

Moscow's Regional Economy: An Economic Data Analysis

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Contents

Executive Summary iii

Acknowledgments ix

Introduction 1

1. Quad-County Regional Economy 2

 1.1 Population 2

 1.2 Employment 6

 1.3 Housing Starts 10

 1.4 Student In The Region 12

2. Moscow’s Economic Pillars 14

 2.1 Key Export Oriented Industries 14

 2.2 Outside Income 15

 2.3 University of Idaho 18

 2.4 Moscow’s Economic Strengths and Regional Partnerships 21

3. Moscow’s Perception in the Broader Region and Idaho 25

4. Moscow’s Economic Challenges 27

5. Summary and Conclusion 28

Appendix 1: Biographies 29

Appendix 2: Supplementary Data Tables 30

Appendix 3: Bibliography 35

Executive Summary

Employment Growth of Moscow, Latah County, and the Regional Economy

1. The City of Moscow, while maintaining a strong relationship with the University of Idaho (UI), has begun growing despite slow UI's enrollment and financial growth.
2. Latah County's total employment grew 7% from 2012 to 2017 much higher than the -4.3% from 2008 to 2012 (Emsi).
3. Whitman County and Pullman continue to grow slightly faster than Latah County and Moscow, seeing a 10% cumulative growth from 2012 to 2017, but the gap in growth has been closing over the last four years.
4. Latah County/Moscow's economic base identifies three key drivers of the economy: UI (50%); all other basic industries including agriculture, wood products, high technology manufacturing and services (25%); and Moscow's role as the home and shopping center of the Palouse (25%) (Peterson and Pool, 2013).
 - 4.1. Two of these three drivers are clearly growing: Basic industries and services and Moscow's contribution to regional retail trade and residential commuting income.
 - 4.2. Latah County/Moscow has benefited from the growth of many high technology services firms such as Emsi which now has approximately 120 professional employees in Moscow, Populi, Roman Roads, Wovax, Biketronics, TerraGraphics, MEI (Troy), and others.
 - 4.3. The Moscow Farmers Market is a long-term community success story. The market has experienced rapid growth reaching an estimated 164,892 annual visitors in 2013, up from 84,084 in 2003; a 96% cumulative increase and a 7.0% average annual growth rate. By 2016 the market visitors were projected to reach 176,380 visitors.
 - 4.4. Approximately 20-25 firms have spun-off from the Moscow Farmers Market and established brick and mortar establishments or permanent production facilities locally. (Peterson and Pool, 2016).
 - 4.5. The regional economy has an emerging craft beer and winery cluster now counting over fifteen regionally produced wines and craft beers. Moscow has been developing a craft beer district that now includes Moscow Brewing Company, Rants and Raves Brewery, and Hunga Dunga Brewery. In addition, there are several Moscow restaurants and bars that specialize in serving local and regional craft beers such as the Ale House, Lodgepole, Tapped, and Martins Smokehouse (Peterson and Pool, 2016).
 - 4.6. Moscow has a vibrant and robust downtown. The downtown corridor encompasses the area between the northern and southern borders of town and, from east to west, the area between the Latah County Courthouse and Ashbury Street. In that corridor there are at least 344 firms, employing approximately 3,691 workers. The firms represent a variety of economic clusters:
 - Health care – 753 jobs
 - Eating and drinking – 632 jobs
 - Retail – 586 jobs
 - Other – 387
 - Government – 385 jobs
 - Finance/insurance/real estate – 291 jobs
 - Engineering and technology services – 233 jobs
 - Manufacturing/Craft Industries – 243 workers
 - Professional services – 140 jobs
 - Private Education – 41 jobs
 - 4.7. The broader Quad County economy economic base includes a strong manufacturing sector in high-technology digital switches, wood and paper products, ammunition and gun

manufacturing, a jet boat industry, and other smaller industries. Employment stood at 8,304 jobs in 2017 up from 6,074 in 2012, a 37% increase (BEA/Emsi).

Palouse Retail Trade/Eating and Drinking Leadership

1. Moscow has regained one of the new automobile dealerships that were lost in the previous decade: Quad Cities Nissan.
2. Latah County/Moscow remains the Palouse regional leader in retail trade. The industry grew by 11% to reach 2,498 jobs (2012 to 2017) as compared to Whitman County/Pullman which increased by 17% to 2,055 jobs. In the broader Quad County economy, Nez Perce County/Lewiston reached 3,151 jobs in 2017, an increase of 8% and Asotin County/Clarkston increased 10% to 1,428 jobs (BEA/Emsi).
3. Latah County/Moscow's eating and drinking establishment grew 29% to reach 1,318 jobs (2012 to 2017) as compared to Whitman County/Pullman which increased by 14% to 1,356 jobs. Nez Perce County/Lewiston reached 1,392 jobs in 2017, an increase of 9% and Asotin County/Clarkston increased 5% to 496 jobs (BEA/Emsi).
4. Moscow historically has been the shopping center (retail trade hub) of the Palouse, a position the city is maintaining. Total retail sales for 2012 (the most recent Economic Census) were: 1) Lewiston \$670.5 million; 2) Moscow \$314.1 million; 3) Pullman \$222.7 million; and 4) Clarkston \$263.2 million. Lewiston is the retail trade leader in the broader Quad County economy.

Pullman-Moscow Airport Realignment Project

1. It could be argued that the \$119 million Realignment project on the Pullman-Moscow Airport (PUW) is the most important cooperative success story by Latah County, Whitman County, Moscow, Pullman, UI, WSU, and the local business community. Without the project, the PUW airport would have lost commercial air service from noncompliance with FAA standards as well as approximately \$2.5 million per year in federal grants and contracts that are tied to commercial air service.
 - 1.1. The local funding match of about \$9.66 million was met by contributions from the regional governmental entities and from businesses/individuals such as Schweitzer Engineering Laboratories (SEL) and Ed and Beatriz Schweitzer who donated over \$2 million.
 - 1.2. Enplanements have increased from 40,759 in 2013 to 61,833 in 2016, a 34% increase in three years. At this rate of growth, the PUW will overtake the Lewiston-Nez Perce County Airport within 5 years (FAA).
 - 1.3. The PUW airport annually creates 212 direct jobs in the regional Quad County economy and 300 total local jobs (including the multiplier effects). The five-year construction project (currently underway) will temporarily create 93 direct jobs and 226 total jobs annually (including the multiplier effects) (Peterson, 2016).

Regional Population Growth and Commuting Patterns

1. Moscow's population grew a cumulative 3.4% from 24,499 to 25,322 from 2012 to 2017. Lewiston grew 2.6%, Clarkston 0.8%, and Pullman 6.1% over the same period. Pullman/Whitman County continue to be the regional growth leaders although Moscow/Latah County is closing the gap (U.S. Census/Emsi).
2. Many residents of Moscow work in Pullman or Lewiston and out-commute, an important source of residential income to Moscow. It is estimated that in 2015, 3,144 people who live in Latah County (mostly Moscow residents) commute to Pullman to work. Alternatively, 777 people live in Whitman County (mostly Pullman) and commute

to Latah County (Moscow). Net outflow of workers from Moscow were 2,367. In 2015 Latah County gained \$155.7 million in income from these commuting patterns (net). Whitman County lost \$144.1 million (net) (BEA, Flow of Earnings, CA91). Moscow's economy is dependent on commuter income, cross boarder retail trade, eating and drinking visitors, and out of region (mostly university-related) tourism.

3. Moscow's retail trade industry faces several competitive challenges. The "Amazon Effect" i.e. the nationwide trend of substituting online shopping for local shopping by consumers has caused several firm closures in the Palouse Empire Mall, most notably Macys. Pullman is developing a cohesive retail trade center with the additions of Walmart, Pullman Building Supply, and others.

Other Business Leaders and Emerging Trends

1. Founded in 1977, the Moscow Food CO-OP is an important iconic Moscow business that boasted nearly \$12 million in sales in 2016 and purchases over \$300,000 from local producers each year in Latah County. The CO-OP has approximately 122 local workers and a \$3.2 million payroll (Peterson, 2017).
2. The Moscow Food CO-OP, Farmers Market, and many local businesses are supporting a strong local foods sector in Latah County.
3. New Saint Andrews (NSA) has approximately 23 full and part-time faculty/staff with a gross payroll of \$1.1 million and over 165 students. NSA is expanding into the former CJ's building that will serve as a music conservatory and could ultimately hold 300 full-time students and 44 faculty and staff (NSA, Daily News, 4/17).
4. Northwest River Supply (NRS), a home-grown Moscow company is the world's leading whitewater rafting gear company, employing 102 people with a \$5 million payroll.
5. Moscow has a strong emerging health care sector led by Gritman Medical Center which directly employed 587 full and part-time workers with a 2015 payroll of approximately \$22 million. In 2017 the health care sector (excluding nursing homes) in Moscow employed 978 direct jobs. Gritman just completed a \$12 million oncology complex that will employ 70 additional employees.

University of Idaho, the Region's Largest Employer

1. The UI is Idaho's Flagship university with the state's largest alumni base (80,000 alumni), economic impacts of \$1.1 billion statewide (Emsi, 2015), and the broadest and deepest range of programs in the state. However, Boise State University (BSU) and the other state universities are catching up.
2. The importance of student growth on the regional economy cannot be understated. In 2015, the average residential UI student created \$44,200 in sales transactions, \$36,500 in wage and salary earnings, and $\frac{3}{4}$ of a job in the community.¹ This assumes that in the long-run university activities and expenditures are dependent on student enrollments (including the multiplier effects).

Growth Challenges of the University of Idaho

3. The UI's dominance in higher education in Idaho is at risk, a fact that remains unchanged since the previous report in 2013. BSU (and ISU) have reached or exceeded

¹ These figures do not include research dollars.

par with the UI in many major functional areas such as general undergraduate enrollment. The UI still leads in research dollars, doctoral programs, Ph.D. students, outreach and engagement, and some specialized programs such as WAMI (medical education) and Law.

4. In 2016 BSU had nearly 85% more students than the UI and 69% higher FTEs.
5. Statewide, the UI student population grew cumulatively -1.5% from 2012 to 2016 as measured by October 15 headcounts. Boise State University (BSU) grew 1.3%, Lewis-Clark State College (LCSC) grew 0.9%, and Idaho State University (ISU) grew -1.7%. From 1982 to 2016.
6. The average annual student growth rates between 1982 and 2016 were: UI was under 1%, BSU 2.2%, ISU 1.8%, and LCSC 1.9%. The UI has had a positive headcount growth rate for 2016 and preliminarily for 2017.
7. The UI now ranks 3rd in student headcounts (11,780) behind BSU (23,854), ISU (12,928), but above LCSC (3,909). UI is also ranked third in terms of full-time equivalents (FTEs) behind both BSU and ISU (based on fall October 15th enrollment headcounts).
8. Employing the historical (1982-2016) average annual UI growth rates of about 1.0% into a future forecast, the UI would reach former UI President Nellis target of 16,000 student enrollments in the year 2048.
9. Small changes in growth rates can have large cumulative impacts. If the UI were to grow at about 4.5% annually, it would reach approximately 18,000 students in ten years. Thus, it is possible to reverse the growth patterns quickly if strong positive growth rates can be sustained.
10. Current UI President Chuck Staben has a similar goal to Nellis, to increase UI enrollments 50% by 2025 (Spokesman Review, 2015).
11. BSU now leads the UI in terms of the FY2017 basic state appropriation (\$93.7 million versus \$86.7 million). BSU is virtually tied with the UI in terms total operating budget which includes funding from all sources (UI \$470 million [FY17] to BSU \$469 million).
12. BSU produced more Bachelor's degrees (3,154) than the UI (2,137) in AY 2014/2015, and more Master's degrees (703 BSU to 525 UI). The UI produced substantially more Doctoral degrees (87 research/133 professional practice degrees) to BSU (14 research degrees).
13. The UI had \$95.5 million in research expenditures in FY2015 and \$95.3 million in FY2012, approximately 67% of the total for all Idaho higher education research expenditures. (Unofficially the UI exceeded \$100 million in research in 2016). From 2012 to 2015 UI research expenditures grew 0.14% cumulatively while research expenditures at BSU grew 11.42% and stood at \$30.0 million in 2015. ISU research expenditures declined 15.53% and stood at \$17.5 million (FY2015).

Idaho and the Perception of Moscow

1. Civic leaders and local government officials appear to have become more sensitive to Moscow's image and may have improved the perception of Moscow statewide. The 2013 study identified issues arising from:
 - 1.1. Southern Idaho media bias against both Moscow and the UI.
 - 1.2. Challenges of running a state's largest residential campus.

- 1.3. Unintentional self-inflicted image problems by the UI and some bad luck; and
- 1.4. A general lack of awareness by some civic leaders on how Moscow is perceived around the state.
2. Governmental and civic leaders appear have become more focused on economic growth since the previous 2013 study.
3. Asymmetry in news reporting: The University of Idaho is the “big scoop” story for local media while Boise State University is treated like a “protected child” by the Idaho Statesman.
4. There are still public perception challenges. The “killing kitties” viral story: “U of I accused of killing feral cats without approval,” Idaho State Journal, 9/16. The public relations related to this story could have been improved.

