
A Profile of Service Sectors

Selected Geographies:
Yellowstone County, MT

Benchmark Geographies:
U.S.

Produced by
Economic Profile System
EPS
May 20, 2015

About the Economic Profile System (EPS)

EPS is a free, easy-to-use software application that produces detailed socioeconomic reports of counties, states, and regions, including custom aggregations.

EPS uses published statistics from federal data sources, including Bureau of Economic Analysis and Bureau of the Census, U.S. Department of Commerce; and Bureau of Labor Statistics, U.S. Department of Labor.

The Bureau of Land Management and Forest Service have made significant financial and intellectual contributions to the operation and content of EPS.

See headwaterseconomics.org/EPS for more information about the other tools and capabilities of EPS.

For technical questions, contact Patty Gude at eps@headwaterseconomics.org, or 406-599-7425.



headwaterseconomics.org

Headwaters Economics is an independent, nonprofit research group. Our mission is to improve community development and land management decisions in the West.



www.blm.gov

The Bureau of Land Management, an agency within the U.S. Department of the Interior, administers 249.8 million acres of America's public lands, located primarily in 12 Western States. It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.



www.fs.fed.us

The Forest Service, an agency of the U.S. Department of Agriculture, administers national forests and grasslands encompassing 193 million acres. The Forest Service's mission is to achieve quality land management under the "sustainable multiple-use management concept" to meet the diverse needs of people while protecting the resource. Significant intellectual, conceptual, and content contributions were provided by the following individuals: Dr. Pat Reed, Dr. Jessica Montag, Doug Smith, M.S., Fred Clark, M.S., Dr. Susan A. Winter, and Dr. Ashley Goldhor-Wilcock.

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Note to Users:

This is one of fourteen reports that can be created and downloaded from EPS Web. You may want to run another EPS report for either a different geography or topic. Topics include land use, demographics, specific industry sectors, the role of non-labor income, the wildland-urban interface, the role of amenities in economic development, and payments to county governments from federal lands. Throughout the reports, references to online resources are indicated in parentheses. These resources are provided as hyperlinks on each report's final page. The EPS reports are downloadable as Excel, PDF, and Word documents. For further information and to download reports, go to:

headwaterseconomics.org/eps

What sectors comprise services?

This page describes the number of jobs in services broken out by individual service sectors.

Employment in Services, 2013

	Yellowstone County, MT	U.S.
Total Private Employment	68,676	118,266,253
Services Total	~60,214	100,621,550
Utilities	320	638,575
Wholesale trade	5,206	5,908,763
Retail Trade	10,506	15,023,362
Transportation and Warehousing	2,947	4,287,236
Information	1,812	3,266,084
Finance and Insurance	3,692	6,063,761
Real Estate and Rental and Leasing	1,006	1,972,105
Professional, Scientific, and Tech.	3,366	8,275,350
Mgmt. of Companies and Enterprises	562	3,098,762
Administrative and Support Services	3,092	10,185,297
Educational Services	~729	3,513,469
Health Care and Social Assistance	13,611	18,598,711
Arts, Entertainment, and Recreation	1,562	2,112,000
Accommodation and Food Services	8,702	12,395,387
Other Services	3,101	5,282,688
Non-Services	8,372	17,633,301
Unclassified	~3	~24,999

This table does not include employment data for government, agriculture, railroads, or the self-employed because these are not reported by County Business Patterns. Estimates for data that were not disclosed are indicated with tildes (~).

Study Guide and Supplemental Information

What sectors comprise services?

What do we measure on this page?

This page describes the number of jobs in services broken out by individual service sectors.

Services are made up of 15 service-related sectors shown in the table Employment in Services. These are displayed at the 2-digit level, according to the North American Industrial Classification System (NAICS). Non-services are made up of all industries that are not classified by the federal government as services.

Services: Consists of the following sectors: Utilities; Wholesale Trade; Retail Trade; Transportation & Warehousing; Information; Finance & Insurance; Real Estate & Rental & Leasing; Professional, Scientific, & Tech.; Mgmt. of Companies & Enterprises; Administrative & Support Services; Educational Services; Health Care & Social Assistance; Arts, Entertainment, & Recreation; Accommodation & Food Services; and Other Services.

Non-Services: Consists of the following sectors: Mining; Construction; Manufacturing; and Agriculture, Forestry, Fishing, and Hunting.

Why is it important?

The information in this report is useful for exploring the growth of services, details on service sectors, and the mix of high and low-wage services across geographies.

Almost all jobs created in the U.S. today are in service sectors. From 1990 to 2008, for example, more than 99 percent of net new jobs created in the U.S. economy were in service sectors. Despite the strong growth of employment in services, the term "services" is often misunderstood. Services consist of a wide mix of jobs, combining high-wage, high-skilled occupations (e.g., doctors, software developers) with low-wage, low-skilled occupations (e.g., restaurant workers, tour bus operators). The service sector typically provides services, such as banking and education, rather than creating tangible objects. However, some service sectors, such as utilities and architecture, are closely associated with goods-producing sectors.

Methods

Data on this page were obtained from County Business Patterns. We use this source because, compared to other sources, it has fewer data gaps (instances when the federal government will not release information to protect confidentiality of individual businesses). It also includes both full and part-time employment. The disadvantage of County Business Patterns data is that they do not include employment in government, agriculture, railroads, or the self-employed and as a result under-count the size of industry sectors. Also, County Business Patterns data are based on mid-March employment and do not take into account seasonal fluctuations. For these reasons, the data are most useful for showing long-term trends, displaying differences between geographies, and showing the relationship between sectors over time.

Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses data from the U.S. Department of Commerce to estimate these data gaps. These values are indicated with tildes (~).

Additional Resources

The definitions of the service sectors can be found in the online NAICS manual available at: census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007 (1).

For additional online manuals and definitions of industry codes, see: census.gov/eos/www/naics (2) and bls.gov/bls/NAICS.htm (3).

To verify the growth in services nation-wide, in terms of jobs and personal income, visit the Bureau of Economic Analysis' interactive web site and select tables SA05 and SA25: bea.gov/regional/spi/default.cfm?selTable=SA25N (4).

Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at headwaterseconomics.org/eps (5).

Data Sources

U.S. Department of Commerce. 2015. Census Bureau, County Business Patterns, Washington, D.C.

