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**THE MINIMUM WAGE AND
WASHINGTON COMPETITIVENESS
IN THE POTATO INDUSTRY**

By

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THE MINIMUM WAGE AND WASHINGTON COMPETITIVENESS IN THE POTATO INDUSTRY

R. Thomas Schotzko and David Holland¹

INTRODUCTION

Perceptions of the effects of Washington's minimum wage law appear to be conditioned by the location of the observer. In western Washington, one might get the impression that there are few minimum wage jobs. On the other hand, minimum wage jobs in eastern Washington are a larger proportion of total employment. While the commercial/industrial characteristics of the two regions are different, the characteristics of the labor markets play a major role in determining the numbers of jobs filled at minimum wage rates.²

According to Washington State Employment Security Department data, about one-half of all minimum wage jobs are in retail sales and Accommodation and Food services. Because of the distribution of the population of the state, most of those jobs would be in western Washington. The third largest source of minimum wage jobs is in agriculture. That industry is predominantly east of the Cascades, although there is significant agricultural activity in the Skagit valley of northwest Washington.

The greater amount of economic activity in western Washington creates a greater demand for employees against which the traditional minimum wage firms must compete. This competition pushes wages up above the minimum wage rate for many jobs. In economic jargon the quantity of labor supplied in western Washington is insufficient to keep the market-clearing, or equilibrium, wage rate close to or at the legal minimum rate. Whether the difference in labor markets is due to physical distance, social factors, or some other characteristics is unknown. The supply of labor in eastern Washington appears to be greater relative to the demand for those workers, except during some short periods of time when labor intensive crops are being harvested.

This report will provide some information and observations on the effects of the minimum wage rate in eastern Washington with particular reference to firms packing potatoes for the fresh market, a typically labor intensive activity. In 1998 Washington voters passed an initiative tying the minimum wage rate to the Federal U.S. Consumer Price Index for Urban Wage Earners and Clerical Workers. As a result, the minimum wage in Washington has increased every year since its passage.³

¹ Tom Schotzko is an Extension Economist and Dave Holland is a Professor of Agricultural Economics at the School of Economic Sciences, Washington State University.

² See for example, Glenn, Kirsta. [Minimum Wage Workers in Washington State](http://www.workforceexplorer.com/admin/uploadedPublications/988_MinimumWageArticle.pdf). Washington State Employment Security. Labor Market and Economic Analysis. Olympia, WA. Undated.

³ Ibid.

The initial interest in conducting this project was to evaluate the loss of competitiveness by Washington potato packers relative to other potato growing areas that are not confronted with an escalating minimum wage rate. That aspect will be examined here. However, during the course of this project other facets of the effects of rising minimum wages were identified and will also be discussed as they are pertinent to rural development. Each of these effects is due to the singular nature of agriculture, its market characteristics, and the rural location of production and packing.

That agriculture in Washington is generally a low wage employer is a commonly accepted notion. However, the validity of that notion varies significantly from one segment of the industry to another. Further, focusing only on production agriculture ignores the impact of the cost structure that exists among first handlers, particularly those first handlers that supply fresh fruits and vegetables.

Over time dryland agriculture has successfully replaced most of the labor once employed in the production of grain. Using today's technology, less than one hour of labor is used to grow and harvest an acre of grain in eastern Washington.⁴ A similar statement can be made about most of irrigated crops. For potatoes, the most recent estimate available is from 2001 and indicates that slightly over 4 hours of labor are needed per acre.⁵ This is a significant decline from the 8.11 hours needed per acre of potatoes in the mid 1980s.⁶ These labor saving achievements in production agriculture, while softening the impact of escalating wage rates and helping producers remain competitive, do not completely protect growers from the impact on costs of increasing wage rates.

In the fresh market system, labor costs are much more significant at the first handler level. Grading and packing have historically been done by hand. While some automation has occurred, labor has continued to be a critical input in this process.

In the state of Washington, packers/shippers do not typically purchase the crops they pack. This is true in the tree fruit industry in Washington as well as in potatoes. Packers sell their services to growers and the charges for those services are taken out of the sales revenue generated when the potatoes are sold. Growers are the residual recipients of the dollars generated by the sale of the packed product to wholesalers and retailers. That sale value is then reduced by every participant in the chain between growers and buyers before growers receive their payment. Under normal conditions, packers will charge growers for the packing and sales services they provide, but packers know that if growers suffer losses on the crop they may be forced out of the industry. Hence, packers may be willing to share some of the loss in order to keep growers who need their services in business.

⁴ The enterprise budgets produced by the School of Economic Sciences at Washington State University usually offer estimates of the labor hours needed per acre. A variety of examples are available at <http://www.farm-mgmt.wsu.edu/nonirr.htm>.