Moving Forward

1. Good News:
 - a. Moscow’s economy is growing. The city has a vibrant entrepreneurial downtown, one of the finest farmer’s market in the county, an emerging high technology services industry, a craft brewing district, a strong arts and cultural community, a robust retail trade and restaurant sector, and many other important economic sectors and amenities.
 - b. Moscow has sustained construction activity since 2013 with several new developments in town including, the Identity Moscow project that will add a 154 multi-residential complex and a 3,000 square foot commercial complex (Daily News, 11/11/16).
 - c. The Pullman Moscow Airport realignment project is progressing well and will likely transform the airport into the region’s largest airport in the near future, surpassing the Lewiston airport.
 - d. The University of Idaho has partially restored the Western Undergraduate Exchange (WUE) program for Washington, Oregon, and Alaska that will help improve enrollments.
 - e. For the first time since the term of UI President Hoover ended in 2003, the UI is taking both enrollment growth and research growth seriously. The UI is aggressively implementing intensive programs to increase both.
2. Challenges
 - a. Turnover of UI leadership. Bob Kustra is considered to be one of the most successful Boise State Presidents, and has been in office since 2003. Since 2003 the UI has had the following presidents:
 - i. Robert A. Hoover 2003 (final year in office)
 - ii. Gary G. Michael (Interim) 2003–2004
 - iii. Timothy P. White 2004–2008
 - iv. Steven Daley-Laursen (Interim) 2008–2009
 - v. M. Duane Nellis 2009–2013
 - vi. Donald L. Burnett Jr. (Interim) 2013–2014
 - vii. Chuck Staben 2014–present
 - b. News story: “UI president finalist for UNM job, Staben interviewing for University of New Mexico president (Daily News, 10/7/17).

3. There have been some recent increases in both research and students but that growth has not yet been sustained over time.
4. The UI has essentially seen only modest increases relative to the overall economy since its peak in 2003. On the flip side of the equation, if the UI successfully increases its growth goal set by President Staben, the local economy will grow by approximately 4,440 jobs, payrolls will increase by \$162 million, and the population will increase by over 10,000 people. Although unlikely, given the current growth trends, there would be challenges in managing the increased growth.

Conclusions

1. Moscow is refocusing on economic drivers directly under their control
2. Moscow's retail trade and commuter income levels are growing
3. Local industries such as Emsi, New Saint Andrews, and the CO-OP are expanding.
4. The University of Idaho is making efforts to increase enrollments and revenues
5. The Airport realignment project is on tract and progressing well
6. Moscow continues to have a thriving downtown culture with the farmers market and local food production.

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Any errors in this report are the responsibility of the authors and not any of the above-mentioned institutions or individuals. All position statements are those of the authors and *do not* necessarily reflect those of the GMA or any other institution or individual.

Introduction

The fundamental purpose of this study is to update the 2013 GMA report on Moscow's regional economy (Peterson and Pool, 2013). The focus of this report centers on the 2012-2017 time period and Moscow's evolving role in the broader region over that time. It is important to understand that altering the course of an economy is no easy thing. Over the past four years Moscow has pulled out of a downward trajectory (employment fell 4.3% during the 2008-2012 recession period) and has been moving steadily towards a more stable growth path. Moscow's historic growth rate has been persistently smaller than public perception (1990 to 2010) as illustrated by two previous studies on Moscow's growth (Peterson and Miller et.al., 1995, 2006). Periodically there has been concern among some governmental leaders the local economy was growing too fast, a perception not supported by the data.

It is common for small rural economies to take more time to recover than larger metropolitan centers. That said, Latah County is ranked 16th out of Idaho's 44 counties in terms of population growth from 2012-2017 and has seen employment rise 7% (1,463 jobs) over the same time period. Roughly \$59 million in new homes have been built from 2012 through 2016.² New business starts and most other economic metrics are on the rise. The University of Idaho (UI), which is approximately half of the regions economy, has not had significant growth since 2003. Although recent indicators and policies are showing improvements, there is not yet a clear trend towards growth.

The remainder of the report is organized into five sections. In Section 1 we focus on the broader Quad-County regional economy (Asotin, Latah, Nez Perce, and Whitman). Section 2 looks at Moscow specifically and how it operates within the larger region. Section 3 focuses on Moscow's changing perception and brand regionally and within Idaho. Section 4 focuses on relevant challenges and policies for moving forward. Lastly Section 5 summarizes and concludes the analysis.

² 2017 new housing starts and new housing values are not yet available.

1. Quad-County Regional Economy

Moscow operates within a much larger functional economy. Unlike larger cities that have the inertia to operate independently, e.g., Spokane or Seattle, Moscow’s success relies less on its size and more on its unique advantages as a home and bedroom community to the surrounding industrial economies.

1.1 Population

Latah County in general and Moscow specifically, have unique attributes in the larger economy. These attributes define our primary economic drivers. As such, it is helpful to understand the broader Quad-County regional profile before diving into Moscow’s specific drivers and the local policy arena. Tables 1.1-1.4 below show the changing population base for each of the four counties (Asotin, Latah, Nez Perce, and Whitman) and the total population for the region. Whitman County saw the largest overall growth from 2012-2017 at 6%. Nez Perce and Latah Counties each saw 3% growth, and Asotin saw growth of 2%. Total population rose from 146,209 to 151,634 or just under 4% growth.

Table 1.1: *Quad-County Population 1910 -2017*

| Year | Asotin | Latah | Nez Perce | Whitman | Total |
|------|--------|--------|-----------|---------|---------|
| 1900 | 3,366 | 13,451 | 13,748 | 25,360 | 55,925 |
| 1910 | 5,831 | 18,818 | 24,860 | 33,280 | 82,789 |
| 1920 | 6,539 | 18,092 | 15,253 | 31,323 | 71,207 |
| 1930 | 8,136 | 17,798 | 17,591 | 28,014 | 71,539 |
| 1940 | 8,365 | 18,804 | 18,873 | 27,221 | 73,263 |
| 1950 | 10,878 | 20,971 | 22,658 | 32,469 | 86,976 |
| 1960 | 12,909 | 21,170 | 27,066 | 31,263 | 92,408 |
| 1970 | 13,799 | 24,891 | 30,376 | 37,900 | 106,966 |
| 1980 | 16,823 | 28,749 | 33,220 | 40,103 | 118,895 |
| 1990 | 17,605 | 30,617 | 33,754 | 38,775 | 120,751 |
| 2000 | 20,551 | 34,935 | 37,410 | 40,740 | 133,636 |
| 2010 | 21,623 | 37,244 | 39,265 | 44,776 | 142,908 |
| 2012 | 21,888 | 38,184 | 39,531 | 46,606 | 146,209 |
| 2017 | 22,365 | 39,378 | 40,526 | 49,364 | 151,634 |

Source: U.S. Census, Emsi

It is interesting to note that the Palouse, Moscow and Pullman, compose a much larger population base than the Valley (Lewiston and Clarkston). The Palouse is roughly 40%

larger than the Valley. Table 1.2 shows cumulative growth rates over several time periods. It is only since 2000 that Whitman County’s growth began outpacing Nez Perce. Just looking at the past four years, Nez Perce has pulled even with Latah in terms of population growth rate, both growing at 3% from 2012 to 2017.

Table 1.2: Cumulative Quad-County Population Growth

| Year | Asotin | Latah | Nez Perce | Whitman | Total |
|-------------|---------------|--------------|------------------|----------------|--------------|
| 1900-2010 | 542% | 177% | 186% | 77% | 156% |
| 1980-2010 | 29% | 30% | 18% | 12% | 20% |
| 2000-2010 | 5% | 7% | 5% | 10% | 7% |
| 2010-2017 | 3% | 6% | 3% | 10% | 6% |
| 2012-2017 | 2% | 3% | 3% | 6% | 4% |

Source: U.S. Census, Emsi

While this growth may seem sluggish relative to Idaho and Washington State growth, it is on par with the national growth rate. The higher growth rates in Washington and Idaho may bode well for the regional economy as we may see spillover without incurring the full costs of the population expansion. This spillover is largely a reflection of the health of the overall economy, what economists term the “National Effect” in shift share analysis. Table 1.3 shows the national and state growth trends.

Table 1.3: National and State Population (1910 -2017)

| Year | United States | Washington State | Idaho State |
|-------------|----------------------|-------------------------|--------------------|
| 1900 | 76,212,168 | 518,103 | 161,772 |
| 1910 | 92,228,496 | 1,141,990 | 325,594 |
| 1920 | 106,021,537 | 1,356,621 | 431,866 |
| 1930 | 123,202,624 | 1,563,396 | 445,032 |
| 1940 | 132,164,569 | 1,736,191 | 524,873 |
| 1950 | 151,325,798 | 2,378,963 | 588,637 |
| 1960 | 179,323,175 | 2,853,214 | 667,191 |
| 1970 | 203,211,926 | 3,409,169 | 712,567 |
| 1980 | 226,545,805 | 4,132,156 | 943,935 |
| 1990 | 248,709,873 | 4,866,692 | 1,006,749 |
| 2000 | 282,192,162 | 5,911,043 | 1,299,610 |
| 2010 | 308,745,538 | 6,724,540 | 1,567,582 |
| 2012 | 313,914,040 | 6,897,012 | 1,595,728 |
| 2017 | 325,401,909 | 7,366,582 | 1,700,077 |

Source: U.S. Census, Emsi

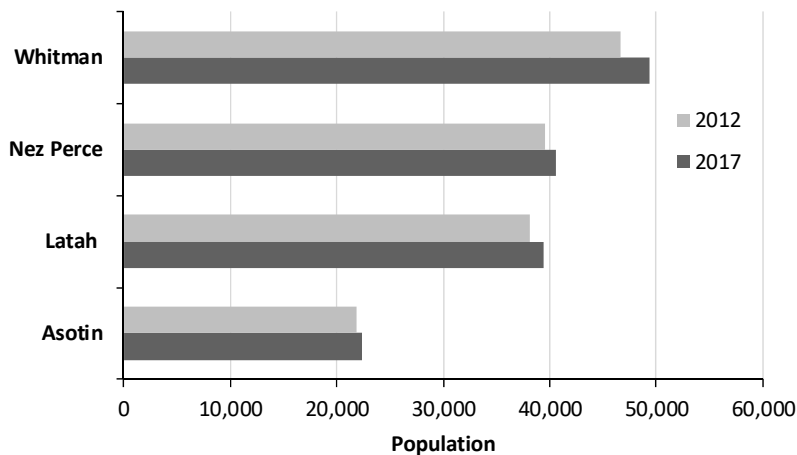
Table 1.4: Cumulative National and State Population Growth

| Year | United States | Washington State | Idaho State |
|-----------|---------------|------------------|-------------|
| 1900-2010 | 305% | 1198% | 869% |
| 1980-2010 | 36% | 63% | 66% |
| 2000-2010 | 9% | 14% | 21% |
| 2010-2017 | 5% | 10% | 8% |
| 2012-2017 | 4% | 7% | 7% |

Source: U.S. Census, Emsi

Figure 1.1 provides a graph to show the change in population by county for the region. Incidentally Latah and Nez Perce Counties are roughly the size today that Whitman was in the 1980's. Asotin is now the same size that Latah was in the 1960's. Looking over such long time horizons often presents a better picture of expected growth.

Figure 1.1 Quad-County Populations (2012 & 2017)



Source: U.S. Census, Emsi

Table 1.5 and 1.6 show the city growth trends in the quad counties. In Latah County almost every city saw population decline, with the notable exception of Moscow. Nez Perce saw some decline in their smallest towns but the growth in Lewiston was nearly as strong as Moscow's. In Idaho the rural cities are shrinking while the larger urban centers are growing. Washington saw growth across the entire city spectrum. Only Endicott, in Whitman County, shrank. Both Clarkston and Asotin grew in Asotin County.

