hire date, department, store, job description, full/part time status, journey/apprentice status, wage schedule and hourly pay rate for employees under the Portland-area UFCW Local 555-Fred Meyer grocery contract (See Figure 3.).** The entire data set includes records for 2,597 grocery contract employees. After excluding stores outside of the Portland CBA, courtesy clerks, duplicate employees, and employees with missing data, the final data universe includes individual records for 1,919 unique employees. An age variable was created

using birth date, a Fred Meyer experience variable using hire date and a lead variable using job description. The time period of the data is a one-time snapshot of employees employed as of June 2018.

**Figure 3. Variable Name, Description, Overall, Female and Male Average**

Variable Name	Description	Overall Avg.	Female Avg.	Male Avg.
Age	Age in Years	36.8	39.8	34.0
FM Experience	Fred Meyer Experience in Years	6.3	6.3	6.3
Full Time/Part Time	Full or Part Time Classification	22.0% FT	21.6% FT	22.4% FT
Gender*	Male or Female	51.0%M/49.0%F		
Median Wage	Median Hourly Wage Rate	\$14.00	\$13.50	\$17.20
Journey Rate	Average Journey Wage Rate	\$15.61	\$14.96	\$16.26
Hourly Rate	Average Hourly Wage Rate	\$14.74	\$14.27	\$15.19
Journey	Journey or Apprentice Wage Steps	74.0% Journey	75.6%	72.3%
Lead	Employee with a Lead or Head Position	5.2% Leads	6.9%	3.6%
Department Name	Employee's Department			
Schedule A	Grocery, Produce, Wall Deli, Beer/Wine/Liq	53.6%	36.2%	70.3%
Schedule B	Deli, Bakery, e-Commerce, Coffee Shop	46.4%	63.8%	29.7%

*Note: There is insufficient data to include meaningful statistics for non-binary employees at this time.*

The data set comes from 25 Fred Meyer stores (See Appendix A) operating within the Portland metropolitan area's urban growth boundary ("UGB"). In order to hold external economic conditions constant, the SPES universe only includes Fred Meyer stores operating under the same state labor laws, minimum wage rates, and urban Portland market conditions.<sup>49</sup>

**Data on educational attainment, race and employee performance were unavailable, but appear likely to be statistically irrelevant.** These data may be relevant to the SPES and could explain variations in the data that are attributed to other variables. For instance, if women working in grocery stores are more likely to be people of color, and people of color are more likely to work in low-pay positions, then the SPES analysis may attribute lower pay to gender (the available variable) that is better explained by race (the unavailable variable). However, according to the U.S. Census Bureau, the percentage of men working in grocery stores in the Portland metropolitan area who are persons of color (21.7%) is nearly identical to women (20.0%), while the percentage of men (20.8%) and women (18.7%) with an associate's degree or more (2+ years of college) working in grocery stores in the Portland area is also very similar.<sup>50</sup> The SPES assumes that missing variables like race, educational attainment and employee performance are evenly distributed for men and women across the sample population.

## Data Analysis

### Overall

**Fred Meyer's grocery contract departments as a whole have roughly equal numbers of men and women, with women more likely to be at a journey level of pay, more likely to be in Schedule B positions and slightly older on average.** Overall, 51.0% of the sample universe is male and 49.0% female. Women in the sample

are 5.8 years older on average than men, but male and female employees have nearly identical average levels of experience (6.3 years) and likelihood of working full-time (21.6% for women and 22.4% for men). Women are slightly more likely than men to be at the journey rate of pay (75.6% vs. 72.3%), and almost twice as likely to be in a department head or lead position. The largest difference between male and female employees under the grocery contract is where they work. More than two-thirds (70.3%) of male employees work in higher paying Schedule A departments, while 63.8% of women work in departments covered under the lower paying Schedule B wage scale.

**Women working under Fred Meyer's grocery contract in the Portland area are paid a median wage that is \$3.70/hour lower than the male median wage (\$13.50/hour vs. \$17.20/hour), representing a 21.5% median wage gap.** These median wages correspond to the Schedule B (\$13.50/hour) and Schedule A (\$17.20/hour) journey wage rates, and over half of all journeywomen (52.5%) earn \$13.50/hour, while 69.6% of all journeymen earn \$17.20/hour. Across both wage scales, the average wage for journeymen under the grocery contract (\$16.26/hour) is \$1.30/hour higher than the average wage for journeywomen (\$14.96/hour), representing an 8.0% journey pay gap. The Schedule A and B apprentice wage steps, which cover 26.1% of grocery contract employees, are identical for the first six steps, producing a smaller apprentice wage gap. The average male apprentice earns \$12.40/hour compared to \$12.13/hour for female apprentices, a \$0.27/hour gap. Overall, women earn \$0.92/hour less than men (\$15.19/hour vs. \$14.27/hour) under the grocery contract, representing an unadjusted average pay gap of 6.1%.

**There is a male-female pay gap for grocery contract employees in the Portland-area within all variables except department and schedule, indicating that differences in the distribution of men and women across departments and schedules drives the pay gap.**

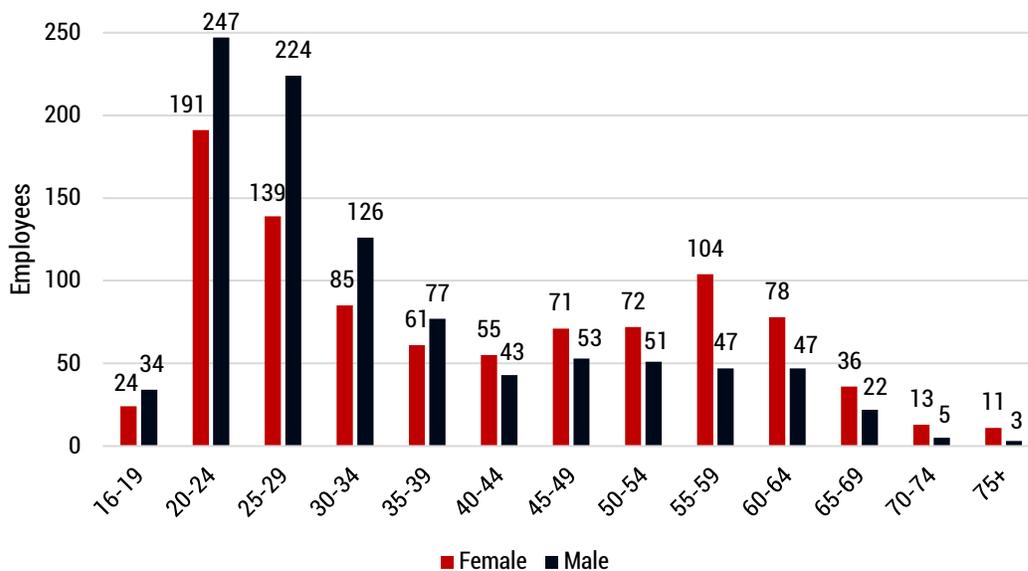
- Male employees earn more than female employees for all age groups between 20 and 69 years of age.
- Men under Fred Meyer's grocery contract earn more than women for every level of years' experience.
- Women are more likely to have attained the journey level of seniority, but female journeypersons are paid significantly less than male journeypersons.
- Women earn less than men for both full and part time work.
- While there are almost twice as many female leads and department heads, male leads and department leads earn significantly more on average.

All of these disparities can be explained by differences in the distribution of male and female employees across Schedule A and B departments. There is no pay gap within each department, and women actually earn slightly more on average than men working in the same department. However, the overrepresentation of female employees in Schedule B and underrepresentation of female employees in Schedule A departments for every age, experience, full-time/part-time, seniority and lead category group drives a wage gap within all of these variables.