⁵ Hinman, Herbert, Gary Pelter and Erik Sorensen. 2001 Cost of Producing Processing and Fresh Potatoes under Center Pivot Irrigation Columbia Basin, Washington. EB 1906. Cooperative Extension Washington State University. Pullman, WA 2001.

⁶ Bauscher, Lonny D, et al. 1984-85 Cost of Producing Crops under Center Pivot Irrigation, Columbia Basin, Washington. EB1291, Cooperative Extension. College of Agriculture. Washington State University. Pullman, WA. July, 1984.

In agricultural market systems there is seldom any opportunity to pass increased costs along to the buyer. Hence, imbalances of any sort affecting costs of one group of growers relative to other groups create a disadvantage (or reduce an advantage). When wage rates are pushed up artificially without regard to labor market supply and demand conditions, i.e. by minimum wage laws, businesses paying the higher wage rates have a harder time competing with firms that do not have to pay the higher rates. Growers in Washington face higher wage costs than their competitors in other potato growing regions (Oregon, Idaho, North Dakota, California, Colorado, and some of the Canadian provinces) but they receive comparable prices for their crop.

The purpose of this report is to provide a brief discussion of the impacts of minimum wage increases on the potato packing industry in Washington, including how competitiveness is affected and how local communities may be impacted.

MINIMUM WAGE RATES

Washington's minimum wage rate, compared to other potato growing areas offering significant competition to the Washington industry, has generally been higher for the past 16 years. Some other states have occasionally had higher minimum wage rates, but not consistently. Oregon has had the second highest minimum wage, exceeding Washington's in six of the past 16 years. California had a higher rate in one of the past 16 years.

Minimum wage rate data were also obtained for three Canadian provinces, British Columbia, Alberta, and Manitoba. British Columbia actually had a minimum wage rate, in U.S. dollars, that exceeded Washington's minimum in 4 of the sixteen years while Manitoba had a minimum above Washington's in one year.

Annual minimum wage rates for each of the selected states and provinces for the 16 year period, 1990 – 2005 are presented in Table 1. Canadian rates were converted to U.S. dollars using exchange rates existing in January of each year.

In addition to having the highest minimum wage rate among potato producing areas, the Washington rate has also been growing faster than any of the other states/provinces. The Washington minimum wage rate increased 72.9% between 1990 and 2005. Oregon has had the second fastest growth rate during this time period at 70.5%, while British Columbia's rate was third highest at 62.1%. The U.S. federal minimum wage rate is the minimum rate in effect in Idaho, Colorado, and North Dakota. The federal minimum wage rate grew 53.7% over that time period. Minimum wage rates in the Canadian provinces of Alberta and Manitoba have had the slowest growth, at 26% and 43.3% respectively. Although California has historically been viewed as a higher wage state, its minimum wage has only grown 58.8% in the past 16 years.

Table 1: Minimum Wage by Potato Producing State/Province.

Year	WA	ID	OR	CA	CO	ND	BC	AB	MB
Nominal \$									
1990	4.25	3.35	4.25	4.25	3.35	3.35	4.10	3.89	4.06
1991	4.25	3.80	4.75	4.25	3.80	3.80	4.31	3.88	4.05
1992	4.25	4.25	4.75	4.25	4.25	4.25	4.33	3.90	4.33
1993	4.25	4.25	4.75	4.25	4.25	4.25	4.33	3.78	3.78
1994	4.90	4.25	4.75	4.25	4.25	4.25	4.28	3.57	3.57
1995	4.90	4.25	4.75	4.25	4.25	4.25	4.28	3.57	3.57
1996	4.90	4.75	4.75	4.75	4.75	4.75	5.13	3.67	3.96
1997	4.90	4.75	5.50	4.75	4.75	4.75	5.11	3.65	3.94
1998	5.15	5.15	6.00	5.15	5.15	5.15	4.90	3.50	3.78
1999	5.70	5.15	6.50	5.75	5.15	5.15	4.67	3.53	3.53
2000	6.50	5.15	6.50	5.75	5.15	5.15	5.19	4.08	4.15
2001	6.72	5.15	6.50	6.25	5.15	5.15	5.08	3.94	4.01
2002	6.90	5.15	6.50	6.75	5.15	5.15	5.03	3.71	3.93
2003	7.01	5.15	6.90	6.75	5.15	5.15	5.09	3.75	4.13
2004	7.16	5.15	7.05	6.75	5.15	5.15	6.17	4.55	5.20
2005	7.35	5.15	7.25	6.75	5.15	5.15	6.65	4.90	5.82

Canadian wages are in current year U.S. dollars, converted using the exchange rate prevailing at the beginning of the year.

Source: See Appendix Table 2.

*Note that Idaho, Colorado, and North Dakota have the same minimum wage for this time period.

The effect of the automatic increases is easily observable in Table 1. While the Washington rate will continue to grow at a somewhat regular rate, increases in the minimum wage rates of other states and provinces will likely be more irregular as past patterns portray.