Table 1.5: Idaho City Population Change 1990-2016

| | 1990 | 2000 | 2012 | 2016 | % (2012-2016) |
|-------------------------|-------------|-------------|-------------|-------------|----------------------|
| <i>Latah County</i> | 30,617 | 34,935 | 38,184 | 39,184 | 2.6% |
| Bovill | 256 | 305 | 259 | 247 | -4.6% |
| Deary | 529 | 552 | 512 | 511 | -0.2% |
| Genesee | 725 | 946 | 965 | 958 | -0.7% |
| Juliaetta | 488 | 609 | 582 | 582 | 0.0% |
| Kendrick | 325 | 369 | 303 | 299 | -1.3% |
| Moscow | 18,519 | 21,291 | 24,499 | 25,322 | 3.4% |
| Onaway | 203 | 230 | 189 | 191 | 1.1% |
| Potlatch | 790 | 791 | 812 | 813 | 0.1% |
| Troy | 699 | 798 | 888 | 887 | -0.1% |
| <i>Nez Perce County</i> | 33,754 | 37,410 | 39,531 | 40,369 | 2.1% |
| Culdesac | 280 | 378 | 379 | 376 | -0.8% |
| Lapwai | 932 | 1,134 | 1,140 | 1,148 | 0.7% |
| Lewiston | 28,082 | 30,904 | 32,051 | 32,872 | 2.6% |
| Peck | 160 | 186 | 199 | 198 | -0.5% |

Source: U.S. Census/Idaho State

Table 1.6: Washington City Population Change 1990-2016

| | 1990 | 2000 | 2012 | 2016 | % (2012-2016) |
|-----------------------|-------------|-------------|-------------|-------------|----------------------|
| <i>Whitman County</i> | 38,775 | 40,740 | 46,606 | 48,830 | 4.8% |
| Albion | 632 | 616 | 583 | 591 | 1.4% |
| Colfax | 2,762 | 2,844 | 2,846 | 2,895 | 1.7% |
| Colton | 325 | 386 | 432 | 466 | 7.9% |
| Endicott | 320 | 621 | 292 | 291 | -0.3% |
| Farmington | 126 | 153 | 149 | 156 | 4.7% |
| Garfield | 544 | 641 | 606 | 611 | 0.8% |
| La Crosse | 336 | 380 | 318 | 318 | 0.0% |
| Lamont | 91 | 106 | 71 | 73 | 2.8% |
| Malden | 189 | 215 | 204 | 205 | 0.5% |
| Oakesdale | 347 | 420 | 431 | 435 | 0.9% |
| Palouse | 931 | 1,011 | 1,021 | 1,045 | 2.4% |
| Pullman | 23,462 | 24,675 | 31,359 | 33,282 | 6.1% |
| Rosalia | 552 | 648 | 557 | 565 | 1.4% |
| St. Johns | 499 | 548 | 546 | 558 | 2.2% |
| Tekoa | 750 | 826 | 791 | 808 | 2.1% |
| Uniontown | 277 | 345 | 298 | 333 | 11.7% |
| <i>Asotin County</i> | 17,605 | 20,551 | 21,888 | 22,306 | 1.9% |
| Asotin | 981 | 1,095 | 1,271 | 1,295 | 1.9% |
| Clarkston | 6,753 | 7,337 | 7,283 | 7,341 | 0.8% |

Source: U.S. Census/Washington State

1.2 Employment

Total employment levels grew regionally as well. The industry mix among the counties differs substantially when looking at the detailed industry data. This diversity within the region speaks to each county's unique comparative advantage. Tables 1.7 and 1.8 show employment by industry and percentage of county employment by industry.

Table 1.7: 2017 Quad-County Employment by Industry

| Industry | Washington State | Asotin | Whitman | Idaho State | Latah | Nez Perce |
|--|-------------------------|---------------|----------------|--------------------|---------------|------------------|
| Crop and Animal Production | 154,497 | 344 | 1,483 | 55,327 | 1,563 | 684 |
| Mining, Quarrying, and Oil and Gas Extraction | 9,611 | 39 | 35 | 5,491 | 23 | 93 |
| Utilities | 5,033 | 15 | 79 | 3,292 | 14 | 64 |
| Construction | 247,248 | 641 | 576 | 62,870 | 845 | 1,230 |
| Manufacturing | 312,117 | 531 | 3,014 | 73,348 | 517 | 4,242 |
| Wholesale Trade | 152,172 | 149 | 574 | 34,600 | 408 | 567 |
| Retail Trade | 450,118 | 1,428 | 2,055 | 112,632 | 2,498 | 3,151 |
| Transportation and Warehousing | 137,517 | 137 | 311 | 29,025 | 164 | 769 |
| Information | 138,914 | 61 | 160 | 12,508 | 249 | 429 |
| Finance and Insurance | 157,536 | 322 | 337 | 39,775 | 443 | 1,417 |
| Real Estate and Rental and Leasing | 201,939 | 418 | 1,193 | 51,352 | 992 | 845 |
| Professional, Scientific, and Technical Services | 316,089 | 422 | 856 | 58,908 | 1,315 | 760 |
| Management of Companies and Enterprises | 47,953 | <10 | 19 | 6,065 | 27 | 82 |
| Administrative and Support and Waste Management and Remediation Services | 216,083 | 269 | 344 | 59,614 | 565 | 826 |
| Educational Services | 87,948 | 111 | 263 | 21,827 | 632 | 212 |
| Health Care and Social Assistance | 474,096 | 1,400 | 1,764 | 107,039 | 1,880 | 3,883 |
| Arts, Entertainment, and Recreation | 101,202 | 194 | 451 | 21,249 | 514 | 490 |
| Accommodation and Food Services | 297,116 | 691 | 1,868 | 69,337 | 2,024 | 1,747 |
| Other Services (except Public Administration) | 202,985 | 478 | 901 | 47,287 | 943 | 1,302 |
| Government | 659,202 | 1,259 | 10,456 | 131,425 | 6,227 | 4,279 |
| Other Industry | 30 | 0 | 0 | 85 | 0 | 0 |
| Total | 4,369,405 | 8,915 | 26,738 | 1,003,058 | 21,844 | 27,075 |

Source: Emsi

Table 1.8: Total Quad-County Percentage of Employment by Industry 2017

| Industry | Washington State | Asotin | Whitman | Idaho State | Latah | Nez Perce |
|--|-------------------------|---------------|----------------|--------------------|--------------|------------------|
| Crop and Animal Production | 4% | 4% | 6% | 6% | 7% | 3% |
| Mining, Quarrying, and Oil and Gas Extraction | 0% | 0% | 0% | 1% | 0% | 0% |
| Utilities | 0% | 0% | 0% | 0% | 0% | 0% |
| Construction | 6% | 7% | 2% | 6% | 4% | 5% |
| Manufacturing | 7% | 6% | 11% | 7% | 2% | 16% |
| Wholesale Trade | 3% | 2% | 2% | 3% | 2% | 2% |
| Retail Trade | 10% | 16% | 8% | 11% | 11% | 12% |
| Transportation and Warehousing | 3% | 2% | 1% | 3% | 1% | 3% |
| Information | 3% | 1% | 1% | 1% | 1% | 2% |
| Finance and Insurance | 4% | 4% | 1% | 4% | 2% | 5% |
| Real Estate and Rental and Leasing | 5% | 5% | 4% | 5% | 5% | 3% |
| Professional, Scientific, and Technical Services | 7% | 5% | 3% | 6% | 6% | 3% |
| Management of Companies and Enterprises | 1% | - | 0% | 1% | 0% | 0% |
| Administrative and Support and Waste Management and Remediation Services | 5% | 3% | 1% | 6% | 3% | 3% |
| Educational Services | 2% | 1% | 1% | 2% | 3% | 1% |
| Health Care and Social Assistance | 11% | 16% | 7% | 11% | 9% | 14% |
| Arts, Entertainment, and Recreation | 2% | 2% | 2% | 2% | 2% | 2% |
| Accommodation and Food Services | 7% | 8% | 7% | 7% | 9% | 6% |
| Other Services (except Public Administration) | 5% | 5% | 3% | 5% | 4% | 5% |
| Government | 15% | 14% | 39% | 13% | 29% | 16% |
| Other Industry | 0% | 0% | 0% | 0% | 0% | 0% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

Source: Emsi

Table 1.9 shows the 2012-2017 employment growth by industry throughout the region. Retail Trade shows that Whitman County saw a 17% growth rate while Latah saw 11% growth over the same time. Looking at Retail Trade in Table 1.7 you can see that Latah still holds a slight advantage as the retail leader on the Palouse but that foothold may be slipping and is an area Moscow may need to focus on if it intends on retaining the position as a retail leader.

Another important story that falls out of Table 1.9 is manufacturing. Whitman County houses Schweitzer Engineering Laboratories which continues to grow its operations both nationally and internationally. Even with a much smaller base (517) Latah County saw a modest 1% growth in manufacturing. However, the Palouse and Quad County regions have a strong manufacturing base, increasing manufacturing employment by 22% and 36% respectively, from 2012 to 2017. The nation as a whole only grew manufacturing employment by 5% over the same time period. The rising manufacturing base benefits the entire economy including Latah County. Given regional commuting and trade patterns, Moscow may benefit as much as Pullman from an additional manufacturing job at Schweitzer Engineering.

Two other important points are 1) Accommodation and food services, which has expanded by 22% in Whitman County and 14% in Latah County; and 2) Professional, Scientific, and Technical Services only 1% in Whitman County but 13% in Latah County. While SEL is a manufacturing enterprise Emsi and many other tech service firms have begun growing in Moscow. According to Moretti (2012) Manufacturing and Tech Services provide two of the strongest large scale development industries because of the overwhelming effect they have on multiplier effects (i.e., the spillover growth they cause in other support industries and household purchases).

Table 1.9: Cumulative Percentage Change in Employment by Industry (2012-2017)

| Industry | Washington State | Asotin | Whitman | Idaho State | Latah | Nez Perce |
|--|-------------------------|---------------|----------------|--------------------|--------------|------------------|
| Crop and Animal Production | 8% | 20% | -3% | 7% | 5% | -2% |
| Mining, Quarrying, and Oil and Gas Extraction | 9% | 8% | 6% | -12% | -55% | -8% |
| Utilities | -3% | -55% | 10% | 10% | 0% | -21% |
| Construction | 29% | 26% | 1% | 24% | 15% | 26% |
| Manufacturing | 5% | 70% | 27% | 17% | 1% | 48% |
| Wholesale Trade | 14% | 51% | 1% | 15% | 15% | 2% |
| Retail Trade | 17% | 10% | 17% | 13% | 11% | 8% |
| Transportation and Warehousing | 21% | -15% | -8% | 11% | -4% | -9% |
| Information | 18% | 79% | -15% | 3% | 15% | 0% |
| Finance and Insurance | 2% | -16% | -18% | 6% | -15% | -7% |
| Real Estate and Rental and Leasing | 16% | 15% | 21% | 19% | 22% | 4% |
| Professional, Scientific, and Technical Services | 14% | 6% | 1% | 15% | 13% | -3% |
| Management of Companies and Enterprises | 24% | - | - | -6% | 35% | -75% |
| Administrative and Support and Waste Management and Remediation Services | 14% | 8% | 1% | 19% | 25% | 18% |
| Educational Services | 22% | 41% | 61% | 34% | 57% | 23% |
| Health Care and Social Assistance | 11% | 13% | 1% | 17% | 1% | 6% |
| Arts, Entertainment, and Recreation | 11% | 7% | 27% | 17% | 23% | 41% |
| Accommodation and Food Services | 21% | 7% | 21% | 22% | 14% | 0% |
| Other Services (except Public Administration) | -13% | -25% | 0% | 14% | 6% | 6% |
| Government | 6% | 3% | 10% | 5% | -1% | 4% |
| Other Industry | - | 0% | 0% | 12% | 0% | 0% |
| Total | 12% | 9% | 10% | 14% | 7% | 9% |

Source: Emsi

1.3 Housing Starts

Economists have looked at new housing starts as a measure of an economies overall health. This may seem strange in the wake of a prolonged national housing collapse but the fact that these measures are recovering is a good sign. All four major cities within the Quad-County region are growing though they still are not seeing the number of housing and residential building starts that the saw pre 2007. This may be a reflection of more stable growth, and a reduction in the number of unqualified loans. It may also indicate a lower long-run growth rate for the Quad-County. While Latah County is receiving additional housing growth from WSU faculty and staff who choose to live in the Moscow region, Latah County's multi-family housing starts are constrained by the lack of UI student enrollment growth over the last couple of decades. WSU students cannot live in Latah County without paying nonresident tuition. Some new student-focused multi-family construction in Moscow may be competing with the existing stock of apartments. The average number of housing starts for Lewiston, Clarkston, Moscow, and Pullman combined pre 2007 was 126 permits per year. Post 2007 that average for the combined four cities fell to 52.