## Age

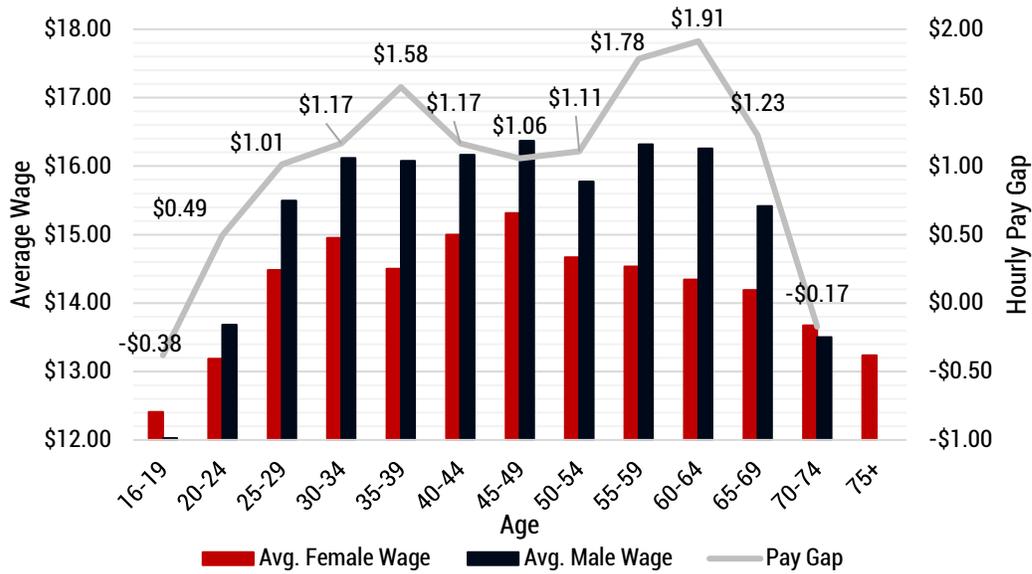
**Female employees have an older average age than male employees (39.8 vs. 34.0), comprise the majority of every age group over 40, and are most likely to be younger (20 – 29 years) and older (55 – 59 years) employees (See Figure 4.).** More than two-thirds (68.9%) of 55 to 59-year-old employees are female, as are more than three-quarters (78.6%) of employees over 75 years of age. Male employees, meanwhile, make up the majority of every 5-year cohort of grocery contract workers 39 and under. The three age brackets containing the most employees, 20 to 24-year-olds, 25 to 29-year-olds, and 30 to 34-year-olds, which together comprise over half (52.7%) of the total grocery contract universe, are all over 55.0% male. If relatively older age is correlated with lower pay, and women are more likely to be old, then age could explain some of the pay gap, an issue explored in the partially adjusted regression model.

**Figure 4. Female and Male Employees by Age Bracket**



**The pay gap rises steadily for employees between the ages of 16 and 39, then dips slightly before peaking for employees age 60 to 64 (See Figure 5.).** For 16 to 19-year-olds, the pay gap is actually  $-\$0.38/\text{hour}$  (women out earn men by  $\$0.38/\text{hour}$ ). The gap then reverses and rises to  $\$1.01/\text{hour}$  in favor of men for 25 to 29-year-olds and  $\$1.58/\text{hour}$  for 35 to 39-year-olds. The pay gap decreases for middle-aged employees before peaking at  $\$1.91/\text{hour}$  for 60 to 64-year-olds. The gap then declines to  $-\$0.17/\text{hour}$  for 70 to 74-year-olds. The two age brackets where women out-earn men, 16 to 19 and 70 to 74-year-olds, are the age brackets where the likelihood of women working Schedule A departments is closest to the male likelihood, which may explain the absence of a male-female pay gap for these age groups.

**Figure 5. Average Female and Male Hourly Wage and Pay Gap by Age**

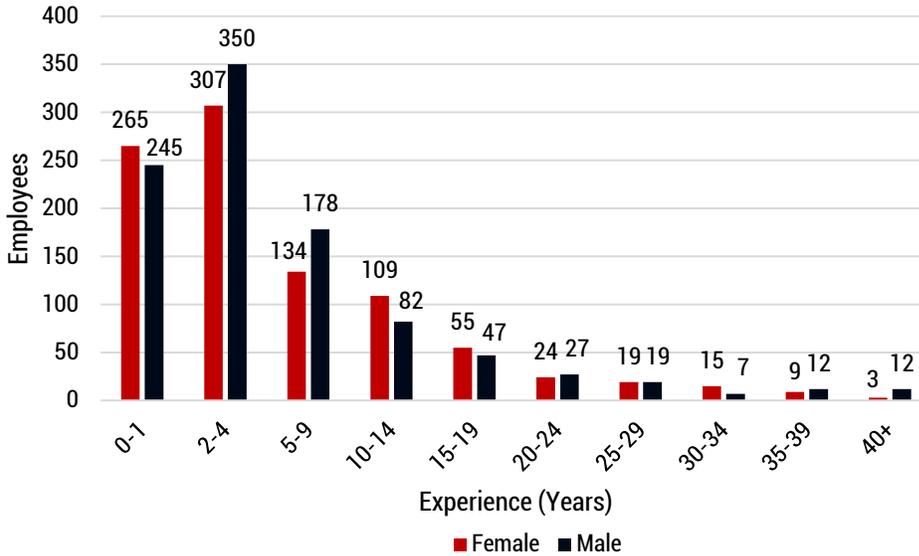


Note: The average male wage for the 75+ age group was excluded to protect employee confidentiality.

### Experience

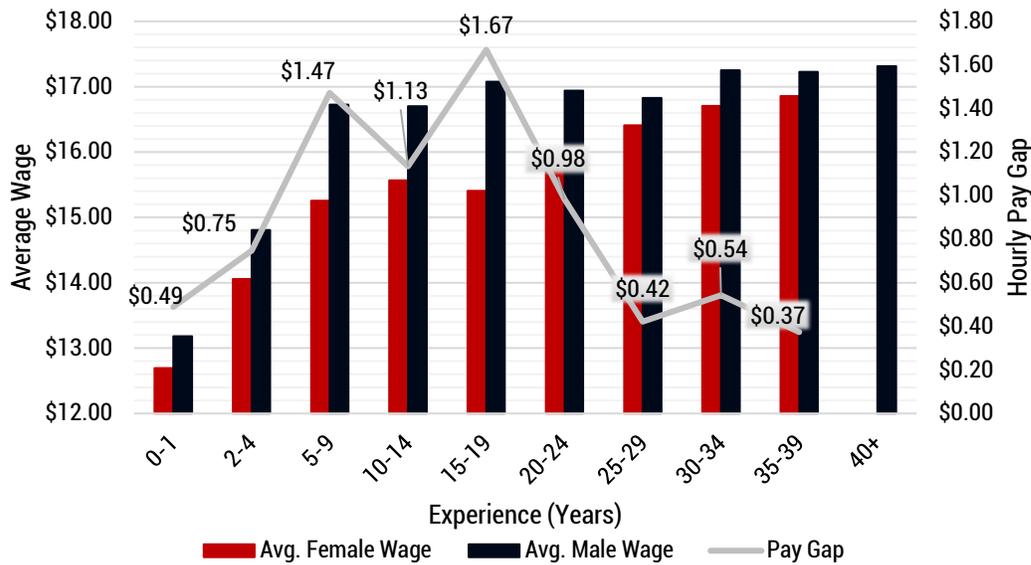
**Female and male employees working in grocery contract departments have roughly equivalent levels and distribution of years' experience at Fred Meyer (See Figure 6.).** Overall, men and women both have an average of 6.3 years of Fred Meyer experience. Six in ten (60.9%) female employees have four or fewer years of experience, compared to 60.8% of male employees, while three-quarters (75.1%) of female employees have less than 10 years' experience compared to 79.0% of male employees. Women are more likely than men to have 10 – 19 years' experience (17.4% vs. 13.2%), while men are slightly more likely to have 20+ years' experience (7.9% vs. 7.4%). Differences in experience levels between male and female employees don't appear to contribute to the gender pay gap. It is important to note that an employee's years' experience doesn't necessarily correspond to seniority level, as employees may work a different number of hours and reach a different wage step each year, and employees who have reached the journey level can have wide variation in their years' experience.

**Figure 6. Female and Male Employees by Years of Experience**



**The pay gap rises with experience for employees with under 20 years' experience before closing significantly for employees with up to 39 years of experience (See Figure 7).** Female workers with 0 to 1 years' experience earn only \$0.49/hour less than their male colleagues (\$13.18/hour vs. \$12.69/hour), which rises to a pay gap of \$1.67/hour (\$17.08/hour vs. \$15.41/hour) for employees with 15 to 19 years of experience. The pay gap then closes significantly for employees with over 25 years of experience, dropping to \$0.37/hour (\$17.23/hour vs. \$16.86/hour) for employees with 35 to 39 years' experience. The narrowing of the pay gap for employees with 25+ years of experience can be explained by a higher share of women in higher paying Schedule A positions. For instance, while only 47.3% of women with 15 to 19 years of experience work in Schedule A jobs (compared to 95.7% of men), 73.7% of women with 25 to 29 years' experience (versus 89.5% of men) and 88.9% of women with 35 to 39 years' experience (compared to 100.0% of men) work in Schedule A departments.

