

Tioga County Development Corporation

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Special Edition

Tioga County's Economic Analysis & Forecast: 2014

The *Tioga County Development Corporation* presents, as a public service, ***Tioga County's Economic Analysis & Forecast 2015***. This Special Edition is the 13th in a series of Annual Reports on changes in the health and structure of Tioga County. The Report is now part of the annual review of the ***Tioga County Enterprise Zone*** and will be included with the Measure of Attainment document. The report is based on the performance of the County economy (by sector) in terms of jobs, wages and payrolls. The County is compared to other counties in the state and to the Commonwealth, to put Tioga County's performance in context. Although the source of the data remains the Unemployment Compensation ES202 files, the reporting agency for this year's data is the US Bureau of Labor Statistics. This year's report is based on impacts on the economy of the Marcellus Shale natural gas drilling boom. It considers the period 2007 through 2014. The natural gas boom in Tioga (and Pennsylvania) began in 2008. The status of the economy in 2007 is used as a base and employment and payroll changes are based on that year.

Employment, Wages & Payroll: Tioga and Pennsylvania, 2007—2014

Total employment in both the state and the County, was essentially the same at the beginning and end of the 2007 and 2014 period despite rapid change in the internal economic structure of both entities. The Great Recession set back the economies of Pennsylvania and Tioga; especially in employment. Tioga lost almost five percent of its total workforce between 2007 and 2009. Pennsylvania lost 3.3%. By 2014 both the state and the County had recovered to almost exactly their 2007 levels.

Wages were a much different story. While average weekly wages grew by a modest 12.6% over the period statewide, they increased by over 31% in Tioga County. Since total employment was about the same as in 2007, the total change in payroll mirrored the change in wages. In Pennsylvania payroll was up 12.7% and in the County 31.0%.

There were a couple of major reasons for the rapid change in wages and, thus, payroll in Tioga County, both ultimately impacts of the Shale exploration. The first was a change in the types of jobs available in the County. The second was significant demand pressure on jobs in certain sectors. These will be discussed in the description of change within the specific sectors.

Perhaps the most telling statistic about the impact of shale gas mining on the County economy is the change in comparative wage between Tioga and the Commonwealth. In 2007, the average Tioga wage was just 61% of the average state wage. By 2014 it had jumped to 80%.

***Tioga's payroll
grew by 31.0%
from 2007 to
2014. PA's by
just 12.7%.***

Tioga County...a place to call home

Impacts of Drilling for Gas in Tioga County

The recent history of the Tioga County economy is primarily the story of the Shale natural gas boom. The first fracking operations in the County occurred in 2008. In that year there were 15 unconventional wells drilled. Therefore, 2007 will be used as the baseline year for this analysis to show the impacts of the gas play on the local economy. Table I shows the unconventional (fracked) wells drilled for each year for Pennsylvania, Tioga, the other counties in the Northern Tier Region, and the region as a whole.

Table 1: Unconventional Gas Wells Drilled 2008 -- 2015

Year	PA	Tioga	Bradford	Susquehanna	Sullivan	Wyoming	N. Tier
2008	576	15	24	33	0	0	72
2009	2,004	123	158	89	0	2	372
2010	3,366	276	371	126	22	24	819
2011	3,559	273	388	206	19	70	956
2012	2,661	122	163	193	27	15	520
2013	2,975	33	108	214	14	69	438
2014	3,204	30	93	238	34	58	453
2015*	789	3	17	64	0	7	91
Total	19,134	875	1,322	1,163	116	245	3,721

Source: Pennsylvania Department of Natural Resources: Oil and Gas Reports, 2015

As has been typical for natural resources booms in this country, there was an initial period where a few risk-taking companies ventured into the Marcellus Shale area and drilled a couple of test wells (2007 – 08). When these wells proved out many more firms obtained mineral rights leases and rushed to join the fray (2009). In 2010, the number of spuds in the region more than doubled over the previous year as all the major players became involved. The number of wells drilled increased still further in 2011.