The difference in the growth rate is that Washington's increases in the minimum wage rate are caused by the CPI, while in other states the increases are mandated legislatively. It should be noted that Oregon now also indexes its minimum wage rate.⁷

RELATIVE WAGE COSTS

The minimum wage received by an employee is not the total cost of that employee to the employer. Table 2 shows the minimum wage rates of the various potato producing states, and the actual amount it costs an employer to hire an individual for an hour (not including any benefits provided by the employer above and beyond the state and federal assessments). The difference between the total cost and the minimum wage includes such things as unemployment

⁷ See <http://www.dol.gov/esa/minwage/america.htm#Oregon>

compensation, worker's compensation, and the employer's portion of the social security and Medicare taxes, as well as any other state and local taxes (these vary from state to state). Mandatory assessments range from 9.2% of the employer's total hourly cost to 12.2% (in California). Colorado is the only other state besides California where assessments exceed 10 percent. The other states have assessments ranging from 9.8% to 9.9%. Appendix 1 contains a complete breakdown of these assessments and a brief description of each.

The differential cost in employing a minimum wage worker between a Washington warehouse and the largest competing state (Idaho) for an employee packing potatoes year-round (2,000 hours) is nearly \$4500, based on 2004 wage rates. In 2005 that differential increased, as the minimum wage rate has risen to \$7.35, making the cost to the employer over \$8.15. North Dakota, Idaho, and Colorado have a comparable and significant advantage over Washington on an annual basis. The annual costs for employing a full-time minimum wage worker in California and Oregon were much closer to those in Washington.

Table 2: Employer Labor Costs, 2004. Per hour and Annual.*

State	Minimum Wage	Assessments	Total
	\$	\$	\$
California			
Hourly	6.75	0.94	7.69
Annual	13,500	1,873	15,373
Colorado			
Hourly	5.15	0.59	5.74
Annual	10,300	1,155	11,455
Idaho			
Hourly	5.15	0.56	5.71
Annual	10,300	1,098	11,398
North Dakota			
Hourly	5.15	0.52	5.67
Annual	10,300	1,022	11,322
Oregon			
Hourly	7.05	0.77	7.82
Annual	14,100	1,484	15,584
Washington			
Hourly	7.16	0.79	7.95
Annual	14,320	1,527	15,847

* Annual assumed at 2000 hours.

As mentioned earlier in the context of eastern and western Washington, wage rates are a function of the supply of and demand for employees. These conditions vary across states and over time. Tables 3 through 6 contain average wage rates as reported by the U.S. Bureau of Labor of Statistics (BLS) for four categories of workers, two at the grower level and two at the packer (first handler) level. Tables 3 and 4 show the average hourly wages paid for two different positions in the packing facility, graders and packers. Generally, the BLS data suggest that Washington has a higher average wage rate in the packing house than other states. North Dakota is an obvious exception for employees grading agricultural commodities, but not for employees hand-packing those commodities. Similarly, Washington on-farm wage rates (Tables 5 and 6)

generally, but not always, exceed other major potato growing areas. Further, comparing the growth in the minimum wage rate relative to the average wage as reported by the BLS, it is difficult to identify a specific trend in the statewide changes. Tables 3 through 6 use standardized definitions provided by the BLS hence, the activities performed by graders and sorters in Idaho or Washington are the same as those performed in the other states for which data have been gathered.

The variability of mean wage rates as reported in these same tables (3-6) is greater for some states than for others. North Dakota wage rates had greater year to year changes than any other state. This variability is due to the small population from which the sample is drawn and the wide range of wage rates being paid by various firms.⁸

Table 3: Average Wages for Graders and Sorters, Ag. Products, Selected States, 1998-2003.

	WA	ID	OR	CA	CO	ND
1998	7.20	6.16	7.04	6.79	6.48	8.22
1999	7.68	6.15	7.94	7.09	6.64	9.18
2000	8.18	6.93	8.05	7.11	7.81	10.21
2001	8.41	6.93	8.46	7.54	7.91	10.63
2002	8.68	7.28	8.58	7.80	7.95	10.70
2003	8.49	7.34	8.19	7.89	8.29	10.43
Increase in Min. Wage (%)	36.1	0.0	15.0	31.1	0.0	0.0
Increase in Ave. Wage (%)	17.9	19.2	16.3	16.2	27.9	26.9

Data provided by Bureau of Labor Statistics, in U.S. dollars/hour (<http://www.bls.gov/oes/home.htm>).

Table 4: Average Wages for Packers and Packagers, Hand, Selected States, 1998-2003.