**Figure 7. Average Female and Male Hourly Wage and Pay Gap by Years' Experience**



Note: The average female wage for the 40+ years' experience group was excluded to protect employee confidentiality.

### Seniority (Journey vs. Apprentice)

**Female employees are more likely to be at the journey level of seniority than male employees.** Although data on accumulated employee hours and specific wage step are not included in the sample dataset, apprentice and journey status are included. Overall, 75.6% of women are journeypersons compared to 72.3% of men. A higher percentage of female employees are at the journey level than male employees in every department besides produce.<sup>51</sup> Roughly 3 in 4 women in Schedule B departments (76.0%) are journeywomen, more than 10 percentage points higher than the rate amongst men (66.0%), and 75.0% of both male and female employees are journeypersons in Schedule A departments. Lower seniority levels among women do not appear to be a factor driving the gender pay gap.

**Journeywomen under Fred Meyer's grocery contract are paid an average of \$14.96/hour while journeymen are paid an average of \$16.26/hour.** The \$1.30/hour pay gap appears to stem entirely from the distribution of male and female journeypersons across Schedule A and B positions. Male and female journeypersons both earn the exact same average wages within each Schedule - \$13.70/hour in Schedule B and \$17.22/hour in Schedule A.

### Full-Time and Part-Time Status

**Women work full-time hours at a similar rate to men (22.4% of male and 21.6% of female employees), and are more likely to work full-time in both Schedule A and Schedule B departments.** Women have a higher rate of full-time employment in both Schedule A (31.5% vs. 27.9%) and Schedule B (16.0% vs. 9.3%) positions. However, since men make up a significant majority of Schedule A departments, while women comprise a majority of Schedule B departments, their overall full-time/part-time rates are roughly equal.

**The gender pay gap exists for both full and part time employees, and is larger for full-time employees.** Men working full time under Fred Meyer's grocery contract earn an average of \$16.89/hour, compared to \$15.76/hour for women, representing a \$1.13/hour pay gap. For part-time workers, men earn an average of \$14.71/hour vs. \$13.86/hour for women, a gap of \$0.84/hour.<sup>52</sup> The larger gap for full-time employees is explained by the fact that full-time men are more likely to work in Schedule A departments, full-time employees are more likely to earn journey wages, and the Schedule A – Schedule B wage gap is larger for journey wages than for the apprentice wages more often earned by part-time workers.

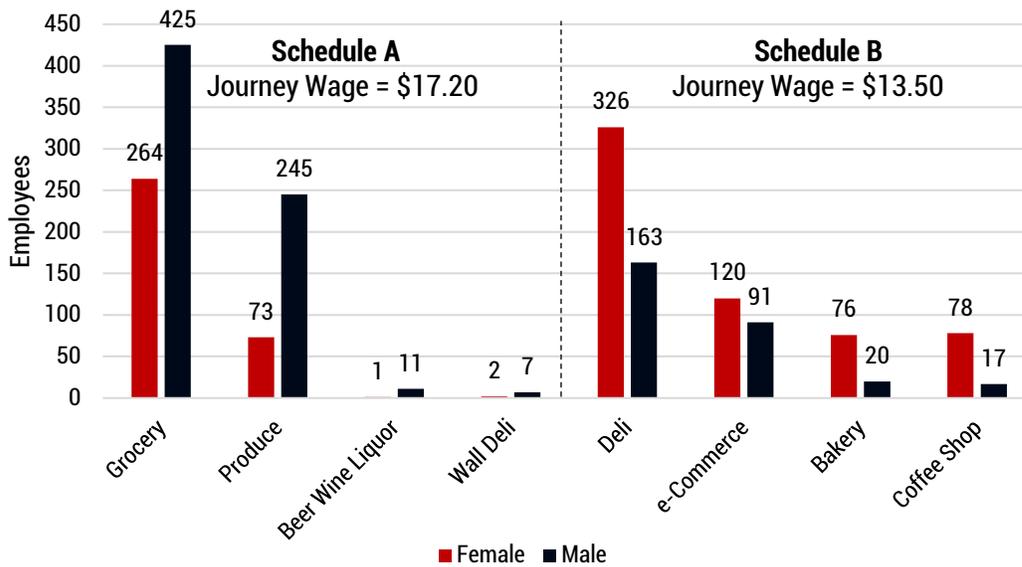
### *Lead Status*

**Female employees are more likely to be leads, but female leads and department heads earn an average of \$1.68/hour less than male leads and department heads.** Female employees are almost twice as likely to serve as leads or department heads as male employees (6.9% vs. 3.6%), but 90.9% of female leads/department heads work in Schedule B positions. For instance, 94.4% of lead baristas in the coffee shop and 83.3% of department leads in e-Commerce are women, while 77.8% of wall deli section heads and head clerks are male, as are 75.0% of grocery department leads and assistant managers. This departmental differentiation based on gender creates a lead pay gap similar to the broader gender pay gap. Overall, women earn \$14.88/hour as leads under the grocery contract while men earn \$16.56/hour, representing a \$1.68/hour lead pay gap.

### *Department and Schedule*

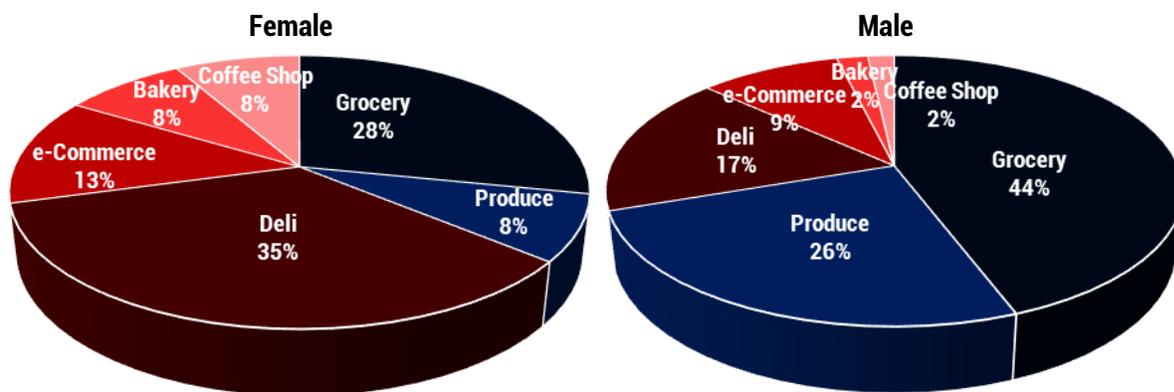
**Women make up the majority of every Schedule B department, while men comprise the majority of every Schedule A department (See Figure 8.).** Overall, 66.9% of Schedule A employees are male while 67.3% of Schedule B employees are female. In the largest Fred Meyer grocery contract department, grocery, men make up 61.7% of all employees. In the second largest department, the deli, women comprise exactly two-thirds (66.7%) of all employees. Men also predominate in the Schedule A produce (77.0%) and beer wine and liquor (91.7%) departments, while women make up large majorities in the Schedule B bakery (79.2%) and coffee shop (82.1%) departments.

**Figure 8. Schedule A and Schedule B Departments by Gender and Journey Wage**



Seven in ten male employees work in Schedule A departments, while over six in ten female employees work in Schedule B departments (See Figure 9.). A little over one-third (34.8%) of female employees work in the Deli, more than one-quarter (28.2%) work in the grocery department and one in eight work in e-Commerce (12.8%). A total of 63.8% of women work in Schedule B departments. Male employees are most likely to work in the grocery (44.2%), produce (25.5%) and deli (17.0%) departments. The share of men working in the produce department is three times larger than the share of women, making the department a key driver of the gender pay gap.

