

Average Hourly Before-tax Earnings and Employment in Agriculture and Industries with a High Concentration of Undocumented Workers Washington State, 2002 to 2009

Ernst W. Stromsdorfer, Ph.D., *economist*

John H. Wines, *economist*

May 2011

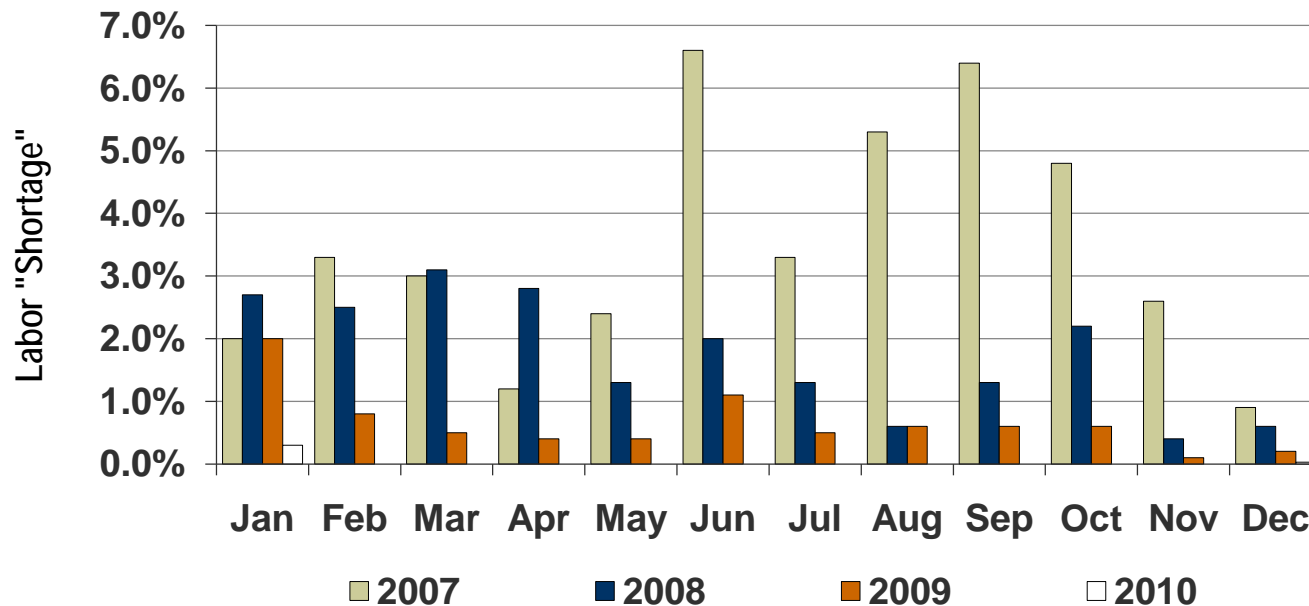
- “Slowdowns in other industries may be helping sustain the labor pool for Washington’s agricultural employers But leaders of several trade groups and others say they fear the labor supply will tighten in the future as workers again leave agriculture for higher-paying jobs in the construction industry as the economy recovers.” *Tri-City Herald*. “Ag industry says labor pool ‘plentiful.’” Section B. May 3, 2010.
- “The reality is, as the economy gets better, you’re going to find less and less (available workers) in the field.” Quote from Paul Simonds, Western Growers spokesman. *Capital Press*. “Farmers expect plentiful labor this year.” April 23, 2010.

Study Purpose

- Compare the flows of agricultural workers between the agricultural sector in the economy and other industry sectors in the economy known to have high concentrations of undocumented workers
- Why?
 - Agricultural producers are perennially concerned about impending “shortages” of workers at key production periods, particularly harvesting
 - What is a “shortage?”
 - A situation in which producers are offering wages below equilibrium, given their demand for workers
 - What has been a recent “shortage” situation?
 - Producers are still exposed to legal sanction since A high proportion of workers are undocumented

Seasonal Agricultural Employment “Shortage”

Seasonal Agricultural Employment “Shortage,” in Percent, Weighted by Labor Force Size of Employer Reporting Washington State, 2007 through 2010

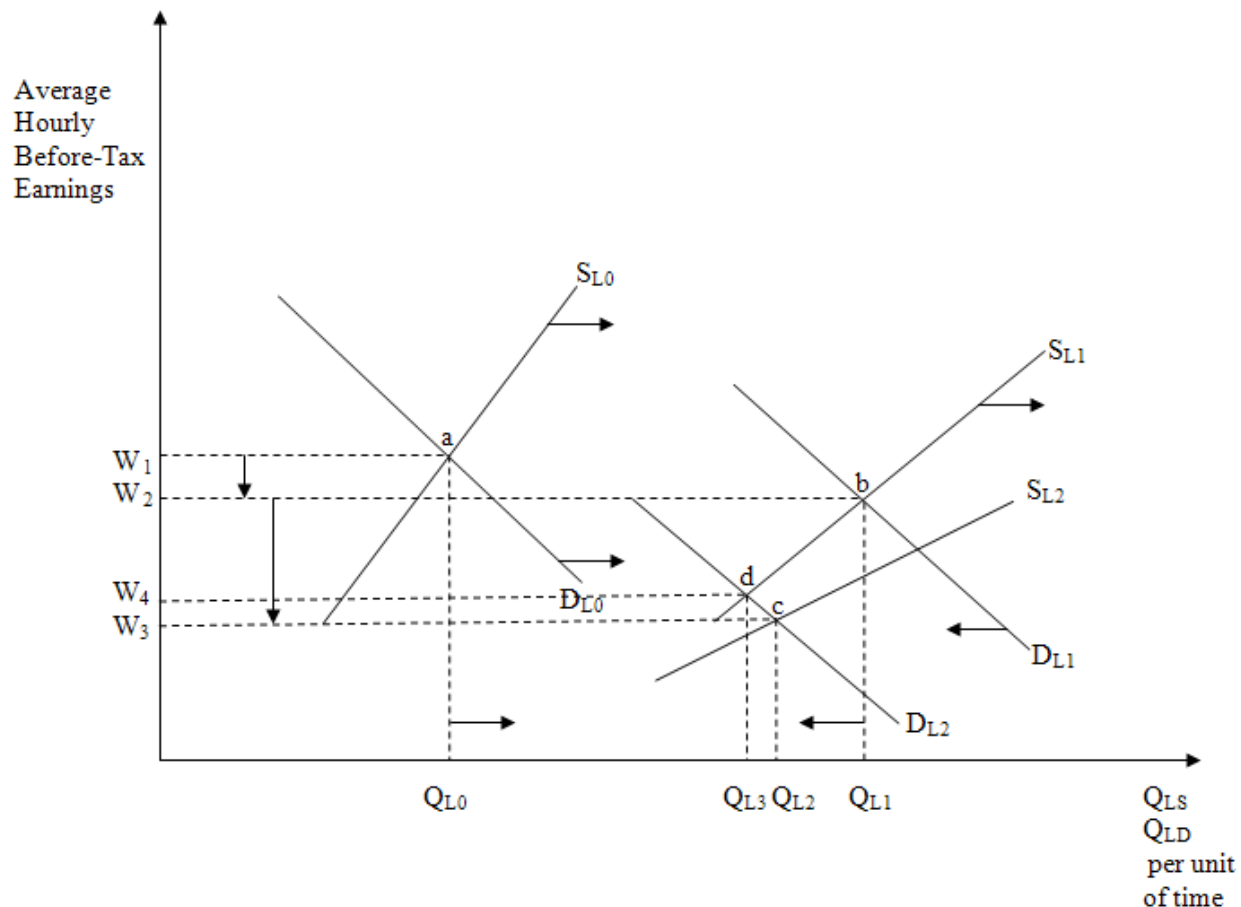


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2007	2.0%	3.3%	3.0%	1.2%	2.4%	6.6%	3.3%	5.3%	6.4%	4.8%	2.6%	0.9%
2008	2.7%	2.5%	3.1%	2.8%	1.3%	2.0%	1.3%	0.6%	1.3%	2.2%	0.4%	0.6%
2009	2.0%	0.8%	0.5%	0.4%	0.4%	1.1%	0.5%	0.6%	0.6%	0.6%	0.1%	0.2%
2010	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



Agricultural Labor Supply and Demand

A heuristic diagram of the demand for and supply of agricultural labor with falling equilibrium average hourly before-tax earnings



Comparisons of Equilibrium Measures of Employment and Before-tax Annual Earnings

- Rationale for the comparison of equilibrium before-tax earnings
- Illegal immigration for economic reasons is costly and fraught with risk and uncertainty
 - Money and non-money costs are high
 - Workers will seek to maximize earnings and wage rates



**Employment
Security
Department**

WASHINGTON STATE

Unauthorized Immigrants in Selected Industries as of 2008

5.4% of the total civilian labor force is unauthorized immigrants

- Construction – 14 %
- Agriculture – 13 %
- Leisure and Hospitality – 10 %
- Professional and Business Services – 7 %
- Manufacturing – 7 %
- Farming – 25 %
- Building, Groundskeeping and Maintenance – 19 %
- Construction – 17 %
- Food Preparation and Serving – 12 %
- Production – 10 %
- Transportation and Material Moving – 7 %



Source: Passel, Jeffrey S. and D’Vera Cohn. “A Portrait of Unauthorized Immigrants in the United States.” Pew Hispanic Center. Washington, D.C. April 14, 2009.