However, as the supply of natural gas provided to the nation climbed rapidly two problems slowed the boom even though the available resource had barely been tapped. The first was stagnant demand in the face of the major increases in supply. The price major gas consumers were willing to pay fell drastically...to the point where drillers postponed drilling or capped their wells for later use. The second deterrent was the lack of a nearby pipeline to ship the gas. While all drillers were impacted by the first concern, those counties further from major markets suffered more from the second. Note, from Table 1, that the impact on Susquehanna County to the east of Tioga (and closer to the East Coast markets) has been slight. New pipelines are being built and will soon lower the cost of getting gas to market.

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The boom and partial bust has had a significant impact on the Tioga economy. Table 2 shows the total employment, wage and payroll in the County from 2007 through 2014. Figure 1 provides an index showing the percentage change in each.

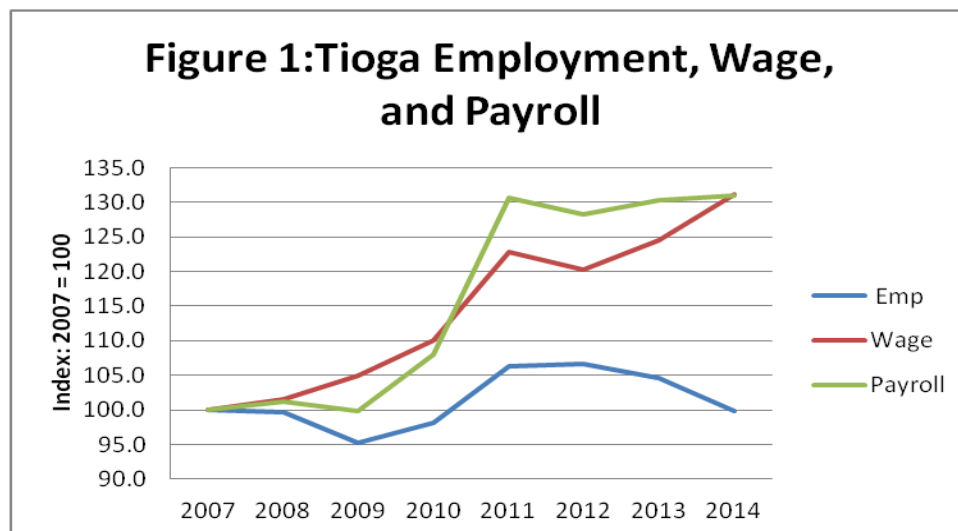
Table 2: Employment, Average Weekly Wage, and Weekly Payroll

Total	Employment	Wage	Wkly Payroll
2007	12,806	\$569	\$7,286,614
2008	12,759	\$578	\$7,374,702
2009	12,195	\$597	\$7,280,415
2010	12,568	\$626	\$7,867,568
2011	13,621	\$699	\$9,521,079
2012	13,658	\$684	\$9,342,072
2013	13,389	\$709	\$9,492,801
2014	12,796	\$746	\$9,545,816

Table 2 shows that employment decreased rather sharply in the County during the recession of 2008 – 2009 from the 2007 baseline (from 12,806 to 12,195: a loss of 611 jobs or 4.8%). The relatively slow pace of growth in wages in the pre-drilling economy meant that payroll took a very slight hit during these years as well.

However, as drilling for gas in the Marcellus Shale hit its stride in 2010, wages took a sharp turn upwards. In fact, between 2010 and 2011 the average wage in the County grew by more than thirteen percent. This coupled with a twelve percent growth in employment between 2009 and 2011, lead to a 30% increase in payroll during the 2009 through 2011 period.

The reduction in the number of wells drilled in the past several years has had a negative impact on overall Tioga employment. As can be seen in Table 2 and Figure 1, total employment in the third quarter of 2014 was essentially at the base 2007 level. From 2007 to 2012, Tioga County gained 852 jobs, an increase of 6.6%. From 2012 through quarter 3 of 2014 the County lost 862 jobs to 12,796. From the standpoint of employment this was basically a wash. However, economic well-being also considers income. When the 30% gains in wages and payroll are factored in, the natural gas play has had very significant positive effects on the County economy.



Structural Changes in the County's Economy

Many have postulated that the improvement in the Tioga County economy was not “real” in that it affected only the low level local service sector activities which catered to the needs of temporary out of state workers who came from Texas and other places to man the drilling rigs. The numbers tell a different story.