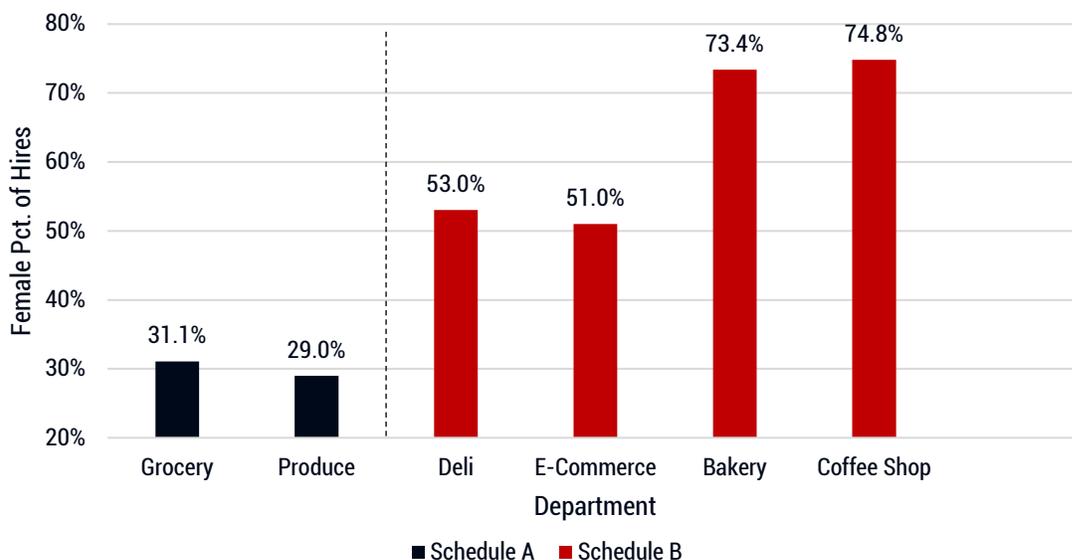
**Figure 9. Gender by Schedule A and Schedule B Department<sup>53</sup>**



In 2018, Schedule A and B new hires into stores in the sample universe followed a similar gender distribution to that of existing employees, with Schedule A new hires more likely to be men, and Schedule B new hires more likely to be women (See Figure 10.). For instance, over the period covered in the data set, 68.9% of new grocery department and 71.0% of new produce department hires in Schedule A were men. In Schedule B, more than half of new deli hires and almost 3 in 4 new bakery and coffee shop hires were

women. This provides evidence that gender differences in hiring may drive the differential gender composition of Schedule A and Schedule B departments ultimately responsible for the gender pay gap.

**Figure 10. Percent Female New Hires by Department (2018)**



*Note: Cold Wall, Wall Deli and Beer Wine & Liquor departments were excluded because of low or non-existent hiring over the period.*

**The percentage of female new hires is similar to the existing percentage of female employees in Schedule A departments, providing evidence against turnover explaining differences in Schedule A gender ratios.** If turnover explains the low percentage of women in Schedule A positions, you would expect the percentage of female new hires to be higher than the overall percentage of women in each department, as women come on but leave at a higher rate than men. However, in the grocery department, 38.3% of current employees are female compared to only 31.1% of new hires, while in produce, the share of existing employees who are female (23.0%) is only slightly lower than the share of new hires (29.0%).

**Although historical data on employment by gender for Fred Meyer departments is unavailable, gendered titles from earlier contracts and data from similar employers indicate that present day Schedule A and B gender ratios follow historical patterns.** Wage scales for “Bakery and Delicatessen Girls” in 1937,<sup>54</sup> references to “Delicatessen Sales girls” in 1962<sup>55</sup> and the bakery’s “Head Sales Girl” position in 1972<sup>56</sup> provide evidence that the bakery and hot food service delicatessen at Fred Meyer were historically female-dominated departments. In a study of 1976 – 1986 data from a unionized grocery store in the Southwest, the produce department was 88.0% male while “other” specialized departments including the bakery were 77.0% female.<sup>57</sup> Another study using 1976 – 1986 data from a different Southwestern unionized supermarket chain found that 94.3% of produce clerks were male while 81.3% of bakery clerks were female.<sup>58</sup> Produce and bakery gender ratios in the 2018 data set follow these historical patterns.

**Female employees earn more than male employees in each individual department, but because of their concentration in lower-wage Schedule B departments, earn lower average wages overall (See Figure 11.).** In Schedule A departments, women earn \$0.09/hour more in grocery and \$0.12/hour more in produce. The gap

is larger in Schedule B departments, where female employees earn \$0.29/hour more in the bakery, \$0.24/hour more in e-Commerce and the deli, and \$0.07/hour more in the coffee shop. Part of this can be explained by the higher percentage of female journeypersons (75.6% vs. 72.3% for men) and higher percentage of women working full-time in both Schedule A and Schedule B departments. Separating employees into journey and apprentice seniority levels, the journey wage difference between men and women is within \$0.05/hour for every department but e-commerce, where journeywomen earn \$0.20/hour more than journeymen. For apprentices, male and female wages are within \$0.05/hour for every department but produce, where the 17 female apprentices earn an average of \$0.69/hour more than their 55 male counterparts. The similarity of female and male average wages by department and substantial differences in gender composition by department provide evidence that the wage gap is driven by the overrepresentation of women in Schedule B departments rather than unequal pay within departments.

**Figure 11. Average Wages by Gender and Gender Composition of Schedule A and B Departments**

Department	Avg. Wage	Female Avg. Wage	Male Avg. Wage	Pct. Female	Pct. Male
<b>Schedule A</b>					
Grocery	\$16.06	\$16.12	\$16.03	38.3%	61.7%
Produce	\$16.24	\$16.33	\$16.21	23.0%	77.0%
<b>Schedule B</b>					
Deli	\$13.31	\$13.39	\$13.15	66.7%	33.3%
e-Commerce	\$12.91	\$13.02	\$12.78	56.9%	43.1%
Bakery	\$12.98	\$13.04	\$12.75	79.2%	20.8%
Coffee Shop	\$12.85	\$12.86	\$12.79	82.1%	17.9%

*Note: The Cold Wall, Wall Deli and Beer, Wine and Liquor departments have been excluded to protect employee confidentiality.*

**Data Summary and Hypothesis**

**Although female and male employees are distributed similarly across age, Fred Meyer experience, seniority, full-time/part-time status and lead status categories, the pay gap persists across almost all sub-groups of these variables.** Men and women have roughly equivalent levels of full-time work and Fred Meyer experience. Female employees have a slightly older age profile, but represent similar numbers of 30 to 49-year-olds where wages are highest. Women are also more, rather than less, likely to have journey level seniority and occupy lead and department head positions. However, the gender pay gap exists for all sub-groups in these categories except 16 to 19-year-old and 70 to 74-year-old employees. Tellingly, the age groups in which the gender pay gap does not exist are also the age groups in which the gender compositions of Schedule A and Schedule B are the most similar. The persistence of the gender pay gap across almost all sub groups provides evidence that other factors are driving the pay gap.

**Male and female employees are grouped into male-dominated, higher-paying Schedule A positions, and female-dominated, lower-paying Schedule B positions, driving the gender pay gap.** Two-thirds (66.9%) of employees in Schedule A departments, where the journey wage is \$17.20/hour, are male, while two-thirds (67.3%) of employees in Schedule B departments, where the journey wage is \$13.50/hour, are female. Holding department and seniority level constant, female employees earn the same or slightly more than their

male counterparts across most sub-groups. These facts provide evidence that the distribution of men and women across Schedule A and Schedule B departments is driving the overall gender pay gap.

## Regression Analysis

**Regression analysis provides a more rigorous method for testing the Schedule A - B hypothesis.** A regression model can measure the estimated impact of gender on hourly wage while holding everything else (i.e. age, Fred Meyer experience, seniority, wage schedule, etc...) constant, creating an apples-to-apples comparison of identical male and female employees. Regression analysis will be used to test the conclusions of the data analysis, that differences in gender ratios by wage schedule, rather than differences in age, Fred Meyer experience, full-time/part-time status, seniority or pay within departments, explain the gender pay gap.

**The SPES regression analysis explores the gender pay gap at three levels of analysis – unadjusted, partially adjusted, and adjusted – to explore the separate impact of factors driving the gap.** The unadjusted regression model looks at the average pay gap between male and female employees without controlling for other variables. The partially adjusted model introduces age, Fred Meyer experience, full-time/part-time status and seniority to examine if differences between male and female employees across these variables affects the pay gap. The adjusted model adds wage schedule, seniority by wage schedule, and lead status to the partial model to develop the most comprehensive explanation of the gender pay gap.

### *Unadjusted*

**The unadjusted regression model attempts to measure the impact on hourly wages of gender alone.** This simple model includes gender as the only variable to explain hourly wages. The results measure the average relationship between being a male or female employee and an employee's hourly wages, and provide an initial estimate for how much of the variation in hourly wages seen between employees is explained by differences in gender (**See Appendix B for a Technical Explanation and Full Results**).

