

# PITTSBURGH ECONOMIC QUARTERLY

Center for Social and Urban Research

## LOCAL RECESSION IMPACTS

How the Pittsburgh region is responding to the evolving national recession does not compare directly to experiences of other regions across the country. The current recession is dated by the National Bureau of Economic Research to have started in March 2001. Through 2001, Pittsburgh region trends compare favorably when compared to most other metropolitan regions. The local unemployment rate remained relatively stable compared to the national unemployment rate. Near the end of 2001, the local unemployment rate dipped below national averages. The November 2001 unemployment rate for the Pittsburgh region stood at 4.4%, which was well below the national average of 5.6%.

Pittsburgh has fared well not only compared to its historical trends but also to most

### Unemployment Rate Changes for 2001

#### 25 Largest Metro Areas

|               | Dec 2000 | Dec 2001 | Change |
|---------------|----------|----------|--------|
| Portland      | 3.1      | 7.0      | +3.9   |
| Dallas        | 2.5      | 5.6      | +3.1   |
| Denver        | 1.8      | 4.9      | +3.1   |
| Phoenix       | 2.4      | 5.1      | +2.7   |
| Miami         | 4.9      | 7.6      | +2.7   |
| San Francisco | 1.8      | 4.3      | +2.5   |
| Seattle       | 3.3      | 5.8      | +2.5   |
| Detroit       | 3.0      | 5.2      | +2.2   |
| Boston        | 1.7      | 3.5      | +1.8   |
| Atlanta       | 2.4      | 4.1      | +1.7   |
| New York      | 4.8      | 6.5      | +1.7   |
| Tampa         | 2.4      | 4.0      | +1.6   |
| Chicago       | 4.3      | 5.8      | +1.5   |
| Minneapolis   | 2.1      | 3.4      | +1.3   |
| Houston       | 3.1      | 4.4      | +1.3   |
| Washington    | 2.1      | 3.2      | +1.1   |
| Cleveland     | 4.2      | 5.2      | +1.0   |
| Los Angeles   | 5.1      | 6.1      | +1.0   |
| San Diego     | 2.4      | 3.3      | +0.9   |
| Cincinnati    | 3.0      | 3.9      | +0.9   |
| Baltimore     | 3.7      | 4.6      | +0.9   |
| St. Louis     | 3.6      | 4.4      | +0.8   |
| Sacramento    | 3.3      | 4.1      | +0.8   |
| Philadelphia  | 3.4      | 4.1      | +0.7   |
| Pittsburgh    | 3.8      | 4.2      | +0.4   |

*Unadjusted for seasonal variation. Source: Bureau of Labor Statistics*

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## PENNSYLVANIA POPULATION GROWTH 2000-2001

The Census Bureau estimate of the Pennsylvania population in 2001 stood at 12,287,150, a level that reflects virtually zero growth from the 2000 level of 12,282,591. State population annual growth rates across the country range from a 5.3% increase for Nevada to a 1.2% decrease for North Dakota. Pennsylvania's

growth placed it 46<sup>th</sup> compared to other states across the country. Total U.S. population is estimated to have grown 1.2% in the last year.

Population growth is derived from multiple sources. Forty percent of national population growth is estimated to be derived from international immigration and 60% from natural population change. Natural

population change comes from the difference in levels of births and deaths annually. Individual states also have population levels affected by domestic migration, the movement of people within the United States.

The fastest growing states derived the bulk of their growth from net domestic migration. States that have

more people moving in than moving out have a positive net domestic migration, which increases population. Certain states also have high levels of international immigration.

Pennsylvania's population growth was measured at a nearly flat 0.05% between 2000 and 2001. Pennsylvania

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other large metro areas in the country. Locally, the seasonally unadjusted unemployment rate increased by 0.4% (from 3.8% to 4.2%) between December 2000 and December 2001, which was the smallest increase among the 25 largest metro areas in the country. The metropolitan region with the largest increase in unemployment over the same period was Portland, Oregon, which experienced a 3.9% point increase (from 3.1% to 7.0%).

Despite an uptick in the local unemployment rate for January, the local unemployment rate of 5.1% is a half percentage point below state and national averages.

A common explanation for less severe recession impacts currently is that the local

economy is more diversified than it was 20 years ago when the concentration of heavy manufacturing industries here magnified national business cycle downturns. Greater diversity explains why the local business cycle is not a magnified version of national trends. Why local trends relatively improved compared to national trends is less clear. One thing to consider is that the local economy did not experience the growth that other metro regions had in the last decade. Pittsburgh regional employment grew just under 5% between 1990 and 2000, compared to almost 14% for the U.S. Some of the fastest growing industries in the late 1990s are the ones that have turned around fastest in the last year. In a sense, local eco-

|                         |     |
|-------------------------|-----|
| City of Pittsburgh      | 4.9 |
| Allegheny County        | 5.0 |
| Pittsburgh Metro Region | 5.1 |
| Pennsylvania            | 5.6 |
| United States           | 5.6 |

