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The **INSTITUTE** for

Public Policy & Economic Development

A partnership among Keystone College, King's College, Luzerne County Community College, Marywood University, Misericordia University, Penn State Wilkes-Barre, The Commonwealth Medical College, University of Scranton, & Wilkes University

THE ANATOMY OF DOUBLE-DIGIT GROWTH

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Introduction

The Institute was asked to evaluate several potential factors of future economic growth in Northeastern Pennsylvania. It was hypothesized that four key factors will lead to positive economic growth in the region in the future. These factors are migration of people into the area, economic activity brought about by natural gas drilling in the Marcellus Shale formation, an increase in the number of “baby boomers” looking to retire in the area, and economic growth caused by expansion of the Panama Canal and ports along the Eastern Seaboard. The four hypotheses were examined based on research from a variety of sources that was compiled for this report. The Institute used its own data and reports it had previously published as well as data and research available from other organizations and publications.

Migration

The Internal Revenue Service (IRS) tracks County-to-County migration data. It measures people movement during a year. The data shows positive and negative net migration by county. Monroe and Wayne County have been beneficiaries of the westward migration since the mid-1990s. The westward migration is comprised of people moving from New York and New Jersey as well as the Philadelphia area further west in order to benefit from the lower cost of living and in particular, the lower cost of housing and property taxes. Many people kept their higher paying jobs in New Jersey or New York City and commuted. In 2002, that westward migration spread from the Pocono region into Lackawanna and Luzerne counties and the commute pattern remained similar. Many expected immediate population growth in the shale rich counties of the northeast and north central part of the state; however, in early stages of drilling, the personnel required moved to those counties on a temporary basis and therefore filed in their home states. Thus, visibly there may be more people, increased congestion and, initially, more housing shortages. However, many of those residents have been temporary and there has actually been an overall decline in population in the Marcellus Shale counties.

This table shows net gain and loss by county for the 2005-2006 period through the 2009 – 2010 period. While movement slowed during the Great Recession, counties that were growing prior to it are likely to continue growing. Shale counties that lost population early on began to show limited growth in the last year measured. This could be because temporary workers who came to work in the natural gas industry are becoming permanent residents. Overall, the Northeastern Pennsylvania region gained nearly 17,000 new residents during that time period. A detailed set of migration data tables can be found in the Appendix.

County	Total Inflow	Total Outflow	Net Gain/Loss
Bradford	8,603	9,197	-594
Carbon	14,453	11,541	2,912
Clinton	1,207	1,179	28
Columbia	10,297	9,593	704
Lackawanna	27,130	26,417	713
Luzerne	41,670	37,461	4,209
Lycoming	14,153	15,367	-1,214
Monroe	41,950	36,817	5,133
Montour	4,994	4,839	155
Northumberland	14,644	14,595	49
Schuylkill	19,560	16,713	2,847
Snyder	6,581	6,262	319
Sullivan	1,232	1,243	-11
Susquehanna	7,284	7,435	-151
Union	8,210	7,870	340
Wayne	11,387	9,848	1,539
Wyoming	5,616	5,804	-188
Total	238,971	222,181	16,790

Source: IRS

The Institute believes that due to the ongoing westward migration and Marcellus and Utica Shale opportunities, the Northern Tier, North Central, and Wyoming Valley counties will continue to see modest population growth. Carbon, Monroe, and Schuylkill are likely to benefit from people movement out of the Lehigh Valley and Philadelphia Area Counties as well as New Jersey and the New York City area in search of a lower cost of living. The continued growth of population is an important factor in bringing new energy and vitality to the region.

Marcellus Shale

For decades, Northeastern Pennsylvania has endured sluggish growth; however, the region may soon experience much needed industrial revitalization. In recent years, NEPA's population has increased, coinciding with strengthened business activity and rising housing prices — a growth gone unobserved for 60 years. While there are various reasons that could contribute to this new activity, it seems that the Marcellus Shale formation is a major factor responsible for that situation.