**The unadjusted gender pay gap for Portland-area Fred Meyer grocery contract employees is \$0.92/hour and is statistically significant, but does not explain much of the variation in wages.** A simple linear regression model for the unadjusted pay gap finds that being a male employee is associated with an increase in wages of \$0.92/hour above the \$14.27/hour earned by a female employee. These wage levels (\$14.27/hour for women, \$15.19/hour for men) are equivalent to the average wage for male and female employees in the sample universe. This does not control for seniority, which drives the larger \$1.30/hour average journey wage gap. The estimate for the independent variable, gender, is statistically significant, meaning that it's likely that being a male employee is related in some way to earning higher hourly wages. However, R-squared and Adjusted R-squared for the model, which measure the proportion of variability in hourly wages that can be explained by the model, are very low (less than 0.05). This implies that over 95% of the variability in hourly wages for the sample is explained by other factors in addition to gender.

## Partially Adjusted

The partially adjusted regression model examines the estimated impact of gender when the effect on hourly wages of age, experience, full-time/part-time status and seniority are included in order to examine whether male-female differences in these factors impact the gender wage gap. The SPES data analysis provides evidence that male-female employee differences in variables like age and Fred Meyer experience are not large contributors to the wage gap, so comparing male and female employees with identical age, experience, full-time status and seniority should not have a large impact on the gender pay gap found in the unadjusted model. The partially adjusted regression model tests that theory by looking at the impact of gender on hourly wages holding these variables constant. (See Appendix C for a Technical Explanation and Full Results).

Holding these factors constant, the gender pay gap remains almost exactly the same, indicating that gender differences across the additional variables do not contribute to the gender pay gap. A female employee with the same age, experience, full-time status and seniority as a male employee earns an estimated \$0.92/hour less per hour (See Figure 12.). This is almost identical to the unadjusted estimate, indicating that differences in age, experience, full-time/part-time status and seniority between male and female employees explain almost none of the gender wage gap. In the partially adjusted model, journey level seniority increases earnings by \$2.73/hour, all else equal, and full-time status increases hourly wages by \$0.52/hour, all else equal. The model estimates a positive effect of Fred Meyer experience on hourly wages, with every year experience corresponding to a \$0.07/hour increase in hourly wages, all else equal. The Partially Adjusted model estimates that earnings increase for younger Fred Meyer grocery contract employees, peak at age 38.8, and then begin to decline. However, the included variables explain only 60% of the variation in hourly wages, indicating that other factors need to be included to fully explain the gender pay gap.

Figure 12. Results of Partially Adjusted Regression Model

Variable/Metric	Description	Estimated Impact	Significant?
Intercept	Baseline Hourly Wage	\$9.52/Hour	Yes
Gender	Male	\$0.92/Hour	Yes
FM Experience	Fred Meyer Experience in Years	\$0.07/Hour Per Year	Yes
Age	Employee Age	\$0.13 - \$0.003*Year	Yes
FT Status	Full-Time Status	\$0.52/Hour	Yes
Journey	Journey Level Seniority	\$2.73/Hour	Yes
Adjusted R <sup>2</sup>	Explanatory Power of Model	0.601	

## *Adjusted*

**The adjusted regression model incorporates wage schedule and journey by wage schedule into the model to test the Schedule A – B hypothesis.** These variables should be the most important contributors to an employee's hourly wage under the CBA. Since women are disproportionately working in lower-paid Schedule B positions, this result would explain the gender pay gap. A wage schedule, schedule-seniority interaction term, lead status and work location variable are included to create the most comprehensive model possible.

**The impact of gender should decline with the inclusion of variables for seniority and wage schedule.** The SPES data analysis indicates that the impact of gender should shrink in the adjusted model because the gender pay gap seems to be driven by the gendered distribution of employees across Schedules A and B, rather than differences in pay for men and women both working in the same Schedule A or B departments. Since the gender variable now represents the impact of being male holding wage schedule and seniority level by wage schedule constant (i.e. comparing a male Schedule A journeyperson to a female Schedule A journeyperson), and male and female employees earn similar wages in the same department, the data suggests that the gender variable coefficient should be close to 0.

**Consistent with the results of the data analysis, the gender variable is statistically insignificant in the adjusted regression model, while seniority and wage schedule variables explain a large degree of hourly wage rates.** The adjusted model results support the hypothesis that the gender composition of Schedule A and Schedule B departments explains the gender pay gap, and provides evidence against the idea that individual level discrimination within departments explains the gender pay gap. The estimated impact of being a male employee ( $\beta_1$ ) is close to zero and statistically insignificant, while the impact of seniority and wage schedule are very large and significant, indicating that the Schedule A wage scale's higher pay, especially at the journey level, drives the gender pay gap.

**The estimated impacts of seniority level and wage schedule, meanwhile, are large, significant and consistent with average pay rates in the data. (See Figure 13.)** The adjusted regression model estimates that, holding gender, age, full-time/part-time status, work location and lead status constant, the estimated impact of being a Schedule A journeyperson is an hourly pay rate \$5.49/hour higher than baseline (Schedule B apprentice). Schedule A apprentices earn an estimated \$1.28/hour more than Schedule B apprentices, while Schedule B journeypersons earn an estimated \$2.27/hour more on average than Schedule B apprentices, all else equal. These estimates are close to the averages found in the data, indicating that employee differences in other factors like age or full-time/part-time status play a small role in determining wage rates under the grocery contract.

**Figure 13. Hourly Pay by Seniority Level and Wage Scale – Data and Adjusted Model**

Seniority and Wage Schedule	Average Pay (Data)	Difference from Baseline (Data)	Difference from Baseline (Model)
Schedule A Journey	\$17.22	\$5.60	\$5.49
Schedule A Apprentice	\$12.91	\$1.29	\$1.28
Schedule B Journey	\$13.70	\$2.09	\$2.27
Schedule B Apprentice	\$11.61	\$0.00	--

Note: Baseline refers to the average Schedule B apprentice wage.

**The estimated impact of being a lead or department head is large and significant, consistent with the data.** The impact on hourly wages of being a lead or department head, all else equal, is estimated at \$0.95/hour. This is broadly consistent with the data, where Schedule B leads make an average of \$1.26/hour more than Schedule B journeypersons (there are no apprentice level leads), Schedule A leads make an average of \$0.34/hour more than Schedule A journeypersons, and 76% of leads work in Schedule B.

**Estimates for the impact of other variables like age and full-time/part-time status, while still significant, have decreased substantially (See Figure 14.).** Estimates for the impact of being a full-time employee (\$0.07/hour) are significantly lower than in the partially adjusted model, implying that this variable is not as important after accounting for seniority and wage schedule. The estimated impact of age on hourly wage has also diminished substantially in the adjusted regression model. For instance, the estimated additional hourly wage for an employee going from 23 to 24 years old was \$0.05/hour in the partially adjusted model, but only \$0.01/hour in the adjusted model. This result also suggests that seniority and wage schedule, rather than age, play the most important role in determining wage rates.

**Figure 14. Results of Adjusted Gender Pay Gap Model**

Variable/Metric	Description	Estimated Impact	Significant?
Intercept	Baseline Hourly Wage	\$11.22/Hour	Yes
Gender	Male	\$0.00/Hour	No
Age	Employee Age	\$0.02 - \$0.0005*Year	Yes
FT Status	Full-Time	\$0.07/Hour	Yes
Portland	Portland Store	\$0.05/Hour	Yes
Journey	Journey Level Seniority	\$1.93/Hour	Yes
Schedule	Schedule A Employee	\$1.28/Hour	Yes
SchedXJourney	Schedule A Journey Employee	\$2.27/Hour	Yes
Lead	Lead or Department Head	\$0.95/Hour	Yes
<b>Adjusted R<sup>2</sup></b>	<b>Explanatory Power of Model</b>	<b>0.9521</b>	

## *Regression Analysis Summary*

**The SPES regression analysis supports the hypothesis that the gender pay gap among employees working under the Portland-area Fred Meyer grocery contract is driven by differences in the composition of Schedule A and B departments rather than other variables.** The partially adjusted regression model controls for age, experience, full-time/part-time status and seniority and finds that the male-female average wage gap remains the same holding all of these factors constant. This provides evidence that differences between men and women across these variables explain none of the gender pay gap. Seniority, wage schedule and lead status have huge impacts on hourly wage in the adjusted model, indicating that these variables determine hourly wages under the grocery contract. The fact that women and men are distributed unequally across Schedules A and B, and that these wage Schedules (rather than other variables) have the largest impact on hourly wages, provides strong evidence supporting the Schedule A-B hypothesis.