What sectors comprise services?

This page describes the share of total jobs for services as a whole and broken out by individual service sectors.

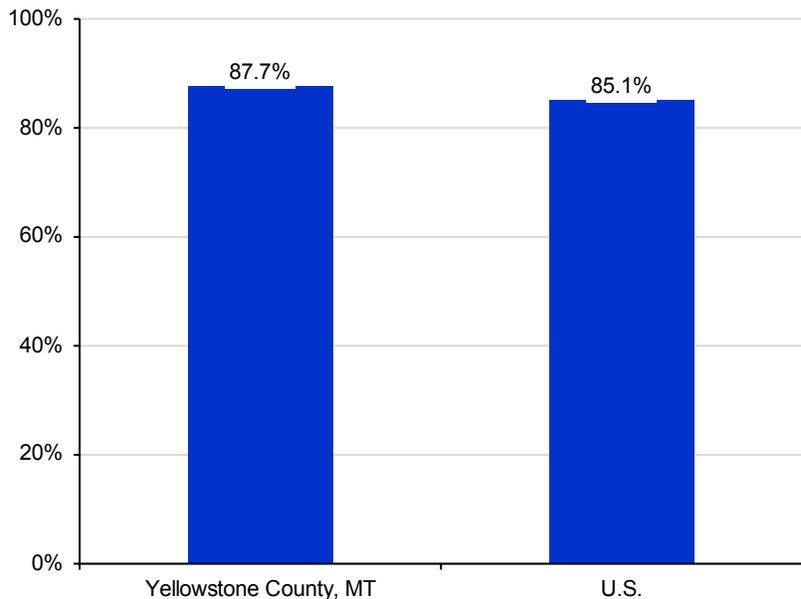
Percent of Total Private Employment in Services, 2013

	Yellowstone County, MT	U.S.
Services Total	~87.7%	85.1%
Utilities	0.5%	0.5%
Wholesale trade	7.6%	5.0%
Retail Trade	15.3%	12.7%
Transportation and Warehousing	4.3%	3.6%
Information	2.6%	2.8%
Finance and Insurance	5.4%	5.1%
Real Estate and Rental and Leasing	1.5%	1.7%
Professional, Scientific, and Tech.	4.9%	7.0%
Mgmt. of Companies and Enterprises	0.8%	2.6%
Administrative and Support Services	4.5%	8.6%
Educational Services	~1.1%	3.0%
Health Care and Social Assistance	19.8%	15.7%
Arts, Entertainment, and Recreation	2.3%	1.8%
Accommodation and Food Services	12.7%	10.5%
Other Services	4.5%	4.5%
Non-Services	12.2%	14.9%
Unclassified	~0.0%	~0.0%

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Percent of Total Private Employment in Services, 2013

- In 2013, Yellowstone County, MT had the largest percent of total employment in services (87.7%), and the U.S. had the smallest (85.1%).



Study Guide and Supplemental Information

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Data Sources

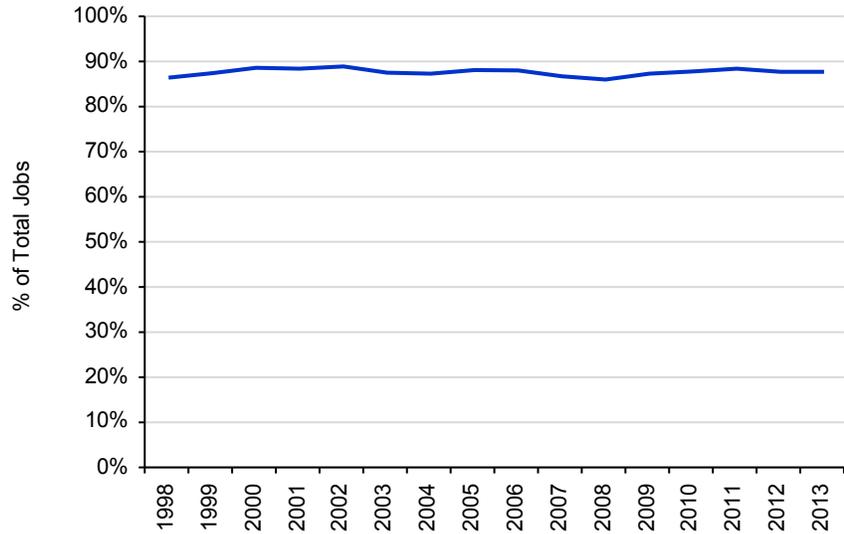
U.S. Department of Commerce. 2015. Census Bureau, County Business Patterns, Washington, D.C.

How has employment in services changed?

This page describes employment trends in regional services as a percent of all jobs, and compares services to non-services over time.

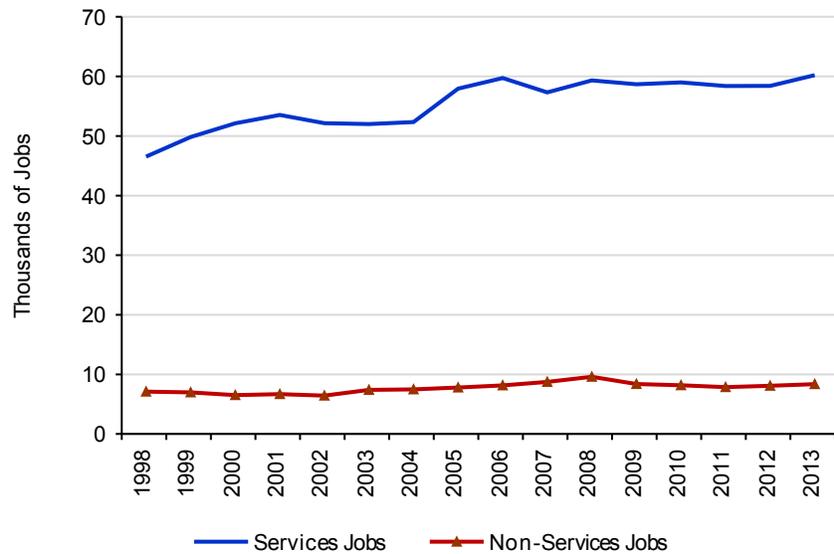
- In 1998, employment in services was 86% of total jobs. In 2013, employment in services was 88% of total jobs.