NAICS Industry Sectors Included in this Study

- **Agriculture**
 - 111 – Crop Production
 - 112 – Animal Production
 - 1151 – Support Activities for Crop Production
 - 1152 – Support Activities for Animal Production

- **Accommodation and Food Services – 72**

- **Food Manufacturing**
 - 311 – Food Manufacturing
 - 312 – Beverage and Tobacco Product Manufacturing

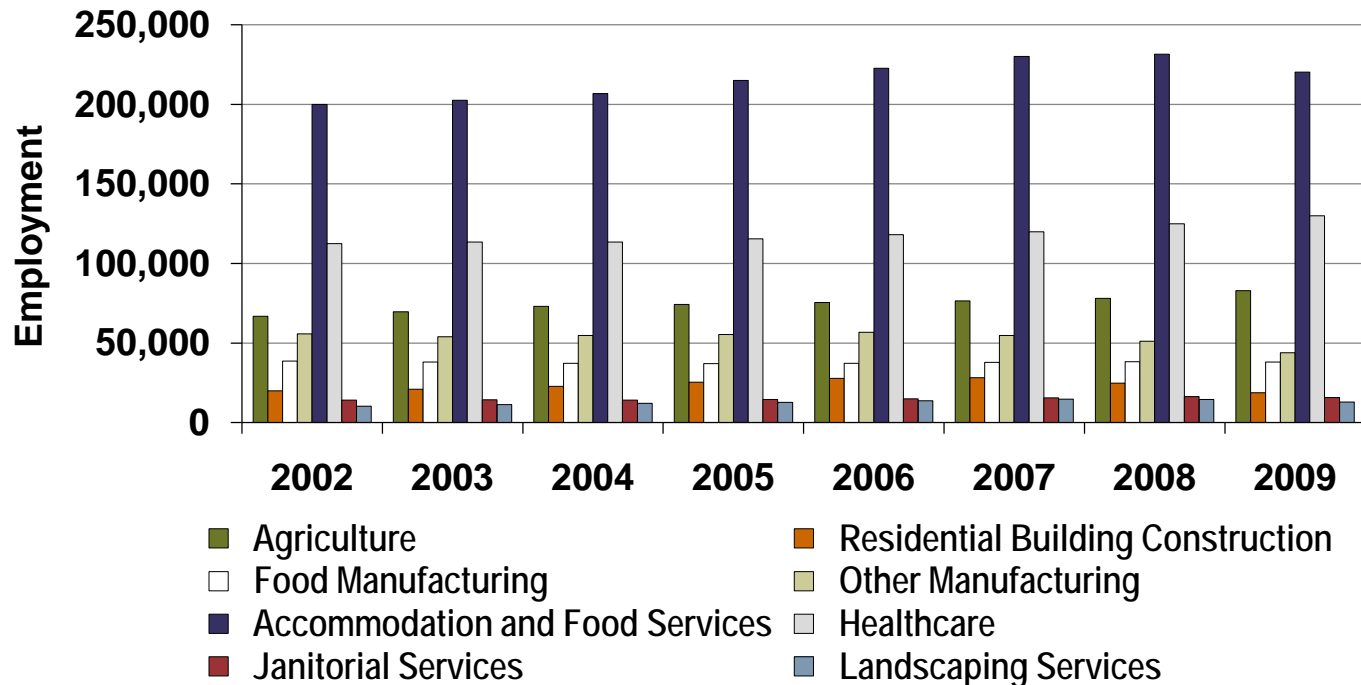
- **Healthcare**
 - 623 – Nursing and Residential Care Facilities
 - 622110 – General Medical and Surgical Hospitals



NAICS Industry Sectors Included in this Study

- Janitorial Services – 561720
- Landscaping Services – 561730
- Other Manufacturing
 - 313 – Textile Mills
 - 314 – Textile Product Mills
 - 315 – Apparel Manufacturing
 - 316 – Leather and Allied Product Manufacturing
 - 321 – Wood Product Manufacturing
 - 322 – Paper Manufacturing
 - 337 – Furniture and Related Product Manufacturing
 - 339 – Miscellaneous Manufacturing
- Residential Building Construction – 2361

Average Quarterly Employment for Agriculture and Selected Industries Washington State, 2002 through 2009

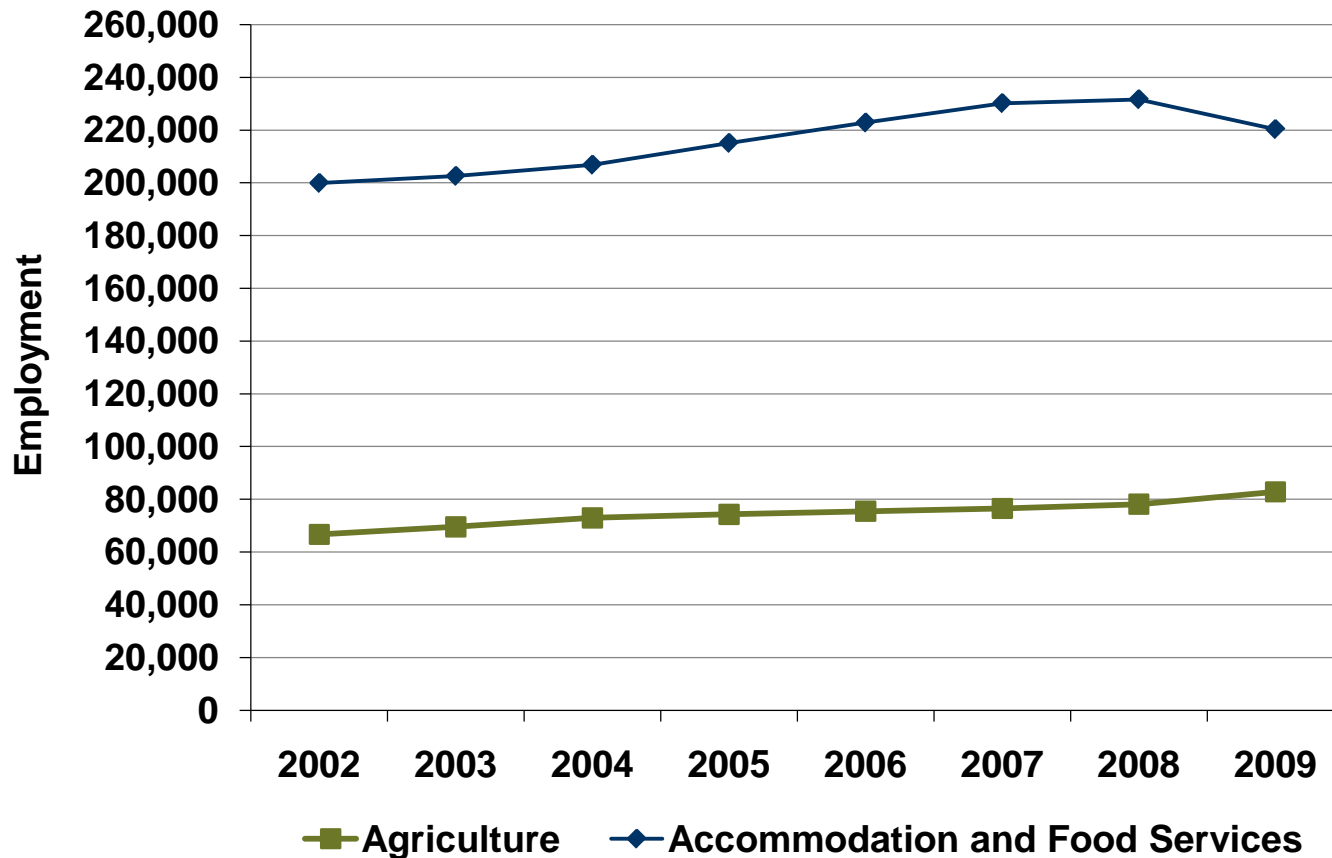


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	66,722	69,545	72,947	74,277	75,476	76,499	78,155	82,858
Residential Building Construction	19,828	21,026	22,794	25,319	27,808	28,272	24,669	18,733
Food Manufacturing	38,723	38,071	37,178	36,984	37,178	37,772	38,240	38,024
Other Manufacturing	55,689	53,971	54,762	55,375	56,706	54,691	51,069	43,882
Accommodation and Food Services	199,896	202,564	206,817	215,079	222,815	230,185	231,652	220,324
Healthcare	112,385	113,398	113,497	115,541	118,154	119,900	124,973	130,032
Janitorial Services	14,146	14,302	14,062	14,550	14,952	15,523	16,247	15,683
Landscaping Services	10,311	11,217	12,092	12,706	13,732	14,753	14,561	12,935



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Quarterly Employment for Agriculture and Accommodation and Food Services Washington State, 2002 through 2009

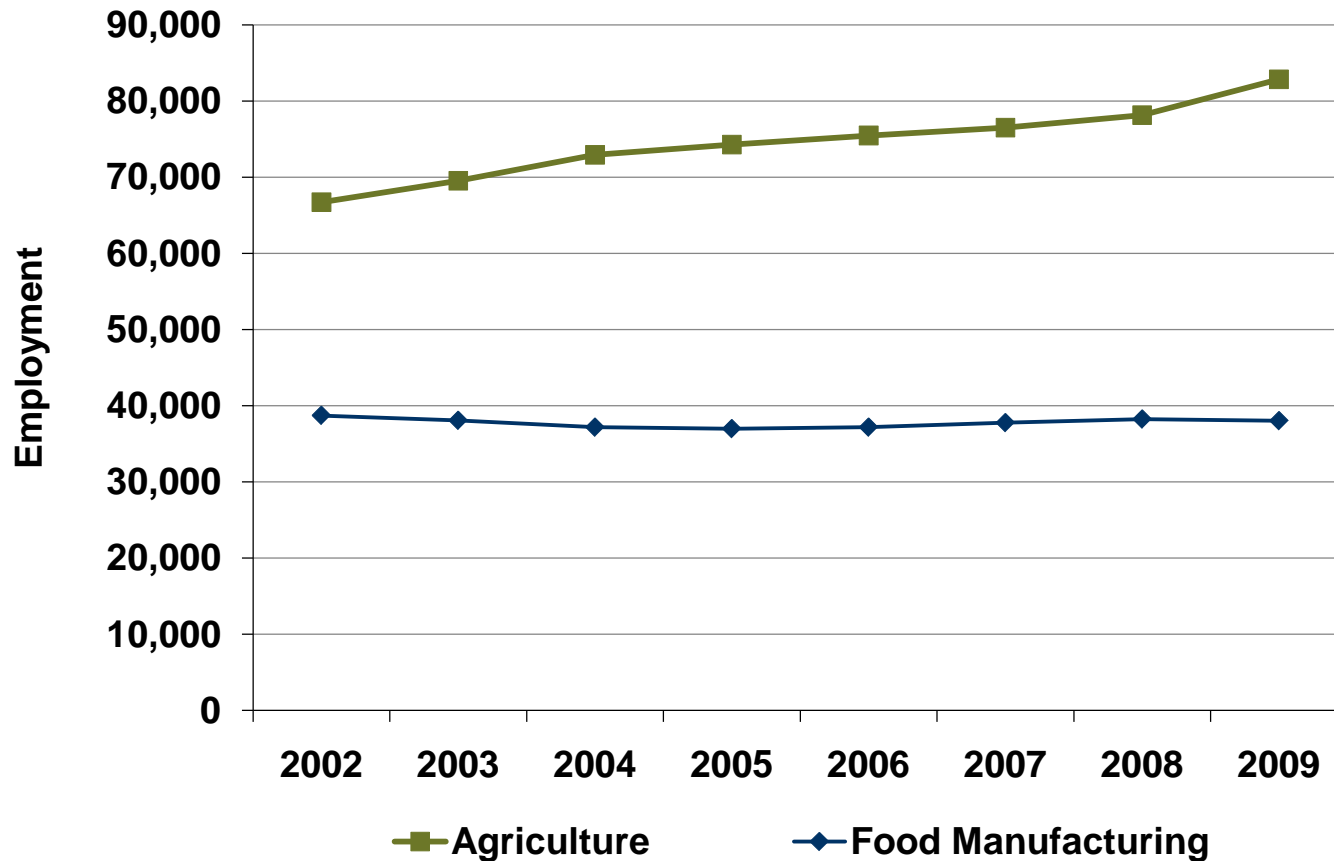


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	66,722	69,545	72,947	74,277	75,476	76,499	78,155	82,858
Accommodation and Food Services	199,896	202,564	206,817	215,079	222,815	230,185	231,652	220,324



