
Earnings and Employment: The Effects of the Living Wage Ordinance in Santa Fe, New Mexico

August 23, 2006

UNIVERSITY OF NEW MEXICO

BUREAU OF BUSINESS AND
ECONOMIC RESEARCH



The University of New Mexico

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Executive Summary

In June of 2004, the living wage ordinance in Santa Fe increased the minimum wage for businesses with 25 or more employees from \$5.15 to \$8.50, a 65 percent increase. In Reynis (2005) and Potter (2006), the Bureau of Business and Economic Research has examined economic trends and employment impacts of the living wage ordinance in the City of Santa Fe. In this analysis, we use a different data set based on individual employee's quarterly wage earnings records to examine both how quarterly earnings and the number of people employed by Santa Fe businesses with 25 or more employees change in response to the living wage ordinance.

The main part of the analysis compares average quarterly earnings over the year prior to the living wage ordinance with earnings after the living wage ordinance. This difference in earnings for employees of large (25 or more employees) Santa Fe businesses is compared with the difference in earnings for employees of large Albuquerque businesses as well as the difference for employees of small Santa Fe businesses. We are also interested in the number of jobs gained or lost in Santa Fe and Albuquerque, and by looking at the number of workers in the wage file who worked for Santa Fe or Albuquerque businesses during a given quarter, we can examine this aspect as well. Since matches are ubiquitously imperfect, the number of jobs is likely less reliable than the employment numbers examined in Potter (2006), but allows us to examine employment changes by gender and age in addition to location and business size.

The results show earnings increases overall and for the retail, health care, and accommodations and food services sectors specifically for employees of large Santa Fe businesses relative to employees of large Albuquerque businesses and small Santa Fe businesses. That employees of large Santa Fe businesses did better against both of these control groups suggests a real increase in quarterly earnings with no negative impact on employment. The retail and accommodations and food services sectors, so often targeted as being hurt by minimum wage laws, show stronger growth in both employee's earnings and the number of jobs for large Santa Fe businesses than for both small Santa Fe businesses and large Albuquerque businesses. The difference is quite substantial, and indicates that the living wage ordinance successfully increased earnings while businesses in these two sectors maintained increases in the number of jobs over and above changes for large Albuquerque and small Santa Fe businesses.

The construction industry is another matter, and it though appears that construction in Santa Fe as a whole began to slow before the living wage ordinance, employee earnings and the number of jobs has decreased more

substantially for large Santa Fe businesses than for small Santa Fe businesses, both of which do worse after the living wage ordinance than large Albuquerque businesses. It is possible that the living wage ordinance contributed to this accelerated decline for large Santa Fe construction businesses, but as the trend began before the living wage ordinance was implemented, and it is difficult to make this conclusion outright. A further complicating factor is that low income workers in the construction industry actual do quite well after the living wage ordinance, showing strong increases in earnings and a notable stability in the number of jobs that is not present for workers overall. This suggests that the decline in the construction industry has little to do with the living wage. Thus it is hard to tell what is happening with the construction industry, but just as it is possible that higher wages due to the living wage contributed to the decline of construction activity, it is possible that the living wage served to help low income workers in an industry that was already in decline.

In summary, the analysis shows that overall quarterly earnings levels have increased after the living wage ordinance. Except in construction, both employment and employee earnings have shown stronger growth for large Santa Fe businesses than for small Santa Fe businesses or large Albuquerque businesses.

I. Introduction

The Bureau of Business and Economic Research (BBER) has examined a number of aspects of the Living Wage Ordinance (LWO) in Santa Fe, beginning with a baseline analysis of the Santa Fe economy and following with analysis based on overall economic trends (“Preliminary Analysis: Impacts of the \$8.50 Minimum Wage on Santa Fe Businesses, Workers, and the Santa Fe Economy”), a wage analysis based on a survey of businesses, and an analysis of employment impacts using ES-202 micro data (“Measuring the Employment Impacts of the Living Wage Ordinance in Santa Fe, New Mexico”)¹. This report uses individual wage earnings micro data to analyze the impacts of the LWO on the earnings of Santa Fe workers, and completes the examination and review of the Living Wage Ordinance implications and effects undertaken by BBER.

The methods used in the analysis of wage impacts are quite similar to those used to examine the effects of the LWO on employment in Santa Fe. To estimate the impacts of the LWO on earnings, we look at the difference in earnings at each job before and after the LWO by industry, as well as differences in the overall time trend of earnings after the living wage is implemented. Gender and age information on each worker allows us to further examine how earnings for women and youth have changed in response to the LWO. In addition to examining changes in wage earnings, we look at changes in the average number of jobs held by Santa Fe workers.

As noted in earlier reports, determining the impacts of the LWO is difficult at best. Apart from the usual difficulties (isolation of influences, reliability of data, etc...) in determining the impacts of a policy change, the case of the Santa Fe living wage is unique in that the small geographical region is less balanced and more subject to seasonality and other economic fluctuation, which increases the variability of employment and earnings and leads to exaggerated estimates of the impacts of any time-based policy such as the LWO.

In the next section, we discuss data sources as well as the manipulations, corrections and other processes used to create the final data sets used in the analysis. Following that, we discuss the methods used in the analysis, focusing first on the methods used in previous literature, though this is covered in more detail in the previous employment analysis report. The analysis results are then presented, beginning with an examination of earnings changes using both Card-Krueger differences and time-series

¹ These reports were previously issued to the City of Santa Fe, and with the City of Santa Fe's permission, will be posted on the BBER website at <http://www.unm.edu/bber>.

regressions and concluding with a look at changes in the average number of jobs and the percent of Santa Fe jobs filled by Santa Fe residents using a variety of Card-Krueger differences and time-series methods as appropriate. The report concludes with a discussion of the results and their implications in terms of the LWO and living wage policy in general.

II. Data

The data used for the analysis in this report is derived from two data sets: the first consists of all businesses with workers covered under unemployment insurance in New Mexico. The second includes all workers employed at the businesses in the first data set. Both of these databases are part of the ES-202 data collection program, compiled by the New Mexico Department of Labor (NM DOL) and used by the U.S. Bureau of Labor Statistics to track employment and wage data over time².

The employer data set includes total monthly employment by business, defined as those employees that received pay during the pay period including the 12th of the month. In addition, information on the location and industry category of each business is included, as well as several variables indicating the type of ownership, whether the business has multiple locations, and a variety of contact and legal information. The wage data set includes quarterly wages by each worker at each employer, as well as an employer identification number and the worker's address, and is matched with the New Mexico Drivers License database by the NM DOL to include gender, and birth date.

As with the previous employment analysis, the employer data set was corrected for misspelled city names and missing physical addresses. Employers who were publicly owned or had more than one location³ were removed. To limit the data set to just those employers in Santa Fe or Albuquerque, employers not located in Santa Fe or Albuquerque were removed. Location in Santa Fe was defined as including only those employers listing Santa Fe as their city and zip codes of 87500, 87501,

² BBER is given access to this data for use in specific projects, and must ensure the maintenance of confidentiality of both individual wage data and individual firm employment data.

³ Removing multiple location employers is an unfortunate necessity. Though the employer file tracks each location separately and can be used by itself without problem, the wage file only matches each employee to the general employer number which could be of the multiple locations that a business has. Hence there is no way to determine whether an employee of a particular chain is actually employed in Santa Fe and hence subject to the LWO, or employed elsewhere in New Mexico.

87505, and 87507⁴, while location in Albuquerque was defined simply as employers listing Albuquerque as their city.

The wage data set was cleaned for errors in the social security number, which included removing entries with invalid social security numbers or names in place of the social security number. Errors in the birth date resulted in some workers being impossibly old or not yet born, and these were excluded for the analysis of youth earnings, but were otherwise left intact. Quarterly earnings were adjusted to real second quarter 2004 dollars using the consumer price index published by the U.S. Bureau of Economic Analysis.

These two data sets, one consisting of Santa Fe and Albuquerque private single location employers and the other consisting of all workers, were then merged together, creating a database of workers who worked for the employers included in the first data set. This final database includes quarterly wages from 1996 to the second quarter of 2005 as well as the city and county of the employer and the employee, the employer industry category, the total employment at each employer by month, and the gender and age of each employee.

This data set is used to examine the changes in earnings before and after the LWO in Santa Fe and Albuquerque as well as the percent of Santa Fe jobs held by Santa Fe City or County residents. To examine changes in the average number of jobs held by each of these workers, the data set was again merged with the wage data set, which created a second database that includes all jobs that any worker employed at a Santa Fe or Albuquerque business held. This second database is used in the analysis of changes in the average number of jobs held by Santa Fe workers after the LWO.

It should be noted that these data sets do not include every worker employed at a privately held single location business in Santa Fe or Albuquerque. With any data set human error is a significant problem, and matching multiple data sets compounds the problem. Since matches are based on identification numbers, an error in the unemployment identification number results in the worker not being recognized as an employee, while an error in the social security number of a worker will result in separate entries and can skew estimates of wage changes. BBER has done its' best to account for these errors, but 100 percent accuracy is impossible. If these

⁴ This is restrictive and eliminates some businesses that actually lie within Santa Fe, but in setting the data it is better to be restrictive than inclusive. We'd rather miss some firms that should be included than include some firms that should be missed. The alternative is to include a great number of businesses that lie within Santa Fe County but do not fall within the city limits. The zip code 87500 does not exist, but a significant number of businesses had this zip code, and it likely represents a data entry error, therefore it was included.

errors can be assumed to be random, their impact on the analysis can be assumed to be negligible.