Percent of Total Private Employment in Services, Yellowstone County, MT



- From 1998 to 2013, employment in services grew from 46,541 to 60,214 jobs, an increase of 29 percent.
- From 1998 to 2013, employment in non-services grew from 7,111 to 8,372 jobs, an increase of 18 percent.

Total Jobs in Services and Non-Services, Yellowstone County, MT



Study Guide and Supplemental Information

How has employment in services changed?

What do we measure on this page?

This page describes employment trends in regional services as a percent of all jobs, and compares services to non-services over time.

Why is it important?

Services account for more than 99 percent of new job growth in the U.S. since 1990. If services are a large proportion of existing jobs and of new jobs in the local economy, then from the perspective of a public lands manager it may be important to conduct additional research to determine whether public lands play a role in stimulating new service industry growth. It may be that public lands create a setting that attracts and retains service businesses. Perhaps the recreational and environmental amenities of public lands attract "footloose" (i.e., able to live almost anywhere) service workers. If so, it is possible that new demands may be placed on public lands. It is possible that a shift toward a service-based economy corresponds with a shift in values and expectations regarding how public lands should be managed.

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The line charts that show employment trends in services begin in 1998 because that is the year the Census Bureau (and County Business Patterns) shifted to using the new North American Industrial Classification System (NAICS).

Additional Resources

To read more about the attraction of high-skilled service workers to places with amenities and quality of life (referred to by some as the "Creative Class") see the U.S. Department of Agriculture's Economic Research Service: ers.usda.gov/amberwaves/april07/features/creative.htm (6) ("The Creative Class: Key to Rural Growth"). This web site contains links to creative class and amenity scores for every county in the nation. It may also be useful to run the EPS-HDT Land Use report to learn about the presence of national parks and other forms of protected lands, and the EPS-HDT Amenities report to investigate whether a connection exists between local amenities and economic growth.

For a critique of the Creative Class, see: Hoyman, M. and C. Faricy. 2008. "It Takes a Village: A Test of the Creative Class, Social Capital, and Human Capital Theories." *Urban Affairs Review*. 44(311-332). <http://uar.sagepub.com/content/44/3/311> (7).

For a review of the role of services in the Western U.S., see: Shumway, J.M. and S.M. Otterstrom. 2001. "Spatial Patterns of Migration and Income Change in the Mountain West: The Dominance of Service-Based, Amenity-Rich Counties." *Professional Geographer*. 53(4):492-502. www3.interscience.wiley.com/journal/118972385/abstract?CRETRY=1&SRETRY=0 (8).

Monthly Labor Review Online is a good source for future employment projections. According to projections by the Labor Department, between 2008 and 2018 "goods-producing" employment in the U.S. (manufacturing, construction, mining) will not grow. By 2018, "goods-producing" sectors will account for 12.9 percent of all jobs, down from 14.2 percent in 2008. In contrast, "service-providing" sectors are expected to account for 96 percent of the growth in jobs. The fastest growing are projected to be professional and business services, and health care and social assistance. See: Bartsch K. J. 2009. "The Employment Projections for 2008-18" *Monthly Labor Review Online*. 132(11): 3-10. bls.gov/opub/mlr/2009/11 (9).

For an overview of how historical changes in employment have affected rural America, see: Whitenar, L.A. and D.A. McGranahan. 2003. "Rural America: Opportunities and Challenges." *Amber Waves*. February. ers.usda.gov/Amberwaves/Feb03/features/ruralamerica.htm (10).

Data Sources

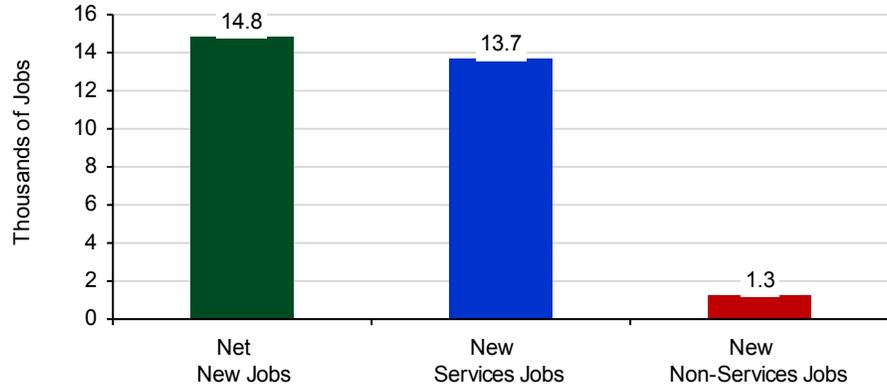
U.S. Department of Commerce. 2015. Census Bureau, County Business Patterns, Washington, D.C.

How has employment in services changed?

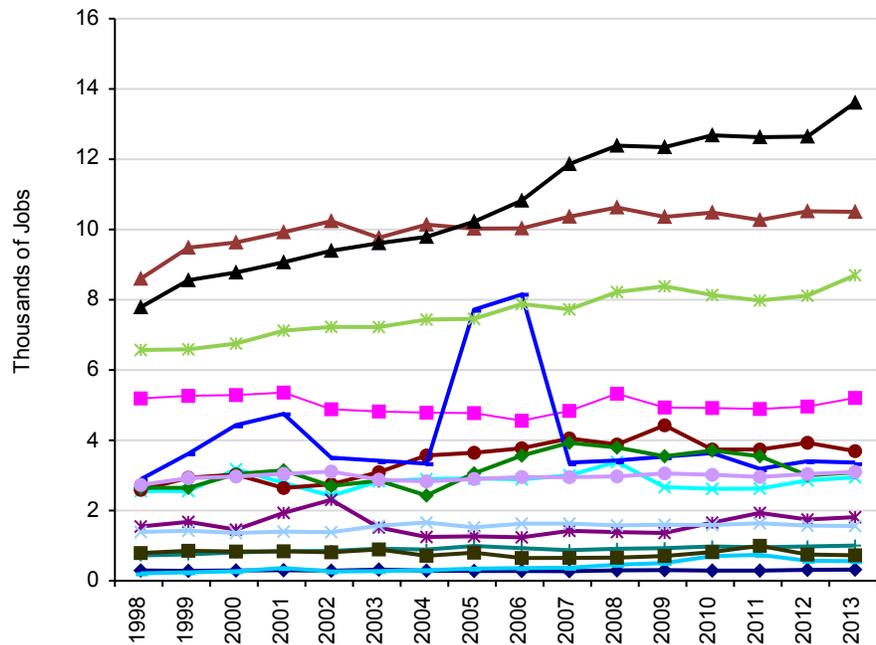
This page compares the size of employment growth in services and non-services and shows employment trends in service sectors.

