

## **Juniata County: How the Labor Market of a Small, Rural Pennsylvania County Survived the Great Recession**

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### **Abstract**

*Analyzing the great recession of 2007-09 requires attention to many variables. Regardless of location, the recession left quite an impact on labor markets. Whether local, regional, or national, one sees the carnage inflicted throughout society. By tracking the recession dating cycle provided by the National Bureau of Economic Research (NBER), it is possible to evaluate any of a number of trends as related to the recession. One such appraisal entails evaluating the unemployment rate of Juniata County, a rural county in Pennsylvania, as it relates to both the Pennsylvania and U.S. economies. Is it possible that fragments of the economy were resistant to the downturn while others faced the wrath of the great recession? If so, are there legitimate reasons, beyond randomness, for such protected pockets? In order to answer such questions, the labor market of Juniata County was compared to that of both Pennsylvania and the U.S. in order to scrutinize the potential for a pocket of resistance during the great recession. Finally, reasons for such resistance will be offered as part of the analysis.*

**Keywords:** Juniata County, labor market, great recession

### **Juniata County: How the Labor Market of a Small, Rural Pennsylvania County Survived the Great Recession**

Numerous studies have addressed the timeliness and depth of what is referred to as the “great recession” of 2007-09. Such studies include many facets of the labor market and how it has been reshaped since the recession. Upon conclusion of the recession has been the need to evaluate the impact on specific fragments of the economy and how these segments fared relative to the rest of the economy. The attempt in this case is to look at Juniata County, a small, rural county located in Pennsylvania. Of significance is a comparison of Juniata County to the economies of both Pennsylvania and the United States in terms of the labor markets. Conclusions will be integrated into this three-fold analysis.

### **A Timeline for the Great Recession**

The National Bureau of Economic Research (2010) dated the great recession by noting a peak in December 2007 and a trough in June 2009. Hence, NBER's dating cycle accounts for a recession of approximately 1.5 years. In comparison, data provided by the Bureau of Economic Analysis (BEA) notes the recession was slightly shorter as it lasted from the third quarter of 2008 through the second quarter of 2009 (2010). Unlike NBER's approach of analyzing multiple variables and attempting to point to a specific peak and trough, BEA's data results in an approach based purely on quarterly GDP data and the definition accepted in mainstream economics (a period of at least two consecutive quarters of declining GDP). Hence, the recession lasted approximately one year. In fact, adding December 2007 through June 2008 to BEA's time period would allow one to arrive at NBER's dating cycle. Regardless of the discrepancy in time, the recession was extensive as various economists and analysts point to the jobless recovery as a reason for arguing that the recession was deep and, hence, dates exceeded those emanating from NBER or BEA.

For purposes of research, it was important to expand the analysis of unemployment beyond the technical recession dates provided by NBER as the labor market showed an increase in unemployment beyond the trough in June 2009. Thus, it was imperative to evaluate the unemployment data through the end of 2009 as unemployment reached 10% by October 2009 and stayed at 9.9% in both November and December of that year. Hence, analyzing the data through that year would yield more guidance than stopping at the official trough in June 2009.

### **The National and Pennsylvania Unemployment Pictures**

During the recession the U.S. unemployment rate increased from 2008 through 2009, seeing a peak of 10% in October 2009. Similarly, Pennsylvania experienced an increase in unemployment that peaked in the second half of 2009. In evaluating the unemployment rate, one could look at the NBER time period and add to that period as unemployment continued to escalate after the "official" end of the recession. This allows for a view from December 2007 through June 2009 and again by looking at December 2007 through December 2009. The comparison of the two is noted first by utilizing the NBER recession period with information provided by BLS (2012).

In utilizing this unemployment data, the Pennsylvania labor market shows strength in comparison to that of the U.S. in terms of lower mean (6.0 to 6.7%), lower median (5.6 to 6.1%), lower high level (8.0 to 9.5%), smaller low level (4.6 to 4.9%), lower standard deviation (1.14 to 1.58), and lower coefficient of variation (.19 to .236). By adding an additional six months to account for the accelerated unemployment, it is possible to make another comparison of information (BLS, 2012). Again, one sees the unemployment rate in Pennsylvania as an improvement over that of the U.S. in terms of lower mean (6.572 to 7.44%), lower median (6.5 to 7.3%), lower high level (8.6 to 10%), smaller low level (4.7 to 4.9%), lower standard deviation (1.43 to 1.91), and lower coefficient of variation (.218 to .257). An overall analogy is similar regardless of the view by NBER's 18-month cycle (Dec. 2007 – June 2009) or the two-year cycle that includes the highest level of unemployment (Dec. 2007 – Dec. 2009). In either methodology, Pennsylvania fared better than the U.S. when evaluating unemployment rates.