III. Method

The primary method used throughout this analysis is the difference-in-differences method used by Card and Krueger and others⁵. Where data permits, this analysis is supplemented with a time-series analysis of form similar to that in Yelowitz (2005) and Pollin and Wicks-Lim (2005)⁶. The difference-in-differences analysis compares before and after differences in a given control region to differences in the region in which a minimum wage law was enacted. The results then indicate whether the change in the minimum wage region was positive or negative relative to the change in the control region. The analysis of time-series data compares total or average values over time using dummy variables to indicate the region in which the policy takes effect and the time period during which the policy is implemented.

Both difference-in-differences and time-series methods are used to examine changes in wage earnings. In the difference-in-differences analysis, the basic unit of measurement is average quarterly wage earnings taken over the quarters of the fiscal year during which a person worked a specific job. For example, if someone worked only the 1st and 2nd quarter of 2004, their average quarterly earnings before the LWO is the average of those two quarters. To be included in the difference calculations, a person has to have earned wages in at least one quarter during the two years that encompass the living wage (i.e. any quarter from 3rd quarter 2003 to 2nd quarter 2005). This annual average reduces the effects of seasonal jobs by including jobs that are held only during a certain season, and ensures that people who stopped or started a job during the year before and the year after the LWO are included. The difference analysis itself compares the difference between average quarterly earnings in the year after the LWO (3rd quarter 2004 to 2nd quarter 2005) and the year before the LWO (3rd quarter 2003 to 2nd quarter 2004) for each worker in Santa Fe with the same differences for each worker in Albuquerque.

Since the Santa Fe Living Wage applies only to businesses with 25 or more employees, we begin by comparing earnings changes for the population of workers at businesses with 25 or more employees using a simple regression with a constant and a dummy variable indicating that a person is employed at a business located in Santa Fe. For the complete population of workers a similar regression is used, including a dummy variable indicating

⁵ For example, see the debate between Card and Krueger (1994, 1995, 2000) and Neumark and Wascher (1995, 2000).

⁶ See Brown et al. 1982 for a comprehensive review of time-series analysis studies.

that the worker is employed at a business with 25 or more employees and a dummy variable indicating that the worker is employed at a business that both has 25 or more employees and is located in Santa Fe. These regressions are used to look at changes in wage earnings for all workers of several different NAICS industry sectors, as well as earnings for women and youth in different sectors.

To examine changes in the average number of jobs held by workers in Santa Fe, we use a difference-in-difference analysis comparing the average number of jobs held during a given quarter in the year prior to the LWO with the average after the LWO in Santa Fe and Albuquerque. Here again the data allows us to examine changes for different industry sectors, genders, and ages.

The selection of Albuquerque as the control region is discussed in depth in “Measuring the Employment Impacts of the Living Wage Ordinance in Santa Fe, New Mexico (BBER 2006).” To maintain continuity of comparison amongst the analyses, Albuquerque is used as the control region for this analysis as well.

IV. Results

The results are discussed below in five sections: the first focuses on quarterly earnings trends through time in Santa Fe, and the second compares earnings and employment trends in Santa Fe to Albuquerque. The third section contains the meat of the difference analysis, focusing on the difference-in-differences in earnings between, first, large businesses in Santa Fe and Albuquerque, and second, large businesses in Santa Fe and small businesses in Santa Fe. The fourth section discusses earnings trends among low income workers in key industries, and the fifth looks at changes in the percent of workers for large Santa Fe businesses who are also Santa Fe residents over time. For brevity’s sake, we will use the term “large” to refer to businesses with an average of 25 or more employees in either the year before or the year after the LWO (and hence if in Santa Fe, subject to the LWO) and the term “small” to refer to businesses with an average of less than 25 employees in both the year before and the year after the LWO. In the figures below, the vertical line represents when the LWO went into effect. Finally, it is essential throughout the discussion of wage earnings that we keep in mind that we are not discussing wage rates. The data only provide total quarterly earnings, which can be affected by the hourly wage rate an employee receives or by the number of hours an employee works. Hence the increase in average quarterly earnings over the years is likely due to some combination of hourly rate increases as well as increased hours worked.

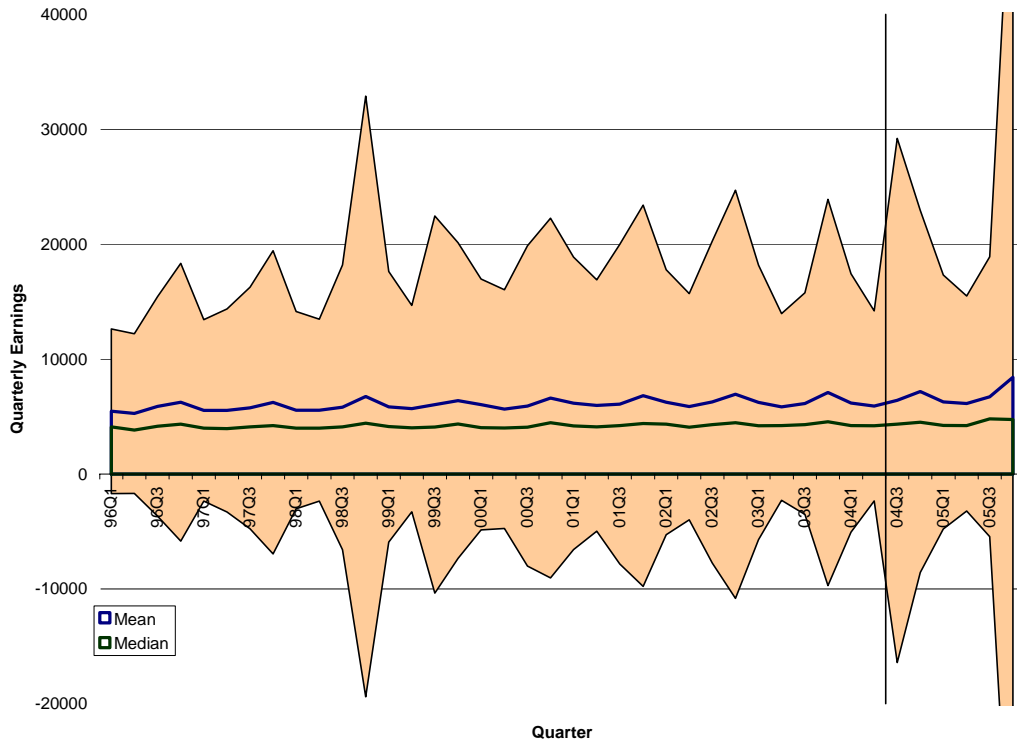
A. Quarterly Earnings in Santa Fe

Average quarterly earnings for employees of large Santa Fe businesses have been increasing steadily for the past 10 years, moving from an average of \$5,713 in 1996 to \$6,883 in 2005. However, median earnings have remained fairly stagnant, increasing from \$4,102 in 1996 to \$4,490 in 2005, a gain of only \$400 in 10 years.

Important seasonal peaks in mean and median earnings occur regularly in the fourth quarter of each year, indicating a substantial increase in business during this tourist and holiday-driven time. These seasonal fluctuations can be seen clearly further below in **Figure 2**. The distribution of wages follows the same seasonal pattern, with the standard deviation increasing substantially in the fourth quarter of each year, as shown in **Figure 1**.

Figure 1 shows the mean and median quarterly earnings, as well as one standard deviation above and below the mean quarterly earnings. What is particularly interesting about the fluctuations in the distribution is the strong increase in the standard deviation during the peak fourth quarter of years following the LWO. The corresponding low point during the second quarter of 2005 is almost unchanged from the second quarter of 2004. We will see below that the average change in quarterly earnings after the LWO was positive, but **Figure 1** suggests that most of this increase is coming from higher earnings during the peak season of the year, while the low season experiences a relatively small increase.

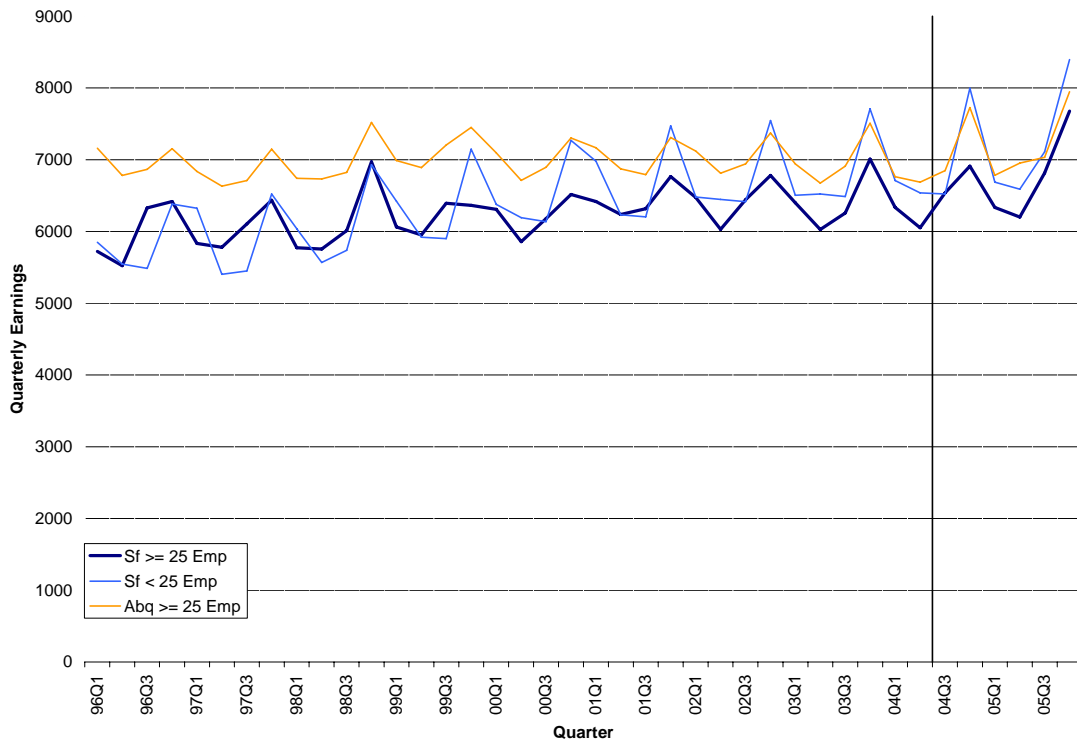
FIGURE 1: QUARTERLY EARNINGS OF EMPLOYEES OF LARGE SANTA FE BUSINESSES: MEAN, MEDIAN, AND STANDARD DEVIATION