As a whole, the U.S. produces about 20 Tcf of natural gas per year. The nation's natural gas industry is rapidly increasing. In 2009, the U.S. produced 3,110 billion cubic feet (Bcf) of natural gas from shale — an increase of nearly 1,820 Bcf since 2007. Between 2007 and 2010, shale gas production in Pennsylvania rose from just 1 Bcf to 365 Bcf.¹ This massive production increase is expected to continue for years to come.² The U.S. Energy Department estimates that there is 141 trillion cubic feet (Tcf) of gas in the Marcellus Shale formation. In 2008, The Institute released a study describing the potential impact the shale formation, or "play," could have on the economy of Pennsylvania's 10th Congressional District. In this study, The Institute first

¹ http://www.eia.gov/dnav/ng/ng_prod_shalegas_s1_a.htm

² <http://www.post-gazette.com/stories/local/state/marcellus-shale-gas-estimate-plummet-219007/>

examined the Barnett Shale in Texas, where the natural gas industry has aided the Dallas/Fort Worth economy in remaining nearly recession-proof. There, production has resulted in \$11.1 billion in annual output, and 100,268 permanent jobs.³ Next, The Institute studied the Fayetteville Shale in Arkansas. Although more recent than the Barnett Shale, the Fayetteville Shale play has already both improved employment and considerably contributed to the state's local economies. Projections indicate that the Fayetteville Shale play will result in major population increases and significant employment gains through 2025.

Finally, The Institute examined the potential effects of NEPA's Marcellus Shale play. When The Institute first examined Marcellus Shale activity in 2008, we reported that 93 drilling permits had been issued and 18 wells drilled in Pennsylvania's Bradford, Lycoming, Susquehanna, and Wayne Counties. As an update, as of September 2012, 4,823 drilling permits have been issued and 2,448 wells have been drilled in Bradford, Lycoming, Sullivan, Susquehanna, and Wyoming Counties. In 2011, more than 2 Tcf of natural gas production in Bradford, Lycoming, and Susquehanna County was reported to the Pennsylvania Department of Environmental Protection.

The Institute has found considerable possibilities beyond which we already have for growth within northeastern Pennsylvania, and some counties have already begun to see some of the expansionary effects of the Marcellus Shale drilling. Although this exploration is still in early development, the case study comparisons of different regions allow us to conclude that there is definite potential for growth in wealth, employment, and housing within northeastern Pennsylvania. Further, production and well life expectancy have been studied. Wells can generate gas for 20 or more years. Therefore, shale natural gas drilling is not a short-term endeavor. There are many companies that are currently invested in the growth of the Marcellus Shale and its natural gas supply, but we can only see the effects as more energy companies come to the region. Since the region is comprised of adjacent counties (non-drilling counties adjacent to drilling counties) in addition to the core counties, there must be considerable strategic economic development initiatives in place to ensure that there is direct economic benefit in addition to any spill over from the core drilling counties.⁴ Further, the Utica Shale Play has a footprint that overlaps the Marcellus. As a result, this additional shale has the capacity to generate its own generational natural gas drilling.

Baby Boomers

Baby Boomers are those born between 1946 and 1964. Baby Boomers began retiring in 2011 and are likely to continue retiring in stages through 2029. Boomers total approximately 75 million individuals. Baby Boomers are spenders, not savers, and they have been highly affected by The Great Recession. There are about 10,000 Boomers per day eligible for retirement

³ <http://www.fortworthchamber.com/BarnettShaleStudy11.pdf>

⁴ A Review of Changes in Selected Economic & Demographic Indicators in Particular Counties in the Barnett, Fayetteville and Marcellus Shale Play. December 2012. The Institute for Public Policy & Economic Development.

(beginning in 2011) and approximately, only 3,000 per day are retiring. The Boomers comprise about 40% of the US population.

According to a study by Realty Trac, an online market research company foreclosure, loan, and home sales data, in a recently completed study on Boomers, there are 40 cities nationwide with a 33% or greater population of those 65 and older, demonstrated recent housing price appreciation and positive capitalization. Florida dominated the top 15 list with six communities; other states represented were California, Oregon, New York, Arkansas, and Pennsylvania.⁵

Estimates as of July 2012 shows that retirees are staying in urban areas closer to job centers. Many have delayed retirement or are seeking part time opportunities. Even those in rural areas are moving to urban areas in their 70s. Aside from the general benefits of urban living, retirees are closer to major health care systems. Retiring Boomers are seeking “walkable” communities and smaller homes, particularly townhomes and condominium units.