As Pennsylvania seems to have fared better in the overall labor market in relationship to the United States, there is almost perfect positive correlation of unemployment rates between the two entities (and hence high coefficient of determination). The high positive correlation and coefficient of determination appear by using either time period. With the shorter time period, correlation is .997 and coefficient of determination is .994. The longer period (including July through December 2009) yields the same correlation and coefficient of determination.

In scrutinizing the unemployment data, the Pennsylvania labor market presents a better picture than that painted by the U.S. economy. Even though this is the case, the correlation shows that the pattern of unemployment moves in precisely the same pattern between the two economies. The terms “jobless recovery” and “mancession” were quite common during this economic downturn. The idea of a jobless recovery was noted as it took labor markets a period of time to improve by a lowering of the unemployment rate. When this rate decreased, part of the reason was due to those leaving the labor market. This was depicted in a lower participation rate. Additionally, the term “mancession” was used because occupations hit hardest tended to be those with a traditional male dominance, include construction (1.9 million), various financial services (.628 million), and manufacturing (2.1 million) (BLS, 2013).

### Unemployment in Juniata County

In addressing the labor market in Juniata County, there are similarities and differences in relationship to both state and national markets. The same comparisons can be made in terms of time periods (BLS, 2012 and Pennsylvania Department of Labor & Industry, 2013). Tables 1 and 2 yield effective summary data created from a review of the information.

Table 1

*Juniata County, PA, and US Unemployment Dec 2007 – June 2009*

		Mean	High	Low	Median	SD	CV
Seasonally	Juniata	6.05	8.2	4.7	5.5	1.23	.203
	PA	6.00	8.0	4.6	5.6	1.14	.19
	US	6.7	9.5	4.9	6.1	1.58	.236
Not seasonally	Juniata	6.21	8.9	4.3	5.9	1.45	.233
	PA	6.05	8.2	4.4	5.6	1.22	.202
	US	6.73	9.7	4.8	6.1	1.63	.242

Table 2

*Juniata County, PA, and US Unemployment Dec 2007 – Dec 2009*

		Mean	High	Low	Median	SD	CV
Seasonally	Juniata	6.49	8.2	4.7	6.7	1.34	.206
	PA	6.572	8.6	4.6	6.5	1.43	.218
	US	7.44	10	4.9	7.3	1.91	.257
Not seasonally	Juniata	6.51	8.9	4.3	6.9	1.3893	.213
	PA	6.55	8.2	4.4	6.2	1.3934	.213
	US	7.41	9.7	4.8	7.1	1.87	.252

Utilizing both seasonally and not seasonally adjusted data could help in addressing vast differences in the labor markets when comparing Juniata County to both Pennsylvania and the United States. In analyzing the unemployment rate via seasonally or not seasonally adjusted data, Juniata County maintains a lower mean, median, and standard deviation against U.S. data. As expected, the coefficient of variation is lower in the same data points. Additionally, the high rates are lower and low rates are smaller when making

the same comparison. However, the comparison of Juniata County to Pennsylvania depends on the time factor. In using NBER’s time period (December 2007 through June 2009), unemployment conditions are better for the Pennsylvania economy. However, a two-year period (December 2007 through December 2009) points to Juniata County as having better market conditions.

In terms of correlation, it is possible to compare Juniata County to both Pennsylvania and the United States with seasonally and not seasonally adjusted data. This can be accomplished with both time periods noted in Table 3 and Table 4.