B. Santa Fe and Albuquerque Wage Earnings Trends

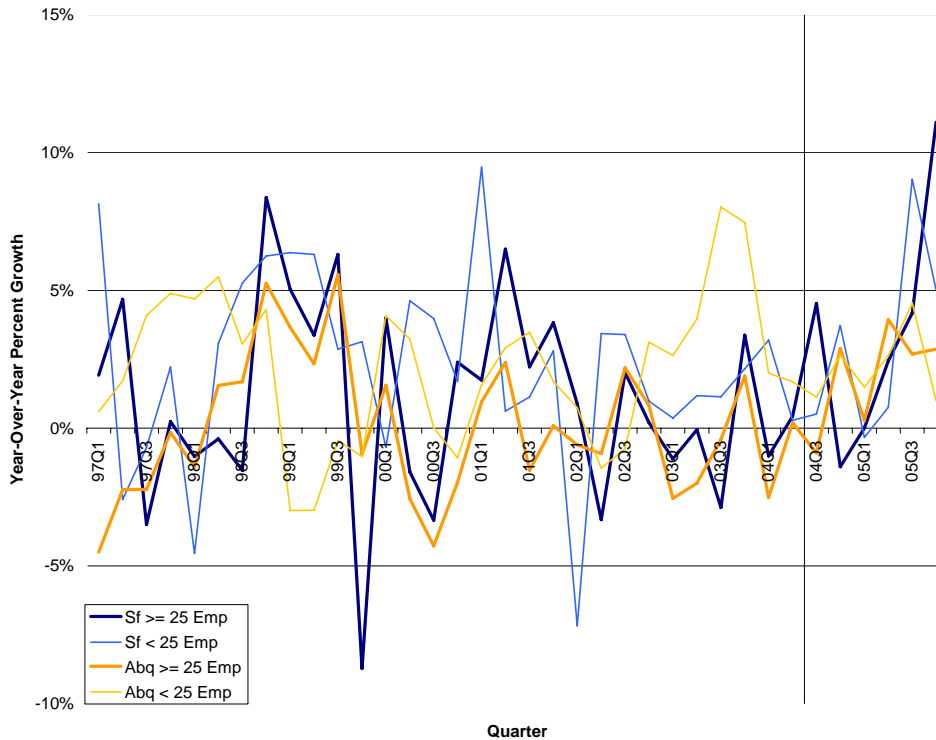
Average quarterly wage earnings in both Santa Fe and Albuquerque have been steadily increasing over the past decade. Overall, average earnings in Santa Fe have been catching up to Albuquerque earnings, though the seasonal spike in earnings in the fourth quarter is much stronger in Santa Fe. **Figure 2** shows quarterly earnings for employees of large Santa Fe businesses, employees of small Santa Fe businesses, and employees of large Albuquerque businesses.

FIGURE 2: AVERAGE QUARTERLY EARNINGS BY LOCATION AND BUSINESS SIZE



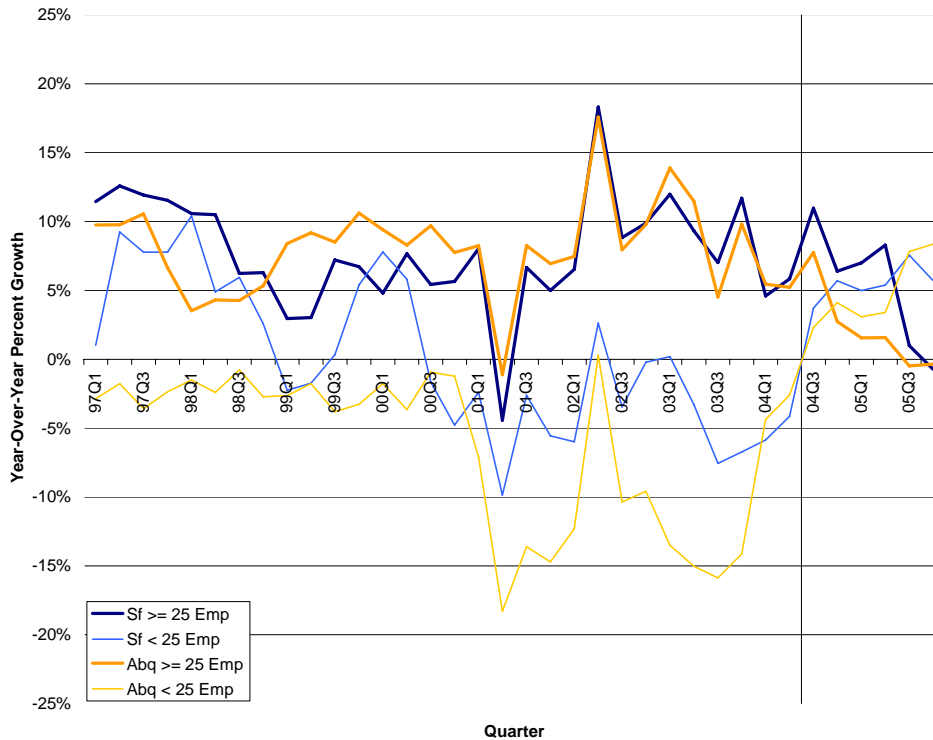
Given the average earnings shown in **Figure 2**, one way of looking at possible LWO impacts is to examine year-by-year percent growth in average earnings. **Figure 3** shows this percent growth in average earnings for employees of large businesses in Santa Fe as well as for employees of small Santa Fe businesses, large Albuquerque businesses and small Albuquerque businesses. While the year-over-year growth in average earnings fluctuates a great deal, there is somewhat stronger growth in average earnings for employees of large Santa Fe businesses than for employees of other businesses in Santa Fe and Albuquerque, particularly in the last two quarters of 2005. The fourth quarter of 2004 does show a slight drop in quarterly earnings for employees of large Santa Fe businesses, but this recovers in later periods.

FIGURE 3: YEAR-OVER-YEAR PERCENT GROWTH IN AVERAGE QUARTERLY EARNINGS BY LOCATION AND BUSINESS SIZE



This should not be surprising, given that the goal of a living wage is to increase earnings. However, it does suggest that if employers reduced hours or the number of jobs, this did not happen to a large enough extent to eliminate a gain in average quarterly earnings. This is discussed further in the next section. For now though, consider **Figure 4**, which shows the year-over-year percent change in the number of jobs for the same four business categories. There is a trend beginning in earnest in the last quarters of 2003 in which growth in small businesses increases substantially while growth for large businesses decreases. This trend is true in both Santa Fe and Albuquerque. This trend continues after the LWO takes effect in the second quarter of 2004, with growth in the number of jobs at large businesses in both Santa Fe and Albuquerque becoming weaker.

FIGURE 4: YEAR-OVER-YEAR PERCENT CHANGE IN THE NUMBER OF WAGE EARNING JOBS BY LOCATION AND BUSINESS SIZE



Looking at female workers, quarterly earnings behave similarly, showing stronger growth among employees of large Santa Fe businesses after the LWO except in the first quarter of 2005. The trend in the number of jobs is similar to overall trends as well, though growth in the number of jobs at large Santa Fe and Albuquerque businesses becomes negative much sooner and the number of jobs at small businesses in both Santa Fe and Albuquerque held by women grows more slowly than employment overall. In spite of this shared trend between Albuquerque and Santa Fe, growth in the number of jobs held by female workers at large Santa Fe businesses is consistently stronger than growth at large Albuquerque businesses. The overall indication here is that women are not being hired for an equal number of the new jobs available in Santa Fe or Albuquerque, regardless of business size. Figures for these trends are included in Appendix I.

Average quarterly earnings for youth workers, those who are aged 14 -18 in a given year, differ slightly from the trends for women and employees overall. The change in earnings for youth employed at large Santa Fe businesses is much stronger for youth working at large Santa Fe businesses than for youth at large Albuquerque businesses. By the end of 2005, the growth trend is again similar to that of youth working at large Albuquerque businesses. This is consistent with what we might expect from

a living wage impact, where earnings show strong growth in the year following the new minimum, but then follow overall trends after that period.

The number of jobs held by youth shows substantial decline across the board in both Santa Fe and Albuquerque in the quarters following the LWO, with this decline being slower for large Santa Fe businesses than large Albuquerque businesses and small Santa Fe businesses until the third quarter of 2005 when youth employment growth at large Albuquerque businesses becomes slightly less negative. The Figures for youth job and earnings trends are included in Appendix I.