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Earnings (QCEW)

Average Quarterly Employment for Agriculture and Food Manufacturing Washington State, 2002 through 2009

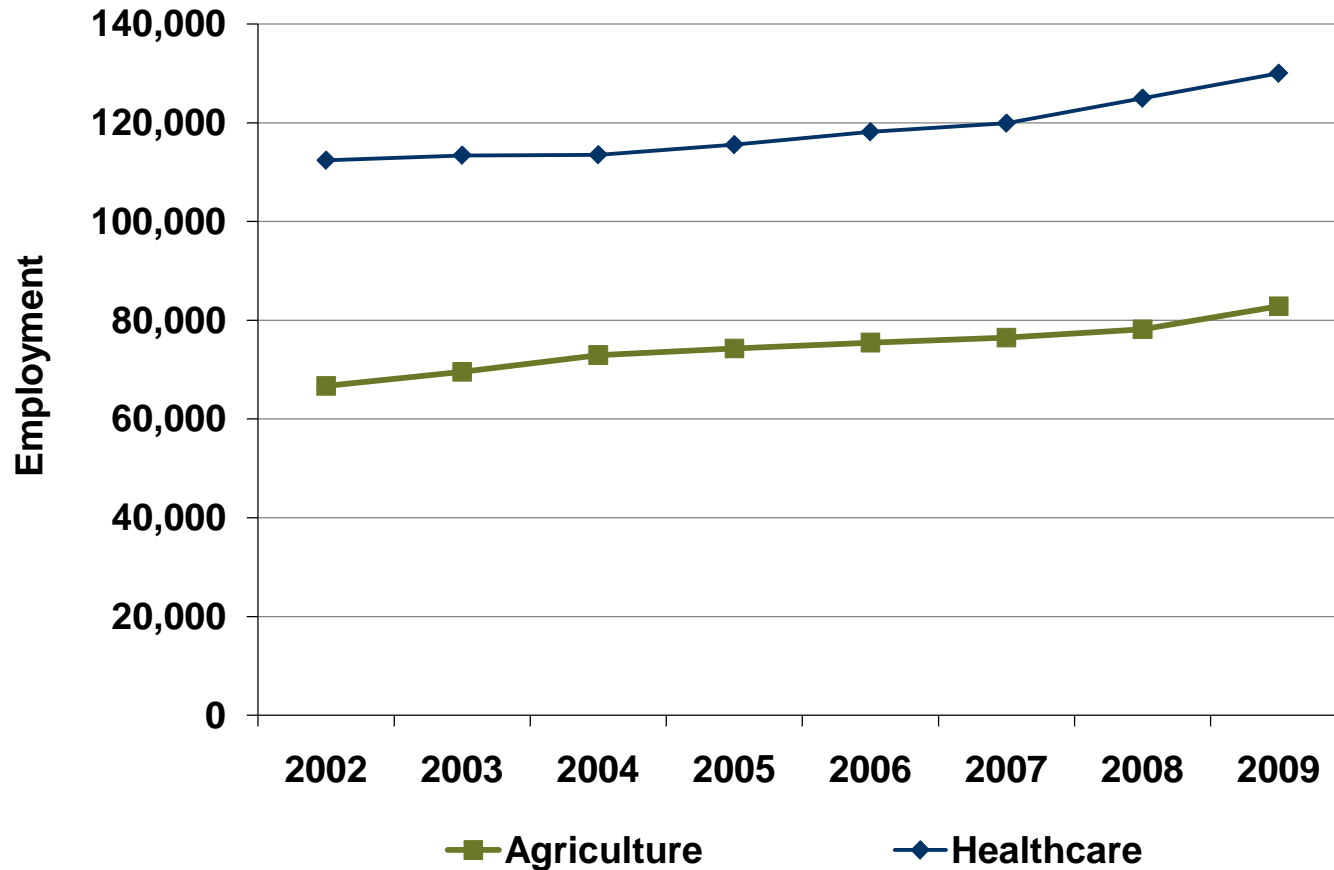


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	66,722	69,545	72,947	74,277	75,476	76,499	78,155	82,858
Food Manufacturing	38,723	38,071	37,178	36,984	37,178	37,772	38,240	38,024



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Earnings (QCEW)

Average Quarterly Employment for Agriculture and Healthcare Washington State, 2002 through 2009

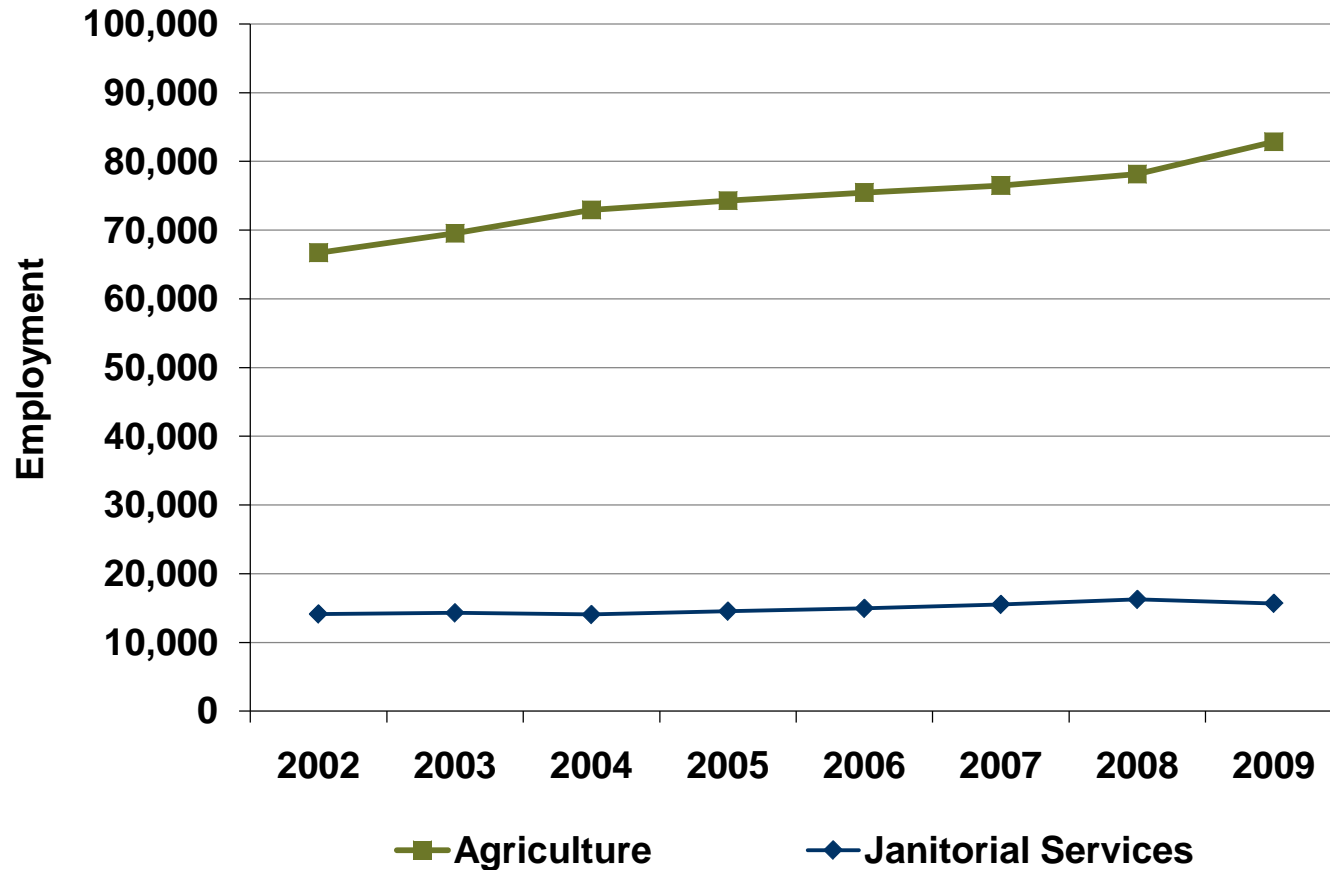


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	66,722	69,545	72,947	74,277	75,476	76,499	78,155	82,858
Healthcare	112,385	113,398	113,497	115,541	118,154	119,900	124,973	130,032



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Quarterly Employment for Agriculture and Janitorial Services Washington State, 2002 through 2009