- From 1998 to 2013, employment in services increased by 13,673 jobs.
- From 1998 to 2013, employment in non-services increased by 1,261 jobs.

New Jobs in Services & Non-Services, Yellowstone County, MT, 1998-2013



Jobs in Service Sectors, Yellowstone County, MT, 1998-2013



- | | |
|------------------------------------|--------------------------------|
| ◆ Utilities | ◆ Wholesale Trade |
| ▲ Retail Trade | ✕ Trans. & Warehousing |
| ✱ Information | ● Finance & Insurance |
| — Real Estate, Rental & Leasing | — Prof., Scientific, & Tech. |
| — Mgmt. of Companies & Enterprises | ◆ Admin. & Support Services |
| ■ Educational Services | ▲ Health Care & Social Assist. |
| ✕ Arts, Entertain., & Rec. | ✱ Accom. & Food Services |
| ● Other Services | |

Study Guide and Supplemental Information

How has employment in services changed?

What do we measure on this page?

This page compares the size of employment growth in services and non-services and shows employment trends in service sectors.

Why is it important?

In the U.S., and in many counties and regions across the country, service sectors have created the majority of new jobs in recent decades. Since the bulk of recent economic growth has been related to services and there are wide discrepancies between the skills and wages of service sectors it is important to understand the mix of industries that make up services.

The figure New Jobs in Services and Non-Services illustrates whether services or non-services account for new job growth. The figure Jobs in Service Sectors shows a detailed breakdown of the components of service sectors for the same time period to indicate which service industries are driving job growth.

Methods

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The line chart that shows employment trends in services begins in 1998 because that is the year the Census Bureau (and County Business Patterns) shifted to using the new North American Industrial Classification System (NAICS).

Additional Resources

EconData.net provides a useful description of the various sources of data on employment by industry available from federal sources, including a comparison of methods used for each: econdata.net (11).

To see employment trends in services compared to other sectors run the EPS Socioeconomic Measures report. Figures in that report display all sectors over time. A useful exercise is to see whether employment in services follows employment in other sectors. For example, in the early 1980s in counties with mining activity, service employment often went up and down with mining employment. In some counties, this relationship held until the early 1990s, after which service employment began to grow even when mining declined. By viewing line charts, and the relationships between sectors over time, one can develop hypotheses that can be tested via other means (for example, by use of models such as IMPLAN, by closer examination of the components of the service sector, and by a review of the literature).

Data Sources

U.S. Department of Commerce. 2015. Census Bureau, County Business Patterns, Washington, D.C.

How do wages in service sectors compare to wages in other sectors?

This page describes wages (in real terms) from employment in service sectors compared to wages from employment in non-service sectors and government. It also describes the percent of jobs in each category. These are shown together to illustrate where the high and low-wage occupations are located (by geography and industry) and whether the jobs in each category make up a large or small proportion of total employment.

Average Annual Wages, 2013 (2014 \$s)

	Yellowstone County, MT	U.S.
All Sectors	\$42,519	\$50,600
Private	\$41,792	\$50,495
Services	\$39,007	\$48,620
Trade, Transportation, Utilities	\$38,916	\$42,429
Information	\$44,796	\$88,189
Financial Activities	\$54,750	\$82,022
Professional and Business	\$46,105	\$65,653
Education and Health	\$49,924	\$45,691
Leisure and Hospitality	\$16,448	\$20,732
Other Services	\$27,355	\$33,373
Non-Services	\$59,984	\$59,298
Natural Resources and Mining	\$104,105	\$57,984
Construction	\$52,439	\$54,032
Manufacturing (Incl. Forest Prod.)	\$62,107	\$62,073
Government	\$48,463	\$51,166

This table shows wage data from the Bureau of Labor Statistics, which does not report data for proprietors or the value of benefits and uses slightly different industry categories than those shown on previous pages of this report.

Percent of Total Employment, 2013

	Yellowstone County, MT	U.S.
Total Private	89.1%	84.3%
Services	77.3%	69.5%
Trade, Transport., Utilities	25.2%	19.1%
Information	1.3%	2.0%
Financial Activities	5.1%	5.7%
Professional and Business	11.1%	13.8%
Education and Health	17.1%	15.1%
Leisure and Hospitality	13.3%	10.6%
Other Services	4.2%	3.1%
Non-Services	11.8%	14.8%
Natural Resources and Mining	0.9%	1.5%
Construction	6.6%	4.3%
Manufacturing (Incl. Forest Prod.)	4.3%	9.0%
Government	10.9%	15.7%

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Why is it important?

While nationally nearly all new jobs since 1990 have been in services, they are not equally distributed across the country, and not all counties are able to attract and retain the relatively high-wage services. Some counties may have high average annual wages in a particular sector, but few people employed in that sector. Others may have low wages in a particular sector, and many people employed in that sector.

Additional research would be needed to determine whether a geography has the elements that need to be in place to attract and keep high-wage services workers. For example, those elements may include access to reliable transportation including airports, amenities, recreation opportunities, a trained workforce, and good schools. It is also worth investigating whether public lands play a role in attracting high-wage service workers (see Additional Resources mentioned in this report).

Methods

The wage and employment data on this page are from the Bureau of Labor Statistics, which does not report data for proprietors or the value of benefits and uses slightly different industry categories than those shown on the initial pages of this report.

Depending on the geographies selected, some data may not be available due to disclosure restrictions.

Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses custom data aggregations calculated from various NAICS codes. Occasionally, one or more data values underlying these aggregations are non-disclosed. These values are indicated with tildes (~).

Additional Resources

For an overview of how the Bureau of Labor Statistics treats employment, see: bls.gov/bls/employment.htm (12).

For an overview of how the Bureau of Labor Statistics treats pay and benefits, see: bls.gov/bls/wages.htm (13).