	WA	ID	OR	CA	CO	ND
1998	7.91	6.87	7.51	7.51	7.23	7.13
1999	8.21	6.90	8.56	7.92	7.33	7.13
2000	8.56	7.19	9.09	8.15	7.71	7.12
2001	8.97	7.49	9.51	8.49	8.25	7.41
2002	9.07	7.93	9.31	8.84	8.60	7.70
2003	9.43	8.54	8.82	8.75	8.94	7.77
Increase in Min. Wage (%)	36.1	0.0	15.0	31.1	0.0	0.0
Increase in Ave. Wage (%)	19.2	24.3	17.4	16.5	23.7	9.0

Data provided by Bureau of Labor Statistics, in U.S. dollars/hour (<http://www.bls.gov/oes/home.htm>).

⁸ Michael Ziesch, North Dakota Job Service, Personal Communication, Aug. 6, 2005.

Table 5: Average Wages for Farm Equipment Operators, Selected States, 1998-2003.

	WA	ID	OR	CA	CO	ND
1998	8.23	7.94	9.87	8.47	N/A	9.22
1999	8.38	7.81	10.02	8.54	7.59	N/A
2000	9.65	8.15	8.91	8.97	8.90	N/A
2001	10.34	8.95	9.64	9.20	9.74	9.61
2002	10.73	9.94	10.01	9.61	10.17	9.49
2003	10.78	9.75	10.64	9.42	11.46	10.93
Increase in Min. Wage (%)	36.1	0.0	15.0	31.1	0.0	0.0
Increase in Ave. Wage (%)	31.0	22.8	7.8	11.2	51.0	14.8

Data provided by Bureau of Labor Statistics, in U.S. dollars/hour (<http://www.bls.gov/oes/home.htm>).

Table 6: Average Wages for Farm Workers and Laborers, Selected States, 1998-2003.

	WA	ID	OR	CA	CO	ND
1998	7.04	6.44	6.58	6.46	6.61	8.19
1999	7.90	6.59	N/A	6.63	7.82	8.19
2000	7.34	6.88	7.81	7.07	8.61	7.39
2001	8.61	7.15	7.83	7.51	8.90	7.50
2002	8.65	6.95	8.15	7.93	8.57	7.24
2003	8.79	7.77	8.69	8.18	9.74	11.09
Increase in Min. Wage (%)	36.1	0.0	15.0	31.1	0.0	0.0
Increase in Ave. Wage (%)	24.9	20.7	32.1	26.6	47.4	35.4

Data provided by Bureau of Labor Statistics, in U.S. dollars/hour (<http://www.bls.gov/oes/home.htm>).

Table 7 takes a slightly different approach to evaluate differences state by state. This table shows the minimum wage rate in six states and the national average for May, 2003, as reported by the BLS. It also has the median wage rate being paid on the same date. The ratio of the two rates provides an indication of how close many of the people included in the survey are to the minimum wage rate. For example, in Washington, half of the packers and packagers are within 17% of the minimum wage rate. However, in Colorado, the median wage rate is 61% above the minimum wage. In Idaho, this rate is 47% above the minimum wage (\$5.15).

Wage information on graders and sorters is similar except for the North Dakota figure, which is substantially above Washington. All of the other listed states are below Washington, with Colorado again having the next highest median. The North Dakota rates are particularly interesting as further review of regional rates from within that state show a wide variation in entry level rates, median rates, and average rates⁹. As noted earlier, the variation in rates

⁹ The North Dakota data can be found at <http://www.state.nd.us/jsnd>.

reported for North Dakota is affected by the limited number of firms in the state and the range of wages being paid.

There is some thought that the number of migrants (legal or otherwise) in an area creates an environment that favors employers in terms of wage rates. That may be true, but it could also be that the migrants merely add to a labor supply that is already abundant. In either case, it is interesting to compare North Dakota with Washington, for example, in terms of the number of Hispanics. In the state of North Dakota, the 2000 Census of Population indicates that 7,786 Hispanics were residing in that state, representing 0.1 % of the population. In Washington, the 2000 Census of Population identified 441,509 Hispanics, representing 7.5% of the people in the state. In fact, 13 counties in the state of Washington have a higher population of Hispanics than the state of North Dakota.¹⁰

Table 8 contains a variety of data calculated from the wage survey conducted by the U.S. Bureau of Labor Statistics in May 2003. Shown are the estimated numbers of people by state employed as graders and sorters of agricultural products. Also reported is the mean hourly wage rate, the annual mean salary associated with the mean rate (assuming 2080 hours), and the distribution of employees by wage rate. It is immediately obvious that the labor market in North Dakota is significantly different than any of the other states. Even though the minimum wage in force in that state is the federal rate, it is highly likely that very few people are employed at that rate, on average, in the state. The lowest paid 10% of workers receive no more than \$7.62, well above minimum wage for that state. For the whole state that category represents only 57 individuals. All of the other states have bottom 10% wage rates that are much closer to the applicable minimum wage rate. Idaho and Colorado, for example, both use the federal minimum rate and the bottom 10% in both states were receiving no more than 10% above the minimum wage rate. In California, Oregon, and Washington the wage rate range encompassing the bottom 10% is even narrower, with the range being less than 4% above the minimum rate.