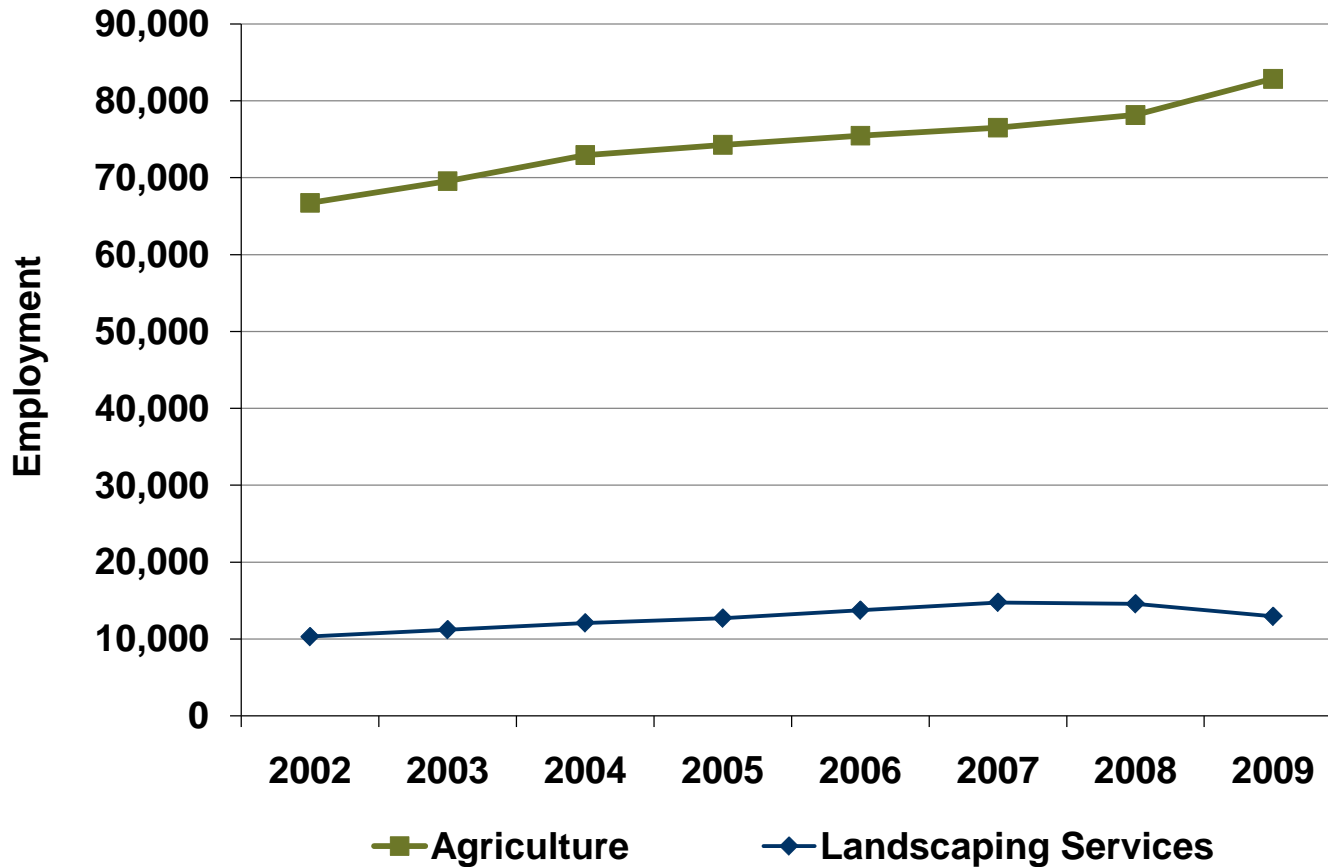


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	66,722	69,545	72,947	74,277	75,476	76,499	78,155	82,858
Janitorial Services	14,146	14,302	14,062	14,550	14,952	15,523	16,247	15,683



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Quarterly Employment for Agriculture and Landscaping Services Washington State, 2002 through 2009

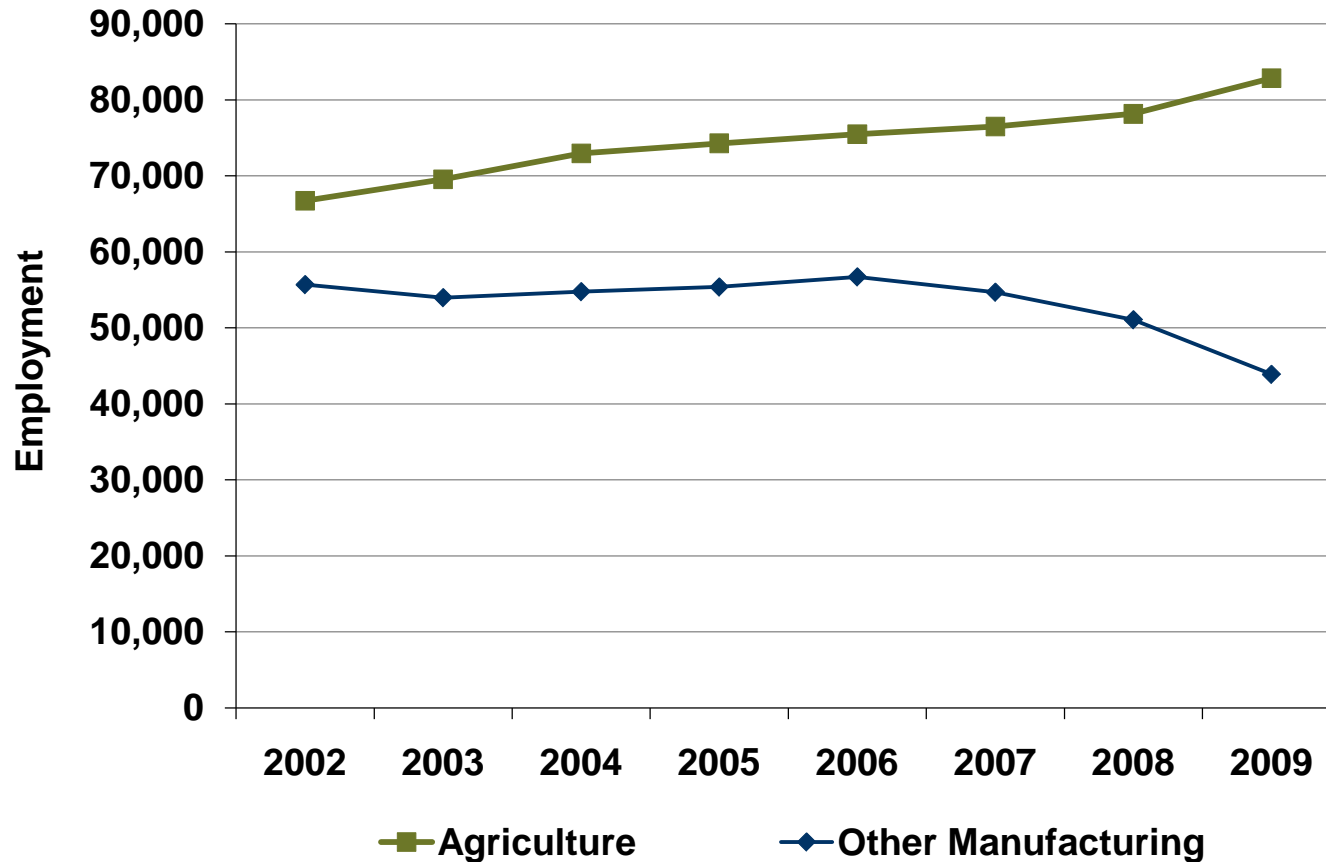


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	66,722	69,545	72,947	74,277	75,476	76,499	78,155	82,858
Landscaping Services	10,311	11,217	12,092	12,706	13,732	14,753	14,561	12,935



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Quarterly Employment for Agriculture and Other Manufacturing Washington State, 2002 through 2009

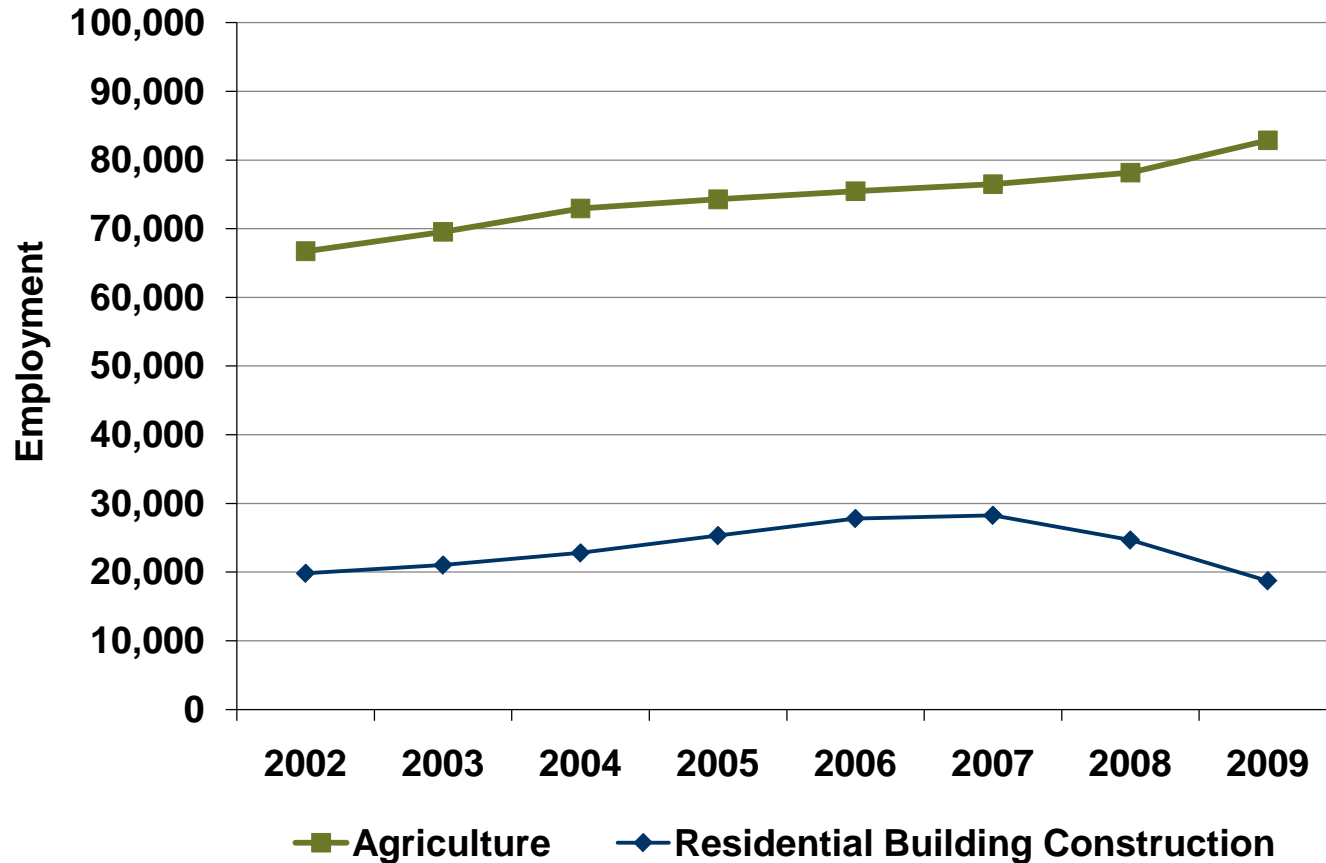


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	66,722	69,545	72,947	74,277	75,476	76,499	78,155	82,858
Other Manufacturing	55,689	53,971	54,762	55,375	56,706	54,691	51,069	43,882