The previous BBER report on employment impacts (Potter 2006) did not find that the change in employment at large Santa Fe businesses was significantly different from the change in employment at large Albuquerque businesses. This result, taken with the trends shown in **Figures 2-4**, suggests that overall employees of large Santa Fe businesses have experienced an increase in their quarterly earnings without an adverse impact on employment levels. We will examine this in more detail in the next section, which analyzes changes in quarterly earnings on the level of an individual wage earner. This allows for a more robust comparison of wage changes. The analysis in the next section provides an estimate of quarterly earnings lost or gained that includes the effects of jobs lost or gained, and hence is not subject to the same ambiguity as the figures for average changes discussed in this section.

C. Difference Analysis of Changes in Quarterly Earnings in Santa Fe and Albuquerque

The benefit of the difference-in-differences method is that it captures the change in quarterly earnings for each employee at a given job. While looking at composite wage trends allows us to compare average quarterly earnings across all employees, the difference-in-differences analysis examines the average change in quarterly earnings for each individual at a given job. In this case we take each employee's average of quarterly earnings over the year before the LWO and compare that to their average quarterly earnings over the year after the LWO. This difference in earnings forms the basic unit of analysis. We include in this difference any job at which a person had earnings from the third quarter of 2003 to the second quarter of 2005. This captures both jobs that were worked before the LWO but not after and vice-versa. Job growth or decline after the LWO will indicate a corresponding change in quarterly earnings. The results in this section should not be thought of as a change in average earnings per se,

but rather a change in the overall average earnings of any job that was worked during the two years encompassing the LWO⁷.

On average, the difference in quarterly earnings before and after the LWO is positive for all, female, and youth employees of large businesses in both Santa Fe and Albuquerque. The increases are really quite substantial for both cities, hovering at upwards of 5 or 6 percent, though the percent increase for youth is substantially higher than that in both cities, and the percent increase for women is somewhat lower in the case of Albuquerque. The average quarterly earnings in the years before and after the LWO and the differences between the two are shown in **Table 1**. Note that both women and youth employees of large businesses in Santa Fe have higher quarterly earnings on average than in Albuquerque. However, overall employees have lower average earnings, indicating that women and youth are either better paid or work more hours than men or older workers in Santa Fe than in Albuquerque.

TABLE 1: AVERAGE QUARTERLY EARNINGS OF EMPLOYEES OF LARGE BUSINESSES BEFORE AND AFTER THE LIVING WAGE IN SANTA FE AND ALBUQUERQUE

	SANTA FE			ALBUQUERQUE		
	Before	After	Difference	Before	After	Difference
Everyone 37,311; 405,686	3,399.30	3,670.60	271.30	3,510.73	3,636.03	125.30
Women 14,934; 153,802	3,432.89	3,718.01	285.12	3,040.40	3,117.46	77.06
Youth 2,136; 26,502	482.01	878.07	396.07	420.93	776.89	355.97

NOTE: Average quarterly earnings are over workers that earned wages during at least one quarter in the two years surrounding the LWO. These values are necessarily lower than official estimates because they include people who did not have any earnings during the two years encompassing the LWO. The number of people in Santa Fe and in Albuquerque is given below each category in small print.

Comparing the values in the difference columns of **Table 1** with the results in the first row of **Table 2** provides a more intuitive understanding of the difference-in-differences method. The difference between the 271.30 difference for Santa Fe and the 125.30 difference for Albuquerque is exactly 146.00, the difference in differences in the first row and first column of **Table 2**.

⁷ Averages typically only include cases that have a value. Here the average includes many cases with zero earnings before or after the LWO, which increases the number of cases without increasing the total, and artificially decreases the resulting average. Hence the before and after averages shown here will necessarily be lower than the actual average, because they include a number of people in each case that aren't actually earning any wages.

Since we can distinguish the LWO as applying to businesses of a specific size (25 or more employees) and a specific location (the city of Santa Fe) we can perform the difference-in-differences method on both dimensions, comparing large businesses in Santa Fe to large businesses in Albuquerque and large Santa Fe businesses to small Santa Fe businesses. As noted, the difference-in-differences between Santa Fe and Albuquerque for all employees of large businesses is 146.00, indicating that overall the average quarterly earnings of employees of large Santa Fe businesses increased \$146.00 more than for employees of large Albuquerque businesses. This difference is substantial: nearly 5 percent of average quarterly earnings overall.

TABLE 2: DIFFERENCE-IN-DIFFERENCES OF QUARTERLY EARNINGS BETWEEN EMPLOYEES OF BUSINESSES IN SANTA FE AND ALBUQUERQUE WITH 25 OR MORE EMPLOYEES

	Everyone	Women	Youth
All Industries	146.00	208.06	40.10
442,996; 168,735; 28,637	28.35	31.70	26.80
Construction	-1151.85	337.34	-113.51
47,411; 3,488; 1,012	119.39	335.52	300.80
Retail	617.64	392.89	6.67
42,419; 17,964; 4,167	104.52	86.76	63.70
Health Care	190.76	228.32	145.94
49,848; 9,958; 1,163	85.06	62.77	112.21
Acc. and Food Services	350.92	387.35	98.54
75,962; 30,954; 11,532	22.04	32.85	35.43

Note: Bold values indicate significance at the 10% level. Population sizes are shown under each industry, and standard errors are listed in small text below each result. The regression includes a constant and a location dummy with 1 indicating Santa Fe.

There are at least two significant points that the data in **Table 2** suggest. First, the results are similar in direction to the results found in the employment analysis in Potter (2006). Particularly, the change in earnings for employees of large Santa Fe businesses relative to the change in Albuquerque is positive, as was employment in Potter (2006). With the exception of the construction industry, these positive changes occur across the board, and are particularly strong in the retail and accommodations and food services sectors. The negative construction result appears to be almost entirely felt by male workers older than 18, since the changes relative to Albuquerque for women and youth are positive and much less negative respectively.

Second, though minimum wage laws are usually argued to damage typically low wage earners such as women and youth, the data do not support such a claim. In fact, the increase in earnings for women in Santa Fe over the increase for women in Albuquerque is quite strong, while for youth the

difference is positive but insignificant. This is particularly interesting in the construction industry, where female employees of large Santa Fe businesses had growth relative to Albuquerque, while all workers and youth workers experienced a negative earnings change relative to Albuquerque. The changes for youth relative to Albuquerque are generally smaller than for the other worker categories, but this is primarily due to the fact that youth have much lower quarterly earnings on average.

Table 3 shows the percent change in the number of jobs held at large businesses in Santa Fe and Albuquerque. Similar tables for differences in the number of jobs and for quarterly earnings differences and percent changes are in the appendix.

The increase relative to Albuquerque in quarterly earnings for women in construction and youth in accommodations and food services are in and of themselves interesting. For women working at large businesses in Santa Fe, the number of jobs held in the construction industry increase slightly (54 to 60) while their average (speaking in terms of actual averages here, in other words, including only those people who had earnings during a given period) quarterly earnings increased by \$731. Thus women must be either earning a higher wage or working more hours. In light of both decreased jobs and quarterly earnings in the construction industry for employees of large Santa Fe businesses, the increases for women indicate a stronger role in construction, and they may possibly be filling hours that male employees no longer work.

In the accommodations and food services sector, quarterly earnings for youth increased by \$163 after the LWO, while the number of youth employed at large Santa Fe businesses went from 526 to 765. Accommodations and Food Services is an industry sector that typically employs a large portion of youth workers, and the result shown in **Table 2** that youth employees at large businesses in Santa Fe had an increase in earnings of \$98 more than youth employees in Albuquerque - coupled with the increase in the number of youth employees, suggests that any effects from the LWO were beneficial in terms of both quarterly earnings and the number of jobs worked by youth workers. However, these results in general are not as strong as for female workers or workers overall, which indicates that youth did not see increases of the same size as other workers. This is probably due mostly to the typically small earnings by youth workers and indeed percent increases for youth are vastly larger than for workers overall.

TABLE 3: PERCENT CHANGE IN THE NUMBER OF WAGE EARNING JOBS IN THE YEAR BEFORE AND THE YEAR AFTER THE LIVING WAGE ORDINANCE

	EVERYONE		WOMEN		YOUTH	
	Santa Fe	Albuquerque	Santa Fe	Albuquerque	Santa Fe	Albuquerque
All Industries	5.98%	3.09%	4.95%	0.48%	43.09%	53.44%
Construction	-3.51%	10.63%	3.90%	2.69%	63.64%	93.87%
Retail	11.57%	5.30%	12.92%	2.20%	60.11%	95.74%
Health Care	0.93%	0.96%	0.26%	0.19%	73.17%	116.98%
Acc. and Food Services	8.87%	-1.06%	11.17%	-2.27%	45.44%	33.02%

Note: Values are derived from the number of cases with positive earnings in the year before and the year after the LWO. Hence there is no standard error or measure of statistical significance.

Our other dimension of analysis compares earnings of employees of large Santa Fe businesses to small Santa Fe businesses, the results of which are shown in **Table 4**. These results are again not much different from what one might expect, showing generally positive increases in quarterly earnings for workers in large Santa Fe businesses. There are particularly strong increases in earnings in the retail and the accommodations and food services sectors, while earnings in construction are negative relative to small business workers.

There is considerable agreement between the results in **Table 2** and the results in **Table 4**, suggesting that the earnings changes are in fact due to the LWO. This is true both for the increases shown overall and for retail and accommodations and food services, and for the negative changes in construction. That workers at large construction businesses in Santa Fe experienced negative earnings growth relative to construction businesses that are large in Albuquerque on the one hand and small in Santa Fe on the other suggests in particular that earnings have decreased due to the LWO. This is due to both decreases in the number of jobs as well as decreases in quarterly earnings per worker (See **Table 5** as well as **Tables A-1** through **A-8** in the appendix for a clearer sense of these changes).