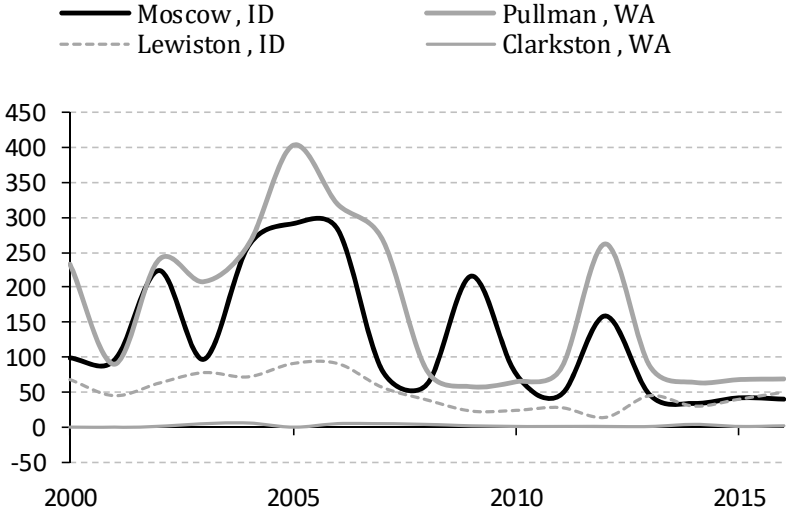
Table 1.10: *New Residential Building Permits By City and Year*

| Year | Lewiston | Moscow | Clarkston | Pullman |
|-------------|-----------------|---------------|------------------|----------------|
| 2000 | 68 | 99 | 0 | 233 |
| 2001 | 45 | 96 | 0 | 90 |
| 2002 | 63 | 224 | 1 | 240 |
| 2003 | 78 | 97 | 5 | 208 |
| 2004 | 72 | 259 | 6 | 261 |
| 2005 | 91 | 291 | 0 | 403 |
| 2006 | 91 | 283 | 5 | 319 |
| 2007 | 57 | 81 | 5 | 269 |
| 2008 | 39 | 61 | 4 | 81 |
| 2009 | 23 | 216 | 2 | 58 |
| 2010 | 24 | 76 | 1 | 65 |
| 2011 | 28 | 46 | 1 | 83 |
| 2012 | 14 | 159 | 1 | 262 |
| 2013 | 45 | 46 | 1 | 87 |
| 2014 | 30 | 34 | 4 | 64 |
| 2015 | 40 | 42 | 1 | 68 |
| 2016 | 50 | 40 | 2 | 69 |

Source: Census Bureau Building Permit Survey

Figure 1.2 shows this information visually. You can see the peck building in Moscow and Pullman occurred in 2005-2006 time period right before the housing crash of 2007. Table 1.11 and Figure 1.3 show the value of residential building starts and the average value per building start. While the expectation might be that the total value of homes would reflect the same trends as the number of homes, the stories are actually quite different.

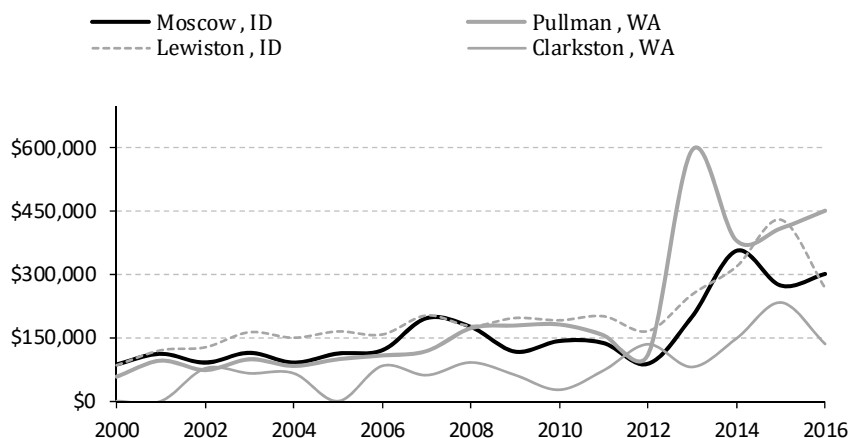
Figure1.2: *New Residential Building Permits (2000-2016)*



Source: Census Building Permit Survey

While the number of residential building starts has shrunk the average value of buildings has risen quite dramatically of the last several years. Taking the values in Table 1.11 and dividing by the number of permits issued in Table 1.10 gives the average value per permit as can be seen in Figure 1.3. Though more research is required to understand the intricacies of this data, our assumption is that more multi-family and apartment buildings are being constructed. It may be that wealthier segments are building larger homes but in order to verify that average home size by city would need to be examined. One thing is clear, however, the type of building construction occurring has changed since 2012.

Figure1.3: *Average Value of New Residential Building Starts (2000-2016)*



Source: Census Building Permit Survey

Table 1.11: New Residential Building Value By City and Year

| Year | Lewiston | Moscow | Clarkston | Pullman |
|------|--------------|--------------|-----------|--------------|
| 2000 | \$5,790,357 | \$8,625,000 | \$0 | \$13,526,066 |
| 2001 | \$5,433,245 | \$10,786,143 | \$0 | \$8,649,503 |
| 2002 | \$8,042,157 | \$20,427,668 | \$77,740 | \$17,672,427 |
| 2003 | \$12,749,927 | \$11,123,005 | \$330,475 | \$20,622,740 |
| 2004 | \$10,827,216 | \$23,672,000 | \$396,570 | \$21,793,767 |
| 2005 | \$15,041,741 | \$32,904,602 | \$0 | \$40,062,508 |
| 2006 | \$14,379,133 | \$34,127,302 | \$418,637 | \$34,549,367 |
| 2007 | \$11,585,997 | \$15,946,158 | \$308,000 | \$31,922,839 |
| 2008 | \$6,955,532 | \$10,734,838 | \$367,098 | \$14,007,013 |
| 2009 | \$4,535,763 | \$25,349,000 | \$124,000 | \$10,398,856 |
| 2010 | \$4,601,199 | \$10,847,000 | \$27,000 | \$11,812,537 |
| 2011 | \$5,634,095 | \$6,333,000 | \$73,000 | \$12,965,369 |
| 2012 | \$2,326,004 | \$14,078,849 | \$135,000 | \$28,853,071 |
| 2013 | \$11,392,325 | \$9,244,876 | \$81,000 | \$51,821,383 |
| 2014 | \$9,573,193 | \$12,119,426 | \$595,000 | \$24,340,040 |
| 2015 | \$17,198,962 | \$11,507,363 | \$233,921 | \$27,854,497 |
| 2016 | \$13,411,941 | \$12,064,771 | \$271,496 | \$31,153,095 |

Source: Census Bureau Building Permit Survey

1.4 Student In The Region

Finally we turn to student populations within the Quad-County economy. The importance of student growth on the regional economy cannot be understated. In 2015, the average student created \$44,200 in sales transactions, \$36,500 in wage and salary earnings, and $\frac{3}{4}$ of a job in the community. This assumes that in the long-run university activities and expenditures are dependent on student enrollments (including the multiplier effects). Note

that this is for the average student. Out of state students typically contribute more to the economy than residential students because they have higher expenses and bring in new money to the economy.

Table 1.12 shows the portion of each counties population that is composed of students from each four-year institution. This does not include the community college students that exist and take classes locally. North Idaho College, Spokane Community College, and Walla Walla Community College have students that take classes locally in conjunction with the local universities.

Table 1.12: *Students Percentage of Populations*

| Institution | County | Students | Population | % of Population |
|-----------------------------|---------------|-----------------|-------------------|------------------------|
| Washington State University | Whitman | 20193 | 48,830 | 41.4% |
| University of Idaho | Latah | 11599 | 39,184 | 29.6% |
| New Saint Andrews | Latah | 165 | 39,184 | 0.4% |
| Lewis Clark State College | Nez Perce | 3909 | 40,369 | 9.7% |

Source: Census Bureau, WSU, UI, NSA, LCSC

2. Moscow's Economic Pillars

This section of the report focuses in explicitly on Moscow's fundamental economic drivers. One important thing to note here is that each of the three pillars identified form the basis for bringing new dollars into Moscow. These functions are referred to as basic industries and are largely non-resident serving. Resident serving industries, or non-basic industries, serve to recirculate the monies that the basic industries bring in. Both provide a vital role in economic growth and stability. Basic industries act as faucet bringing new dollars and economic activity into the economy. Non-basic industries act as a plug to keep those new dollars circulating locally and prevent them from flowing out of the economy. Moscow 's economy has both a strong base and non-base components. Pullman has a strong base but a much smaller non-base component of their economy. Thus income and spending generated from their base industries often spills-over into Moscow's economy

The three pillars or basic industry activities are: 1) Key export oriented industries³, 2) Outside income from retail sales to non-residents and from local residents that work outside of Moscow and "import" their paychecks, and lastly 3) the University of Idaho which can claim roughly 50% of Moscow's economic base.

2.1 Key Export Oriented Industries

Several firms exist in Moscow that sell product outside Latah County. Emsi has emerged as a tech leader in the local economy. They develop and sell data products in several countries primarily to economic development organizations, higher education, site selectors, and talent acquisition and human resource firms. Northwest River Supply had a payroll of approximately \$5 million in 2017 and is the premier rafting and watersport equipment provider. Agriculture is another main driver that fits into this category. Farmers in Latah County bring significant revenues as well as state and federal support into the county and Moscow benefits directly from those dollars. These firms and many others like them provide roughly 25% of the flow of new dollars into the economy.

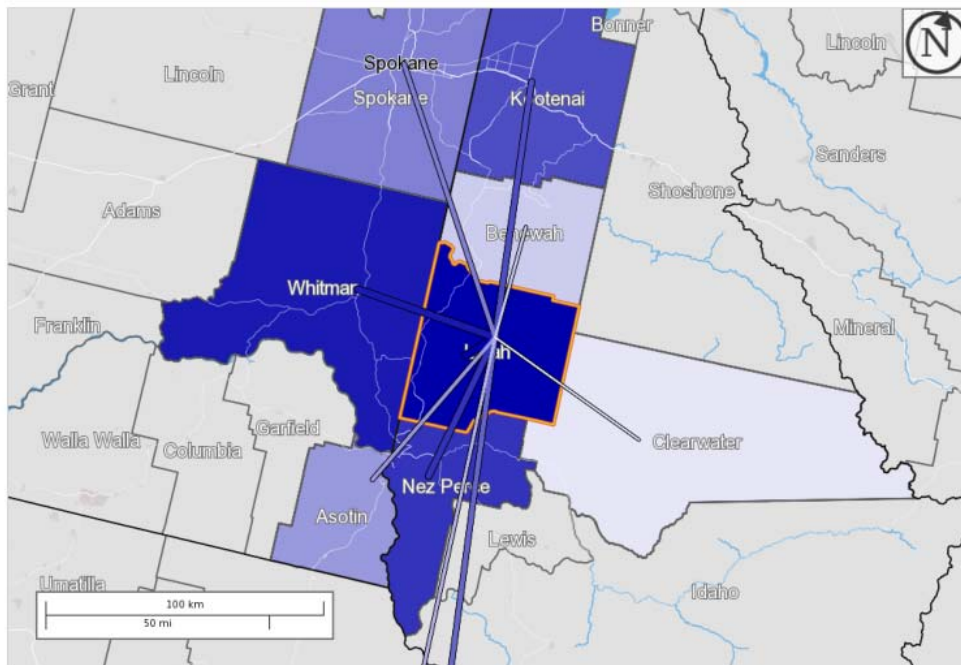
³ Exports may refer to any activity that brings new monies into the local economy from outside. They can include sales or monies at the state, national, or international level. The point here is that these industries are selling their product outside of the local economy and bringing new dollars into the economy.

Resident serving firms such as Gritman medical Center, to Mikey’s Gyros help to keep those dollars local by providing goods and services locally so that residents don’t have to import their services from the LC valley or Spokane.

2.2 Outside Income

Residence outside income comes from multiple places. Retirees that live in Moscow receive their pensions or retirement funds from outside the local economy. That new money then circulates in Moscow. However, the primary source of outside income is derived from what are known as out-commuters. Those are individuals and families that prefer living in Moscow but working outside Latah County. Figure 2.1 shows the primary commuting patterns for Latah County residents. Out-commuter patterns show that the majority of Latah residence that work outside the county work in either Whitman or Nez Perce.

Figure 2.1: *Commuting Patterns of Moscow Residents*



Source: Census on the Map

Table 2.1 Shows the Latah county residents and the portion of them that work in the surrounding commute shed. Roughly 54% of residents work locally. 20% work in Whitman

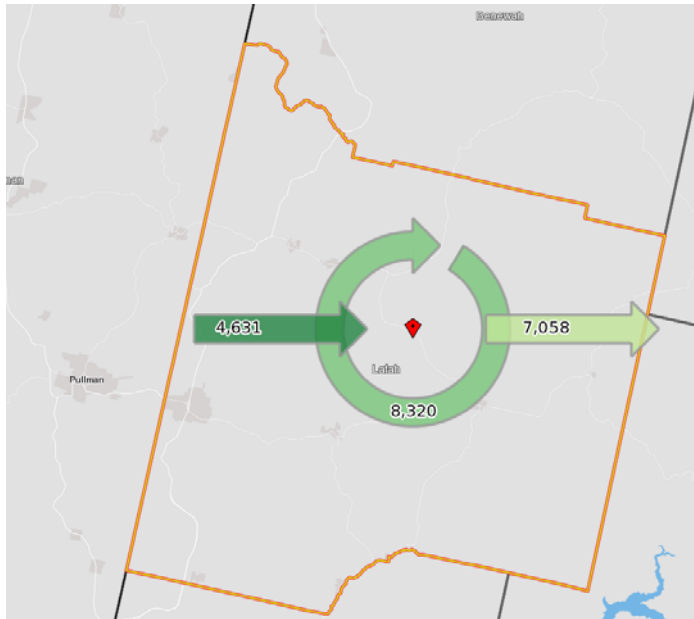
County, likely at SEL or WSU, and bring their paychecks back into Moscow. Another 7% work in Nez Perce. Figure 2.2 shows the inflows and outflows of workers to and from Latah County. Roughly 4,631 workers come into Moscow for their primary jobs, 8,320 workers stay in Latah County for their primary job, and over 7,000 flows out of Latah. Latah County and Moscow particularly operates as the bedroom community to the surrounding regions. Just looking at Moscow and Pullman 3,144 commuters go from Moscow to Pullman While only 777 come to Moscow from Pullman for net out-commuters of 2,367. We are a net importer of income and a net exporter of labor. Table 2.2 shows what is known as place-of-work and place-of-residence. It is the data that supports Figure 2.2.