Per the U.S. Census, “approximately 46.2 million people, or 15% of the U.S. population, reside in rural counties, which spread across 72% of the nation’s land area.” From 2011 to 2012, those non-metro areas lost more than 40,000 people, a 0.1% drop.”⁶

Another study developed using the ACCRA Cost of Living Index (COLI) indicated that communities like Pittsburgh, Cleveland, Buffalo, and Baltimore Towson area were likely to see increases in Baby Boomers because of the cost of living, health care, arts and culture, recreational activities, and strength of public transportation.⁷

A recent AARP study of members completed a couple years ago to identify their top choices of retirement showed interest in various communities in North Carolina, South Carolina, and Florida. In addition, Colorado, Texas, California, Oregon, New Mexico, Arkansas, and Washington were referenced. Many of the communities on the list have a varying range of cost of living expenses. However, it is anticipated that most Baby Boomers will seek to locate in inexpensive cost of living areas. The data also points to an interest in “college towns” because of their level of arts, cultural and other activities. All the research points to Boomers decision-making process focused on cost of living.⁸

Based on data from the U.S. Census and the Tax Foundation, the nine continental U.S. states that have no personal income tax, Alaska, Florida, Nevada, New Hampshire, Tennessee, Washington, South Dakota, Texas, and Wyoming, have populations that are growing at double the rate of those in the nine states with the highest tax burdens, which are New York, Connecticut, Massachusetts, Oregon, Minnesota, California, New Jersey, Virginia, and

⁵ <http://www.thestreet.com/story/11970334/1/retiring-baby-boomers-create-housing-boomtowns.html>

⁶ <http://sacramento.cbslocal.com/2013/06/13/rural-areas-losing-population-as-retiring-baby-boomers-stay-put/>

⁷ <http://www.nerdwallet.com/blog/2013/best-places-baby-boomers/>

⁸ <http://www.nytimes.com/ref/realestate/greathomes/GH-Retire.html>

Maryland. The populations of states with no income tax grew 15 percent, well above the 10 percent rate for the United States as a whole.

The study used IRS tax data to analyze whether state-income tax acted as a magnet to attract people from other states, over \$2 trillion moved between the states from 1995 to 2010. That shift left some states much richer, and others considerably poorer, in the process.

Communities in northeastern Pennsylvania may be poised to attract Baby Boomers because many of our communities have downtown or dense, urban living with arts and culture and recreational opportunities within walking distance of housing. Northeastern Pennsylvania also boasts a stock of affordably priced, modestly sized homes. Further, the higher education infrastructure in northeastern Pennsylvania has created a number of college towns. Baby Boomer migration is compromised by the income tax structure in Pennsylvania. However, the public transportation system needs enhancements to routes and timing to make NEPA a more friendly region for the “carless.” While not in the bottom 10 of U.S. states, Pennsylvania is not in the top 10 in terms of tax favorability for Baby Boomers. Though Northeastern Pennsylvania is home to many communities retiring Baby Boomers will find attractive, it must compete with other states and regions that have warmer climates and more favorable taxation to seniors.

Panama Canal and Port Expansion

The economies of international trade greatly affect local economic development. In an increasingly globalized world, the ability to efficiently move goods is vital to the health of the global economy. Improvements to the worldwide network of shipping routes could have a profound impact on the economy of Northeastern Pennsylvania, especially given the renewed focus on economic growth through export.⁹ Access to shipping routes enables economic growth through exports and is a useful tool in attracting businesses to the area.

An important development in international trade is the \$5.2 billion expansion of the Panama Canal that is currently in progress. Over the past several decades, the total tonnage of goods traversing the Canal has increased sharply, while the total number of trips has plateaued. Many large ships in service today barely fit through the canal, and there is pressure to accommodate larger ships to keep up with the growing demand for internationally traded goods. A third set of locks is being added to the canal, which will add capacity to the canal as well as allow larger ships to pass through, so called “post-Panamax” vessels.¹⁰

Transportation of goods between the Atlantic coast and East Asia will become more efficient, so the prime economic benefactors of this expansion will be ports along the U.S. East and Gulf Coasts.¹¹ It is expected that logistics-related business will boom throughout the Eastern

⁹ Canaga Retna, Sujit M. The Panama Canal Expansion and SLC State Ports. June 2010. Southern Legislative Conference.