The rapid jump in wages and payroll was **not** due to the demands placed on the accommodations and food service sector of the local economy due to the rapid influx of miners. In fact, workers in that sector of the local service economy made less money per week in 2009, 2010 and 2011 than they had in 2007. By 2012, employment in the sectors was up less than twelve percent. Payroll was up slightly less than 16% in 2012 over 2007. In comparison payroll was up over 30% for the total economy.

The local sectors which benefitted the most from the boom through 2011 were, in fact, those which provided direct inputs to the gas drilling process. Specifically, these included the:

- Construction sector: up 49.3% in employment, 87.6% in wages, and 180.1% in payroll.
- Professional Services sector: up 36.6% in employment, 29.9% in wages, and 77.4% in payroll.
- Transportation and Warehousing sector: up 29.3% in employment, 26.8% in wages, and 63.9% in payroll.
- Wholesale Trade: up 34.7% in employment, 42.5% in wages, and 91.8% in payroll.
- Finance and Insurance: up 19.9% in employment, 30.1% in wages, and 56.0% in payroll.

All of these are higher wage sectors dominated by workers with skills and/or education. They are the very sectors the County has been encouraging to grow for the past decade. Further, even during the downturn in drilling each has maintained employment levels well above the average.

Those who maintain that extractive industries do little to bolster the local economy in the long-run should take note.

Figure 2 shows the major sectors of the Tioga economy in 2007 and 2014.



Major Sectors of the Tioga Economy

Major sectors are here defined as those with at least 100 employees in Tioga County. These are grouped from largest in 2007 to the smallest. Government is not included. The graphics show the change in employment and payroll on those sectors most affected by the natural gas boom.

Manufacturing

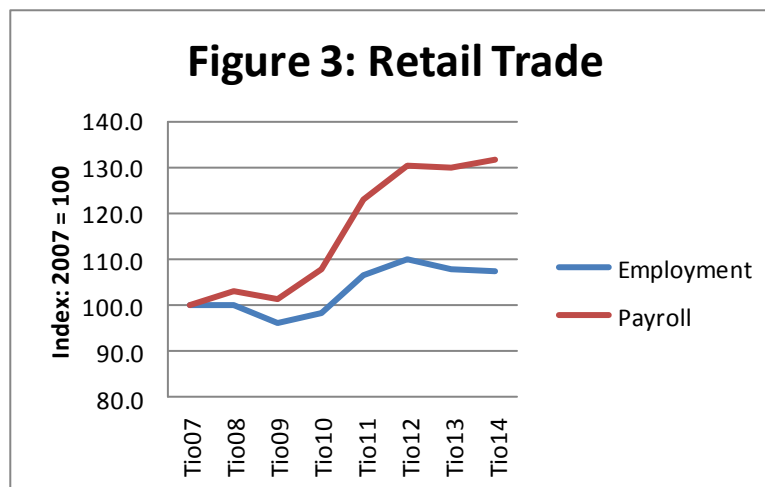
While many other sectors grew rapidly during the 2007 through 2014 period Manufacturing continued its long decline in both the County and the state. The sector employment fell from 2,572 at the beginning of the period to 1,956 at the end. This was a 24.0% loss. The state saw a decline of 13.7%. Despite the loss of jobs wages in sector increased rapidly (probably due to increased demand for workers in fields related to gas drilling). In 2007, the average sector wage was \$701 per week; this jumped to \$837 by 2014, a growth of 19.4%. In Pennsylvania the average manufacturing wage grew by 11.0%. County payroll in the sector fell by 9.2% and in the state by 4.0%. Manufacturing is still the largest private sector in the County but Health Care and Retail Trade are now very close in total employment, though not in total payroll.

Health Care and Social Services

This sector had 1,983 employees in 2007 and 1,923 in 2014, a loss of 60 jobs. Although Health Care lost employment in the last few years in the County (about 3.0%) it more than compensated with a 38.5% increase in the average wage, moving from \$535 per week to \$741. In Pennsylvania the sector added 11.7% in employment but wages grew by just 17.0%. Hence, the total sector payroll in Tioga grew by 34.3% versus 30.6% statewide.