Since Idaho is the primary competitor for Washington potato packers and data are available on a regional basis, some discussion of the differences is warranted. The Idaho Department of Commerce and Labor reports wage rates for three regions across southern Idaho. Other regions are also reported, but do not have relevance to this report (north Idaho, for example, has no significant potato production). Table 9 shows the wage rate survey results for May 2003 and 2004.¹¹ The eastern region data do not include Pocatello and the southwest region does not include the Boise MSA data. The numbers in this table suggest that the number of people available for this type of work in eastern and southwest Idaho seem to be relatively more plentiful than in south central Idaho. Also, the decline in mean wages from one year to the next suggests that people in the eastern and southwest labor markets may also be more mobile.

¹⁰ Washington data are available at this website:

http://factfinder.census.gov/servlet/QTTTable?_lang=en&_name=DEC_2000_SF1_U_DP1&ds_name=DEC_2000_SF1_U&geo_id=04000US53

North Dakota data see are available this website: <http://www.ndsu.nodak.edu/sdc/data/census/cityrace2000rev.pdf>

¹¹ The availability of data with this level of specificity is determined on a state by state basis. Washington's Employment Security Department does report wage rates on a regional basis, but not with the same level of detail nor is it reported with quite the same timing of release.

Table 7: Estimated Median Wages, May 2003.

State	Packers and Packagers, Hand			Graders and Sorters, Agricultural Products		
	Hourly Median	Minimum Wage	Median % Above Minimum Wage	Hourly Median	Minimum Wage	Median % Above Minimum Wage
California	\$7.96	\$6.75	17.93%	\$7.27	\$6.75	7.70%
Colorado	\$9.30	\$5.15	61.17%	\$7.79	\$5.15	51.26%
Idaho	\$7.57	\$5.15	46.99%	\$6.61	\$5.15	28.35%
North Dakota	\$7.38	\$5.15	43.30%	\$10.34	\$5.15	100.78%
Oregon	\$8.20	\$7.05	16.31%	\$7.27	\$7.05	3.12%
Washington	\$8.38	\$7.16	17.04%	\$8.20	\$7.16	14.53%
National	\$8.14	\$5.15	58.06%	\$7.78	\$5.15	51.07%

Source: <ftp://ftp.bls.gov/pub/special.requests/oes/oesn03s.zip>

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Table 8: Comparison of Hourly Wages for Graders and Sorters of Agricultural Products, May 2003.

State	Total Employment	Min Wage	Hourly Mean	Annual Mean	Below 10%	Below 25%	Median Wage	Below 75%	Below 90%
California	13560	\$6.75	7.89	16420	6.91	7.01	7.27	8.33	10.24
Colorado	620	\$5.15	8.29	17250	5.81	6.50	7.79	9.32	10.43
Idaho	1700	\$5.15	7.34	15260	5.66	6.01	6.61	7.93	8.97
North Dakota	440	\$5.15	10.43	21700	7.62	9.27	10.34	11.43	13.10
Oregon	1130	\$6.90	8.19	17030	6.98	7.10	7.27	8.95	9.78
Washington	3630	\$7.01	8.49	17670	7.20	7.55	8.20	8.96	10.42

Source: <ftp://ftp.bls.gov/pub/special.requests/oes/oesn03s.zip>

Table 9: Idaho Regional Wage Rates for Graders and Sorters of Agricultural Products.

	Mean Wage	Entry Wage	Median Wage	Experienced Wage
May 2003				
Eastern	\$7.10	\$6.40	\$6.90	\$7.50
South Central	\$8.00	\$6.40	\$7.10	\$8.80
Southwest	\$6.50	\$6.30	\$6.50	\$6.60
May 2004*				
Eastern	\$6.71	\$6.14	\$6.53	
South Central	\$8.01	\$6.42	\$7.01	
Southwest	\$6.35	\$6.13	\$6.33	

Source: <http://lmi.idaho.gov/?PAGEID=674SUBID=174> Idaho Department of Commerce and Labor.

* The experienced rate was not reported for 2004.

Similar data are reported for Washington, but with less detail. The Washington Employment Security Department gathers wage rate data monthly for many different kinds of jobs in production agriculture and at the packer (first handler) level. The Washington survey reports wage rates for people grading and sorting potatoes. Table 10 shows the average wage rate for three regions in Washington where the bulk of the potato production occurs. The western region includes all counties west of the Cascade mountain range. The Columbia Basin includes only Grant and Adams counties. The southeastern region includes Benton, Franklin, and Walla Walla counties. Given the change in the average wage rate in each of the regions, it appears that the escalating minimum rate is pushing up the wage rates for graders and sorters.

Table 10: Washington Regional Wage Rates for Potato Sorters and Graders.