Employment and wage estimates are also available from the Bureau of Labor Statistics for over 800 occupations. Looking at services by occupation, rather than by sector or industry, is helpful since wages vary dramatically across occupations associated with different services. For more information, see: bls.gov/oes (14).

For a peer-reviewed journal article and interactive web tool on the importance of transportation to attracting high-wage "knowledge-based" workers to areas with high amenities, see: Rasker, R., P.H. Gude, J.A. Gude, J. van den Noort. 2009. "The Economic Importance of Air Travel in High-Amenity Rural Areas." *Journal of Rural Studies* 25(2009): 343-353, available at: headwaterseconomics.org/3wests.php (15).

See also Knapp, T.A., and P.E. Graves. 1989. On the Role of Amenities in Models of Migration and Regional Development. *Journal of Regional Science* 29(1): 71-87. This article specifically captures the idea that amenity values are capitalized into wages.

Data Sources

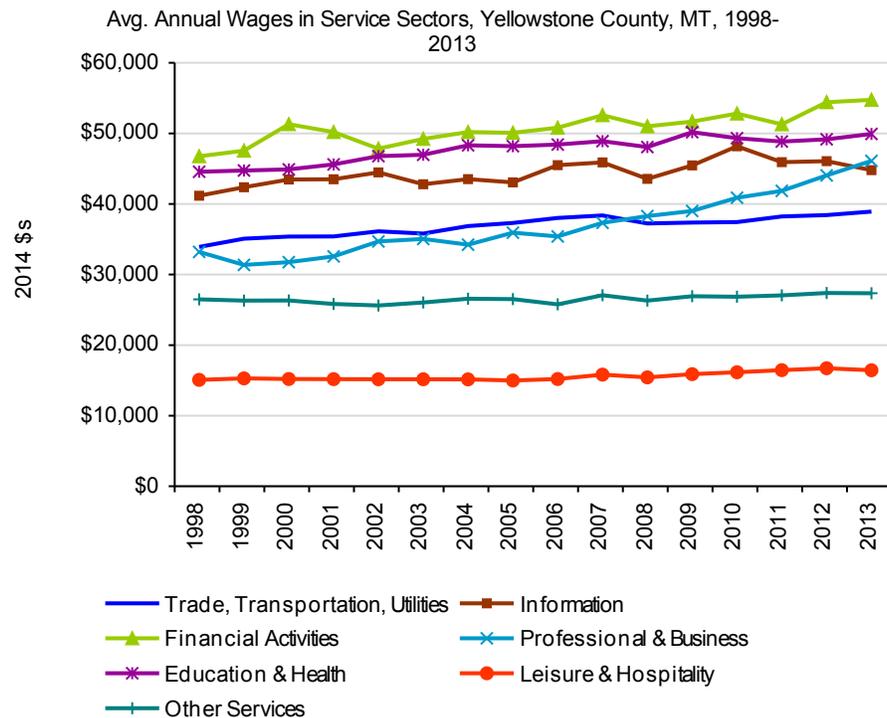
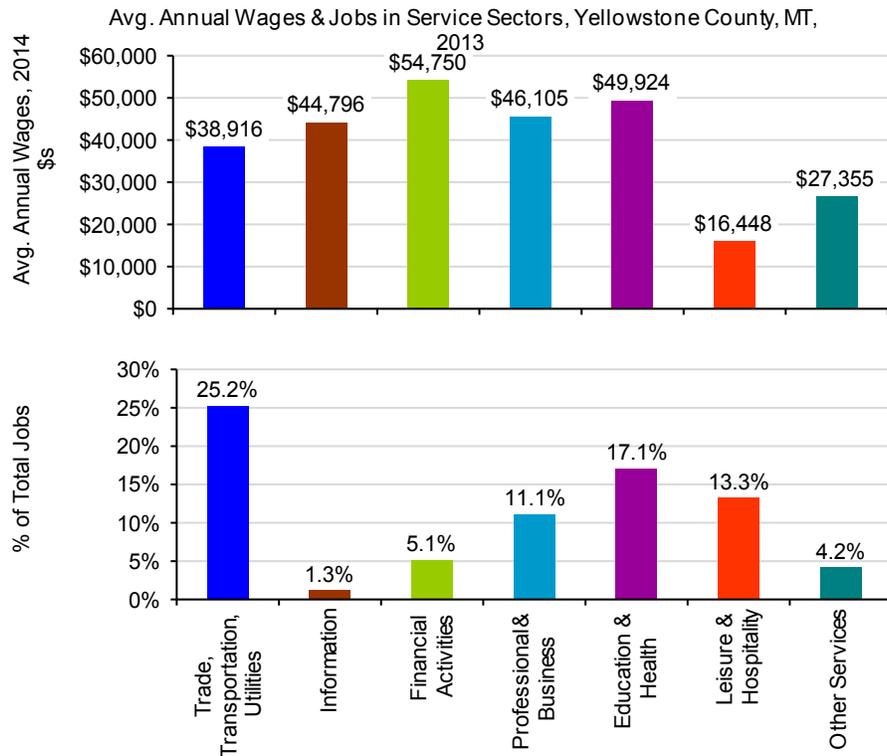
U.S. Department of Labor. 2014. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C.

What is the relationship between jobs and wages in service sectors?

This page describes average wages (in real terms) and employment levels in different service sectors. It also shows average wage trends (in real terms) for service sectors at the regional level.

- In 2013, the three service sectors that paid the highest wages were financial activities (\$54,750), education & health (\$49,924), and professional & business (\$46,105).

- In 2013, the three service sectors that employed the highest proportion of people were trade, transportation, utilities (25.2% of total jobs), education & health (17.1% of total jobs), and leisure & hospitality (13.3% of total jobs).



Data Sources: U.S. Department of Labor. 2014. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C.

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The figure *Avg. Annual Wages in Service Sectors* is useful for describing how many people are working in relatively high and low-wage service sectors. The line chart *Avg. Annual Wages in Service Sectors* is useful for comparing wage trends by service sector.

Why is it important?

While much of the growth in the economy has been in service industries, they do not all pay the same wages or employ the same number of people. Sometimes the lowest-wage service occupations employ the most people, and a few high-wage service-related occupations employ only a few people. For a county or region to perform well economically, it helps to have a diversity of service industries and a large number of people employed in the higher-wage components of services.