Retail Trade

In terms of jobs, Retail Trade is now the third largest sector in Tioga County. Compared to the Commonwealth, Retail Trade in Tioga fared quite well during the 2007 through 2014 period. While the state was losing 3.7% of its employment in the sector, Tioga gained 7.3%. Further, statewide wages in Pennsylvania grew by only 8.2% over the seven years but in the County the average retail wage increased 22.8%. The average wage in the County in 2007 was only 70% of the state average, but by 2014 it improved to 86%. Retail payroll grew by 31.8%.



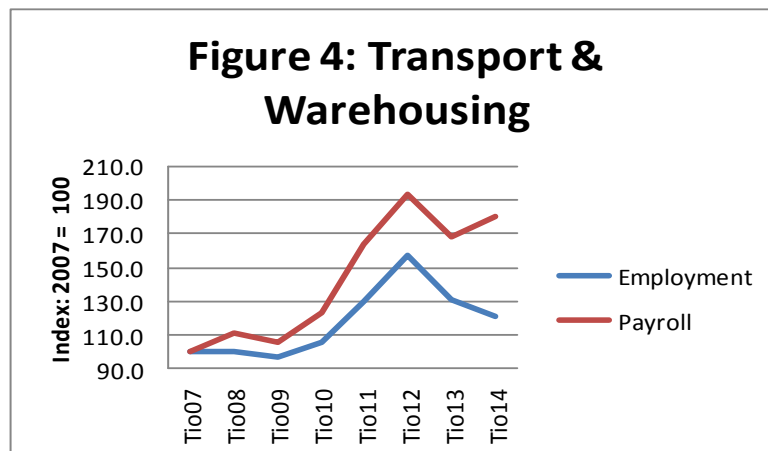
Major Sectors, Continued

Accommodations and Food Service

This sector is the fourth largest in the County in employment. It had 1,092 employees in Tioga County in 2007 and 1,121 in 2014, a growth of 2.7%. In Pennsylvania employment in the sector grew by 9.1%. Wages locally fell by 7.9% from \$275 per week to \$253 (though tips and gratuities are not included in the published wage). Hence, payroll in the sector decreased by 5.6%. Obviously, natural gas mining has not had a major impact on employment or wages. Statewide wages increased by 12.6% and payroll by 24.2%.

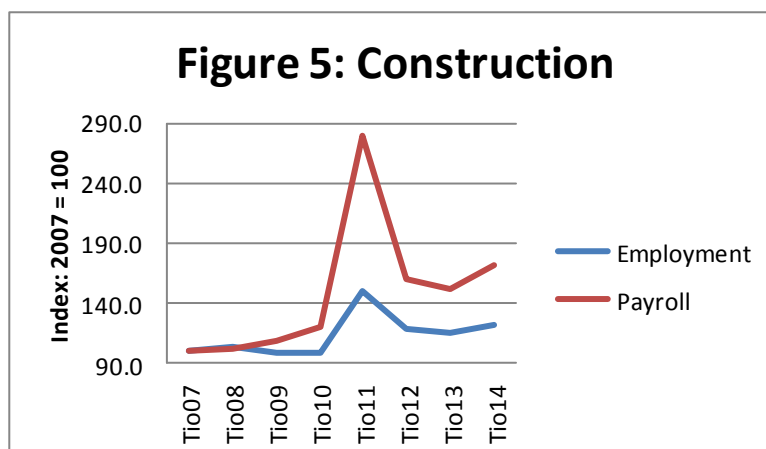
Transportation and Warehousing

Like Construction, Wholesale Trade and Finance and Insurance, the Transportation and Warehousing sector provides direct inputs to the drilling process. And, as was the case in those sectors, it grew rapidly in Tioga County over the period. Employment was up from 501 to 605 or 20.8% and average wages increased from \$628 per week to \$940 or 49.7%. Total payroll, then, grew by 80.8%. Contrast this with the same sector in Pennsylvania: employment was down by 1.5%; wages increased by just 12.1% and payroll by 10.4%.