	May 2003	May 2004
Western	\$7.01	\$7.18
Columbia Basin	\$7.29	\$7.37
Southeastern	\$7.01	\$7.36

Source: Wines, John, et.al. "Seasonal Farm Labor Employment and Wage Trends." Various Issues. Washington State Employment Security Department, Labor Market and Economic Analysis Branch, Olympia, WA, <http://www.workforceexplorer.com/article.asp?ARTICLEID=1229&PAGEID=94&SUBID=1> .

A weighted average wage rate was calculated using the data in Tables 9 and 10 along with the estimated number of people in that job classification at the time the wage survey was conducted. Using the information in Appendix I, the actual cost to the employer can be calculated.

In 2003, the average cost to employers for sorters and graders was \$7.93 in Idaho and \$7.91 in Washington. After the increase in the minimum wage rate in Washington at the beginning of 2004, the employer hourly cost rose to \$8.15 while in Idaho the average hourly cost fell to \$7.91. The slight fall in the average Idaho cost was likely due to adjustments in the labor market caused by employee turnover.¹²

These minimum wage rate increases now appear to be causing a divergence in labor costs among the various states. However, the dynamics of both the labor market and the potato market suggest that potato packing firms will work to mitigate the negative effects of rising minimum wage rates on overall labor costs. Interviews were conducted with six potato packing operations to determine how and what adjustments were being made to offset the effects of increasing minimum wage rates.

ADJUSTING TO ESCALATING MINIMUM WAGE RATES

Packers in Washington's potato industry are adjusting to the increasing minimum wage in various ways. In some warehouses the production employees (those directly involved in sorting, grading, sizing, packing, and palletizing) are being paid the minimum wage rate and automatically receive annual increases. For other firms where some production wage rates are above the minimum, workers receive variable increases that may or may not reflect the same percentage increase that was applied to the minimum wage. For some of these firms wage compression (a decline in the differential rates for various jobs) may become a problem.

Packers are also making other adjustments in their operations to compensate for the rising labor costs. Most of the firms have upgraded or are contemplating upgrading their packing systems/facilities. Two have built new facilities with more modern technologies that reduce the number of employees. Two firms have been installing new labor saving equipment and a fifth plans to install a new packing system in the near future. Greater communication and coordination within firms as well as with buyers has also been used to reduce labor costs, particularly in terms of overtime costs.

Consideration of new or upgraded machinery seemed pervasive among the shippers. Even those firms with newer facilities/equipment are constantly looking at new technologies that might efficiently replace some of the current employees. These firms feel these types of changes are necessary to stay in business.

Substantial labor cost reductions (possibly as much as 33%) can be expected from the implementation of the technologies now available to the packing industry. This estimate is based on the discussions and cost data provided by the individual shippers and the authors' knowledge of the labor-saving technologies being employed in the fresh packing industry. Individual gains may be much greater depending on the level of capital investment, but the industry averages will not likely decline as much. Estimating the labor cost reduction is straightforward as most

¹² It should be noted that the Idaho numbers likely include graders and sorters of other agricultural commodities as that state's classification does not specify "potato graders and sorters." The Washington data do pertain directly to potato graders and sorters.

employees in the packing sheds are being paid minimum wage rates, so a 25% reduction in employees results in about a 25% reduction in labor costs.

Each packer provided data on labor costs per ton of potatoes handled. Across the six firms the average labor cost per ton was \$15.83 in 2002. In 2003 that figure increased to \$16.07. However, because of the capital investments being contemplated by some of the firms it is likely that the labor cost per ton will decline in the near term as those investments are undertaken. For those firms that have already made most of the labor-saving improvements, some growth in labor costs per ton are now occurring but these firms were already below the industry average in labor costs per ton. Significant cost reductions can be anticipated from those firms in the midst of making improvements.

Capital improvements made in the past three to four years in the six warehouses that were visited have eliminated over 50 jobs. Given the plans of some of these packers another 20 to 30 jobs may disappear in the next two years. The impact on employee numbers varies by warehouse. In general, the decline in employee numbers has ranged from 25% to over 30%. In one case capital investment resulted in increased capacity, but also increased the number of employees slightly.

Substitution of capital for labor has ramifications for the small rural communities in which many of these firms operate. The addition of newer technology to perform one or more operations will replace a number of employees. The loss of ten jobs in a small rural community may mean five or more households will be forced to relocate, impacting both local schools and local businesses.

SUMMARY AND CONCLUSIONS

A review of minimum and average wage rate data from several states which are significant competitors with the Washington potato industry suggests that labor market conditions are sufficiently different to make it difficult to extrapolate beyond the differences in minimum wage rates, average wage rates, and employer cost per hour. A key unknown is the grading and packing technologies being employed in other growing areas. Washington currently has the highest minimum wage rate and will likely continue to have the highest rate.