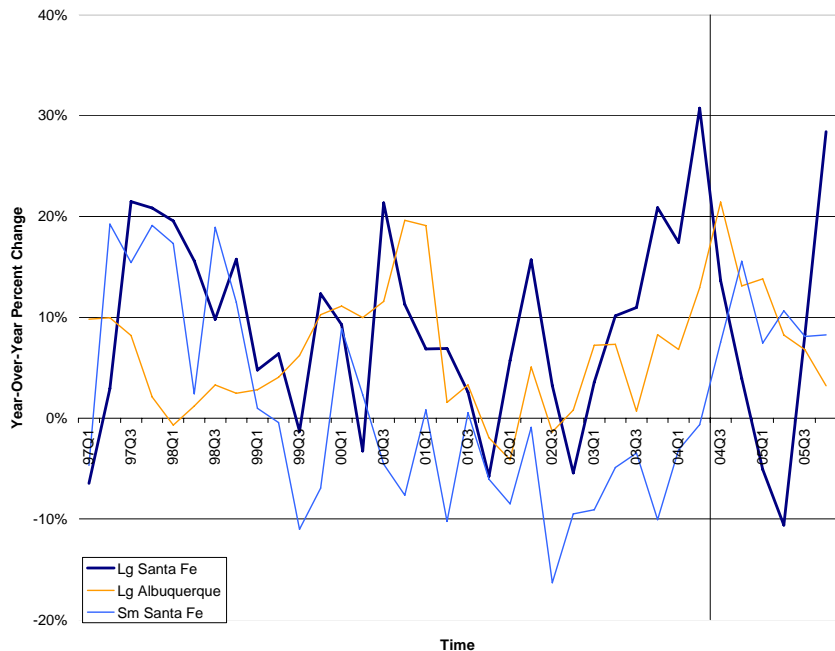
TABLE 4: DIFFERENCE-IN-DIFFERENCES OF QUARTERLY EARNINGS BETWEEN EMPLOYEES OF BUSINESSES IN SANTA FE WITH 25 OR MORE EMPLOYEES AND EMPLOYEES OF SANTA FE BUSINESSES WITH LESS THAN 25 EMPLOYEES

	Everyone	Women	Youth
All Industries	49.29	168.21	113.42
76,936; 30,261; 4,156	58.89	51.33	40.14
Construction	-905.25	632.70	469.17
9,341; 915; 224	126.88	420.44	329.86
Retail	605.93	316.98	53.92
10,780; 4,673; 820	188.34	123.96	88.77
Health Care	-18.76	118.27	330.44
10,116; 7,029; 292	190.59	111.43	175.64
Acc. and Food Services	610.19	649.68	246.24
17,304; 5,607; 1,497	39.98	65.83	56.16

Note: Bold values indicate significance at the 10% level. Population sizes are shown under each industry, and standard errors are listed in small text below each result. The regression includes a constant and a size dummy with 1 indicating businesses with 25 or more employees.

Looking at earnings over time, the decreases in construction begin at the same time as the LWO, and further suggest that there was a negative effect on employee earnings and the number of jobs in the construction industry. **Figure 5** shows the year-over-year change in the number of construction jobs, where the decrease is easily seen (**Figure A-5** shows the same graph using quarterly earnings in the appendix).

FIGURE 5: YEAR-OVER-YEAR PERCENT CHANGE IN THE NUMBER OF WAGE EARNING CONSTRUCTION JOBS BY LOCATION AND BUSINESS SIZE



On the other hand, **Table 4** and **Table 5** (shown below), which shows the percent change in the number of wage earning jobs, suggest growth in both earnings and the number of jobs overall relative to small Santa Fe businesses, and for the retail and accommodations and food services sectors in particular. This is again supported by the positive changes in earnings and jobs for employees of large Santa Fe businesses relative to large Albuquerque business employees and small Santa Fe business employees. The two industries experiencing the strong increases, retail and accommodations and food services, are industries that typically pay low wages, so to some extent we would expect quarterly earnings to increase in these sectors. However, the coupling of the increase in earnings with the increase in the number of jobs shown in **Table 5** shows that large businesses in the retail and accommodations and food services sectors are experiencing strong growth relative to small Santa Fe businesses and large Albuquerque businesses in those sectors. Though it is contrary to the predictions of neoclassical minimum wage theory, the data give no indication of lost jobs or other adjustments that might eliminate the growth in wages experienced by workers overall and the retail and accommodations and food services sector in particular (Again, further data is shown in **Tables A-1** through **A-8**).

TABLE 5: PERCENT CHANGE IN THE NUMBER OF WAGE EARNING JOBS IN THE YEAR BEFORE AND THE YEAR AFTER THE LIVING WAGE ORDINANCE

	EVERYONE		WOMEN		YOUTH	
	>= 25	< 25	>= 25	< 25	>= 25	< 25
All Industries	5.98%	0.06%	4.95%	-0.87%	43.09%	23.07%
Construction	-3.51%	2.02%	3.90%	-4.78%	63.64%	10.83%
Retail	11.57%	-0.87%	12.92%	-0.03%	60.11%	35.19%
Health Care	0.93%	2.20%	0.26%	2.56%	73.17%	27.27%
Acc. and Food Services	8.87%	-11.60%	11.17%	-14.29%	45.44%	13.02%

Note: Values are derived from the number of cases with positive earnings in the year before and the year after the LWO. Hence there is no standard error or measure of statistical significance.

The earnings and job changes indicated by the data discussed above suggest that the impacts of minimum wage laws are not uniform or universal. It certainly appears that the construction sector has experienced a decline in both quarterly earnings and number of jobs. On the other hand, retail and accommodations and food services show substantial increases in both quarterly earnings and the number of jobs.

The data are even more puzzling for women and youth workers, who are usually assumed to be hurt most by reductions in jobs. In contrast, the data here suggests that both youth and women workers are doing better than workers of large Santa Fe businesses overall in the construction industry,

but did not experience strong growth to the same degree as workers overall in the retail and accommodations and food services sector.

D. Earnings of Low Income Workers

Focusing on low wage earners, those whose annual income before the LWO was less than \$17,860⁸, in the construction, retail, accommodations, and food services industries (breaking accommodations and food services into separate sectors for greater clarity) we see strong increases in quarterly earnings. **Table 6** shows the average change in quarterly earnings for these employees of large Santa Fe businesses. The increase in earnings shown in **Table 6** is substantially higher than for change for employees overall in these industries (shown in **Table A-3** and **Table A-7**), indicating that workers with low earnings did better than workers overall in these key industries. It should be noted that here we are looking at the average earnings per person rather than average earnings per job as in the previous sections, which makes it difficult to directly compare results here with earlier results.⁹

TABLE 6: ANNUAL AVERAGE OF QUARTERLY EARNINGS BEFORE AND AFTER THE LIVING WAGE ORDINANCE

	Before	After
Construction 547	2,291.64	2,502.28
Retail 876	1,785.92	2,523.52
Accommodations 1253	1,936.86	2,387.60
Food Services 2086	1,792.87	2,100.27

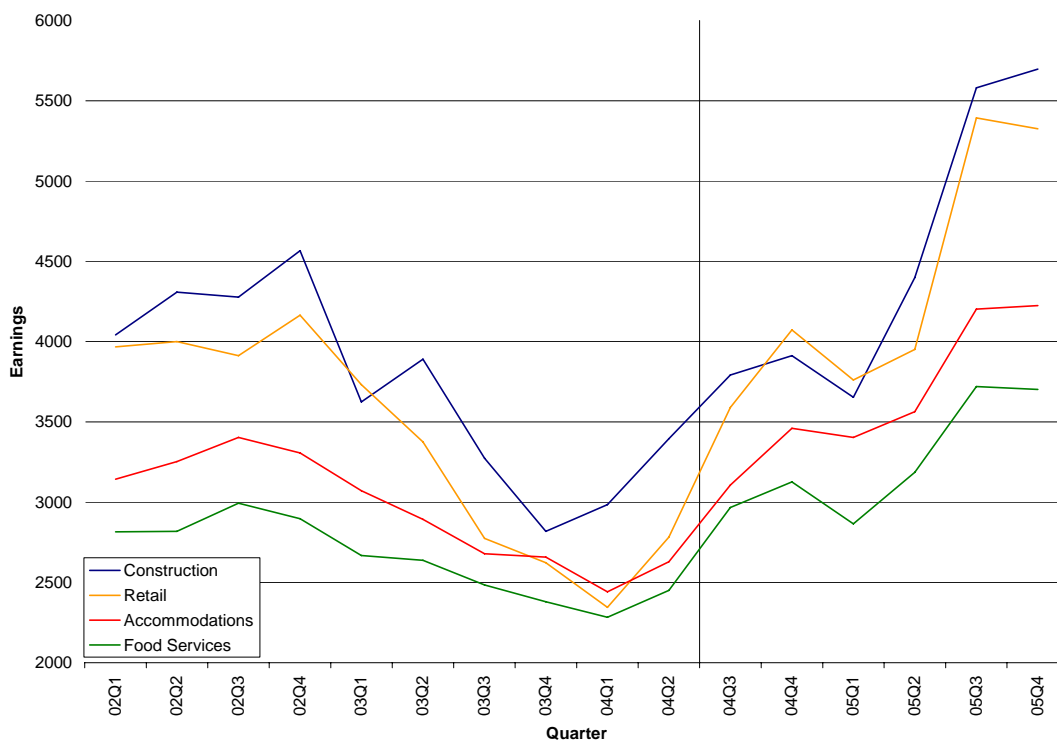
Note: Sample size is listed in small text below each industry.