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For an overview of how the Bureau of Labor Statistics treats pay and benefits, see: bls.gov/bls/wages.htm (13).

Employment and wage estimates are also available from the Bureau of Labor Statistics for over 800 occupations. Looking at services by occupation, rather than by sector or industry, is helpful since wages vary dramatically across occupations associated with different services. For more information, see: bls.gov/oes (14).

For a peer-reviewed journal article and interactive web tool on the importance of transportation to attracting high-wage "knowledge-based" workers to areas with high amenities, see: Rasker, R., P.H. Gude, J.A. Gude, J. van den Noort. 2009. "The Economic Importance of Air Travel in High-Amenity Rural Areas." *Journal of Rural Studies* 25(2009): 343-353, available at: headwaterseconomics.org/3wests.php (15).

See also Knapp, T.A., and P.E. Graves. 1989. On the Role of Amenities in Models of Migration and Regional Development. *Journal of Regional Science* 29(1): 71-87. This article specifically captures the idea that amenity values are capitalized into wages.

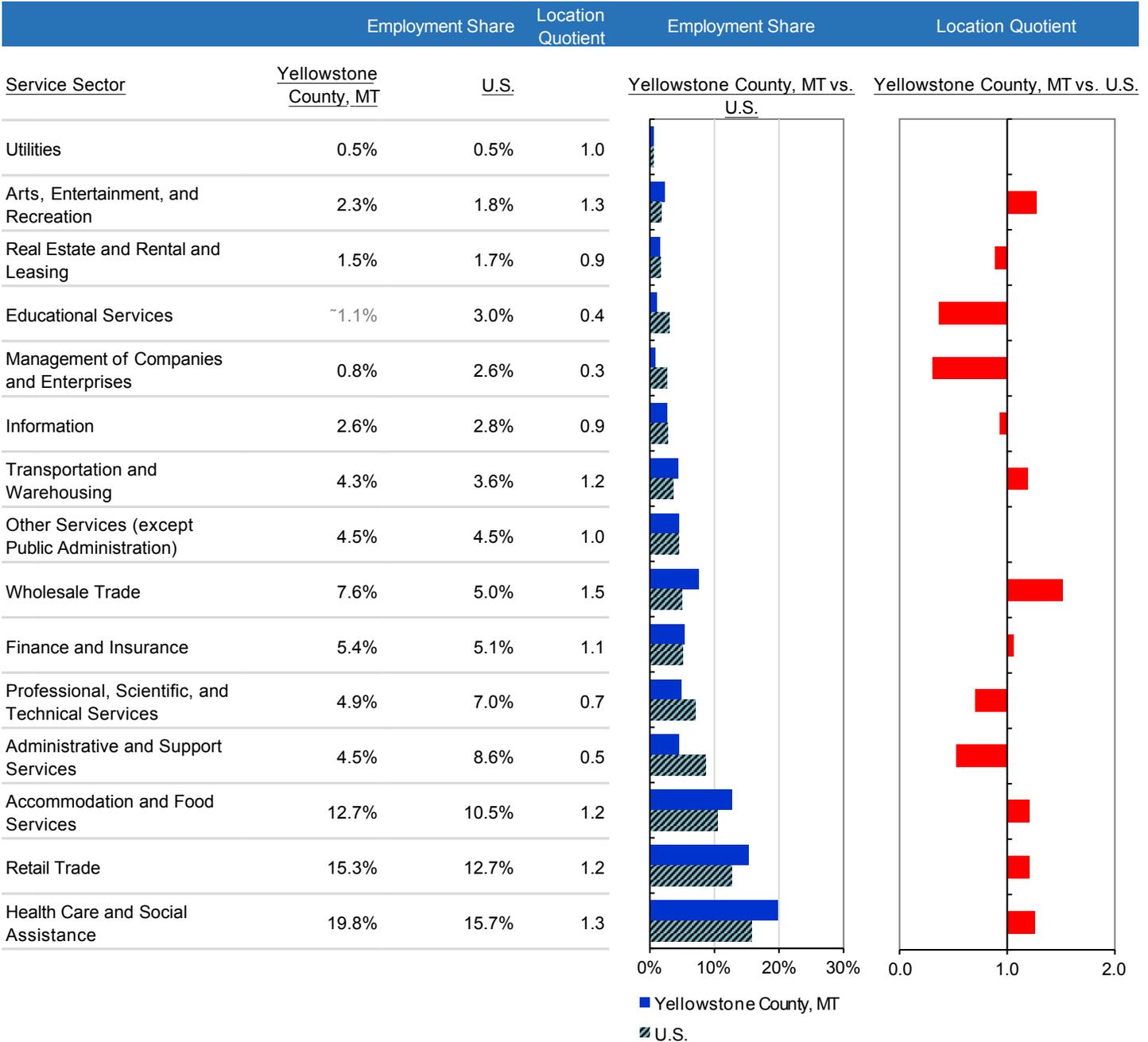
Data Sources

U.S. Department of Labor. 2014. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C.

How does regional employment in service sectors compare to the U.S.?

This page describes how the region is specialized (or under-specialized) in services employment. The figure illustrates the difference between the region and the U.S. by comparing jobs in services as a share of total employment and with location quotients.

Percent of Total Jobs in Service Sectors, Yellowstone County, MT vs. U.S., 2013



- In 2013, wholesale trade had the highest location quotient score (1.5) and management of companies and enterprises had the lowest (0.3).

Study Guide and Supplemental Information

How does regional employment in service sectors compare to the U.S.?

What do we measure on this page?

This page describes how the region is specialized (or under-specialized) in services employment. The figure illustrates the difference between the region and the U.S. by comparing jobs in services as a share of total employment and with location quotients.

Location quotient: A ratio that compares an industry's share of total employment in a region to the national share. More precisely, it is the percent of local employment in a sector divided by the percent employment in the same sector in the U.S. In other words, it is a ratio that measures specialization, using the U.S. as a benchmark. A location quotient of more than 1.0 means the local area is more specialized in that sector relative to the U.S. A location quotient of less than 1.0 means it is less specialized.