Source: Employment Security Department/LMEA Quarterly Census of Employment and Wages (QCEW)

Average Quarterly Employment for Agriculture and Residential Building Construction Washington State, 2002 through 2009

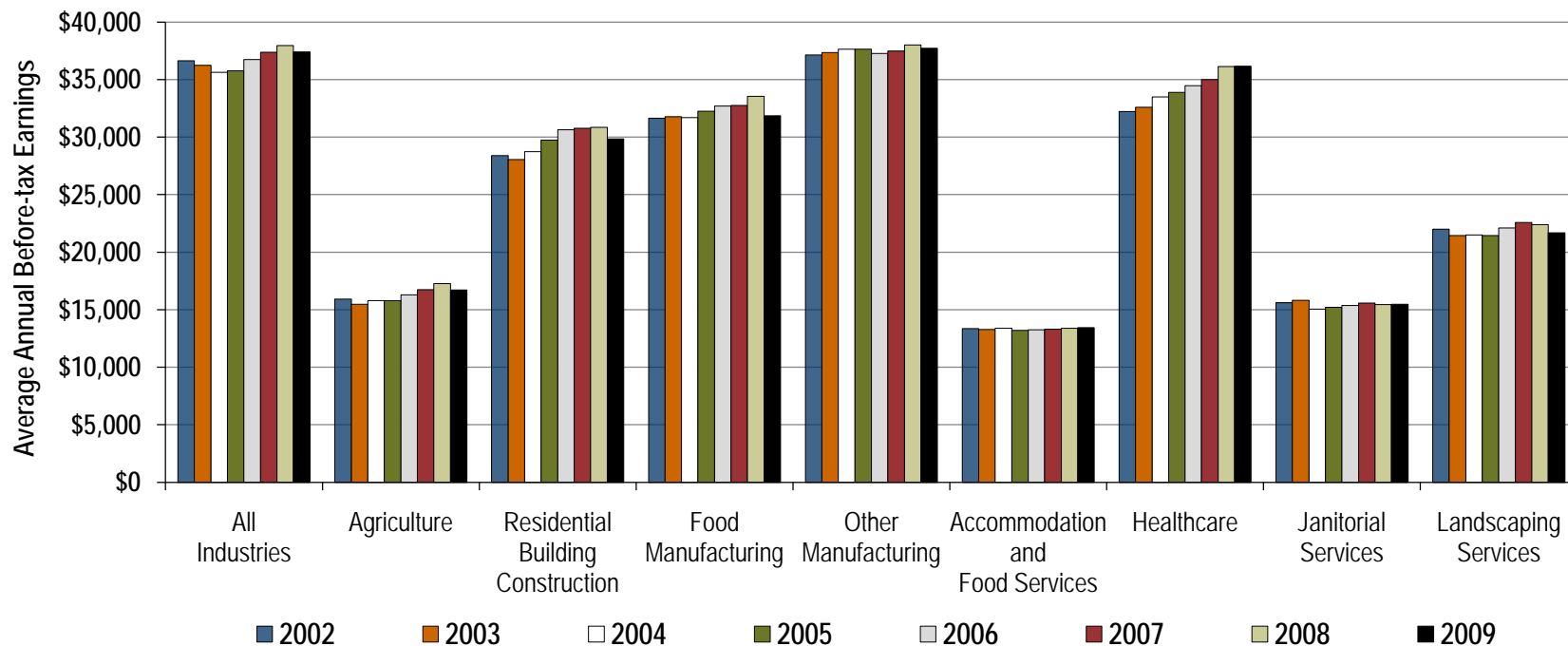


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	66,722	69,545	72,947	74,277	75,476	76,499	78,155	82,858
Residential Building Construction	19,828	21,026	22,794	25,319	27,808	28,272	24,669	18,733



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Annual Before-tax Earnings for All Industries, Agriculture and Selected Industries, Inflation-adjusted Dollars Base Year 2000 = 100, CPI-W, Washington State, 2002 through 2009

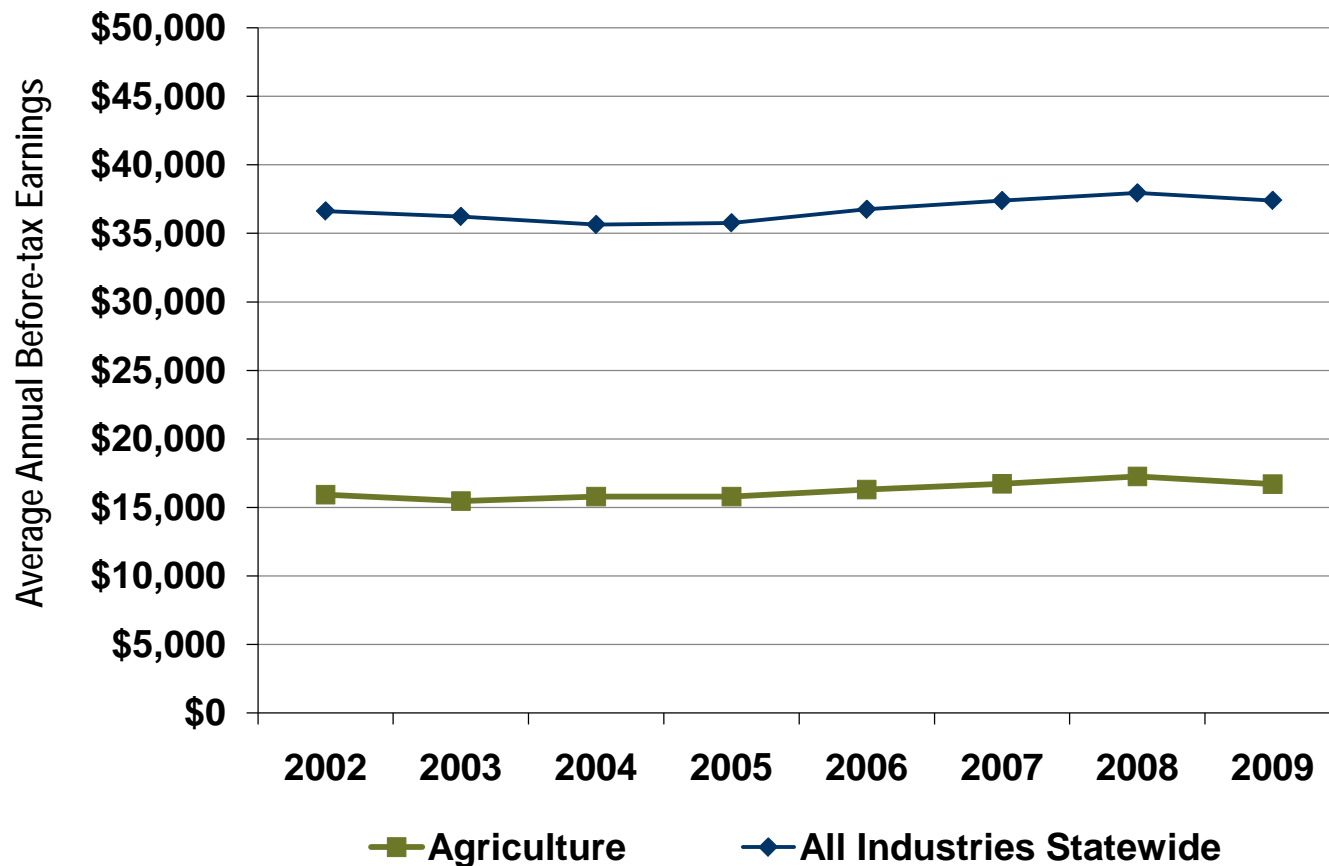


	2002	2003	2004	2005	2006	2007	2008	2009
All Industries	\$36,632	\$36,231	\$35,644	\$35,769	\$36,751	\$37,389	\$37,948	\$37,404
Agriculture	\$15,927	\$15,470	\$15,799	\$15,794	\$16,303	\$16,731	\$17,266	\$16,708
Construction of Buildings	\$28,403	\$28,048	\$28,734	\$29,731	\$30,647	\$30,780	\$30,863	\$29,836
Food Manufacturing	\$31,649	\$31,789	\$31,706	\$32,253	\$32,689	\$32,761	\$33,551	\$31,862
Other Manufacturing	\$37,133	\$37,348	\$37,650	\$37,633	\$37,276	\$37,495	\$38,022	\$37,711
Accommodation and Food Services	\$13,362	\$13,286	\$13,374	\$13,193	\$13,255	\$13,305	\$13,390	\$13,446
Healthcare	\$32,217	\$32,603	\$33,499	\$33,902	\$34,471	\$35,002	\$36,136	\$36,172
Janitorial Services	\$15,614	\$15,818	\$15,063	\$15,214	\$15,359	\$15,583	\$15,448	\$15,473
Landscaping Services	\$21,995	\$21,443	\$21,493	\$21,437	\$22,110	\$22,577	\$22,407	\$21,675



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Annual Before-tax Earnings for Agriculture and All Industries Inflation-adjusted Dollars, Base Year 2000 = 100, CPI-W Washington State, 2002 through 2009