Construction

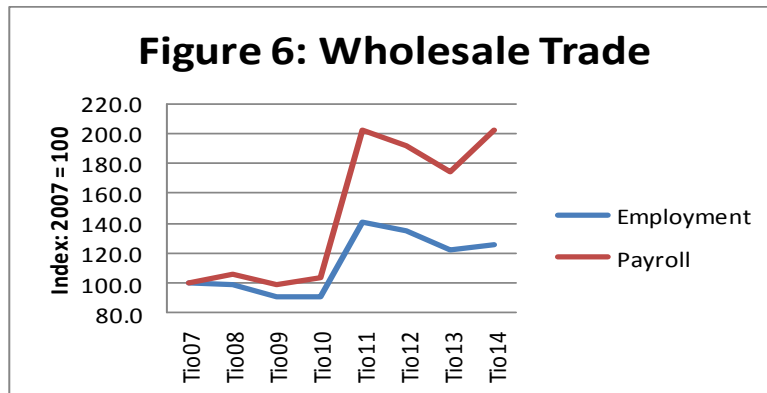
The Construction Sector in Tioga County clearly did benefit from the natural gas boom. Between 2007 and 2014 Tioga employment in the sector grew from 422 to 516 or 22.3%; while statewide Construction lost 6.3% of its 2007 employment. Average wage in the County saw an increase of 40.2%. This generated an increase in payroll of 71.4%. In Pennsylvania sector payroll grew by a modest 8.9%



Major Sectors, Continued

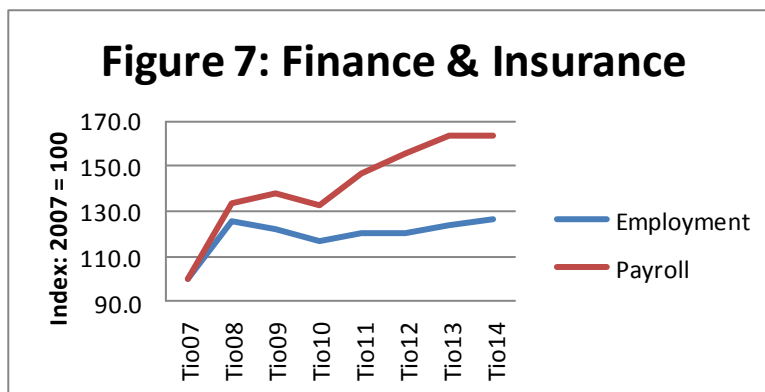
Wholesale Trade

With a 25.9% increase in jobs and a 60.3% increase in wages the Wholesale Trade sector has been one of the most heavily impacted areas of the Tioga economy over the past seven years. In 2007 Wholesale trade had 378 employees and in 2014 it had 476. Wages, which were already above average for the County in 2007 at \$650 per week, grew to \$1,042 by 2014. Overall, the changes in employment and wages lead to 101.9% growth in payroll. The sector did not fare as well in the state; it lost 5.2% of its employment base and wages grew by just 14.6%. Hence, the growth in total payroll was just 8.6%.



Finance & Insurance

For the years just preceding the gas boom finance and Insurance lost significant employment but the Marcellus Shale Play changed the local demand for financial services. In 2007 the sector had 322 employees but by 2014 this grew to 408, a 26.7% increase. Wages increased commensurately. The average wage grew by 29.0%; payroll grew by 63.5%. In contrast, in the state the sector lost 3.8% in employment and wages grew by just 3.3%, leaving payroll essentially unchanged.



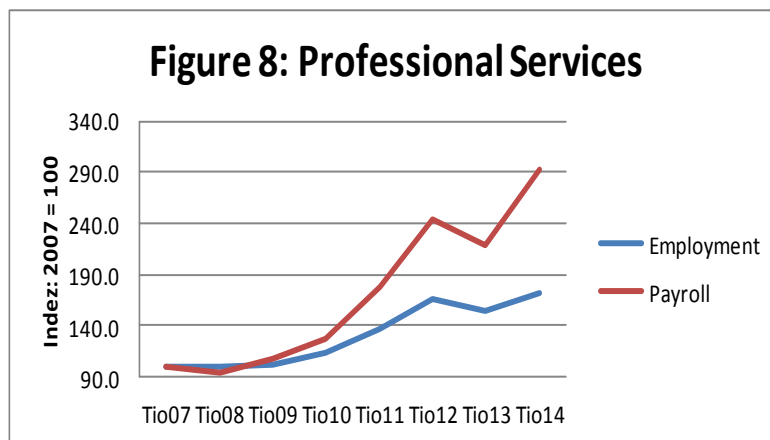
Other Services

Other Services is a medium sized sector in Tioga County. It contains a mixture of personal and business services ranging from barber shops to funeral parlors and automobile services. In 2007 it had 314 employees in the County and in 2014, 372. This was a growth of 18.5%. Wages increased at much faster rate, up 58.4% over the period. Hence, payroll grew by 87.7%. Statewide the sector change was much more sedate. Employment was up 3.1% and wages 14.0%. Statewide payroll increased by 17.6%.