Another way to think about location quotients is as a measure of whether a place or geography produces enough goods or services from an industry to satisfy local demand for those goods or services. Results above or below the 1.0 standard indicate the degree to which a place or geography may import or export a good or service. Although there is no precise cutoff, location quotients above 2.0 indicate a strong industry concentration (and that an area is likely exporting goods or services) and those less than .5 indicate a weak industry concentration (and that an area is likely importing goods or services).

The term "benchmark" in this report should not be construed as having the meaning as in the National Forest management Act (NFMA).

Why is it important?

Areas where the region is less specialized ($LQ < 1.0$) can mean opportunities for business expansion. Areas where the region is more specialized ($LQ > 1.0$) may be an indication that the region produces more than it needs in that particular industry and exports goods and services to outside markets.

A few caveats: (1) A large location quotient for a particular sector does not necessarily mean that sector is a significant contributor to the economy. (2) LQs greater than 1.0 only suggest potential export capacity when compared to the U.S. and do not take into account local demand. Local demand may be greater than a national average, and therefore all goods and services may be consumed locally (i.e., not exported). (3) LQs can change from year to year. (4) LQs can vary whether one uses income or wage data rather than employment.

Methods

$LQ = (e_i/e) \text{ divided by } (E_i/E)$

Where:

e_i = Local employment in industry i

e = Total local employment

E_i = U.S. employment in industry i

E = Total U.S. employment

Some data is withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses data from the U.S. Department of Commerce to estimate these data gaps. These are indicated in *italics* in tables.

Additional Resources

A succinct definition of a location quotient is offered by Florida State University's Department of Urban and Regional Planning: <http://mailer.fsu.edu/~tchapin/garnet-tchapin/urp5261/topics/econbase/lq.htm> (16).

The Bureau of Labor Statistics has a useful online Location Quotient Calculator: bls.gov/tutorial/location_calc/ (17).

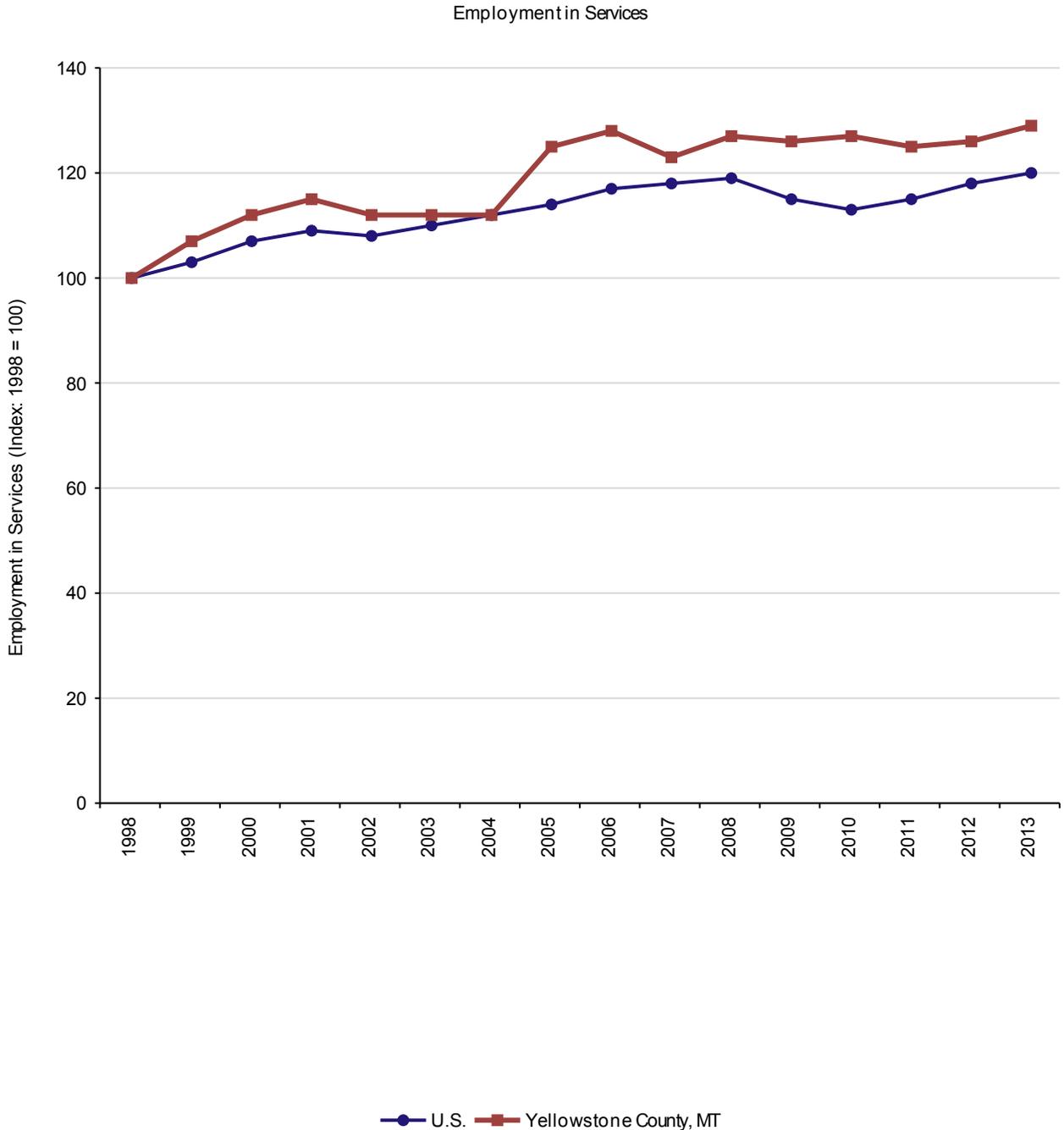
New Mexico State University offers a definition, with examples, of location quotients at: arrowheadcenter.nmsu.edu/sites/default/files/uploadedcd/WhatisaLocationQuotient.pdf (18).

Data Sources

U.S. Department of Commerce. 2015. Census Bureau, County Business Patterns, Washington, D.C.

How does employment in service sectors compare across geographies?

This page compares the change in services employment for the geographies selected and the U.S. The information is indexed (1998=100) so that data from geographies with different size economies can be compared and to make it easier to understand the relative rate of growth or decline of services employment over time.