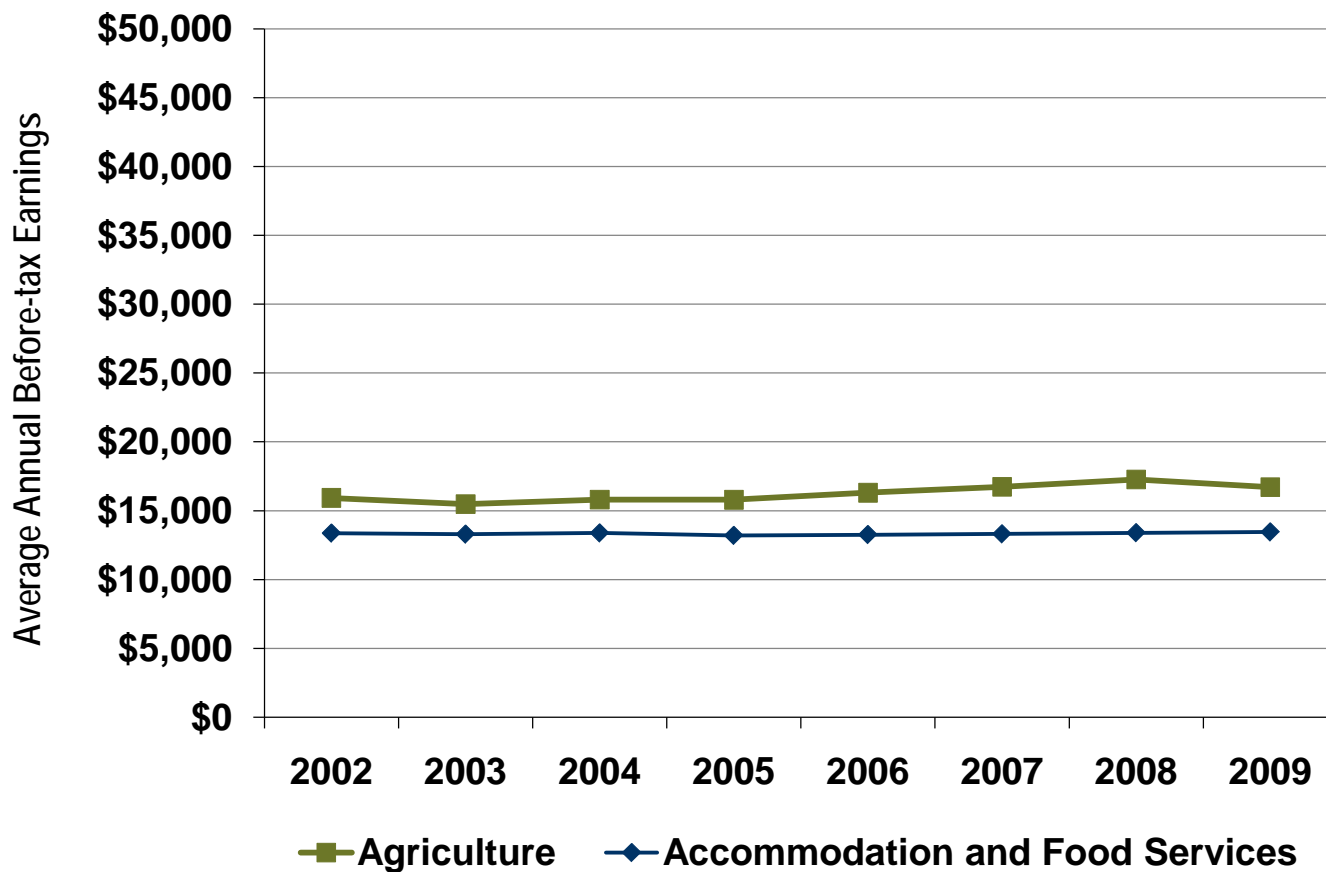


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	\$15,927	\$15,470	\$15,799	\$15,794	\$16,303	\$16,731	\$17,266	\$16,708
All Industries Statewide	\$36,632	\$36,231	\$35,644	\$35,769	\$36,751	\$37,389	\$37,948	\$37,404



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Annual Before-tax Earnings for Agriculture and Accommodation and Food Services, Inflation-adjusted Dollars Base Year 2000 = 100, CPI-W, Washington State, 2002 through 2009

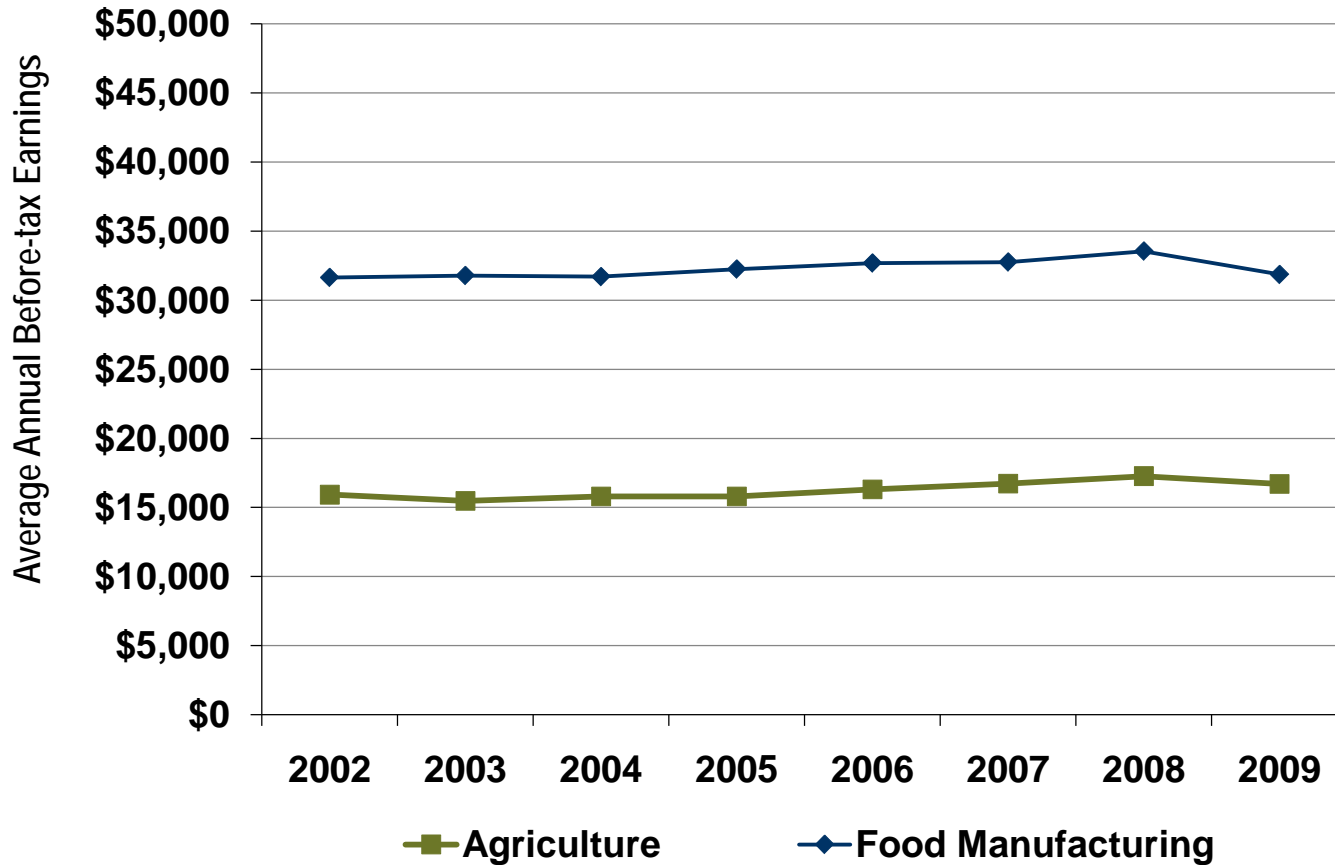


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	\$15,927	\$15,470	\$15,799	\$15,794	\$16,303	\$16,731	\$17,266	\$16,708
Accommodation and Food Services	\$13,362	\$13,286	\$13,374	\$13,193	\$13,255	\$13,305	\$13,390	\$13,446



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Annual Before-tax Earnings for Agriculture and Food Manufacturing, Inflation-adjusted Dollars, Base Year 2000 = 100, CPI-W Washington State, 2002 through 2009



	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	\$15,927	\$15,470	\$15,799	\$15,794	\$16,303	\$16,731	\$17,266	\$16,708
Food Manufacturing	\$31,649	\$31,789	\$31,706	\$32,253	\$32,689	\$32,761	\$33,551	\$31,862