As with **Table 2** and **Table 4**, the values in **Table 6** take into account people who lost or gained a job during the two years enclosing the date the LWO took effect, and hence changes in the number of jobs or the earnings could result in the increase in earnings that we see here. Quarterly average earnings of workers who earned less than \$17,860 and were older than 18 in the year before the LWO are shown in **Figure 7**. The strong increase in earnings for these low income workers is evident. Employment among these workers is relatively stable during this period, showing only a slight increase after the LWO.

⁸ \$17,860 is the annual income of someone earning \$8.50 per hour and working 40 hours a week.

⁹ In other words, here we look at the earnings of a person, summed over the jobs they held, where in earlier results we look at the average earnings per job. Similarly, the number of people employed here is actually that, while earlier we talked about the number of jobs.

FIGURE 7: QUARTERLY EARNINGS OF LOW INCOME WORKERS, BY INDUSTRY



The suggestion from **Figure 7** is that low income workers in these key industries are significantly better off, presumably at least in part due to increased hourly wages. This is true even in the construction industry, where earnings and the number of jobs decreased after the LWO. Low income workers, at least, do not appear to be suffering any adverse effects from the slowing construction industry.

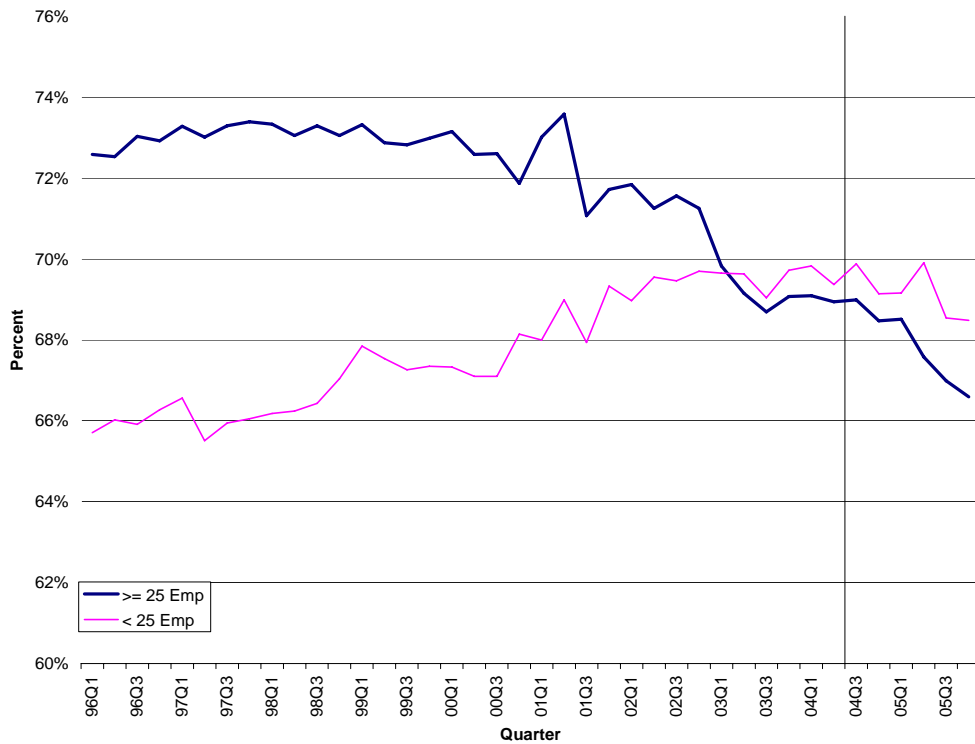
E. Percent of Santa Fe City Jobs Held by Santa Fe City Residents

There has been some concern that the LWO will increase competition for Santa Fe jobs as people in surrounding areas such as Española and Rio Arriba vie for jobs in Santa Fe. If true, the LWO could potentially harm the very people it tries to help, as Santa Fe workers find it harder to get jobs. **Figure 6** shows the percent of employees of Santa Fe businesses that live in the Santa Fe region.¹⁰ The percent of Santa Fe workers who live in the

¹⁰ Workers living in the Santa Fe region are defined as having Santa Fe as the city in their address. This includes most of the people living outside city limits, but still residing within the larger Santa Fe region.

Santa Fe region has been decreasing (with some seasonal variation) rather regularly since 1998. Since about 2001, these decreases have been rather stronger, so between 2001 and 2005, the percent of employees of large Santa Fe businesses who are also residents decreased from about 72 percent to 67 percent.

FIGURE 6: PERCENT OF SANTA FE CITY WORKERS LIVING IN SANTA FE REGION BY BUSINESS SIZE



It is clear then that Santa Fe residents are holding a smaller percent of Santa Fe jobs in 2005 than they were in 2001. However, the actual number of Santa Fe workers that are residents is fairly stable from 2000 or 2001 onward for both small and large businesses. The declining percent is due to increasing numbers of employees who live outside the Santa Fe area. There are a number of dynamics here that may affect this, including the explosive growth in the Rio Rancho area and high housing prices in Santa Fe, as well as the oft encountered desire for people to live in more rural areas. What is unclear though is whether the LWO had any affect on the ratio of residents to non-residents. Certainly the downward trend is present long before the LWO takes place, and there is not a decline in the actual numbers of workers who live in Santa Fe. It is more likely that, as with most cities, Santa Fe is experiencing stronger population growth at its edges and in nearby settlements.

Over this same 2001 forward period, the percent of workers of small Santa Fe businesses who also reside in Santa Fe has evidenced a very slight increase early on that levels out by 2003. The behavior of the two groups begins to appear similar after the second quarter of 2003, though the decrease in 2005 is not as strong for the small business group.

V. Discussion

As noted in the previous section, the results of the analysis suggest that the impacts of the living wage ordinance are not easily simplified to a single positive or negative statement. Rather, employment and earnings in some industries appear to have benefited from the LWO, while employment and earnings in other industries may have decreased. These results are interesting and lend insight into the possible impacts of the LWO in the first year following the implementation of the ordinance. However, there may be long term positive or negative effects associated with the LWO that have not come into play yet. There are opposing limitations on research at work here, in that it is more difficult to tease impacts out when looking at long term impacts, but the impacts themselves are likely to be felt over a longer time period than the first year following a policy change.

The most controversial and hence interesting conclusion suggested by the analysis is that large businesses in the retail and accommodations and food services sectors increased both employee earnings and employment relative to large Albuquerque and small Santa Fe businesses after the LWO. This increase was somewhat lower for female and youth workers, though still an increase relative to large Albuquerque and small Santa Fe businesses. Certainly the data do not suggest that the increase in the minimum wage had any negative effect on these two industries or on earnings and the number of jobs as a whole.

It was mentioned in Reynis (2005) and Potter (2006) that the decreases in employment in the construction sector appear to be due to a slowing housing market rather than any wage increases. The data here support the suggestion that the construction industry in Santa Fe slowed relative to Albuquerque after the LWO. This is true for both large and small Santa Fe businesses, but to a greater degree for large businesses. Both employee earnings and the number of jobs have decreased for large Santa Fe construction businesses. This may suggest attempts by these businesses to reduce employment below the 25 employee limit or increase hiring workers under the table, but it is difficult to tell. The fact that low income workers in large Santa Fe construction businesses, in contrast to workers overall, show growth in earnings and no reduction in employment numbers suggests that the reduction in employment and earnings is not targeted at those who make a low wage. Certainly a reduction has occurred, as is

suggested by this report as well as Reynis (2005) and Potter (2006), but the reduction seems to have occurred among workers with a wage in excess of \$8.50 per hour.

The percent of Santa Fe workers who are also residents declined after the LWO, but this appears to be part of a continuing trend that has been taking place since 2001. Within the context of the generally dynamic Santa Fe economy, high housing prices, and extreme growth in nearby Rio Rancho, it is perhaps not surprising that the number of people living outside of the Santa Fe region who are employed in Santa Fe has been increasing. All of this combines to make any correlation between the LWO and the decrease in the percent of Santa Fe workers who are also residents suspect. Though the LWO may have contributed further to a trend that was already firmly established, it is likely that larger forces are at work here.

On a final note, this study makes extensive use of data through the second quarter of 2005. This is partly due to the fact that the methodology encourages the use of data for the year following the policy change, but also because more recent, final data is not available. Data for the third and fourth quarter of 2005 became available part way through this study, and has been included where applicable. However, as of this writing, only preliminary first quarter 2006 covered employment data is available. Neither the employer file nor the wage records for 2006 are available for our analysis at this time.¹¹

¹¹ The DOL does produce monthly estimates of nonfarm employment for New Mexico and the MSAs based on a survey of employers. These Current Employment Survey (CES) estimates are based on a sample, whereas the ES-202 data is population inclusive, i.e., all employees covered for unemployment insurance are reported. CES estimates are available through July 2006. For Santa Fe, these estimates show a marked deceleration in private nonfarm employment during the first seven months of 2006. The CES estimates should be viewed as preliminary. The CES data are subject to revision each February when the series on nonfarm employment is re-benchmarked to the covered employment ES-202 series through the first quarter of the previous year, so the CES for 2006 will be revised at least twice before final estimates are made in 2008. The fact that the CES estimates indicate slower growth for the first half of 2006 does not alter the conclusions given above as our analysis is based on an earlier period for which we have the benefit of population based data. It should also be pointed out that a new wage minimum of \$9.50 was instituted at the beginning of 2006. The impacts of this increase in the minimum wage are unknown, and cannot be rigorously investigated until finalized data is available for the full year (at least) following this new increase. In either case, a drop in employment growth for Santa Fe County as shown in the preliminary CES data is ultimately not relevant to the analysis in this and previous reports, which focus on the \$8.50 minimum wage increase implemented in June 2004.