Table 2.1: *Latah County Residents' County of Employment*

| Counties as Work Destination Area | Count | Share |
|--|--------------|--------------|
| All Counties | 15,378 | 100% |
| Latah (ID) | 8,320 | 54% |
| Whitman (WA) | 3,144 | 20% |
| Nez Perce (ID) | 1,035 | 7% |
| Kootenai (ID) | 526 | 3% |
| Ada (ID) | 517 | 3% |
| Spokane (WA) | 310 | 2% |
| Asotin (WA) | 126 | 1% |
| Canyon (ID) | 114 | 1% |
| Benewah (ID) | 100 | 1% |
| Clearwater (ID) | 81 | 1% |
| All Other | 1,105 | 7% |

Source: Census on the map

Figure 2.2: Latah County Employment Inflow-Outflow



Source: Census on the map

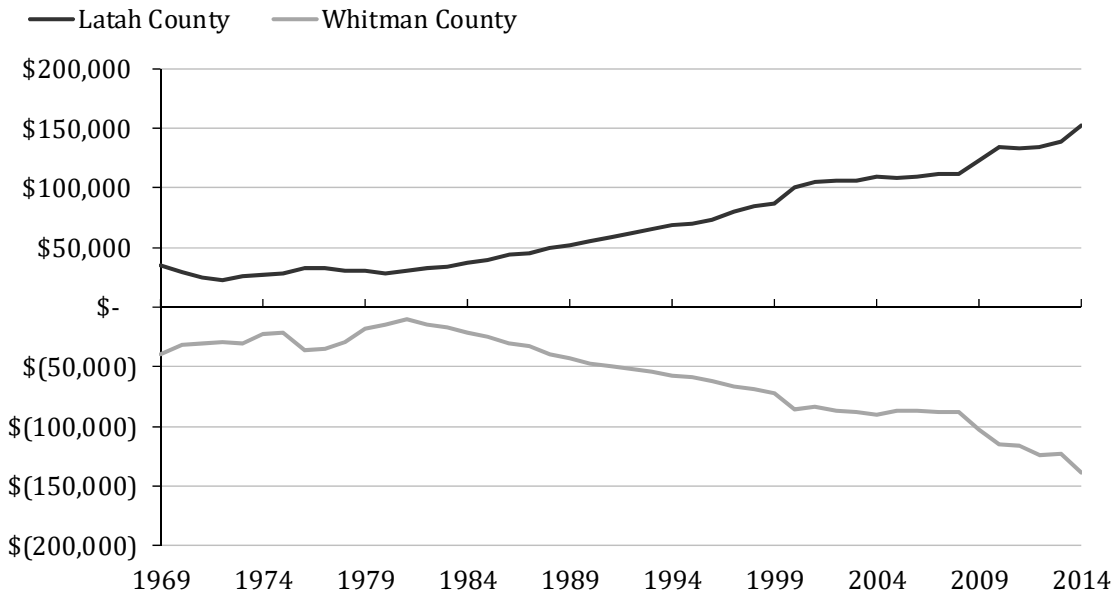
Table 2.2: Latah County Employment Inflow/Outflow Data

| Description | Count | Share |
|--------------------------------------|--------------|--------------|
| Employed in Latah | 12,951 | 100% |
| Employed in but living outside Latah | 4,631 | 36% |
| Employed and Living inside Latah | 8,320 | 64% |
| <hr/> | | |
| Living in Latah | 15,375 | 100% |
| Living in but employed outside Latah | 7,058 | 46% |
| Living and employed in Latah | 8,320 | 54% |

Source: Census on the map

Figure 2.3 shows the BEA flow of earnings data for Whitman and Latah Counties. It becomes very clear that jobs and income in Whitman County is providing large earning flows into Moscow. One way to view this is that as employment in Pullman Grows, Moscow benefits. The reciprocal is not entirely true. Growth in Moscow does not result in a direct and immediate increase in Pullman income.

Figure 2.3: Latah County Residential Outside Income



Source: BEA - Flow of Earnings Ca91

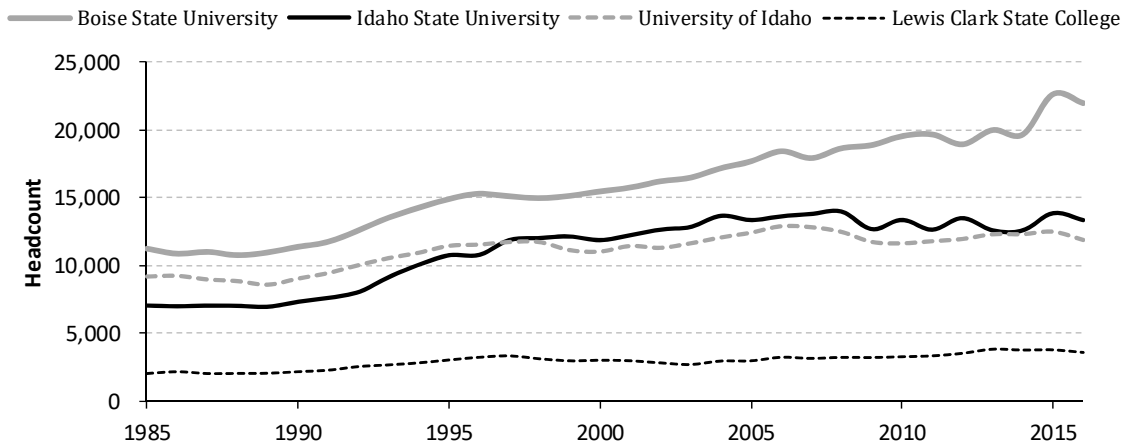
2.3 University of Idaho

University of Idaho is the region’s largest single employer, has the state’s largest alumni base (80,000 alumni) and the broadest and deepest range of programs in the state. However, Boise State University (BSU) and the other state universities are catching up. As stated at the end of Section 1 students bring significant amounts of money and part-time labor to Moscow. Since the UI represents roughly 50% of the new monies coming into Moscow it will be difficult to grow the economy without growing this central pillar. The University faces serious growth challenges that are not entirely within the purview of the Moscow City leadership.

Figure 2.3 shows the long term 12-month enrollment trends of the major universities in Idaho. UI is now third in enrollments and FTEs behind BSU and ISU. BSU has roughly 80% higher enrolments based on fall enrolments. The growth rate in student enrollments has been largely flat since 1995. President Staben has partially reinstated the Western Undergraduate Exchange and has been making enrollment growth a focus of his presidency.

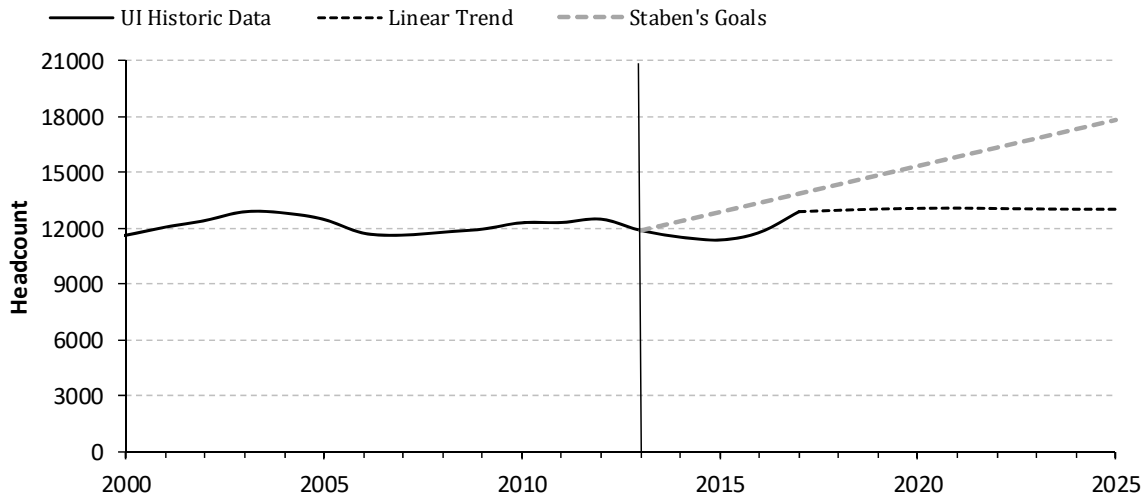
Figure 2.4 shows UI’s 12-month enrollments since 2000 and projected to 2025. The vertical line shows when president Staben took office. At that time he promised to raise enrollments by 50% by 2025. The light dashed projection shows the linear trend necessary to meet his promised goal. The black line is actual enrollments and the blacked dashed line is the projected enrollments using the linear trend based on the 2000-2017 enrollments. Since 2015 enrollments have started to grow but it is unclear if that trend can be sustained going forward.

Figure 2.3: *Idaho 12-month enrollments by University (1985-2016)*



Source: Idaho State Board of Education

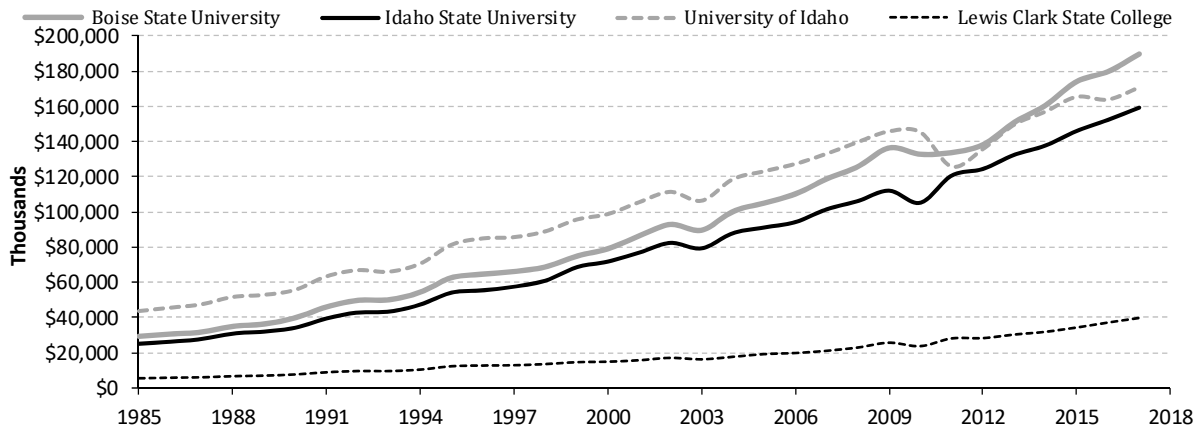
Figure 2.4: *University of Idaho 12-month enrollments projected to 2025*



Source: Idaho State Board of Education

Annual appropriations to the UI are now second in the state, behind BSU and quite frankly they would be third behind ISU if it weren't for the sizable levels of research dollars the UI receives. ISU is still on track to overtake UI in terms of appropriations given current trends.

Figure 2.5: Idaho Annual Appropriations by University (1985-2017)



Source: Idaho State Board of Education

The UI faces serious growth challenges moving forward and given the high turnover of university leadership at UI it is unlikely they will be able to hit the 4.5% growth rate necessary to achieve Staben’s goals. Tables 2.3 and 2.4 show the presidents from UI and BSU. Beginning in 1989 with President Zinser UI has not been able to keep a president for more than 7 years. This lack of long term vision has severely hampered UI’s ability to progress along a single track and meet the goals of incoming presidents. Vision is constantly changing.

BSU meanwhile has only had one president with tenure less than a decade. Their vision is more cohesive and the senior administrators all seem to be working towards the same goals. Bob Kustra, the current BSU president has served since 2003 and outlasted seven UI presidents. Given President Staben’s recent announcement that he is a finalist for the New Mexico State Presidency it is likely that Kustra will outlast him as well.