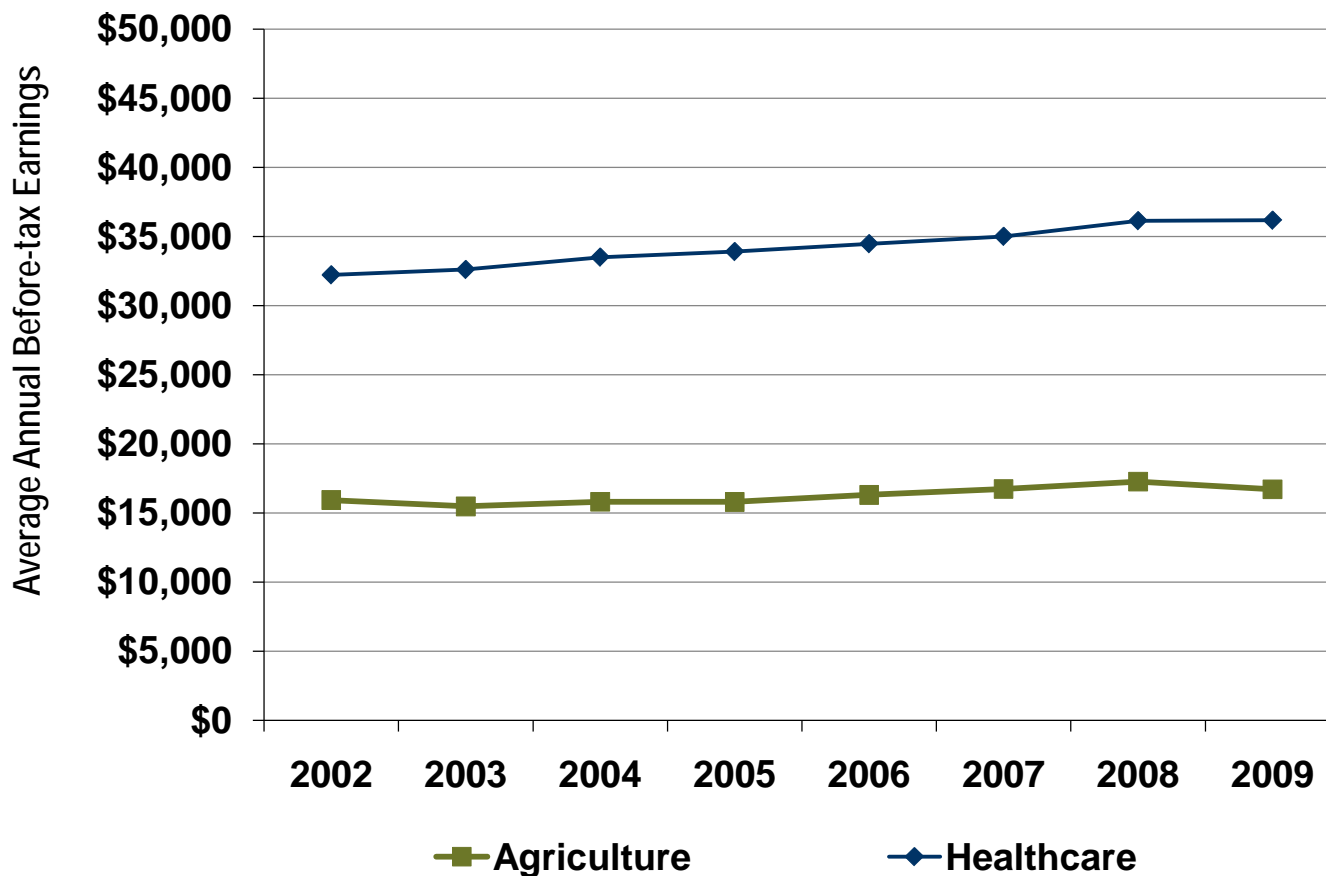


Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Annual Before-tax Earnings for Agriculture and Healthcare

Inflation-adjusted Dollars, Base Year 2000 = 100, CPI-W

Washington State, 2002 through 2009

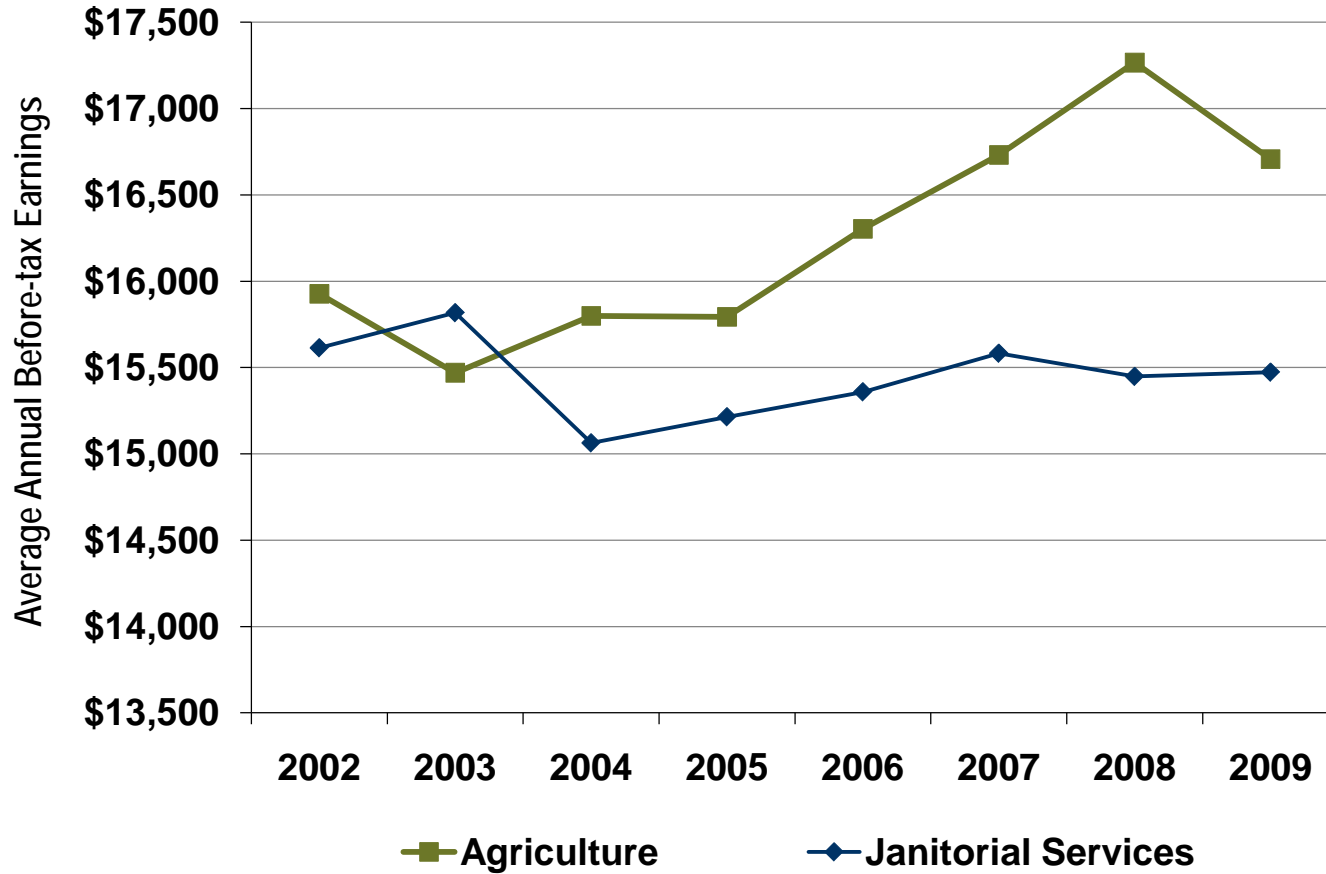


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	\$15,927	\$15,470	\$15,799	\$15,794	\$16,303	\$16,731	\$17,266	\$16,708
Healthcare	\$32,217	\$32,603	\$33,499	\$33,902	\$34,471	\$35,002	\$36,136	\$36,172



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Annual Before-tax Earnings for Agriculture and Janitorial Services, Inflation-adjusted Dollars, Base Year 2000 = 100, CPI-W Washington State, 2002 through 2009

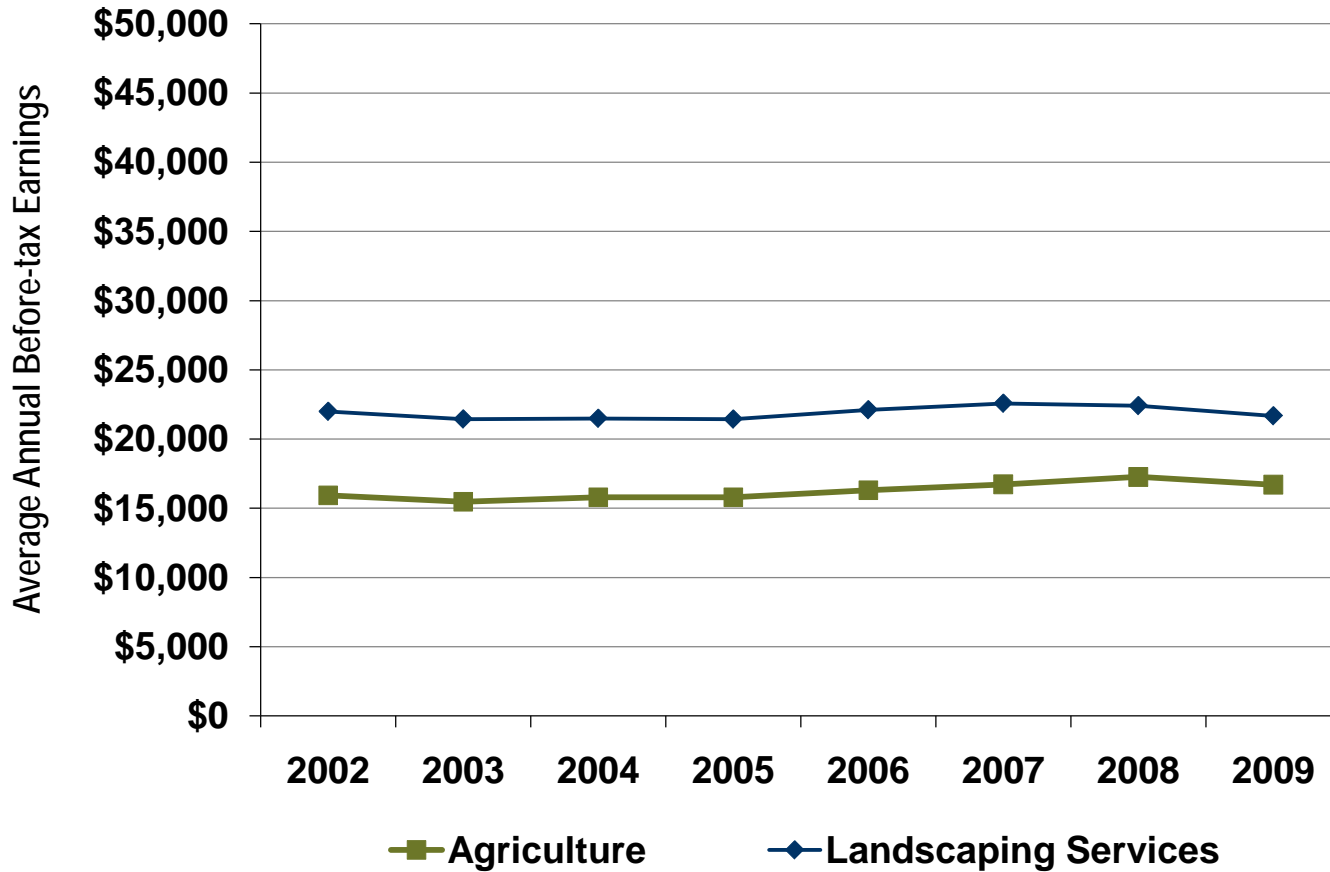


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	\$15,927	\$15,470	\$15,799	\$15,794	\$16,303	\$16,731	\$17,266	\$16,708
Janitorial Services	\$15,614	\$15,818	\$15,063	\$15,214	\$15,359	\$15,583	\$15,448	\$15,473