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APPENDIX

FIGURE A-1: YEAR-OVER-YEAR PERCENT CHANGE IN THE AVERAGE QUARTERLY EARNINGS OF FEMALE WORKERS BY LOCATION AND BUSINESS SIZE

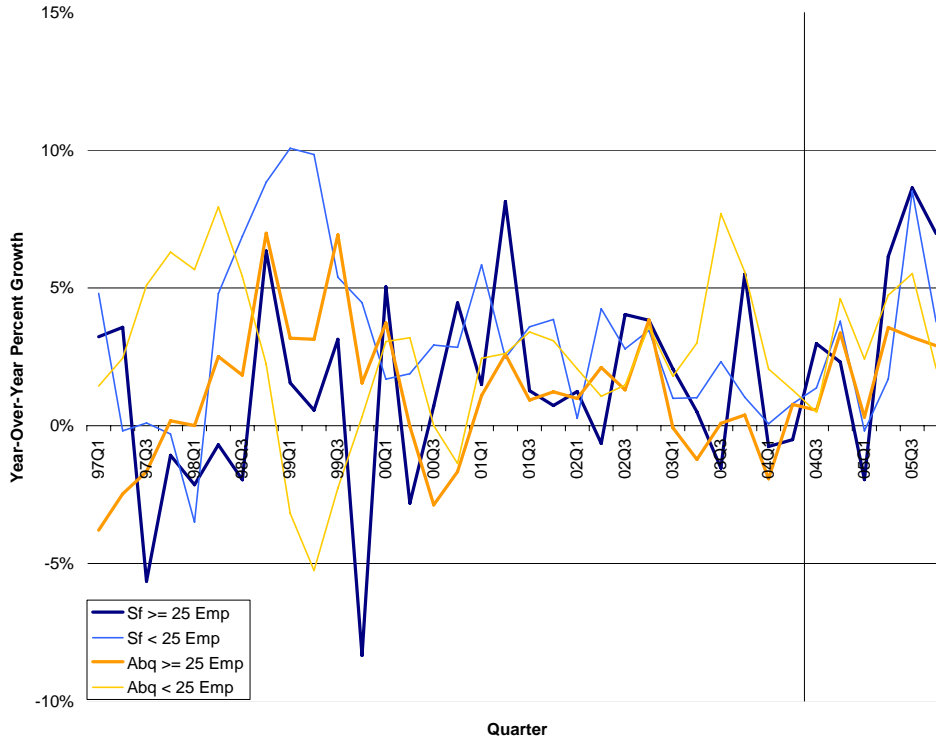


FIGURE A-2: YEAR-OVER-YEAR PERCENT CHANGE IN THE NUMBER OF JOBS HELD BY FEMALE WORKERS BY LOCATION AND BUSINESS SIZE

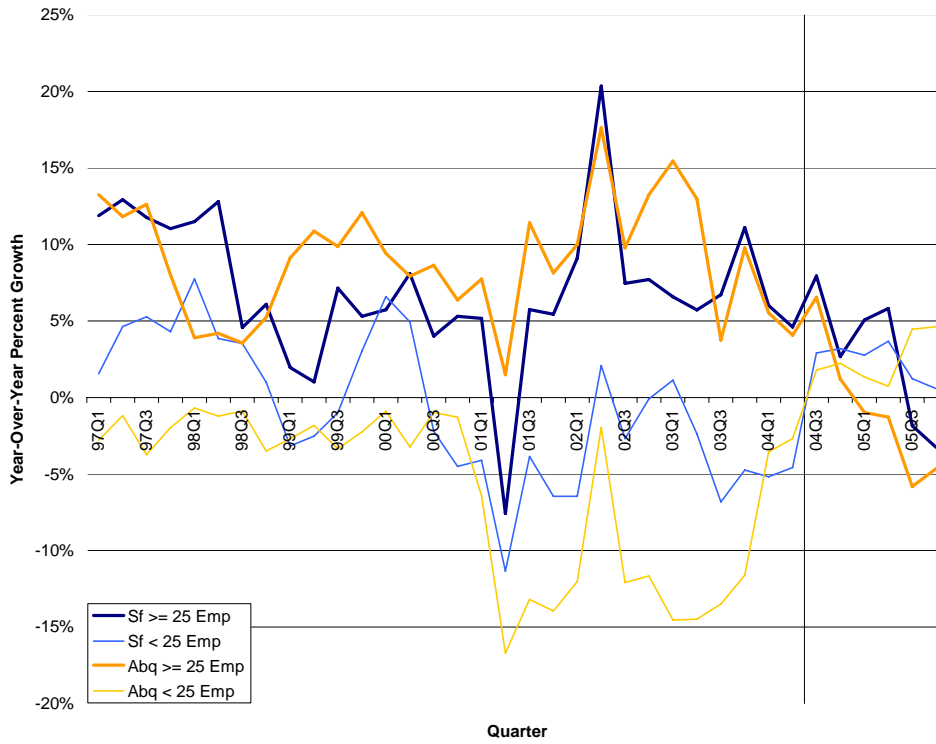


FIGURE A-3: YEAR-BY-YEAR PERCENT GROWTH IN AVERAGE QUARTERLY EARNINGS BY LOCATION AND BUSINESS SIZE, EMPLOYEES AGE 14 TO 18