## **Findings**

**The results of the data and regression analysis suggest that the hiring of men into Schedule A and women into Schedule B positions is responsible for the gender pay gap at Fred Meyer.** A majority of Schedule A new hires (69.2%) and current employees (66.9%) are male, while a majority of Schedule B new hires (59.0%) and current employees (67.3%) are female. The journey rate of pay in Schedule A is \$17.20/hour while the journey rate of pay in Schedule B is \$13.50/hour, leading to an average rate of pay for Schedule A employees (\$16.14/hour) that's more than \$3.00/hour higher than the average rate of pay for Schedule B employees (\$13.13/hour). The SPES data and regression analysis show that this pay differential, combined with unequal gender ratios between the Schedules, drives the \$3.70/hour median wage and \$1.30/hour journey wage gap between male and female employees under Fred Meyer's Portland-area grocery contract.

**Male-female differences in age, experience and full-time/part-time status explain almost none of the gender pay gap.** Men and women have similar or identical levels of Fred Meyer experience (6.3 years) and rates of full and part time work (22.4% of male and 21.6% of females work full time), while female employees have an older average age than male employees (39.8 vs. 34.0-years-old). The partially adjusted regression results indicate that these variables contribute almost nothing to the gender pay gap. The adjusted regression analysis results indicate that none of these variables has a major impact (>\$0.10/hour) on hourly wages independent of seniority by wage schedule.

**Female employees working under Fred Meyer's grocery contract would receive a substantial increase in hourly, annual and lifetime income if the Schedule A – Schedule B wage gap was closed.** If all Schedule B employees were paid the same as Schedule A employees, the average wage for women in Schedule B would rise \$2.98/hour from \$13.20/hour to \$16.18/hour.<sup>59</sup> This higher hourly pay rate for Schedule B women would translate into an estimated \$3,099 to \$6,198 in additional annual earnings per female Schedule B employee (assuming 1,040 to 2,080 hours worked). For the median Schedule B female employee, a 37-year-old deli clerk, this translates into additional lifetime earnings of \$89,867 to \$179,734 between the present day and retirement.<sup>60</sup> Schedule B journeywomen, who would earn \$3.70/hour more if Schedule B wages rose to Schedule A levels, would experience an even larger change. A 25-year-old journeywoman in the bakery or

coffee shop would earn \$3,848 to \$7,696 more per year for the remainder of her 40-year career, translating into \$153,920 to \$307,840 in additional lifetime earnings.<sup>61</sup>

## Possible Explanations and Further Research

**These results raise two theoretical questions that, while outside the scope of the SPES, are important to consider – why are women more likely to be employed in lower-paid Schedule B positions than higher-paid Schedule A positions, and why are female-dominated Schedule B positions paid less than male-dominated Schedule A positions.** It may be the case that hiring managers place new employees into gendered roles at the time of hire. The employer may also relegate women to lower paid Schedule B positions on hire because women have fewer higher paid employment opportunities or are less likely to quit those positions. It may be the case that Schedule A positions generate higher value for the employer than Schedule B positions, and that other factors drive differences in male and female preferences in employment. Schedule A positions might have other attributes – higher difficulty, less schedule flexibility – that require higher compensation to retain staff. It may also be the case that managers engage in individual level wage discrimination, paying similarly qualified men and women different rates based upon gender. Each of these potential explanations is explored below and evidence is provided where available and relevant.

**Hiring managers may place women and men into gendered roles that correspond to Schedule A and Schedule B work.** Managers may be more likely to place men in Schedule A positions stocking grocery shelves and lifting heavy produce boxes, and women in food preparation and customer service positions in the bakery or deli. Stanford sociologist Cecilia Ridgeway argues that “when the job at stake is one that is predominantly filled by one sex or the other, as many jobs are, then the stereotype of sex tends to frame the image of the ideal hire for the job.”<sup>62</sup> Consciously or unconsciously, hiring managers may be more likely to place female-candidates in female-dominated departments like the bakery or coffee shop because they’re more likely to “fit in” or conform to expectations for the job role. Fred Meyer disputes this, asserting that “applicants choose the job for which they want to apply – this isn’t decided by management” and that “gender is never a factor in our hiring decisions or used to determine the roles for which an associate can apply.”<sup>63</sup> Assessing *why* female applicants are more likely to be hired into Schedule B departments is beyond the scope of the SPES, but a comparison of the percentage of male and female applicants who request to work in each department compared to the percentage of men and women actually hired into each department could provide evidence for or against this theory.

**Grocery employers may use their market power to place women in lower-wage positions because women have fewer high-paying alternatives.** In their 2010 study, Ransom and Oaxaca built a supermarket labor model where employer monopsony<sup>64</sup> power, combined with gender differences in the elasticity of labor supply,<sup>65</sup> could explain “conscious wage discrimination by the employer” resulting in a gender “wage difference of between 9% and 20%.”<sup>66</sup> The study used 1970s and 1980s data from a unionized supermarket chain in the Southwest to examine how different wage levels affected the rate at which female and male employees quit to look for other jobs. The authors found that female employees were less likely to quit low-wage jobs than male employees, implying that “the firm could reduce turnover by placing men in the high-wage jobs and women in the low-wage jobs since the elasticity of the quit rate with respect to the wage is higher for men.”<sup>67</sup> The study finds a “gender wage gap for the firm ranged from 9% to 11%” and concludes

that “monopsonistic discrimination may be one reason for the wage differences between men and women in this industry.”<sup>68</sup> Data to test this theory is also outside the scope of the SPES.

**The employer may be more likely to place female employees in Schedule B departments because of other factors.** It may be the case that women are more likely than men to request Schedule B positions, or that same-gender social networks play a role in increasing the number of male applicants to male-majority departments and female applicants to female-majority departments. However, none of these theories explain why female-dominated Schedule B positions are paid less than male-dominated Schedule A positions.

**The SPES analysis provides some evidence against the theory that direct gender discrimination in wages is causing the gender pay gap in Fred Meyer stores.** The preponderance of sex discrimination lawsuits and settlements during the 1970s, 1980s and 1990s suggest that gender discrimination, especially with regards to promotions and occupational segregation, has been a historical problem in the grocery industry. George Washington University Law Professor Michael Selmi reviewed sex discrimination lawsuits and settlements from the 1980s and 1990s and found that “despite the bevy of lawsuits, it is... clear that the pattern of discrimination within the grocery industry remains entrenched [in 2005], some twenty years after the initial [sex discrimination] suits were filed.”<sup>69</sup> There has also been evidence of gender discrimination by management in setting wages in other industries. A 1999 study using a dataset of 199,558 workers employed at 16,144 manufacturing plants in the U.S. found that “on average, women’s wages [in manufacturing] fall short of men’s by considerably more than can be explained by their lower marginal productivity. This is consistent with the standard wage discrimination hypothesis.”<sup>70</sup> However, Schedule A and B employees at Fred Meyer operate under a union contract that ensures minimum wage levels based on seniority, enforced by union representatives. The SPES econometric analysis finds that wage schedule and seniority have by far the largest impact on an employee’s hourly rate, consistent with the Schedule A – B hypothesis, while the impact of gender on wage rate within a given wage schedule becomes insignificant, providing evidence against the idea that individual wage discrimination for non-management employees under the grocery contract (rather than differences in Schedule A and B gender composition) creates the gender pay gap.

**Schedule A positions may have higher marginal productivity than Schedule B positions leading to higher wage rates, although this is impossible to prove with current data.** The standard labor market model posits that wages for an occupation are equal to the marginal product of labor (price multiplied by output) produced by an additional employee. It may be the case that employees in produce and grocery produce more valuable output for Fred Meyer than employees in the bakery or deli, which would increase employer demand and boost wages for those occupations. Unfortunately, data for the value of output per employee by department is unavailable.

**However, Schedule B departments appear to have comparable or higher gross profit margins, which could translate to higher, not lower, marginal product of labor.** Kroger CFO Mike Schlotman said in 2017 that “produce, meat, seafood, the deli, the bakery, the prepared foods – all of those carry higher gross margins than grocery.”<sup>71</sup> A 2010 analysis of the US Fresh Produce Value Chain found that the deli has a higher gross

margin and adjusted gross profit as a percentage of weekly sales than produce.<sup>72</sup> An article in the Houston Chronicle found that “the bakery and deli... are the higher-margin areas. Bakeries are the highest, at about 40 percent, and delis have about 38-percent margins overall, so these can provide a large percentage of grocery store profits.”<sup>73</sup> While departmental profit-margins don’t necessarily determine the value of workers’ marginal product, they provide evidence that employees in the deli and bakery may not be adding less value than grocery and produce.