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Annual Before-tax Earnings for Agriculture and Landscaping Services, Inflation-adjusted Dollars, Base Year 2000 = 100, CPI-W Washington State, 2002 through 2009

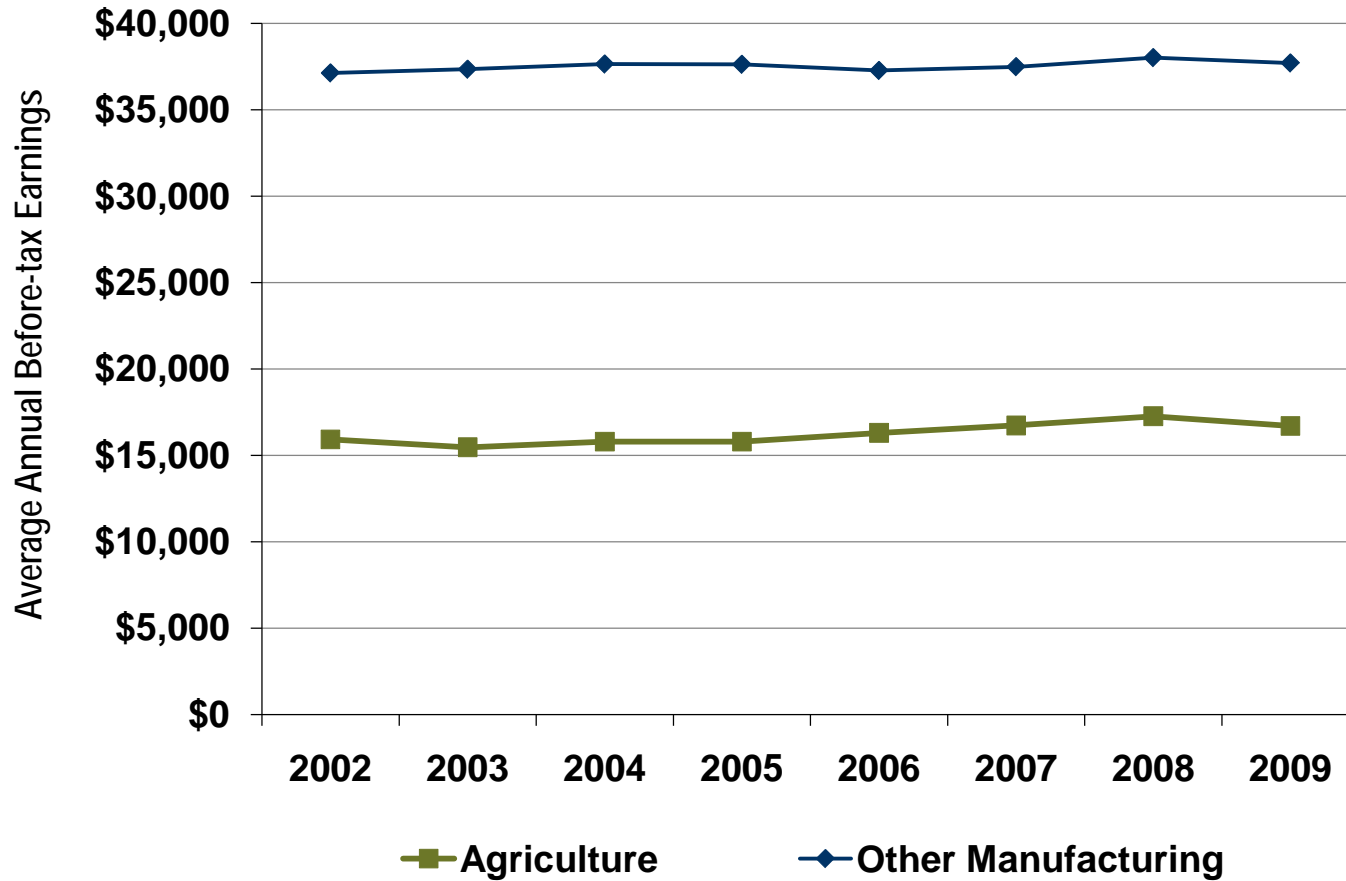


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	\$15,927	\$15,470	\$15,799	\$15,794	\$16,303	\$16,731	\$17,266	\$16,708
Landscaping Services	\$21,995	\$21,443	\$21,493	\$21,437	\$22,110	\$22,577	\$22,407	\$21,675



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Annual Before-tax Earnings for Agriculture and Other Manufacturing, Inflation-adjusted Dollars, Base Year 2000 = 100, CPI-W Washington State, 2002 through 2009

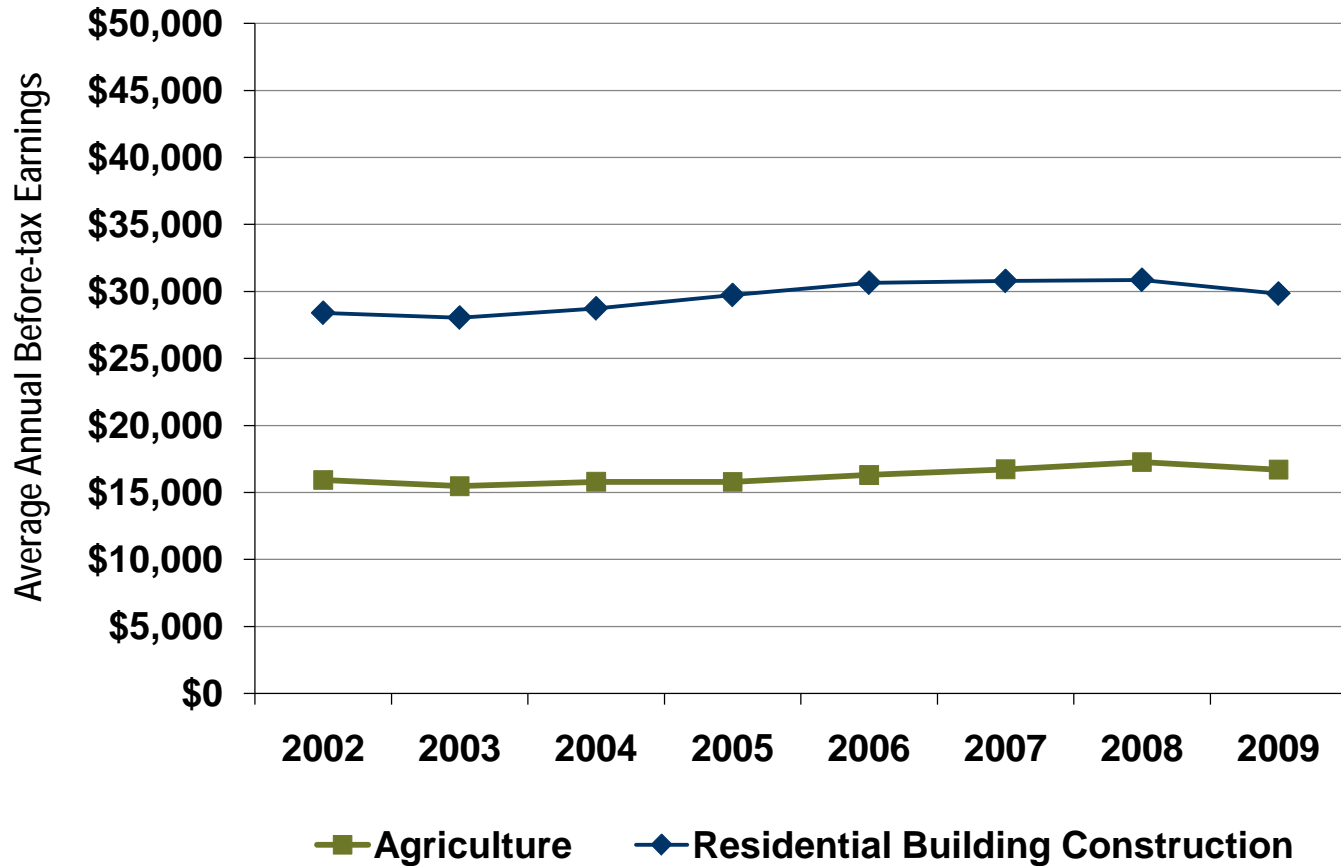


	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	\$15,927	\$15,470	\$15,799	\$15,794	\$16,303	\$16,731	\$17,266	\$16,708
Other Manufacturing	\$37,133	\$37,348	\$37,650	\$37,633	\$37,276	\$37,495	\$38,022	\$37,711



Source: Employment Security Department/LMEA, Quarterly Census of Employment and Wages (QCEW)

Average Annual Before-tax Earnings for Agriculture and Residential Building Construction, Inflation-adjusted Dollars Base Year 2000 = 100, CPI-W, Washington State, 2002 through 2009



	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture	\$15,927	\$15,470	\$15,799	\$15,794	\$16,303	\$16,731	\$17,266	\$16,708
Residential Building Construction	\$28,403	\$28,048	\$28,734	\$29,731	\$30,647	\$30,780	\$30,863	\$29,836



Summary and Conclusions

- No structural “shortage” of agricultural labor supply in the period 2007 to 2009
- Spot “shortages,” as measured by the responses of agricultural producers have been declining to 0 percent over the period 2007 to 2009
- Agricultural producers are aware that the current Great Recession has alleviated concerns over labor “shortages” in agriculture



**Employment
Security
Department**

WASHINGTON STATE

Summary and Conclusions

- While agricultural employment grew by
 - 1,023 average quarterly workers between 2006 and 2007, the seven industry sectors represented here grew by 9,751 workers
 - 1,656 average quarterly workers between 2007 and 2008, the seven industry sectors remained essentially static at an average quarterly increase of 315 workers
 - 4,703 average quarterly workers between 2008 and 2009, the seven industry sectors released 21,798 workers back into the state's labor market



**Employment
Security
Department**

WASHINGTON STATE

Summary and Conclusions

- Undocumented workers likely respond to the incentive of higher average annual earnings and higher hourly wage rates when seeking employment in the United States
 - This behavior is hypothesized to be a function of the money and non-money costs, risks and uncertainty
- Inflation-adjusted dollar average annual earnings in agriculture are the third lowest in the group of eight industry sectors in this study
- Yet, employment has increased in agriculture over the period 2002 to 2009