In North Dakota, a limited supply of potential employees relative to needs appears to be enough to cause average wages to easily surpass the average wage rate for similar jobs in Washington. A closer look at conditions in Idaho, the most important competitor, indicates that the steady growth in the Washington minimum wage rate has resulted in a disadvantage relative to Idaho. When calculating the actual labor costs per hour, Washington shippers now pay even more per hour than Idaho shippers due to the differences in taxes assessed by each state. The extent of the disadvantage cannot be measured with the available data as there is no information on the technologies being employed in the warehouses in Idaho nor are there any data on the volumes being handled by those warehouses. Certainly, labor wage rates favor potato packers in Idaho.

A more rapidly increasing disadvantage for Washington packers is the effect that the minimum wage rate has on those employees whose wage rates are above the minimum. There are no data available across the states that allows for comparison of other positions within packing firms. However, the interviews with the packers in Washington revealed that five of the six do have a significant minority of employees whose wages are above the minimum; these rates are also increased when the minimum increases. The rate of increase varied by firm and did not typically exceed the percentage increase in the minimum wage rate. When compared to the up and down pattern more common in other states, the steady rate of growth in Washington's average wage rates also suggests a widening labor cost disadvantage for Washington.

Wage rates alone do not provide a complete measure of loss of competitiveness, as the labor cost per hour figures offer no information on the quantity or quality of the hours of labor activity. Washington packers, as a group, are moving as quickly as possible to install labor-saving equipment. So, while the hourly rate increases can be seen in total costs or costs per ton for those firms with stable labor forces, the installation of labor-saving technologies has been driving employee numbers down (as well as the labor cost per ton).

The loss of jobs within the potato packing industry is difficult to measure, as employment of graders, sorters, and packers is seasonal. During the peak of the season there appear to be 1000 or more people employed in these activities.¹³ Based on those data it seems likely that between 200 to 300 jobs could be eliminated due to the adoption of labor-saving technology in the face of increasing minimum wage rates. Other structural shifts may occur as a result of capital investment in the packing industry, leading to further reductions in employment.

The decline of rural communities in eastern Washington is associated with the changes that occurred in production agriculture over the past century. The opening of the Columbia Basin to irrigated agriculture created many new jobs in production agriculture and in handling/processing. Technological advances continue to reduce the amount of labor needed in production agriculture. (Major exceptions include apples, pears and cherries, each of which uses over 100 hours of labor per acre per year, and asparagus, a crop likely to see shrinking acreage due to the loss of the asparagus processing industry in the state.)

Similar changes are now occurring at the first handler level. As technology replaces employees, population may shift away from the small towns of the Columbia Basin to more densely populated areas where more employment opportunities exist. The towns of Quincy, Warden, Royal City, Mattawa, Othello, and Connell could all be faced with declining populations due to the loss of employment opportunities. The impacts would be felt by the remaining retail businesses, the school systems, and the local infrastructure.

While the improvement in wage rates caused by the escalating minimum wage rate will improve incomes for some individuals, that improvement could come at a cost in community well-being. The extent to which these communities ultimately suffer job losses will be affected by their ability to attract new businesses.

¹³ See Glenn, Kirsta, "Agricultural Workforce in Washington State 2003" Washington State Employment Security Department, Labor Market and Economic Analysis Branch. June 2004. P. 50-54.

APPENDIX I

Appendix Table 1: Labor Costs to Employers by State, 2004.

State	Category	Hourly	Annual
Washington	Minimum Wage	7.16	14320
	Workers Compensation	0.12	236.28
	Min. Unemployment Insurance .97%	0.07	138.90
	FUTA .8% of First \$7,000	0.06	56
	Social Security (OASDI) 6.2%	0.44	887.84
	Medicare (HI) 1.45%	0.10	207.64
	Totals	7.95	15846.66
Idaho	Minimum Wage	5.15	10300
	Workers Compensation	0.12	244.11
	Min. Unemployment Insurance .1%	0.01	10.30
	FUTA .8% of First \$7,000	0.04	56
	Social Security (OASDI) 6.2%	0.32	638.6
	Medicare (HI) 1.45%	0.07	149.35
	Totals	5.71	11398.36
Oregon	Minimum Wage	7.05	14100
	Workers Compensation	0.15	290.46
	Min. Unemployment Insurance 1.8%	0.01	25.38
	Worker's Benefit Fund (WBF) \$.017/hour	0.02	34.00
	FUTA .8% of First \$7,000	0.06	56
	Social Security (OASDI) 6.2%	0.44	874.2
	Medicare (HI) 1.45%	0.10	204.45
Totals	7.82	15584.49	
California	Minimum Wage	6.75	13500
	Workers Compensation	0.35	706.05
	Min. Unemployment Insurance 1.5% of First \$7,000	0.01	70.88
	Employment Training Tax (ETT) .1% of First \$7,000	0.01	7.00
	FUTA .8% of First \$7,000	0.05	56
	Social Security (OASDI) 6.2%	0.42	837
	Medicare (HI) 1.45%	0.10	195.75
Totals	7.69	15372.68	
Colorado	Minimum Wage	5.15	10300
	Workers Compensation	0.14	281.19
	Min. Unemployment Insurance .003% of First \$10,000	0.02	30.00
	FUTA .8% of First \$7,000	0.04	56
	Social Security (OASDI) 6.2%	0.32	638.6
	Medicare (HI) 1.45%	0.07	149.35
	Totals	5.74	11455.14
North Dakota	Minimum Wage	5.15	10300
	Workers Compensation	0.06	127.72
	Min. Unemployment Insurance .49%	0.03	50.47
	FUTA .8% of First \$7,000	0.04	56
	Social Security (OASDI) 6.2%	0.32	638.6
	Medicare (HI) 1.45%	0.07	149.35
	Totals	5.67	11322.14