Table 2.3: University of Idaho Presidents

| President | Start Year | End Year | Term |
|-----------------------------|------------|----------|------|
| James H. Forney (Acting) | 1891 | 1892 | 1 |
| Franklin B. Gault | 1892 | 1898 | 6 |
| Joseph P. Blanton | 1898 | 1900 | 2 |
| James Alexander MacLean | 1900 | 1913 | 13 |
| William L. Carlyle (Acting) | 1913 | 1914 | 1 |
| Melvin A. Brannon | 1914 | 1917 | 3 |

| | | | |
|---------------------------------|------|------|----|
| Ernest H. Lindley | 1917 | 1920 | 3 |
| Alfred H. Upham | 1920 | 1928 | 8 |
| Frederick J. Kelly | 1928 | 1930 | 2 |
| Mervin G. Neale | 1930 | 1937 | 7 |
| Harrison C. Dale | 1937 | 1946 | 9 |
| Jesse E. Buchanan | 1946 | 1954 | 8 |
| Donald R. Theophilus | 1954 | 1965 | 11 |
| Ernest W. Hartung | 1965 | 1977 | 12 |
| Richard D. Gibb | 1977 | 1989 | 12 |
| Elisabeth A. Zinser | 1989 | 1995 | 6 |
| Thomas O. Bell (Acting) | 1995 | 1996 | 1 |
| Robert A. Hoover | 1996 | 2003 | 7 |
| Gary G. Michael (Interim) | 2003 | 2004 | 1 |
| Timothy P. White | 2004 | 2008 | 4 |
| Steven Daley-Laursen (Interim) | 2008 | 2009 | 1 |
| M. Duane Nellis | 2009 | 2013 | 4 |
| Donald L. Burnett Jr. (Interim) | 2013 | 2014 | 1 |
| Chuck Staben | 2014 | 2017 | 3 |

Source: University of Idaho

Table 2.4: *Boise State Presidents*

| President | Start Year | End Year | Term |
|---------------------------|-------------------|-----------------|-------------|
| Bishop Middleton Barnwell | 1932 | 1934 | 2 |
| Eugene Chaffee | 1936 | 1967 | 31 |
| John Barnes | 1967 | 1977 | 10 |
| John Keiser | 1978 | 1991 | 13 |
| Charles Ruch | 1993 | 2003 | 10 |
| Bob Kustra | 2003 | 2017 | 14 |

Source: Boise State University

Part of this problem may be associated with the State Board and UI’s reputation statewide. In so far as Moscow’s city officials are able to influence or recommend members to the state board it may be advisable to get someone from northern Idaho on the board or to recommend that the board focus on making a long term strategic higher.

2.4 Moscow’s Economic Strengths and Regional Partnerships

Farmers Market: The Moscow Farmers Market is a long-term community success story.

The market has experienced rapid growth reaching an estimated 164,892 annual visitors in

2013, up from 84,084 in 2003; a 96% cumulative increase and a 7.0% average annual growth rate. By 2016 the market visitors were projected to reach 176,380 visitors.

Approximately 20-25 firms have spun-off from the Moscow Farmers Market and established brick and mortar establishments or permanent production facilities locally. (Peterson and Pool, 2016).

Craft Beer and Wine Cluster: The regional economy has an emerging craft beer and winery cluster now counting over fifteen regionally produced wines and craft beers. Moscow has been developing a craft beer district that now includes Moscow Brewing Company, Rants and Raves Brewery, and Hunga Dunga Brewery. In addition, there are several Moscow restaurants and bars that specialize in serving local and regional craft beers such as the Ale House, Lodgepole, Tapped, and Martins Smokehouse (Peterson and Pool, 2016).

Vibrant Downtown: Moscow has a vibrant and robust downtown. The downtown corridor encompasses the area between the northern and southern borders of town and, from east to west, the area between the Latah County Courthouse and Ashbury Street. In that corridor there are at least 344 firms, employing approximately 3,691 workers. The firms represent a variety of economic clusters:

- Health care – 753 jobs
- Eating and drinking – 632 jobs
- Retail – 586 jobs
- Other – 387
- Government – 385 jobs
- Finance/insurance/real estate – 291 jobs
- Engineering and technology services – 233 jobs
- Manufacturing/Craft Industries – 243 workers
- Professional services – 140 jobs
- Private Education – 41 jobs

Pullman-Moscow Airport Realignment: It could be argued that the \$119 million Realignment project on the Pullman-Moscow Airport (PUW) is the most important cooperative success story by Latah County, Whitman County, Moscow, Pullman, UI, WSU, and the local business community. Without the project, the PUW airport would have lost commercial air service from noncompliance with FAA standards as well as approximately \$2.5 million per year in federal grants and contracts that are tied to commercial air service.

The local funding match of about \$9.66 million was met by contributions from the regional governmental entities and from businesses/individuals such as Schweitzer Engineering Laboratories (SEL) and Ed and Beatriz Schweitzer who donated over \$2 million.

Enplanements have increased from 40,759 in 2013 to 61,833 in 2016, a 34% increase in three years. At this rate of growth, the PUW will overtake the Lewiston-Nez Perce County Airport within 5 years (FAA).

The PUW airport annually creates 212 direct jobs in the regional Quad County economy and 300 total local jobs (including the multiplier effects). The five-year construction project (currently underway) will temporarily create 93 direct jobs and 226 total jobs annually (including the multiplier effects) (Peterson, 2016).

Regaining an Automobile Dealership: Moscow has regained one of the new automobile dealerships that were lost in the previous decade: Quad Cities Nissan.

Moscow Food CO-OP: Founded in 1977, the Moscow Food CO-OP is an important iconic Moscow business that boasted nearly \$12 million in sales in 2016 and purchases over \$300,000 from local producers each year in Latah County. The CO-OP has approximately 122 local workers and a \$3.2 million payroll (Peterson, 2017).

Emerging Local Foods Industry: The Moscow Food CO-OP, Farmers Market, and many local businesses are supporting a strong local foods sector in Latah County.

New Saint Andrews: New Saint Andrews (NSA) has approximately 23 full and part-time faculty/staff with a gross payroll of \$1.1 million and over 165 students. NSA is expanding into the former CJ's building that will serve as a music conservatory and could ultimately hold 300 full-time students and 44 faculty and staff (NSA, Daily News, 4/17).

Northwest River Supply: Northwest River Supply (NRS), a home-grown Moscow company is the world's leading whitewater rafting gear company, employing 102 people with a \$5 million payroll.

Gritman Medical Center: Moscow has a strong emerging health care sector led by Gritman Medical Center which directly employed 587 full and part-time workers with a 2015 payroll of approximately \$22 million. In 2017 the health care sector (excluding nursing homes) in Moscow employed 978 direct jobs. Gritman just completed a \$12 million oncology complex that will employ 70 additional employees.

3. Moscow's Perception in the Broader Region and Idaho

The 2013 study addressed the public perception of Moscow as perceived in the rest of Idaho, particularly in Boise and the broader Treasure Valley. The question is important because:

- 1) Approximately 50% of Latah County's economy is derived directly or indirectly from Idaho taxpayer support.
- 2) Perception affects long term University of Idaho funding.
- 3) Perception affects new businesses and industries interested in doing business in Moscow.

Historically, Moscow and the University of Idaho have a controversial public image with parts of the State of Idaho arising from several sources:

1. Southern Idaho media bias against both Moscow and the UI
2. Challenges of running a state's largest residential campus;
3. Unintentional self-inflicted image problems by the UI and some bad luck; and
4. A general lack of awareness by some civic leaders on how Moscow is perceived around the state.

Some of these issues remain unchanged since the 2013 study while substantial improved has occurred in others.

There is still a perceived southern Idaho media bias against Moscow and the UI. The Idaho Statesman (located in Boise) is perceived in northern Idaho to be "a wholly owned subsidiary of BSU," publishing only bad news on the UI and Moscow (usually on the front page) and only good news on BSU and Boise. The Statesman, located in Boise with a customer base of nearly 1/3rd of Idaho's population, coverage of the Moscow and UI is important for state wide perception and UI funding. This issue is compounded by the local Quad County media viewing the UI as the "big scoop" source of stories for local readers. Unfortunately, many of those articles get relayed to the rest of the state in the form of negative news about the UI and Moscow.

Second, there are the challenges of running a residential university with a large student population. Historically there is an average of about one serious alcohol related accident or student alcohol-related death per year in Moscow. These incidents get intense media scrutiny if they occur on residential campuses and almost no coverage if they occur off campus at urban commuter colleges and universities (such as BSU). The asymmetry of news coverage still exists but there have been few incidents at the UI from 2012 to 2016.

Third, UI administrators are sometimes not successful at navigating Idaho politics and media coverage efficiently or effectively. Several recent cases were outlined in the 2013 study. There has been some improvement but the UI “dead kitties” story indicates challenges still exists (Idaho State Journal, 9/16).

Fourth, a divided community: As noted in the 2013 study Moscow, due to divergent lifestyles and beliefs, has divisions that will require hard work and cooperation to overcome. Progress has been made but more work needs to be done.

Finally, civic and governmental leaders have become more focused on economic growth and more sensitive of Moscow’s image to rest of Idaho. This is the biggest change since the 2013 study. There is a general recognition of the need for Moscow to grow economically and it appears to have wide bipartisan support. Governmental leaders are more aware of Moscow’s dependence on external political and economic factors. Furthermore, governmental and civic leaders are working cooperatively with other jurisdictions such as Pullman and Whitman County. One tangible benefit of this cooperation is the Pullman-Moscow Airport Realignment. Another example is with the Idaho Department of Transportation and the completion of several road projects and improvements in Moscow this past summer ahead of schedule.

4. Moscow's Economic Challenges

Moscow's economic growth and continued development are still very fragile. Whitman and Nez Perce Counties are both growing their retail and manufacturing sectors faster than Latah County. This may bode well for Moscow, if we are able to attract an increasing number of residences and maintain the current labor flows. Additional residents that work outside the local economy will import their income and likely spend most of it here on housing, utilities, groceries, etc. As such a policy that reduces home prices through increased supply may be advisable. This will have the effect of lowering existing home values but may ultimately increase economic activity in the region.

Attracting new firms or growing local entrepreneurship can be costly in the short run and must be undertaken carefully. However, an increased firm presence is likely to cause wages to increase naturally. Supporting continued expansion at Emsi, Northwest River Supply, New Saint Andrews, and other basic firms will have the effect of bringing new dollars into the community and may do so at a lower upfront cost than would be seen through firm recruitment. New industry is still valuable though infrastructure costs may need to be expanded as a result. One possible focus may be to bring in a small but scalable bottling facility that can be used by the growing number of breweries to package and distribute their product to a broader region.

Balancing growth and infrastructure improvements as well as the continued provision of public goods and services may be the largest challenge Moscow has moving forward. Meeting the expectations of the public for sound electrical, water, wastewater treatment, road maintenance (especially during the winter), police, fire, and safety continues to be paramount, especially under tight budget constraints. The city has continued to manage the Hamilton funds very effectively. Amenities for children are continuing to grow with the expansion and investments in the Palouse Ice Rink.

5. Summary and Conclusion

Moscow is now focusing on economic drivers directly under their control. Business recruitment and expansion, continued infrastructure improvements, and revitalization efforts are all underway. Moscow's retail trade and commuter income levels are growing but still face threats moving forward. Pullman's retail sector is still growing faster than Moscow's. So, while there is reason to be optimistic these trends are still fragile. Local industries such as Emsi, Northwest River Supply, New Saint Andrews, the CO-OP and many other firms are expanding.

The University of Idaho is making efforts to increase enrollments and revenues. The reintroduction of the Western Undergraduate Exchange (WUE) is a positive step in that direction. While university governance is not directly within the purview of the city leaders there is reason to hope that the University's sluggish performance may change direction. Given President Staben's announcement as a finalist for the New Mexico State presidency we may have turnover in the leadership, which will ultimately slow the progress we are beginning to see.

The Airport realignment project is on track and progressing well. The cooperation of the many private and governmental entities on both sides of the board continues to make this project a success. The region provided \$9 million in funds for the airport and in return federal government revenues exceeding \$119 million are being invested on the Palouse. An additional \$2.5 million in annual federal grants and contracts that would have been lost were not.

In addition to the positive collaboration between Moscow and Pullman, we continue to have a thriving downtown culture with one of the best farmers market in the nation. Increased local food production, an overall reduction in negative press around the state, and many other positive factors have caused Moscow's reputation to regain some of its luster.

Appendix 1: Biographies

Steven Peterson is a Regional Economist and Clinical Assistance Professor at the University of Idaho, College of Business and Economics, where he has been employed for over 25 years. Peterson's research expertise is in local and regional economic analyses, with a focus on economic impact studies. Steve has conducted over 100 economic impact studies in his career covering virtually every industry in Idaho and the Pacific Northwest including Tribal impact studies, sustainability, energy, agriculture, manufacturing, wood products, mining, health care, transportation, climate change analysis, education, and nonprofit organizations. Steven teaches a variety of economics classes from freshman to graduate classes and has taught nearly 12,000 students in his career. Steven Peterson received a Master of Economics (M.S. Economics) from University of Idaho in 1991.

Timothy Nadreau is an independent research economist and has been doing economic consulting since 2006. Currently Nadreau serves as the managing editor of *Washington Agribusiness: Status and Outlook*. He was an instructor and the curriculum designer for "Tools and Techniques for Understanding Urban Economies" at NYU's School of Professional Sciences. Prior to his work at NYU he led a team of consultants at Economic Modeling Specialists Int. (Emsi). Before joining Emsi, Tim received a bachelor's degree in theoretical mathematics from the University of Idaho. He completed a master's degree in applied economics there in 2011 and was awarded the Iddings fellowship for his work on optimal public investments and tuition levels for community and technical colleges. He is expected to defend his Ph.D. dissertation in the fall of 2017 wherein he focuses on economic development strategies and improved impact and general equilibrium analyses.