Table 3  
Correlation of Unemployment Rate Dec 2007 – June 2009

Seasonally	Juniata County	Juniata County	PA	U.S.
	PA	.995	1	.996
	U.S.	.996	.997	1
Not seasonally	Juniata County	Juniata County	PA	U.S.
	PA	.936	1	.893
	U.S.	.893	.986	1

Table 4  
Correlation of Unemployment Rate Dec 2007 – Dec 2009

Seasonally	Juniata County	Juniata County	PA	U.S.
	PA	.983	1	.989
	U.S.	.989	.997	1
Not seasonally	Juniata County	Juniata County	PA	U.S.
	PA	.904	1	.87
	U.S.	.87	.991	1

In looking at Tables 3 and 4, high correlation exists among all data points. The strongest levels exist when using seasonally adjusted data for Pennsylvania and the United States. In both time periods, the correlation was almost perfect positive at .997. The weakest of the measures, although it is high positive correlation, occurs when comparing Juniata County to the United States in the not seasonally adjusted modes. Although the values are only .87 and .893, both are considered strong positive correlation. What is to be made of the correlation measures? The measures show strong correlation for the markets, regardless of the actual unemployment rates. Another approach would be to evaluate the strongest and weakest links in terms of coefficient of determination. By using data from the same tables, it is possible to create multiple coefficients of determination.

Table 5

*Summary Coefficient of Determination: Highs and Lows*

Highs and Lows	Comparison Points	r <sup>2</sup>
Highs	U.S. and PA (seasonally) NBER period	.994
	U.S. and PA (seasonally) two-year	.994
Lows	U.S. and Juniata (not seasonally) NBER period	.797
	U.S. and Juniata (not seasonally) two-year	.757

By looking at Table 5, it is conceivable to evaluate coefficient of determination. Whereas seasonally adjusted data for Pennsylvania and the U.S. economies share the strongest explanation of variation, not seasonally adjusted data for Juniata County and the U.S. economies share the weakest explanation of total variation. Keep in mind this holds true in both the NBER period and that which adds an additional six months to account for the accelerated unemployment rates.

### Major Employers of Juniata County

In looking at specific employers within Juniata County during the recession period, Pasitesearch.com (2012) lists the top employers as follows:

1. Empire Kosher Poultry Inc.
2. Armstrong Wood Products Inc.
3. Juniata County School District
4. Excel Homes Group LLC
5. Zimmerman Truck Lines Inc.
6. Weis Markets Inc.
7. PA State Government
8. Brookline at Mifflintown Inc.
9. Juniata County Commissioners
10. Juniata Valley Bank
11. Locust Grove Retirement Village
12. First National Bank of Mifflintown

Of significance is Empire Kosher Poultry, Inc., the county's largest employer and a significant contributor to payroll. According to the U.S. Census Bureau's North American Industrial Classification System (NAICS), Empire Kosher is a manufacturing firm (code 311- food manufacturing). Specific to Empire Kosher, it is defined by code 311615 which is identified as poultry processing (U.S. Census Bureau, 2013). This is quite noteworthy as manufacturing is a segment blamed, in part, for the massive job losses during the recent recession. However, Empire Kosher relates to food processing and it may be deliberated as manufacturing but aligns more with food products.

Also, of the top employers, only two produce nonfood goods (Armstrong Wood Products and Excel Homes). This could play in impact in allowing Juniata County to main relatively low unemployment rates because manufacturing was the hardest hit industry group. Recall that Empire Kosher fits the broad category of manufacturing but is quite different in being part of the food manufacturing sector.

In evaluating the top employers, it is easy to classify them into six categories:

1. Manufacturing (Empire Kosher, Armstrong, and Excel Homes)
2. Rural Financials (Juniata Valley Bank and First National Bank)
3. Retail (Weis Markets)

4. Government & education (Juniata County School District, PA State Government, and Juniata County Commissioners)
5. Trucking (Zimmerman Truck Lines)
6. Retirement Homes (Brookline and Locust Grove)

A number of these industries fit the “recession-proof” mode. This could explain why Juniata County maintained unemployment levels with less variability than that of the U.S. economy. In tracking a blend of Juniata County’s top employers from beginning of the recession to the year after the recession (hence, a return to normalcy), such data could be useful in looking at labor markets. Table 6 shows data from four of Juniata County’s top ten employers (10k data for First National Bank of Mifflintown (2013), Juniata Valley Bank (McMinn, 2013), Juniata County School District (Killer, 2013), and Empire Kosher (Hazard, 2014)).