- From 1998 to 2013, County Region had the fastest rate of change in services employment and County Region had the slowest.

Study Guide and Supplemental Information

How does employment in service sectors compare across geographies?

What do we measure on this page?

This page compares the change in services employment for the geographies selected and the U.S. The information is indexed (1998=100) so that data from geographies with different size economies can be compared and to make it easier to understand the relative rate of growth or decline of services employment over time.

Index: Indexed numbers are compared with a base value. In the line chart, employment in 1998 is the base value, and is set to 100. The employment values for subsequent years are expressed as 100 times the ratio to the base value. The indexing used in the line chart enables easier comparisons between geographies over time.

The term "benchmark" in this report should not be construed as having the same meaning as in the National Forest Management Act (NFMA).

Note: If many geographies are selected, it may be difficult to read the figure on this page.

Why is it important?

Not all geographies have attracted or lost service sectors and employment at the same rate.

An indexed chart makes it clear where the rate of services growth or decline has been the fastest. Lines above 100 indicate positive absolute growth while those below 100 show absolute decline. The steeper the curve the faster the rate of change.

This line chart can also be used to examine whether there are differences in volatility (i.e., year-to-year fluctuations) of growth or decline between geographies.

Methods

The line chart begins in 1998 because that is the year the Census Bureau (and County Business Patterns) shifted to using the new North American Industrial Classification System (NAICS).

Additional Resources

The definitions of the service sectors can be found in the online NAICS manual available at: census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007 (1).

To verify the growth in services nationwide, in terms of jobs and personal income, visit the Bureau of Economic Analysis' interactive web site and select tables SA05 and SA25: bea.gov/regional/spi/default.cfm?selTable=SA25N (4).

Data Sources

U.S. Department of Commerce. 2015. Census Bureau, County Business Patterns, Washington, D.C.

Data Sources

The EPS Services report uses published statistics from government sources that are available to the public and cover the entire country. All data used in EPS can be readily verified by going to the original source. The contact information for databases used in this profile is:

- **County Business Patterns**

Census Bureau, U.S. Department of Commerce
<http://www.census.gov/epcd/cbp/view/cbpview.html>
Tel. 301-763-2580

- **Quarterly Census of Employment and Wages**

Bureau of Labor Statistics, U.S. Department of Labor
<http://www.bls.gov/cew>
Tel. 202-691-6567

Methods

EPS core approaches: EPS is designed to focus on long-term trends across a range of important measures. Trend analysis provides a more comprehensive view of changes than spot data for select years. We encourage users to focus on major trends rather than absolute numbers. EPS displays detailed industry-level data to show changes in the composition of the economy over time and the mix of industries at points in time. EPS employs cross-sectional benchmarking, comparing smaller geographies such as counties to larger regions, states, and the nation, to give a sense of relative performance. EPS allows users to aggregate data for multiple geographies, such as multi-county regions, to accommodate a flexible range of user-defined areas of interest and to allow for more sophisticated cross-sectional comparisons.

SIC to NAICS: Starting in the 1930s, the Standard Industrial Classification (SIC) system has served as the structure for the collection, aggregation, presentation, and analysis of the U.S. economy. Under SIC, which employed a four-digit coding structure, an industry consists of a group of establishments primarily engaged in producing or handling the same product or group of products or in rendering the same services. As the U.S. economy shifted from a primary emphasis on manufacturing to a more complex services economy, SIC became less useful as a tool for describing the economy's changing industrial composition.

The North American Industry Classification System (NAICS), developed using a production-oriented conceptual framework, groups establishments into industries based on the activity in which they are primarily engaged. NAICS uses a six-digit hierarchical coding system to classify all economic activity into twenty industry sectors. Five sectors are mainly goods-producing sectors and fifteen are entirely services-producing sectors.

County Business Patterns started organizing their data using NAICS in 1998, Census in 2000, and Bureau of Economic Analysis's Regional Economic Information System in 2001. Because the methods underlying SIC and NAICS are fundamentally different (what was sold vs. how it was produced), NAICS is not backward compatible with SIC. There are a few circumstances where it is acceptable to show uninterrupted trends across the SIC-NAICS discontinuity. Total personal income, total labor income, and non-labor income can all be plotted continuously without a problem. In addition, a few industries can also be plotted without a break, though this is not the case for services.

Adjusting dollar figures for inflation: Because a dollar in the past was worth more than a dollar today, data reported in current dollar terms should be adjusted for inflation. The U.S. Department of Commerce reports personal income figures in terms of current dollars. All income data in EPS are adjusted to real (or constant) dollars using the Consumer Price Index. Figures are adjusted to the latest date for which the annual Consumer Price Index is available.

Data gaps and estimation: Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses supplemental data from the U.S. Department of Commerce to estimate these data gaps. These are indicated in italics in tables. Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at headwaterseconomics.org/eps.

Links to Additional Resources

For more information about EPS see:

headwaterseconomics.org/EPS

Web pages listed under Additional Resources include:

Throughout this report, references to on-line resources are indicated with italicized numbers in parentheses. These resources are provided as hyperlinks here.

- 1 www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007
- 2 www.census.gov/eos/www/naics
- 3 www.bls.gov/bls/NAICS.htm
- 4 www.bea.gov/regional/spi/default.cfm?selTable=SA25N
- 5 headwaterseconomics.org/eps
- 6 www.ers.usda.gov/amberwaves/april07/features/creative.htm
- 7 <http://uar.sagepub.com/content/44/3/311>
- 8 <http://onlinelibrary.wiley.com/doi/10.1111/0033-0124.00299/abstract>
- 9 www.bls.gov/opub/mlr/2009/11
- 10 www.ers.usda.gov/Amberwaves/Feb03/features/ruralamerica.htm
- 11 www.econdata.net
- 12 www.bls.gov/bls/employment.htm
- 13 www.bls.gov/bls/wages.htm
- 14 www.bls.gov/oes
- 15 headwaterseconomics.org/3wests.php
- 16 <http://mailer.fsu.edu/~tchapin/garnet-tchapin/urp5261/topics/econbase/lq.htm>
- 17 www.bls.gov/tutorial/location_calc/
- 18 <http://arrowheadcenter.nmsu.edu/sites/default/files/uploadecd/WhatisaLocationQuotient.pdf>