Appendix 2: Supplementary Data Tables

Table A1: Change in Idaho State County Population from 2012 to 2017

| Rank | County | Population | Change | Percent |
|------|---------------------------------------|------------|--------|---------|
| 1 | Valley County, ID | 10,609 | 1,094 | 11.5% |
| 2 | Canyon County, ID | 215,736 | 21,988 | 11.3% |
| 3 | Ada County, ID | 451,519 | 42,608 | 10.4% |
| 4 | Teton County, ID | 11,103 | 1,020 | 10.1% |
| 5 | Kootenai County, ID | 156,570 | 14,256 | 10.0% |
| 6 | Boundary County, ID | 11,777 | 939 | 8.7% |
| 7 | Twin Falls County, ID | 84,540 | 6,099 | 7.8% |
| 8 | Bonneville County, ID | 113,308 | 6,430 | 6.0% |
| 9 | Bonner County, ID | 42,783 | 2,346 | 5.8% |
| 10 | Jefferson County, ID | 28,064 | 1,405 | 5.3% |
| 11 | Boise County, ID | 7,149 | 349 | 5.1% |
| 12 | Franklin County, ID | 13,448 | 621 | 4.8% |
| 13 | Madison County, ID | 39,155 | 1,443 | 3.8% |
| 14 | Blaine County, ID | 21,886 | 779 | 3.7% |
| 15 | Gem County, ID | 17,236 | 548 | 3.3% |
| 16 | Latah County, ID | 39,378 | 1,200 | 3.1% |
| 17 | Oneida County, ID | 4,357 | 124 | 2.9% |
| 18 | Minidoka County, ID | 20,669 | 556 | 2.8% |
| 19 | Jerome County, ID | 23,076 | 585 | 2.6% |
| 20 | Nez Perce County, ID | 40,526 | 964 | 2.4% |
| 21 | Payette County, ID | 23,077 | 405 | 1.8% |
| 22 | Cassia County, ID | 23,577 | 286 | 1.2% |
| 23 | Caribou County, ID | 6,854 | 81 | 1.2% |
| 24 | Lincoln County, ID | 5,309 | 49 | 0.9% |
| 25 | Bannock County, ID | 84,523 | 715 | 0.9% |
| 26 | Washington County, ID | 10,126 | 72 | 0.7% |
| 27 | Bear Lake County, ID | 5,926 | 25 | 0.4% |
| 28 | Lewis County, ID | 3,840 | 1 | 0.0% |
| 29 | Owyhee County, ID | 11,367 | (31) | (0.3%) |
| 30 | Gooding County, ID | 15,173 | (65) | (0.4%) |
| 31 | Adams County, ID | 3,881 | (28) | (0.7%) |
| 32 | Fremont + Yellowstone Park County, ID | 12,893 | (93) | (0.7%) |
| 33 | Benewah County, ID | 9,051 | (74) | (0.8%) |
| 34 | Bingham County, ID | 45,093 | (434) | (1.0%) |
| 35 | Lemhi County, ID | 7,699 | (79) | (1.0%) |
| 36 | Camas County, ID | 1,068 | (12) | (1.1%) |
| 37 | Clearwater County, ID | 8,467 | (112) | (1.3%) |
| 38 | Idaho County, ID | 16,147 | (260) | (1.6%) |

| | | | | |
|----------|---------------------|------------------|----------------|-------------|
| 39 | Elmore County, ID | 25,807 | (458) | (1.7%) |
| 40 | Power County, ID | 7,603 | (206) | (2.6%) |
| 41 | Shoshone County, ID | 12,385 | (354) | (2.8%) |
| 42 | Clark County, ID | 849 | (25) | (2.9%) |
| 43 | Custer County, ID | 4,038 | (311) | (7.1%) |
| 44 | Butte County, ID | 2,433 | (289) | (10.6%) |
| 0 | Idaho State | 1,700,077 | 104,160 | 6.5% |

Source: U.S. Census

Table A2: Change in Washington State County Population from 2012 to 2017

| Rank | County | Population | Change | Percent |
|------|--------------------|------------|---------|---------|
| 1 | Snohomish County | 798,213 | 65,830 | 9.0% |
| 2 | King County | 2,181,730 | 172,944 | 8.6% |
| 3 | Kittitas County | 45,201 | 3,577 | 8.6% |
| 4 | Clark County | 473,416 | 36,373 | 8.3% |
| 5 | Benton County | 196,201 | 13,714 | 7.5% |
| 6 | Thurston County | 278,226 | 19,422 | 7.5% |
| 7 | Pierce County | 869,918 | 58,241 | 7.2% |
| 8 | Franklin County | 91,907 | 6,137 | 7.2% |
| 9 | Whatcom County | 219,066 | 14,067 | 6.9% |
| 10 | Douglas County | 41,747 | 2,439 | 6.2% |
| 11 | Whitman County | 49,364 | 2,718 | 5.8% |
| 12 | Skagit County | 124,687 | 6,700 | 5.7% |
| 13 | Spokane County | 502,850 | 26,972 | 5.7% |
| 14 | Jefferson County | 31,278 | 1,456 | 4.9% |
| 15 | Island County | 83,018 | 3,743 | 4.7% |
| 16 | Kitsap County | 266,507 | 11,776 | 4.6% |
| 17 | Clallam County | 75,001 | 3,177 | 4.4% |
| 18 | Chelan County | 76,871 | 3,218 | 4.4% |
| 19 | San Juan County | 16,456 | 646 | 4.1% |
| 20 | Wahkiakum County | 4,140 | 154 | 3.9% |
| 21 | Klickitat County | 21,395 | 759 | 3.7% |
| 22 | Cowlitz County | 105,458 | 3,618 | 3.6% |
| 23 | Skamania County | 11,547 | 383 | 3.4% |
| 24 | Pacific County | 21,259 | 699 | 3.4% |
| 25 | Grant County | 94,235 | 2,750 | 3.0% |
| 26 | Mason County | 62,347 | 1,552 | 2.6% |
| 27 | Asotin County | 22,365 | 484 | 2.2% |
| 28 | Stevens County | 44,488 | 921 | 2.1% |
| 29 | Lewis County | 77,142 | 1,583 | 2.1% |
| 30 | Adams County | 19,306 | 381 | 2.0% |
| 31 | Walla Walla County | 60,590 | 1,189 | 2.0% |

| | | | | |
|----------|-------------------------|------------------|----------------|-------------|
| 32 | Yakima County | 250,395 | 3,829 | 1.6% |
| 33 | Pend Oreille County | 13,163 | 170 | 1.3% |
| 34 | Okanogan County | 41,591 | 349 | 0.8% |
| 35 | Garfield County | 2,240 | 15 | 0.7% |
| 36 | Grays Harbor County | 71,434 | (312) | (0.4%) |
| 37 | Lincoln County | 10,312 | (133) | (1.3%) |
| 38 | Ferry County | 7,600 | (107) | (1.4%) |
| 39 | Columbia County | 3,914 | (80) | (2.0%) |
| 0 | Washington State | 7,366,582 | 471,359 | 6.8% |

Source: U.S. Census

Table A3: Fall Headcounts by University and Year

| Academic Year | Boise State University | Idaho State University | University of Idaho | Lewis Clark State College | Total |
|---------------|------------------------|------------------------|---------------------|---------------------------|--------|
| 1982 | 11,241 | 7,046 | 9,185 | 2,031 | 29,503 |
| 1983 | 10,871 | 6,992 | 9,237 | 2,164 | 29,264 |
| 1984 | 11,003 | 7,040 | 8,970 | 2,031 | 29,044 |
| 1985 | 10,758 | 7,021 | 8,848 | 2,036 | 28,663 |
| 1986 | 10,967 | 6,958 | 8,584 | 2,049 | 28,558 |
| 1987 | 11,377 | 7,312 | 9,032 | 2,164 | 29,885 |
| 1988 | 11,747 | 7,616 | 9,444 | 2,275 | 31,082 |
| 1989 | 12,586 | 8,028 | 10,019 | 2,540 | 33,173 |
| 1990 | 13,529 | 9,139 | 10,544 | 2,667 | 35,879 |
| 1991 | 14,254 | 10,048 | 10,941 | 2,816 | 38,059 |
| 1992 | 14,908 | 10,755 | 11,448 | 3,029 | 40,140 |
| 1993 | 15,296 | 10,781 | 11,543 | 3,226 | 40,846 |
| 1994 | 15,099 | 11,875 | 11,730 | 3,330 | 42,034 |
| 1995 | 14,969 | 12,027 | 11,727 | 3,118 | 41,841 |
| 1996 | 15,137 | 12,139 | 11,133 | 2,967 | 41,376 |
| 1997 | 15,467 | 11,870 | 11,027 | 3,008 | 41,372 |
| 1998 | 15,744 | 12,232 | 11,437 | 2,972 | 42,385 |
| 1999 | 16,209 | 12,650 | 11,305 | 2,815 | 42,979 |
| 2000 | 16,482 | 12,843 | 11,635 | 2,696 | 43,656 |
| 2001 | 17,176 | 13,663 | 12,067 | 2,952 | 45,858 |
| 2002 | 17,688 | 13,352 | 12,423 | 2,967 | 46,430 |
| 2003 | 18,431 | 13,625 | 12,894 | 3,228 | 48,470 |
| 2004 | 17,921 | 13,803 | 12,824 | 3,145 | 47,693 |
| 2005 | 18,650 | 13,977 | 12,476 | 3,222 | 48,325 |
| 2006 | 18,880 | 12,679 | 11,739 | 3,211 | 46,509 |
| 2007 | 19,542 | 13,362 | 11,636 | 3,269 | 47,809 |
| 2008 | 19,670 | 12,644 | 11,791 | 3,334 | 47,439 |
| 2009 | 18,936 | 13,493 | 11,957 | 3,521 | 47,907 |

| | | | | | |
|------|--------|--------|--------|-------|--------|
| 2010 | 19,993 | 12,595 | 12,302 | 3,822 | 48,712 |
| 2011 | 19,664 | 12,587 | 12,312 | 3,761 | 48,324 |
| 2012 | 22,638 | 13,860 | 12,493 | 3,775 | 52,806 |
| 2013 | 21,981 | 13,351 | 11,884 | 3,585 | 51,672 |
| 2014 | 22,239 | 13,455 | 11,534 | 3,616 | 51,668 |
| 2015 | 22,086 | 13,032 | 11,372 | 3,635 | 51,118 |
| 2016 | 23,854 | 12,928 | 11,780 | 3,909 | 53,670 |

Source: IPEDS Data Portal

Table A4: Annual Appropriations by University and Year

| Academic Year | Boise State University | Idaho State University | University of Idaho | Lewis Clark State College | Total |
|----------------------|-------------------------------|-------------------------------|----------------------------|----------------------------------|---------------|
| 1977 | \$13,795,700 | \$15,511,200 | \$22,637,100 | \$2,505,300 | \$54,449,300 |
| 1978 | \$15,842,900 | \$17,010,400 | \$25,267,200 | \$2,860,000 | \$60,980,500 |
| 1979 | \$17,407,000 | \$17,972,300 | \$27,248,300 | \$3,146,700 | \$65,774,300 |
| 1980 | \$17,991,900 | \$18,506,900 | \$28,088,100 | \$3,263,100 | \$67,850,000 |
| 1981 | \$19,444,100 | \$19,891,000 | \$30,293,200 | \$3,701,200 | \$73,329,500 |
| 1982 | \$21,421,900 | \$21,370,900 | \$33,547,900 | \$3,953,700 | \$80,294,400 |
| 1983 | \$23,203,900 | \$22,623,300 | \$35,341,400 | \$4,146,800 | \$85,315,400 |
| 1984 | \$25,077,300 | \$22,838,600 | \$38,262,300 | \$4,718,400 | \$90,896,600 |
| 1985 | \$29,227,200 | \$24,972,900 | \$43,566,700 | \$5,343,500 | \$103,110,300 |
| 1986 | \$30,495,300 | \$26,116,300 | \$45,473,400 | \$5,660,400 | \$107,745,400 |
| 1987 | \$31,623,400 | \$27,661,000 | \$47,416,400 | \$5,908,500 | \$112,609,300 |
| 1988 | \$34,878,600 | \$30,740,800 | \$51,599,500 | \$6,535,500 | \$123,754,400 |
| 1989 | \$36,163,800 | \$31,862,400 | \$52,766,600 | \$6,835,300 | \$127,628,100 |
| 1990 | \$39,724,200 | \$34,078,800 | \$55,653,700 | \$7,531,600 | \$136,988,300 |
| 1991 | \$45,922,300 | \$39,345,100 | \$63,311,500 | \$8,762,100 | \$157,341,000 |
| 1992 | \$49,636,000 | \$42,704,800 | \$66,805,200 | \$9,447,100 | \$168,593,100 |
| 1993 | \$50,003,500 | \$43,232,200 | \$65,951,400 | \$9,454,600 | \$168,641,700 |
| 1994 | \$54,299,700 | \$47,255,700 | \$70,577,700 | \$10,264,600 | \$182,397,700 |
| 1995 | \$62,587,100 | \$54,036,700 | \$81,287,900 | \$12,192,000 | \$210,103,700 |
| 1996 | \$64,492,000 | \$55,339,900 | \$84,868,900 | \$12,584,000 | \$217,284,800 |
| 1997 | \$66,112,400 | \$57,460,700 | \$85,586,100 | \$12,766,300 | \$221,925,500 |
| 1998 | \$68,650,900 | \$60,794,100 | \$88,904,500 | \$13,408,000 | \$231,757,500 |
| 1999 | \$74,760,300 | \$68,467,400 | \$95,564,100 | \$14,493,700 | \$253,285,500 |
| 2000 | \$78,980,200 | \$71,703,200 | \$98,725,400 | \$14,774,700 | \$264,183,500 |
| 2001 | \$86,269,100 | \$76,779,600 | \$105,468,400 | \$15,576,700 | \$284,093,800 |
| 2002 | \$92,820,400 | \$82,322,000 | \$111,338,800 | \$16,951,700 | \$303,432,900 |
| 2003 | \$89,563,400 | \$79,222,400 | \$106,319,000 | \$16,127,200 | \$291,232,000 |
| 2004 | \$100,140,400 | \$87,828,800 | \$118,565,300 | \$17,547,900 | \$324,082,400 |
| 2005 | \$104,984,700 | \$91,085,700 | \$123,052,700 | \$19,081,400 | \$338,204,500 |
| 2006 | \$110,148,000 | \$94,163,700 | \$127,251,200 | \$19,708,500 | \$351,271,400 |