Table 6  
*Various Juniata County Employers 2008-10*

	2008 Recession 1 # employees	2009 year Recession year 2 # employees	2010 Post-recession Year # employees	% Change 2008 to 2009	% Change 2008 to 2010
Juniata Valley Bank	150 124 full-time 26 part-time	138 122 full-time 16 part-time	134 119 full-time 15 part-time	-8%	-10.67%
First Nat’l Bank of Mifflintown	126 71 full-time 55 part-time	125 70 full-time 55 part-time	127 69 full-time 58 part-time	-.8%	.8%
Juniata County School District	406 233 Teachers 159 full- and part-time staff 14 admin	379 230 Teachers 135 full- and part-time staff 14 admin	375 235 Teachers 123 full- and part-time staff 17 admin	-6.7%	-7.64%
Empire Kosher Poultry	577 568 full-time 9 part-time	660 652 full-time 8 part-time	631 624 full-time 7 part-time	14.38%	9.39%
<b>TOTALS</b>	<b>1259</b>	<b>1302</b>	<b>1267</b>	<b>3.42%</b>	<b>.64%</b>

The four-firm sample from Table 6 shows a total increase of 3.42% in employment during the recession (2008 thru 2009) and an increase of .64% from beginning of the recession until the year after the recession. Additionally, Empire Kosher showed gains of 14.38% and 9.39% during the same periods of time. In analyzing the four firms, data bodes well in stressing the significance of such employers in helping Juniata County through the recession.

### **Possible Reasons for Resistance**

The Occupational Outlook Handbook offers great insight into the labor market. Many of the occupations listed as having declined in recent years or with declining projections during the next decade are not relevant to Juniata County. This includes aerospace engineers, electrical manufacturing, precious stone and metals, underground mining, and specialty finance (BLS, 2012). Conversely, a number of occupations with highest growth rates (as defined by 29% or greater during the next decade) are important to Juniata County. A number of positions pertain to specialized construction (those with unique construction skills) such as heating, air conditioning, refrigeration, brickmasons, stonemasons, and specialized carpenters, are part of the labor market in Juniata County (BLS, 2012).

For 2007-2011, a breakdown of the Juniata County employee base was piloted by the U.S. Census Bureau (2012) and showed the following occupations as part of the county's labor market as follows: manufacturing 2250, construction 1163, agriculture and forestry 516, retail 1308, education and health care 2142, government 1634, and self-employed 1114. Totals for all occupations are 11281. Juniata County's labor force is comprised of a broad number of "recession" resistant firms. Also, Education and government are critical to the labor market of the county. One could argue the county survives because of a core group: specific firms such as Empire Kosher, governments, health care, agriculture, self-employed, and Juniata County School District. Additionally, a number of employees commute to related labor market areas (primarily Harrisburg and State College) where some of the same types of employment opportunities exist. Included in this group are government, health care, and education. The foreseeable future is promising based on the employment needs of this same group of entities.

### **Reasons Specific to Juniata County**

By analyzing the market, it is possible to look at a number of reasons as to why Juniata County's unemployment rate remained below the national average (and in some cases, the Pennsylvania average) during the recession. In looking at various factors, potential theories are abound as follows:

**Fairly stable group of employers with lower unemployment float.** As noted, a number of major employers within the county operate in stable sectors where serious layoff avoidance was critical during the economic downturn.

**Comparative commuters to State College and Harrisburg (two markets with higher education, government, and health care as major employers).** The U.S. Census Bureau (2012) notes an average commute of approximately 33 minutes for employees living in Juniata County and that 72% of the individuals commute alone. With such long and individualized commutes, it is feasible to see a number of employees traveling outside of the county for work. This includes markets in both State College and Harrisburg areas where stable government, health care, and higher education employers provide constant job opportunities with less unemployment.

**High level of employment by Empire Kosher.** Maintaining a position as the largest employer in Juniata County, Empire Kosher helped weather the storm as a producer of food products. Having a position as largest county employer and selling a staple product offers benefits to both the employer and employees, as seen by the growth in Empire Kosher's employment base during this period (see Table 6).

**High concentration of minimally educated (defined as high school education or less) employed in Juniata County.** It may be possible the minimally educated workers "bunkered" down and stayed the course of employment at Empire Kosher and other firms during the recession. Using 2011 data provided by the U.S. Census Bureau (2012), the number of Juniata County individuals age 25 or older with a high school diploma or higher was 80.9% compared to the PA average of 87.9%. When looking at a Bachelor's degree or higher, it is 11.5% in Juniata County versus 26.7% for Pennsylvania. According to the

Pennsylvania Department of Education (2011), Juniata County has fewer public school students (61.9%) heading to college versus the PA average (73.4%). CEPR (Center for Economic and Policy Research) notes that during the recent downturn, unemployment was lower for both people with just high school degrees and for those who did not graduate from high school when compared to previous downturns (2014). In looking at BLS data from 2007 through 2010, it is possible to compare unemployment of individuals without a high school diploma to those with four-year degrees or higher (2014).