¹⁰ De Obaldía, Marianela Dengo de. The Panama Canal Expansion Implications for Gulf and East Coast Ports. Transportation Research Forum, March 15 2012.

¹¹ Ibid.

Seaboard.¹² Ports throughout the Gulf Coast and Eastern Seaboard are undertaking capital projects to expand capacity, improve infrastructure, accommodate post-Panamax ships, and better compete for the new traffic. One of the nearest ports to Northeastern Pennsylvania, the Port of New York/New Jersey is in the process of upgrading to accommodating post-Panamax ships, which includes the raising of the Bayonne Bridge that connects New Jersey with Staten Island. The project is not expected to be completed in time for the opening of the expanded Panama Canal, but is on track to be finished shortly thereafter. Northeastern Pennsylvania's economy can benefit from its close geographic proximity to the Port of New York/New Jersey, as well as good transportation access to that port. Increased shipping traffic at East Coast ports will have a positive economic impact that is likely to be felt throughout a broad region. Access to the newly expanded port may also help attract and retain businesses that import goods from or export goods to East Asia. However, it remains to what extent Mid-Atlantic ports closest to Northeastern Pennsylvania will capture the increased shipping traffic given the stiff competition from other ports throughout the Eastern Seaboard and Gulf Coast.

Most importantly, improved shipping can expand access to global markets for products produced locally. The expanded Panama Canal is expected to become the primary trade route for liquefied natural gas (LNG) from the U.S. to Asia. Shale gas sourced from the U.S. can be more efficiently and effectively transported to Asia, opening new markets for this important export product from Northeastern Pennsylvania. Markets for LNG in the Pacific Basin are projected to be strong in the coming years amid steadily growing demand. Supply within Asia is currently outpaced by demand, so there is potential for significant exports of North American LNG to Asia.¹³ This bodes well for the economic impact of Marcellus Shale gas and reiterates the importance of overseas shipping of shale gas from Northeastern Pennsylvania. The ability of Marcellus Shale gas to compete for Asian demand within an increasingly competitive marketplace and globalized economy will determine the impact of the Panama Canal expansion on the local area.

Conclusions

The Institute believes that Northeastern Pennsylvania could be primed for significant economic growth. Of the four hypothesized growth factors, each will contribute to overall economic growth to varying degrees. The largest and most important driver of future growth is likely to be the Marcellus Shale formation. Better access to global markets for natural gas, thanks to the Panama Canal expansion project and port improvements along the Eastern Seaboard, will help the Marcellus Shale region maximize its potential. The population of the region is likely to continue growing at a moderate pace, thanks to migration into NEPA from elsewhere. Workers will continue to move into the area to fill the numerous job vacancies in the natural gas industry, and the relatively low cost of living and small town character of the area is attractive to people who work in Northern New Jersey, New York City, or Southeastern Pennsylvania. A significant increase in population will grow the overall size of the regional

¹² McCurry, John W. Cargo Evolution: East Coast ports strive to be the fittest for the Panama Canal expansion. Site Selection magazine, November 2011.

¹³ Chong, Zhi Xin. Changing Asian Gas Markets. Wood Mackenzie.

economy as new residents spend money locally. The movement of retiring Baby Boomers into the area is the least likely of these four factors to have a large economic growth impact. NEPA faces stiff competition from other states and regions in attracting this cohort, but possesses some helpful attributes, so a moderate growth effect from Baby Boomer in-migration is certainly not impossible. Overall, Northeastern Pennsylvania could be poised for economic prosperity. The Marcellus Shale formation is a powerful resource, and the region's competitive advantages make it an appealing place for people to live, work, and do business.