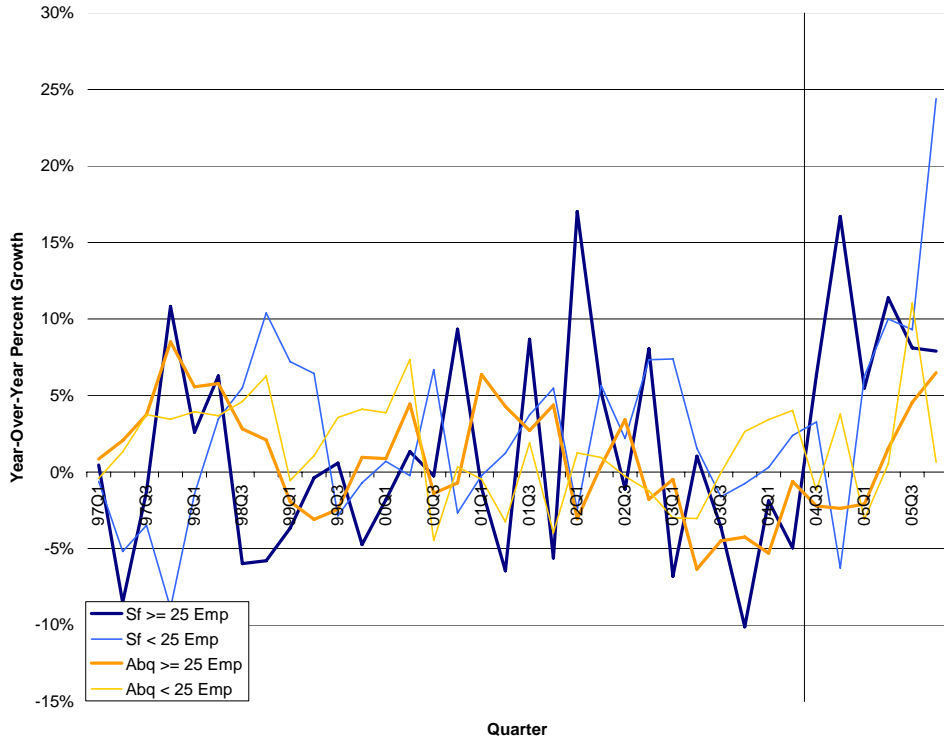


FIGURE A-4: PERCENT CHANGE IN THE NUMBER OF JOBS HELD BY YOUTH WORKERS AGE 14 - 18 BY LOCATION AND BUSINESS SIZE

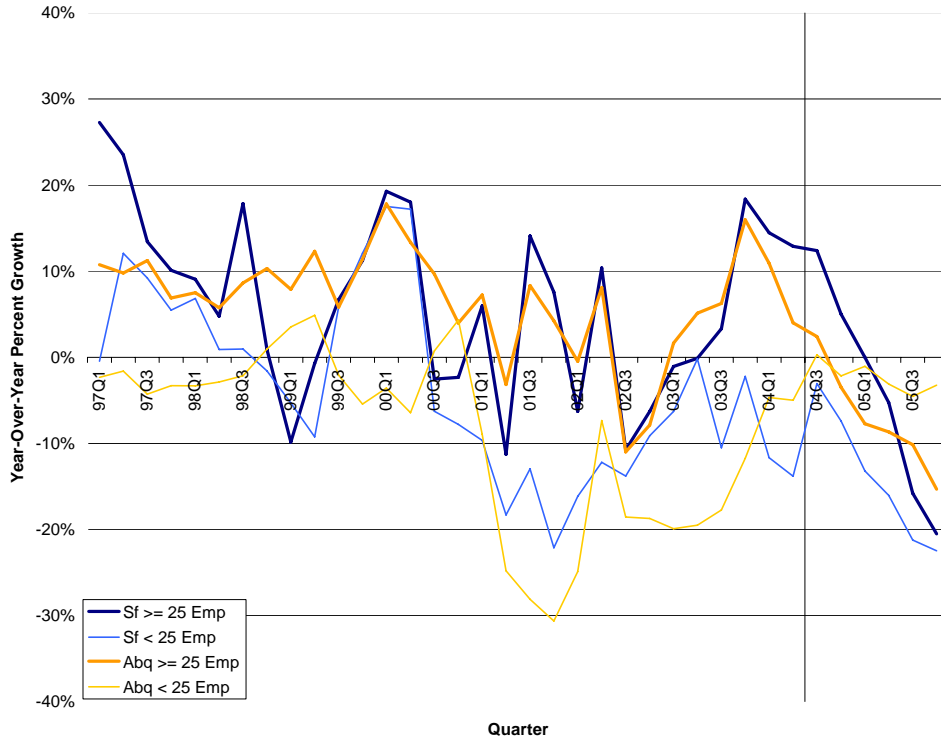


FIGURE A-5: PERCENT CHANGE IN THE NUMBER OF CONSTRUCTION JOBS BY LOCATION AND BUSINESS SIZE

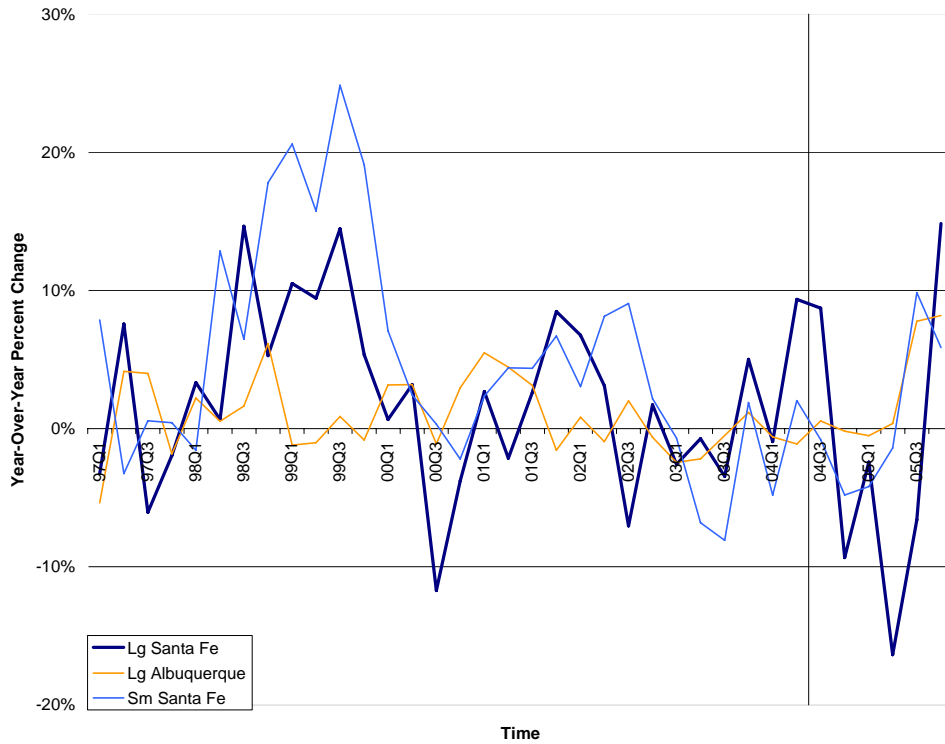


TABLE A-1: DIFFERENCE-IN-PERCENT DIFFERENCES OF QUARTERLY EARNINGS BETWEEN EMPLOYEES OF BUSINESSES IN SANTA FE AND ALBUQUERQUE WITH 25 OR MORE EMPLOYEES

	Everyone	Women	Youth
All Industries	0.076	0.093	-0.004
442,996; 168,735; 28,637	0.009	0.014	0.039
Construction	-0.252	0.049	-0.234
47,411; 3,488; 1,012	0.033	0.110	0.242
Retail	0.117	0.162	-0.124
42,419; 17,964; 4,167	0.030	0.050	0.095
Health Care	0.008	0.008	-0.100
49,848; 9,958; 1,163	0.020	0.024	0.132
Acc. and Food Services	0.225	0.277	0.132
75,962; 30,954; 11,532	0.018	0.032	0.065

Note: Bold values indicate significance at the 10% level. Population sizes are shown under each industry, and standard errors are listed in small text below each result. The regression includes a constant and a location dummy with 1 indicating Santa Fe.

TABLE A-2: DIFFERENCE IN THE NUMBER OF WAGE EARNING JOBS: LARGE SANTA FE AND ALBUQUERQUE BUSINESSES

	EVERYONE		WOMEN		YOUTH	
	Santa Fe	Albuquerque	Santa Fe	Albuquerque	Santa Fe	Albuquerque
All Industries	1725	8389	579	508	564	6750
Construction	-67	3070	6	63	14	383
Retail	283	1357	118	245	113	1462
Health Care	50	295	10	43	60	441
Acc. and Food Services	783	-438	306	-404	239	1850

Note: Values are derived from the number of cases with positive earnings in the year before and the year after the LWO. Hence there is no standard error or measure of statistical significance.

TABLE A-3: DIFFERENCE IN QUARTERLY EARNINGS: LARGE SANTA FE AND ALBUQUERQUE BUSINESSES

	EVERYONE		WOMEN		YOUTH	
	Santa Fe	Albuquerque	Santa Fe	Albuquerque	Santa Fe	Albuquerque
All Industries	74.56	24.53	140.17	89.93	240.52	179.18
Construction	-912.97	-71.02	731.61	357.08	527.40	574.39
Retail	160.63	-131.95	-87.20	-66.71	199.82	81.50
Health Care	263.29	17.51	340.72	52.62	418.43	298.04
Acc. and Food Services	174.01	81.90	164.17	120.51	163.84	106.55

Note: Values are derived from the number of cases with positive earnings in the year before and the year after the LWO. Hence there is no standard error or measure of statistical significance.

TABLE A-4: PERCENT CHANGE IN QUARTERLY EARNINGS, LARGE SANTA FE AND ALBUQUERQUE BUSINESSES

	EVERYONE		WOMEN		YOUTH	
	Santa Fe	Albuquerque	Santa Fe	Albuquerque	Santa Fe	Albuquerque
All Industries	1.49%	0.47%	2.88%	2.05%	25.15%	20.29%
Construction	-13.83%	-1.22%	12.74%	5.79%	31.80%	41.13%
Retail	2.57%	-2.92%	-1.80%	-2.07%	21.82%	8.77%
Health Care	3.77%	0.29%	5.35%	1.05%	31.44%	29.92%
Acc. and Food Services	6.03%	4.26%	5.89%	6.93%	16.98%	12.90%

Note: Values are derived from the number of cases with positive earnings in the year before and the year after the LWO. Hence there is no standard error or measure of statistical significance.

TABLE A-5: DIFFERENCE-IN-PERCENT DIFFERENCES OF QUARTERLY EARNINGS BETWEEN EMPLOYEES OF SANTA FE BUSINESSES WITH 25 OR MORE EMPLOYEES AND SANTA FE BUSINESSES WITH LESS THAN 25 EMPLOYEES

	Everyone	Women	Youth
All Industries	0.106	0.101	0.234
76,936; 30,261; 4,156	0.012	0.018	0.053
Construction	-0.141	0.162	0.481
9,341; 915; 224	0.038	0.125	0.286
Retail	0.176	0.181	0.255
10,780; 4,673; 820	0.033	0.053	0.120
Health Care	-0.036	-0.048	0.350
10,116; 7,029; 292	0.030	0.036	0.186
Acc. and Food Services	0.370	0.457	0.334
17,304; 5,607; 1,497	0.027	0.047	0.092

Note: Bold values indicate significance at the 10% level. Population sizes are shown under each industry, and standard errors are listed in small text below each result. The regression includes a constant and a size dummy with 1 indicating businesses with 25 or more employees.

TABLE A-6: DIFFERENCE IN NUMBER OF WAGE EARNING JOBS, LARGE AND SMALL SANTA FE BUSINESSES

	EVERYONE		WOMEN		YOUTH	
	>= 25	< 25	>= 25	< 25	>= 25	< 25
All Industries	1725	19	579	-112	564	298
Construction	-67	99	6	-26	14	13
Retail	283	-53	118	-1	113	101
Health Care	50	62	10	51	60	21
Acc. and Food Services	783	-598	306	-257	239	56

Note: Values are derived from the number of cases with positive earnings in the year before and the year after the LWO. Hence there is no standard error or measure of statistical significance.

TABLE A-7: DIFFERENCE IN QUARTERLY EARNINGS, LARGE AND SMALL SANTA FE BUSINESSES

	EVERYONE		WOMEN		YOUTH	
	>= 25	< 25	>= 25	< 25	>= 25	< 25
All Industries	74.56	213.82	140.17	163.89	240.52	180.63
Construction	-912.97	-1.86	731.61	300.57	527.40	464.39
Retail	160.63	94.24	-87.20	77.70	199.82	213.56
Health Care	263.29	227.67	340.72	104.28	418.43	329.04
Acc. and Food Services	174.01	-53.27	164.17	14.93	163.84	12.09

Note: Values are derived from the number of cases with positive earnings in the year before and the year after the LWO. Hence there is no standard error or measure of statistical significance.

**TABLE A-8: PERCENT CHANGE IN QUARTERLY EARNINGS, LARGE AND SMALL
SANTA FE BUSINESSES**

	EVERYONE		WOMEN		YOUTH	
	>= 25	< 25	>= 25	< 25	>= 25	< 25
All Industries	1.49%	3.83%	2.88%	3.33%	25.15%	16.99%
Construction	-13.83%	-0.04%	12.74%	6.34%	31.80%	33.79%
Retail	2.57%	2.07%	-1.80%	1.92%	21.82%	18.67%
Health Care	3.77%	2.94%	5.35%	1.90%	31.44%	26.49%
Acc. and Food Services	6.03%	-2.42%	5.89%	0.73%	16.98%	1.38%

Note: Values are derived from the number of cases with positive earnings in the year before and the year after the LWO. Hence there is no standard error or measure of statistical significance.