Table 7

*U.S. Unemployed less than High School Diploma versus Bachelor's or more 2007 - 2010*

Year	#unemployed with less than high school diploma, 25-older (thousands)	#unemployed with four-year degree or higher, 25-older (thousands)
2007	886	892
2008	1092	1158
2009	1775	2103
2010	1765	2167
% change 2007 to 2010	99.21%	142.94%

Amazingly, Table 7 shows a larger percentage increase in the number of individuals unemployed was greater for those with bachelor's degrees or higher as compared to those with less than a high school diploma. This could help explain part of Juniata County's resistance to the vast unemployment picture painted during the recession.

**Less dependence on a number of occupations that lost many jobs during the recession.** Like other labor markets, Juniata County suffered its fair share of job losses during the downturn but was less prone to the losses incurred by manufacturing, financial, and other components of the labor market.

**A stable number of farms located throughout the county which offered stability as providers of staple food products.** With 5.5% of the Juniata County workforce in agriculture, many remained employed during this time period. Regardless of economic conditions, food serves as the most staple of products thus allowing for stability in related markets. An earlier argument was made for Empire Kosher as a food producer fitting within the confines of manufacturing, hence it could be grouped with the food-generating entities.

**A large number of independent employers.** The U.S. Census Bureau (2012) notes that from 2007 through 2011, almost 10% of Juniata County individuals who held jobs reported self-employment as the primary occupation. It is possible that such employment was less dependent on actions of outside employers.

### Conclusions and thoughts for Future Research

The focus of analysis was to look at the recent economic downturn of 2007-09 (as defined by NBER with additional variables provided by both BEA and BLS). The analysis looked at unemployment rates at the county (Juniata), state (PA), and country (U.S.) levels. Mean, median, high, low, standard deviation, coefficient of variation, correlation, and coefficient of determination were used to evaluate unemployment rates at all three levels. General results show that both Juniata County and Pennsylvania fared better in unemployment as compared to the U.S. economy. This included cases involving both seasonally and not



seasonally adjusted enquiry. In some measures, Juniata County fared slightly better than Pennsylvania when comparing the same variables. Correlation studies show an extremely positive relationship among all three unemployment markets. In this study, unemployment moved in the same direction at a highly correlated rate. Whether looking at Juniata County, Pennsylvania, or the United States, one can compare any of the two labor markets and find that unemployment is highly correlated. Additionally, the same holds true with both seasonally and not seasonally adjusted data. The strongest was between the Pennsylvania and U.S. variables while the lowest (still highly correlated) occurred between Juniata County and the United States. Coefficient of determination showed a high explanation of variation even for the lowest levels (U.S. and Juniata County, not seasonally adjusted).

Finally, Juniata County held secure in employment because of an interesting combination of firms and entities that tend to be “recession-proof” and form a basis for stable employment. Firms such as Empire Kosher, Juniata Valley Bank, First National Bank of Mifflintown, Juniata County School District, state government, county government, and health care providers offer a constant stream of employment that allows the county to maintain a threshold where unemployment is not as prevalent as that of the U.S. economy. A high concentration of less educated employees may have been a boon for the lower unemployment rates in Juniata County as such individuals tend to be reluctant to change jobs in naysayer conditions. Additionally, residents of Juniata County offer a willingness to commute to labor markets in close proximity to the home market (State College and Harrisburg). Both of these markets host highly stable occupations and industries. The combination of an ability to keep a core group of employers along with commuting to strong markets should allow Juniata County to continue a practice of low unemployment relative to the U.S. economy.

As labor markets change at the county, state, and national levels, it is imperative to gain insight into such differences. Because all labor markets aren't perfectly competitive, one would expect some subtle differences in various markets as others are quite expansive in nature. By focusing on specific components of labor markets, it is possible to examine reasons for changes. Whether dependent or independent, it is important to look at other factors related to the labor markets. This would allow a focus on items such as income levels, poverty rates, real estate prices, property foreclosures, bankruptcy filings, and other objects that may have a relationship to unemployment. Such an approach would move the focus specifically from the unemployment rate and onto other economic variables that come to mind when analyzing economic downturns.

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