Appendix: Detailed Migration Data Tables

Source: Internal Revenue Service

Bradford	Inflow	Outflow	Net Gain/Loss	Lackawanna	Inflow	Outflow	Net Gain/Loss	Montour	Inflow	Outflow	Net Gain/Loss	Susquehanna	Inflow	Outflow	Net Gain/Loss
2005-2006	1761	1958	-197	2005-2006	5531	5175	356	2005-2006	989	968	21	2005-2006	1613	1540	73
2006-2007	1671	1760	-89	2006-2007	5557	5178	379	2006-2007	955	940	15	2006-2007	1450	1499	-49
2007-2008	1719	1935	-216	2007-2008	5527	5344	183	2007-2008	1028	1032	-4	2007-2008	1457	1480	-23
2008-2009	1756	1864	-108	2008-2009	5276	5549	-273	2008-2009	1007	955	52	2008-2009	1488	1561	-73
2009-2010	1696	1680	16	2009-2010	5239	5171	68	2009-2010	1015	944	71	2009-2010	1276	1355	-79
Total	8603	9197	-594	Total	27130	26417	713	Total	4994	4839	155	Total	7284	7435	-151

Carbon	Inflow	Outflow	Net Gain/Loss	Luzerne	Inflow	Outflow	Net Gain/Loss	Northumberland	Inflow	Outflow	Net Gain/Loss	Union	Inflow	Outflow	Net Gain/Loss
2005-2006	3193	2420	773	2005-2006	8488	7505	983	2005-2006	2834	3208	-374	2005-2006	1685	1572	113
2006-2007	3272	2161	1111	2006-2007	8556	7403	1153	2006-2007	3020	2764	256	2006-2007	1700	1580	120
2007-2008	2833	2332	501	2007-2008	8468	7950	518	2007-2008	3149	2949	200	2007-2008	1766	1616	150
2008-2009	2715	2376	339	2008-2009	8568	7564	1004	2008-2009	3138	2881	257	2008-2009	1606	1603	3
2009-2010	2440	2252	188	2009-2010	7590	7039	551	2009-2010	2503	2793	-290	2009-2010	1453	1499	-46
Total	14453	11541	2912	Total	41670	37461	4209	Total	14644	14595	49	Total	8210	7870	340

Clinton	Inflow	Outflow	Net Gain/Loss	Lycoming	Inflow	Outflow	Net Gain/Loss	Schuylkill	Inflow	Outflow	Net Gain/Loss	Wayne	Inflow	Outflow	Net Gain/Loss
2005-2006	1229	1201	28	2005-2006	2835	3267	-432	2005-2006	4094	3116	978	2005-2006	2522	2124	398
2006-2007	1107	1109	-2	2006-2007	2758	3378	-620	2006-2007	4036	3314	722	2006-2007	2268	2054	214
2007-2008	1158	1319	-161	2007-2008	2903	3278	-375	2007-2008	4111	3581	530	2007-2008	2314	1909	405
2008-2009	1088	1213	-125	2008-2009	2893	2809	84	2008-2009	3764	3605	159	2008-2009	2085	1941	144
2009-2010	1047	1092	-45	2009-2010	2764	2635	129	2009-2010	3555	3097	458	2009-2010	2198	1820	378
Total	5629	5934	-305	Total	14153	15367	-1214	Total	19560	16713	2847	Total	11387	9848	1539

Columbia	Inflow	Outflow	Net Gain/Loss	Monroe	Inflow	Outflow	Net Gain/Loss	Snyder	Inflow	Outflow	Net Gain/Loss	Wyoming	Inflow	Outflow	Net Gain/Loss
2005-2006	2240	1994	246	2005-2006	10334	7967	2377	2005-2006	1486	1202	284	2005-2006	1224	1286	-62
2006-2007	2093	1917	176	2006-2007	9278	7850	1428	2006-2007	1320	1257	63	2006-2007	1075	1070	5
2007-2008	2112	1943	169	2007-2008	8193	7643	550	2007-2008	1303	1366	-63	2007-2008	1120	1192	-72
2008-2009	2044	1948	96	2008-2009	7496	7000	496	2008-2009	1218	1297	-79	2008-2009	1091	1192	-101
2009-2010	1808	1791	17	2009-2010	6649	6357	292	2009-2010	1254	1140	114	2009-2010	1106	1064	42
Total	10297	9593	704	Total	41950	36817	5133	Total	6581	6262	319	Total	5616	5804	-188

Sullivan	Inflow	Outflow	Net Gain/Loss
2005-2006	233	275	-42
2006-2007	283	241	42
2007-2008	212	277	-65
2008-2009	265	235	30
2009-2010	239	215	24
Total	1232	1243	-11