| | | | | | |
|------|---------------|---------------|---------------|--------------|---------------|
| 2007 | \$118,719,800 | \$101,410,900 | \$133,037,900 | \$20,977,400 | \$374,146,000 |
| 2008 | \$125,710,700 | \$106,108,100 | \$139,678,000 | \$22,840,000 | \$394,336,800 |
| 2009 | \$136,358,100 | \$112,027,800 | \$145,778,500 | \$25,570,100 | \$419,734,500 |
| 2010 | \$132,720,000 | \$105,152,500 | \$145,237,300 | \$23,612,500 | \$406,722,300 |
| 2011 | \$133,706,000 | \$120,591,701 | \$125,757,600 | \$28,013,578 | \$408,068,879 |
| 2012 | \$138,132,100 | \$124,377,421 | \$135,687,600 | \$28,178,878 | \$426,375,999 |
| 2013 | \$150,814,400 | \$132,379,726 | \$149,553,800 | \$30,202,897 | \$462,950,823 |
| 2014 | \$160,523,300 | \$137,683,098 | \$156,978,500 | \$31,768,097 | \$486,952,995 |
| 2015 | \$174,090,100 | \$145,967,458 | \$165,398,700 | \$34,226,917 | \$519,683,175 |
| 2016 | \$179,726,000 | \$152,293,756 | \$163,839,525 | \$37,017,256 | \$532,876,537 |
| 2017 | \$189,733,500 | \$159,249,543 | \$170,746,952 | \$39,658,156 | \$559,388,151 |

Source: IPEDS Data Portal

Appendix 3: Bibliography

- Billings, Mark (2010). Moscow City Council Repeals Living Wage. *KHQ TV*.
<http://www.khq.com/story/12767987/moscow-city-council-repeals-living-wage>.
- Boise State University Institutional Research. (2017). <https://ir.boisestate.edu/>.
- Boise State University. FY 2017 and 2018 Budgets. <https://vpfa.boisestate.edu/budget-and-planning/budget-books-funds/>.
- Bowen, Holly (2012). Manufacturing growth boosts economy. *Moscow-Pullman Daily News*.
http://dnews.com/local/article_458884c2-5bb6-5868-a5e8-331388ba89f8.html.
- Census Bureau. (2017). Building Permits Survey: Permits by County or Place.
<https://www.census.gov/construction/bps/>
- Census Bureau. (2015). On The Map, Latah, Whitman. <https://onthemap.ces.census.gov/>
- County Business Patterns, U.S. Department of Commerce. <http://www.census.gov/econ/cbp/>.
- Creditors seize vehicles from Gilbert Auto lot in Moscow. *Moscow-Pullman Daily News*, June 6th 2013 Issue. http://dnews.com/breaking_news/article_8eb7249a-ceed-11e2-91e3-001a4bcf6878.html.
- Drawhorn, Omie (2008). Crossing the Line. James Toyota relocates to Pullman-Moscow Highway. *Moscow-Pullman Daily News*.
http://news.google.com/newspapers?nid=2026&dat=20081107&id=-tsyAAAAIBAJ&sjid=S_AFAAAAIBAJ&pg=6371,2933282.
- Dubrovin, Rachel (2012). Changed attitudes of Pullman residents spur economic growth. *Klew TV*.
<http://www.klewtv.com/news/local/spurs-growth-182393171.html>.
- Emsi Economic Impact Study. University of Idaho,
http://www.uidaho.edu/president/news/economic_impact.
- Emsi. Labor Force, Population, and Industry Databases (2017, Q3). Subscription Required.
<http://www.economicmodeling.com/>.
- Forbes, Tom (2007). Some perspectives on Growth and Conflict over Growth in Pullman and Whitman County, Presentation at the University of Idaho.

- Hagadone, Zach (2012). Megawoes On Megaloads. *Boise Weekly*.
<http://www.boiseweekly.com/boise/megawoes-on-megaloads/Content?oid=2667457>.
- Hale-Lopez, Stephanie (2011). Moscow Walmart opening soon, *Klew TV*.
<http://www.klewtv.com/news/56757122.html>.
- Higher Education Research and Development: Fiscal Year 2015. National Science Foundation, 2017. http://www.nsf.gov/statistics/nsf13325/content.cfm?pub_id=4240&id=2.
- Idaho State University Institutional Research. (2017). <https://www.isu.edu/institutionalresearch/>.
- Johnson, David (2003). Area has growing stake in higher ed. *Moscow-Pullman Daily News*.
http://lmtribune.com/northwest/article_15a03b7c-0eea-56f1-906d-d06c107a7a26.html.
- Johnson, David (2004). Planner pull out the maps. *Lewiston Tribune*.
http://lmtribune.com/northwest/article_198c6ed8-f625-5eab-925b-5e0e30341a3b.html.
- Lewis-Clark State College Institutional Research & Effectiveness (2017). <http://www.lcsc.edu/ir/>.
- Macz, Brandon (2010). Moscow council angers attendees. *Moscow-Pullman Daily News*.
http://dnews.com/local/article_e0376665-37bb-598d-9d5c-f888948e9559.html?_dc=986984746763.4827.
- Mason, Sarah (2010). It's official: Moscow Walmart will close. *Moscow-Pullman Daily News*.
http://dnews.com/local/article_ce575473-6b4c-5c8f-8066-05c29831983a.html.
- McKee, Bill. Pullman Construction Boom. *Moscow-Pullman Daily News*, July 6th 2013 Issue.
- McKee, Bill (2013). Hawkins shopping center: Dead or alive? *Moscow-Pullman Daily News*.
http://dnews.com/local/article_2ff50574-6913-50be-b3fd-2a0eb5686eba.html.
- Moretti, Enrico. *The New Geography of Jobs*. New York, Houghton Mifflin Harcourt, 2013.
- Moscow Mall moves closer to completion. *Lewiston Morning Tribune*. July 9th, 1978 Issue.
<http://news.google.com/newspapers?id=tb5eAAAAIBAJ&sjid=MzEMAAAAIBAJ&pg=1866,261517>
- 7

National Center for Education Statistics Integrated Postsecondary Education Data Statistics Data Center. (2016 preliminary release). 12-month Enrollments University of Idaho, Boise State University, Idaho State University, and Lewis Clark State College. <https://nces.ed.gov/ipeds/datacenter/>

National Center for Education Statistics Integrated Postsecondary Education Data Statistics Data Center. (2016 preliminary release). Fall Enrollments University of Idaho, Boise State University, Idaho State University, and Lewis Clark State College. <https://nces.ed.gov/ipeds/datacenter/>

National Center for Education Statistics Integrated Postsecondary Education Data Statistics Data Center. (2016 preliminary release). Finance University of Idaho, Boise State University, Idaho State University, and Lewis Clark State College. <https://nces.ed.gov/ipeds/datacenter/>

New Saint Andrews College. (2017). Personal Communication with President Benjamin R. Merkle.

Palouse Empire Mall. Mall Hall of Fame. 2009.<http://mall-hall-of-fame.blogspot.com/2009/04/palouse-empire-mall-west-pullman-and.html>.

Peterson, Steven (2006). Moscow at a Tipping Point: An Economic Analysis of the Retail Trade Sector, the Local, and the Effects of Locating a Super Wal-Mart in the Moscow, Idaho Regional Economy, Sponsored by the Moscow Chamber of Commerce.

Peterson, Steven, J. Miller and H. Robison (2006). Growth in Moscow: A Study of Modest Population Growth and Rising Economic Prosperity, City of Moscow, Idaho.

Peterson, Steven and Mike DiNoto (2003). The Economic Impacts of the University of Idaho on the Latah County Economy. Sponsored by the University of Idaho.

Peterson, Steven and Stephen Pool (2013). An Analysis of the Economic Growth of Moscow and the Regional Economy. Sponsored by the Greater Moscow Alliance.
http://docs.wixstatic.com/ugd/21ee93_fc16ded718aae3e6124eb746c370d1f3.pdf.

Peterson, Steven and Stephen Pool (2016). The Economic Impacts of the Pullman-Moscow Airport and Realignment Project. Sponsored by the Pullman-Moscow Airport.
<http://intranet.ci.moscow.id.us/records/City%20Reports/Airport%20Final%20Report.pdf>.

Peterson, Steven and Stephen Pool (2016). 2016 Report on the Economic Impacts of Moscow Farmers Market.
<http://intranet.ci.moscow.id.us/records/Publications/Market%20Economic%20Impact%20Study%20FINAL.pdf>.

Peterson, Steven. (2017). Economic Impacts of the Moscow Food Co-op. Preliminary Report. Manuscript.

Professor-Student Romance Ends in Murder-Suicide. *Fox News Network*, August 24th, 2011.
<http://www.foxnews.com/us/2011/08/24/professor-student-romance-ends-in-murder-suicide/>.

Rebellion in Idaho: Research Station, Slated for Closure, Incites Grower Resistance. *Fruit Growers News*.
<http://fruitgrowersnews.com/index.php/magazine/article/Rebellion-in-Idaho-Research-Station-Slated-for-Closure-Incites-Grower-Resis>.

Rudd, Elizabeth (2013). EMSI moving out of Alturas, *Daily News*.
http://dnews.com/local/article_d25c2469-f3d2-5c85-b323-f0c336c0de27.html.

Smith, Stephanie (2009). Much-anticipated Walmart Supercenter opens in Clarkston, *Klew TV*.
<http://www.klewtv.com/news/56757122.html>

Smith, Stephanie (2010). Walmart opens doors of Pullman supercenter, *Klew TV*.
<http://www.klewtv.com/news/56757122.html>.

Staszko, Nina (1999). Coghlan case headed to the Idaho Supreme Court. *Moscow-Pullman Daily News*.
http://dnews.com/local/article_7e22c6fd-a30c-582d-8d2b-83ef216d39f6.html.

Valley Medical Center Emergency Services Tower. Lydig Construction.
<http://www.lydig.com/projects/healthcare-research/pullman-memorial-hospital>.

UI Student Freezes to Death after Fraternity party. *The Spokesman-Review*. (1/22/13). <http://www.spokesman.com/stories/2013/jan/22/ui-student-freezes-death-after-fraternity-party/>.

U of I accused of killing feral cats without approval. *Idaho State Journal*. (9/2/16).
http://idahostatejournal.com/news/local/u-of-i-accused-of-killing-feral-cats-without-approval/article_0d6cbe2d-b9d8-5c74-a5c9-b9852ebb1d39.html

University of Idaho in Parma hopes to extend Simplot deal. *Idaho Press*. August 19th, 2013.
http://www.idahopress.com/news/local/university-of-idaho-in-parma-hopes-to-extend-simplot-deal/article_fa118f5e-088c-11e3-b97a-0019bb2963f4.html.

University of Idaho Institutional Effectiveness and Accreditation. (2017). Enrollments.
<https://www.uidaho.edu/provost/iea/institutional-data>.

U.S. Census Bureau (2017). Population Estimates, <http://factfinder.census.gov/>.

U.S. Census Bureau (2017). Residential Housing Starts.
<https://www.census.gov/construction/nrc/index.html>.

U.S. Department of Commerce (2017). Bureau of Economic Analysis, Regional Economic Accounts.
<http://www.bea.gov/regional/>.

Washington State University Institutional Research (2017). <http://ir.wsu.edu>.

Williams, Elaine (2012). Schweitzer has big plans for Lewiston. *Lewiston Morning Tribune*, October 20th
2012 Issue

Yes Moscow, No Super Walmart. No Super Walmart.<http://nosuperwalmart.com/>.