DEFINITIONS:

Minimum Wage: This is the current minimum wage rate in each state. Colorado, Idaho, and North Dakota all use the federal wage rate. The other states in this study set their own minimum. Washington and Oregon's minimum wage rates are tied to the Consumer Price Index and are updated yearly. Hourly wage rates are multiplied by 2000 to determine annual rates. More information can be found at:

Minimum Wage Laws in the States

<http://www.dol.gov/esa/minwage/america.htm>.

Worker's Compensation: This payroll tax, also known as Industrial Insurance, is very difficult to compare across different states. Each state uses different methods of computing and collecting their industrial insurance. Some states use private insurers whose rates are not publicized. Most states levy industrial insurance taxes based on hours worked, but then set a taxable wages ceiling. Because of these comparison difficulties, the worker's compensation amounts used in the Appendix Table are figured based on an Oregon report titled "Oregon Workers' Compensation Premium Rate Ranking 2002." The report is outdated for this table, but it provides the best method for comparing the costs of insurance across states. Annual costs are calculated by multiplying the annual minimum wage by 1/100th of the state's indices rate. Hourly rates are determined by dividing this amount by 2000. More information can be found at:

Oregon Workers' Compensation Premium Rate Ranking 2002

http://www.cbs.state.or.us/imd/rasums/2083/02web/02_2083.pdf.

Unemployment Insurance: This payroll tax is also very difficult to compare across states. The Base Rates vary from year to year, depending on the total amount of money available in the state funds. These rates are then multiplied by the individual firm's Experience Rating to determine what that firm's tax is. The figures used are the absolute minimum that a firm will have to pay in 2004. The real state base rate and surcharge (if any) for 2004 is used and then multiplied by the best experience rating possible. Each state has a website that explains how they determine their tax rate.

FUTA: The Federal Unemployment Tax Act authorizes this federal tax to help cover state unemployment insurance costs. The rate is .8% of the first \$7,000 per employee for employers that have paid their state unemployment insurance tax. More information can be found at:

Unemployment Insurance Taxes

<http://workforcesecurity.doleta.gov/unemploy/uitaxtopic.asp>.

OASDI & HI: The Old-Age, Survivors, and Disability Insurance and Hospital Insurance are commonly referred to as Social Security and Medicare. These are the employer's portion of the tax and are the same for everyone. More information can be found at:

2004 SOCIAL SECURITY CHANGES

<http://www.socialsecurity.gov/pressoffice/factsheets/colafacts2004-alt.htm>.

Worker's Benefit Fund: This is an Oregon specific tax that is similar to the state's Industrial Insurance. This tax is charged to the employer at the rate of 1.7 cents an hour. More information can be found at:

Workers' Benefit Fund (WBF) Assessment

<http://www.cbs.state.or.us/external/bad/badrec4.html>.

Employment Training Tax: This is a California specific tax that is used to fund worker training programs. Employers pay .1% of the first \$7,000 per employee. More information can be found at:

California Employment Tax

<http://www.edd.ca.gov/taxrep/taxrte9x.htm>.

APPENDIX II

APPENDIX 2:

MINIMUM WAGE SOURCES

United States Current Minimum Wage Rates:

www.dol.gov/esa/minwage/america.htm

Canada Current Minimum Wage Rates:

www.gov.mb.ca/labour/labmgt/resbr/wages/minwage.html

Washington Historic:

www.lni.wa.gov/workplacerrights/wages/minimum/history/default.asp

Oregon Historic:

www.boli.state.or.us/technical/min-wage.html is now a dead link.

Information is now located at:

http://prism.state.or.us/downloads/Minimum%20Wage%20Q&A_04.doc

California Historic:

www.dir.ca.gov/IWC/minimumwagehistory.htm

Canadian Historic:

www.110.hrdc-dncc.gc.ca/psait_spila/lmnec_eslc/eslc/salaire_minwage/report2/report2_e.cfm

Historic Exchange Rates:

www.oanda.com/convert/fxaverage



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