**Additionally, Schedule A and B wage scales are identical for early levels of seniority and then diverge dramatically, which would imply that Schedule A positions are only perceived as more productive after employees work for a number of years.** The Schedule A-B wage gap is zero for the first 6,240 hours of seniority when the pay steps are identical (\$11.35/hour to \$11.60/hour). The gap then increases over the next 2,600 hours before reaching a maximum gap (\$17.20/hour vs. \$13.50/hour) as employees reach journey level seniority. It is unclear why productivity would be the same for Schedule A and B employees for the first 3 – 6 years of employment, and then diverge dramatically over the next 1 – 2 years of employment (assuming 1040 – 2080 hours worked per year).

**It may be that other aspects of Schedule A and Schedule B positions determine the differences in wage rates.** Fred Meyer argues that “Schedule A and B are only used to outline specific roles in stores – these roles pay differently based on several variables, for example, job difficulty, scheduling requirements, etc.”<sup>74</sup> It may be the case that grocery and produce positions are more challenging, more physically demanding, or more difficult in another way that requires the employer to provide higher compensation to recruit employees. However, both Schedule A departments like grocery and Schedule B departments like the deli require employees to lift product. It’s hard to assess the exact requirements of each position because data for occupational difficulty is unavailable. It may also be the case that Schedule B positions provide more scheduling flexibility that employees trade for a lower wage. Employees in Schedule A are more likely to work full-time (29.1% of Schedule A vs. 13.8% of Schedule B employees), but in a grocery industry with shrinking hours, part-time schedules may be considered a negative rather than positive aspect of a position.

**Data and regression analyses allow for measurement of the gender pay gap at Fred Meyer and an examination of the factors contributing to the gap, but additional research is required to determine why disparities in employment by gender exist across Schedule A and B and how they’ve contributed to differential pay.** The SPES analysis provides strong evidence that differences in the distribution of male and female employees across higher-paid, male-majority Schedule A and lower-paid, female-majority Schedule B departments drives the gender pay gap. However, further research is needed to understand what drives the differences in pay for Schedule A and B positions, and what factors contribute to differences in Schedule A and B gender ratios in the first place.

## Conclusion

**The gender pay gap for Portland-area grocery contract employees at Fred Meyer is caused by the overrepresentation of women in lower-paid, historically-female Schedule B departments.** Since 1937, Fred Meyer departments like the bakery have employed women working under lower wage scales than male-dominated departments like grocery and produce. While explicit references to gender were removed from contracts in the 1970s and 1980s, gendered employment in historically female departments remains, along with lower pay. It's unclear why employees in Schedule B departments are paid less, and why Schedule B departments are more likely to hire and employ women. However, the pay gap between Schedule A and B wage scales has a profound effect on the wages of female employees, with Schedule B women earning an estimated \$3,099 to \$6,198 less per year on average than they would if Schedule B wages were raised to Schedule A levels. In conclusion, the SPES finds a substantial median wage gap of \$3.70/hour between male and female Portland-area grocery-contract employees, and a \$1.30/hour gap between male and female journeypersons, and this gender pay gap is driven almost entirely by differences in the grocery contract's Schedule A and B wage scales and gender ratios.

## Appendices

### Appendix A. Fred Meyer Stores Included in the SPES

Store Name	Address	City	State	Zip Code
Beaverton	11425 SW Beaverton Hillsdale Hwy	Beaverton	OR	97005
Burlingame	7555 SW Barbur Blvd	Portland	OR	97219
Clackamas	16301 SE 82Nd Dr	Clackamas	OR	97015
Cornelius	2200 E Baseline St	Cornelius	OR	97113
Division	14700 SE Division St	Portland	OR	97236
Gateway	1111 NE 102nd Ave	Portland	OR	97220
Glisan	6615 NE Glisan St	Portland	OR	97213
Gresham	2497 SE Burnside Rd	Gresham	OR	97080
Happy Valley	17005 SE Sunnyside Rd.	Happy Valley	OR	97015
Hawthorne	3805 SE Hawthorne Blvd	Portland	OR	97214
Hillsboro	6495 SE Tualatin Valley Hwy	Hillsboro	OR	97123
Hollywood	3030 NE Weidler St	Portland	OR	97232
Interstate	7404 N Interstate Ave	Portland	OR	97217
Johnson Creek	8955 SE 82nd Ave	Portland	OR	97086
Milwaukie	14700 SE Mcloughlin Blvd	Milwaukie	OR	97267
Oregon City	1839 Molalla Ave	Oregon City	OR	97045
Peninsula	6850 N Lombard St	Portland	OR	97203
Raleigh Hills	7700 SW Beaverton Hillsdale Hwy	Portland	OR	97225
Stadium	100 NW 20th Pl	Portland	OR	97209
Sunset	7355 NE Imbrie Dr	Hillsboro	OR	97124
Tigard	11565 SW Pacific Hwy	Tigard	OR	97223
Tualatin	19200 SW Martinazzi Ave	Tualatin	OR	97062
Walker Rd.	15995 SW Walker Rd	Beaverton	OR	97006
Wilsonville	30300 SW Boones Ferry Rd	Wilsonville	OR	97070
Wood Village	22855 NE Park Ln	Wood Village	OR	97060

## Appendix B. Technical Explanation and Full Results for the Unadjusted Regression Model

### Unadjusted Regression Model

The model's independent variable (gender) is a dummy variable with a value of 1 if the employee is male and 0 if the employee is female. The unadjusted regression model equation is:

$$\text{Hourly Wage} = \beta_0 + \beta_1 \times \text{Gender}$$

The intercept ( $\beta_0$ ) represents the estimated value of hourly wage if gender = 0 i.e. if the employee is female ( $\beta_0 + \beta_1 \times 0 = \beta_0$ ). The intercept plus the coefficient on the gender variable ( $\beta_0 + \beta_1$ ) represented the estimated value of hourly wage if gender = 1 i.e. the employee is male ( $\beta_0 + \beta_1 \times 1 = \beta_0 + \beta_1$ ). The difference between the two represents the unadjusted pay gap, which equals  $\beta_1$  ( $\beta_0 + \beta_1 \times 1 - \beta_0 + \beta_1 \times 0 = \beta_0 + \beta_1 - \beta_0 = \beta_1$ ). The expectation is that being male is correlated with higher hourly wages, so  $\beta_1$  (the wage premium for male employees) should be positive and statistically significant.

### Model Results

**Equation: Hourly Wage =  $\beta_0 + \beta_1 \times \text{Gender}$**

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
Intercept ( $\beta_0$ )	14.27378	0.06990	204.201	<2e-16 ***
Gender ( $\beta_1$ )	0.91966	0.09786	9.397	<2e-16 ***

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Significance codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residuals:

Min	1Q	Median	3Q	Max
-3.8434	-1.6934	-0.7738	2.0066	5.7762

Residual standard error: 2.143 on 1917 degrees of freedom

Multiple R-squared: 0.04404, Adjusted R-squared: 0.04354

F-statistic: 88.31 on 1 and 1917 DF, p-value: <2.2e-16

## Appendix C. Technical Explanation and Full Results for the Partially Adjusted Regression Model

### Partially Adjusted Regression Model

Gender, FT Status and Journey are all dummy variables, with gender equal to 1 for male and 0 for female, FT Status equal to 1 if the employee works full-time and 0 if the employee works part-time, and Journey equal to 1 if the employee is a journeyman and 0 if they are an apprentice. FMExperience is a continuous variable measuring years' experience at Fred Meyer. Age is a polynomial variable broken into two terms – Age and Age<sup>2</sup> – which captures the non-linear relationship between age and earnings. The partially adjusted regression model equation is:

$$\text{Hourly Wage} = \beta_0 + \beta_1 \times \text{Gender} + \beta_2 \times \text{Age} + \beta_3 \times \text{Age}^2 + \beta_4 \times \text{FTStatus} + \beta_5 \times \text{FMExperience} + \beta_6 \times \text{Journey} +$$

The coefficients on Gender ( $\beta_1$ ), FTStatus ( $\beta_4$ ) and Journey ( $\beta_6$ ) represent the estimated impact on hourly earnings if an employee is male, full-time or has journey level seniority, respectively. The coefficient on FMExperience,  $\beta_5$ , represents the estimated additional hourly wage for a one-year increase in years' experience. The interpretation of Age includes the coefficients on both Age and Age<sup>2</sup>. A one-unit increase in age leads to an estimated  $\beta_2 + 2 * \beta_3 * \text{Age}^{75}$  increase in hourly wages, with  $\beta_2$  predicted to be positive and  $\beta_3$  predicted to be negative.