Major Sectors, Continued

Professional Services

This sector has always been significantly under-represented in Tioga County. It contains the offices of architects, engineers, dentists, lawyers, and the like. Many of its components tend to have more urban location patterns. However, between 2007 and 2014 the sector grew by 71.4% in the County. Since, in Pennsylvania, the sector grew by only 5.4%, it seems likely that most of the County’s growth was due to the demand for professional services generated by the mining boom. Professional Services wages also had spectacular growth during the period. In 2007 the average wage in the sector in Tioga was \$743 per week and in 2014 it was \$1,269. This was an increase of 70.8%. As one indication of the magnitude of this change, consider that in 2007 the Tioga average sector wage was just 48.4% of the State average but in 2014 the average wage was 82.7% of the state average. Sector payroll in the County grew by 192.8% compared the Pennsylvania growth of 17.1%.



Administrative Services and Waste Management

This is a fairly small sector in Tioga County with just 175 employees in 2007 and 207 in 2014; an increase of 18.3%. The average weekly wage in Tioga County fell from \$629 to \$569 (-9.5%), but this is likely the result of new hires being paid less money than experienced workers. In the state, Administrative Services employment grew by 6.2% and wages by 7.8%. Sector payroll in the County grew by 7.0% and in Pennsylvania by 14.5%.

Summary and Conclusions

The key factor in the success of the economy of Tioga County in the past seven years has been, of course, natural gas mining. The almost frantic pace of drilling has slowed since 2012 but will resume (though maybe not with as much local disruption) when markets improve and the cost of distribution falls. Key pipelines are being built now which will help with latter. As more coal fired electric generating plants are replaced with gas fuel and as more vehicles and factories are converted to gas, demand will grow, as well. Employment growth may continue to be slow, or even slightly negative, for the next couple of years as the “boom” effect wears off but wages tend to be “sticky downward”, which means that payrolls will likely remain well above the levels of 2007 even if employment does not. The higher wages may lead to secondary development as more professionals and other higher pay seeking workers are attracted to the area.



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The *Tioga County Development Corporation* is pleased to present ***Tioga County's Annual Economic Analysis & Forecast: 2014***. For the 13th year, we have presented our Annual Economic Analysis Summary of the Economy of Tioga County, Pennsylvania...***Tioga County's Annual Economic Analysis & Forecast: 2014***. An Annual Economic Analysis Summary for Tioga County, Pennsylvania.

Prepared under contract with *VanLandingham Consulting*, this Analysis presents an independent analysis of the economic conditions in Tioga County compared to the Region, the Commonwealth and the Nation. Wade VanLandingham has over thirty six years of economic development planning and analysis experience. He performs similar reports for several other counties in the State. He has been under contract with *TCDC* since 1998 and possesses an extensive knowledge of our economy.

This is the fourth year we have also asked Wade to provide projected impact information on the Shale development in Tioga County. Natural gas is a commodity and is impacted by many factors, mostly national and international. As part of the supply and demand process we will experience various levels over the course of several generations. From the early days of Marcellus Shale to the potential we are seeing with the Utica Play it is obvious we will continue to see the benefits of the industry. The key to future growth is the availability of distribution lines; efforts to the conversion of other fuel sources to natural gas; the increase usage of fleets; development of co-generation facilities and development of additional commercial uses of gas related products.

The *Tioga County Development Corporation* hopes this Analysis will assist you in developing strategies for your future growth. It is our pleasure to provide you with this economic development forecasting tool. *TCDC* is here to assist you in your growth and development in making ***Tioga County . . . a place to call home.***

Robert J. Blair
President/Chief Executive Officer

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