### Model Results

**Equation: Hourly Wage =  $\beta_0 + \beta_1 \times \text{Gender} + \beta_2 \times \text{Age} + \beta_3 \times \text{Age}^2 + \beta_4 \times \text{FTStatus} + \beta_5 \times \text{FMExperience} + \beta_6 \times \text{Journey}$**

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
Intercept( $\beta_0$ )	9.5247556	0.2606165	36.547	<2e-16 ***
Gender( $\beta_1$ )	0.9212065	0.0647719	14.222	<2e-16 ***
Age( $\beta_2$ )	0.1343126	0.0141175	9.514	<2e-16 ***
Age <sup>2</sup> ( $\beta_3$ )	-0.0017305	0.0001626	-10.646	<2e-16 ***
FTStatus( $\beta_4$ )	0.5202151	0.0885858	5.872	5.05e-09 ***
FMExp( $\beta_5$ )	0.0656427	0.0049977	13.135	<2e-16 ***
Journey( $\beta_6$ )	2.7303528	0.0806113	33.871	<2e-16 ***

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Significance codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residuals:

Residuals:

Min	1Q	Median	3Q	Max
-4.0955	-1.0843	-0.0608	1.2129	5.0383

Residual standard error: 1.384 on 1912 degrees of freedom

Multiple R-squared: 0.6023, Adjusted R-squared: 0.601

F-statistic: 482.6 on 6 and 1912 DF, p-value: <2.2e-16

## Appendix D. Technical Explanation and Full Results for the Adjusted Regression Model

### Adjusted Regression Model

Gender, FT Status and Journey are dummy variables, and Age is a polynomial variable, with identical definitions to the partially adjusted model. Portland is a dummy variable with a value of 1 for employees working within Portland city-limits and 0 for employees working in the Portland suburbs. Schedule is a dummy variable which equals 1 for Schedule A employees and 0 for Schedule B employees. Since journey wages are set by each wage schedule, ScheduleXJourney is an interaction variable that takes a value of 1 for journeypersons on Schedule A and 0 for Schedule B journeypersons and Schedules A and B apprentice employees. Lead is a dummy variable equal to 1 for lead or department head employees, and 0 for non-leads. FMEExperience has been removed. Department was not included because department wages scales are set by their wage schedule, meaning that department and wage schedule are highly correlated. Independent variables should not be too highly correlated with other independent variables or it introduces problems into the regression model. The adjusted regression model equation is:

$$\text{Hourly Wage} = \beta_0 + \beta_1 \times \text{Gender} + \beta_2 \times \text{Age} + \beta_3 \times \text{Age}^2 + \beta_4 \times \text{FTStatus} + \beta_5 \times \text{Portland} + \beta_6 \times \text{Journey} + \beta_7 \times \text{Schedule} + \beta_8 \times \text{ScheduleXJourney} + \beta_9 \times \text{Lead}$$

The interpretations of Gender, Age, Age<sup>2</sup> and FTStatus are similar to the partially adjusted model with an important twist – the coefficients for each variable are now taking into account seniority level and wage schedule. For instance, Gender coefficient  $\beta_1$  now equals the change in hourly wage for being a male employee *with the same seniority level, wage schedule, work location and lead status*, in addition to age, full-time/part-time status and seniority, as a similarly situated female employee. Similarly, full-time status' coefficient  $\beta_4$  should now be interpreted as the impact of working full-time for a person with the same gender, age, full-time/part-time status, *seniority level, wage schedule, work location and lead status*. Lead's coefficient  $\beta_9$  represents the estimated average impact on hourly wages of holding a lead position in any department, all else equal. The coefficients for seniority level and wage schedule provide estimates for the impact on hourly wages of four combinations:

Schedule A Journey:  $\beta_6 + \beta_7 + \beta_8$

Schedule A Apprentice:  $\beta_7$

Schedule B Journey:  $\beta_6$

Schedule B Apprentice: Journey and Schedule both equal 0, so this combination serves as the baseline.

## Model Results

**Equation: Hourly Wage =  $\beta_0$  +  $\beta_1$ \*Gender +  $\beta_2$ \*Age +  $\beta_3$ \*Age<sup>2</sup> +  $\beta_4$ \*FTStatus +  $\beta_5$ \*Portland +  $\beta_6$ \*Journey +  $\beta_7$ \*Schedule +  $\beta_8$ \*ScheduleXJourney +  $\beta_9$ \*Lead**

**Coefficients:**

	Estimate	Std. Error	t value	Pr(> t )
Intercept( $\beta_0$ )	11.2155975	0.0936979	119.700	<2e-16 ***
Gender( $\beta_1$ )	0.0000315	0.0238284	0.001	0.9989
Age( $\beta_2$ )	0.0217064	0.0049796	4.359	0.0000138***
Age <sup>2</sup> ( $\beta_3$ )	-0.0002455	0.0000577	-4.254	0.0000220***
FTStatus( $\beta_4$ )	0.0701559	0.0317226	2.212	0.0271 *
Portland( $\beta_5$ )	0.0481309	0.0220934	2.179	0.0295 *
Journey( $\beta_6$ )	1.9334434	0.0375946	51.429	<2e-16 ***
Schedule( $\beta_7$ )	1.2814665	0.0434885	29.467	<2e-16 ***
SchedXJour( $\beta_8$ )	2.2723224	0.0509892	44.565	<2e-16 ***
Lead( $\beta_9$ )	0.9529827	0.0552466	17.250	<2e-16 ***

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Significance codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

**Residuals:**

Min	1Q	Median	3Q	Max
-1.6164	-0.0975	-0.0154	0.0656	3.7291

Residual standard error: 0.4794 on 1909 degrees of freedom

Multiple R-squared: 0.9524, Adjusted R-squared: 0.9521

F-statistic: 4240 on 9 and 1909 DF, p-value: < 2.2e-16

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- <sup>29</sup> Collective Bargaining Agreement between Retail Grocery, Bakery Sales Counter, Snack Bar, and Non-Food Employers and Retail Clerks Union, AFL-CIO, Local 201, October 1, 1972.
- <sup>30</sup> Collective Bargaining Agreement between Allied Employers, Inc. and Retail Clerks Union, United Food and Commercial Workers, AFL-CIO, Local 1105, April 1, 1980.
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- <sup>52</sup> Discrepancy of \$0.01/hour between average wages and pay gap due to rounding.
- <sup>53</sup> Cold Wall, Wall Deli and Beer, Wine and Liquor because of low sample sizes.
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- <sup>58</sup> Ransom, M., & Oaxaca, R. (2010). New Market Power Models and Sex Differences in Pay. *Journal of Labor Economics*, 28(2), 267-289.
- <sup>59</sup> Assumes that Schedule B journeypersons earn the average wage of Schedule A journeypersons, and Schedule B apprentices earn the average wage of Schedule A apprentices.
- <sup>60</sup> These represent the lower and higher estimates of nominal annual earnings for the remainder of the employee's career, assuming a retirement age of 65 and 1,040 to 2,080 hours worked per year. The net present value of these sums is \$48,038 to \$96,075 in 2019 dollars assuming a discount rate equal to the August 2019 prime rate of 5.25%.
- <sup>61</sup> These represent the lower and higher estimates of nominal annual earnings for the remainder of the employee's career, assuming a retirement age of 65 and 1,040 to 2,080 hours worked per year. The net present value of these sums is \$67,677 to \$135,353 in 2019 dollars assuming a discount rate equal to the August 2019 prime rate of 5.25%.
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- <sup>64</sup> Monopsony refers to an employer's ability to set the wage for its workers, rather than having to pay the market rate as it would in a perfectly competitive labor market.
- <sup>65</sup> Elasticity of labor supply refers to the percentage increase/decrease in the supply of workers for a given percentage increase/decrease in the wage rate. For instance, if 20% of workers quit after a 10% pay cut, then the elasticity of labor supply would be  $-20\%/-10\% = 2$ .
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<sup>75</sup>  $\beta_2 + 2 * \beta_3 * \text{Age}$  represents the derivative of hourly wages with respect to age.