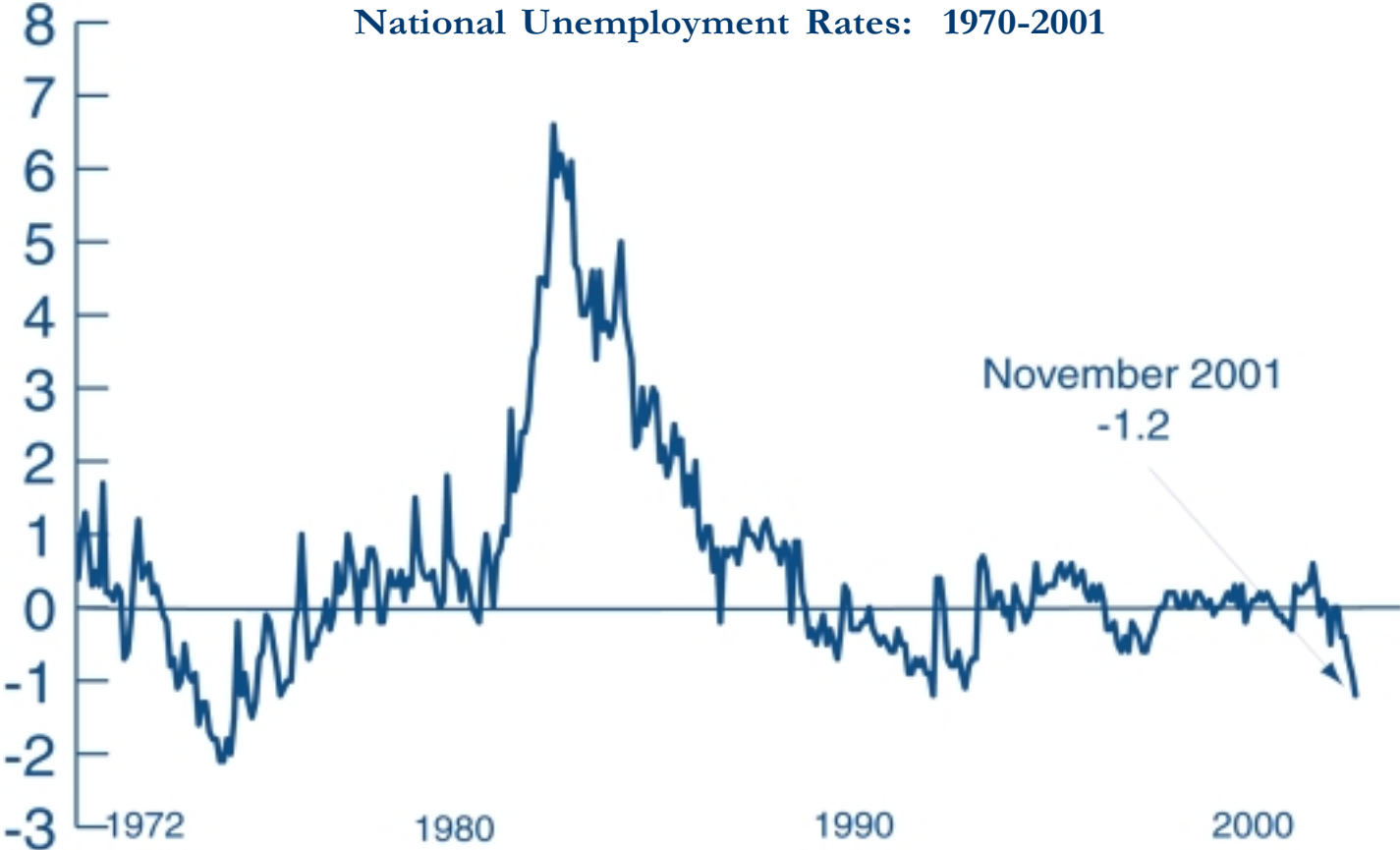
nomie stability during an evolving national recession is a consequence of our lack of participation in the expansion that preceded it.

The current situation is significantly better than in past recessions. In January 1983, the local unemployment rate peaked at 6.6% above the national average, which, at 10.4%, was also much higher than it is now. Specific counties were hit even harder with

Beaver County reaching an unemployment rate of 28% in January 1983, almost six times the current regional rate.

The length of the current national recession is difficult to predict. In a January memo, the National Bureau of Economic Research indicated that the decline in overall economic activity that began last March may be coming to an end.

**Difference Between Pittsburgh Region and National Unemployment Rates: 1970-2001**



Source: Bureau of Labor Statistics

## Road Congestion in Pittsburgh

Congestion has a measurable economic impact on a region. Commuting time impacts worker availability and patterns of residential and commercial development. The burden of commuting time on individuals may represent a real disamenity in terms of where firms and workers choose to locate.

Road congestion affects the majority of the workforce with most workers commuting via personal vehicles or mass transit.

Relative to other regions across the country, Pittsburgh has compared favorably in

terms of congestion and travel delays. The Surface Transportation Policy Project (STPP) computed a Congestion Burden Index (CBI) in a May 2001 report for most major metropolitan areas in the country. Pittsburgh ranked 65 out of a total of 68 in terms of the most congested. At the other extreme, the worst congestion in the country is measured in Los Angeles, Las Vegas, Detroit, and San Bernadino.

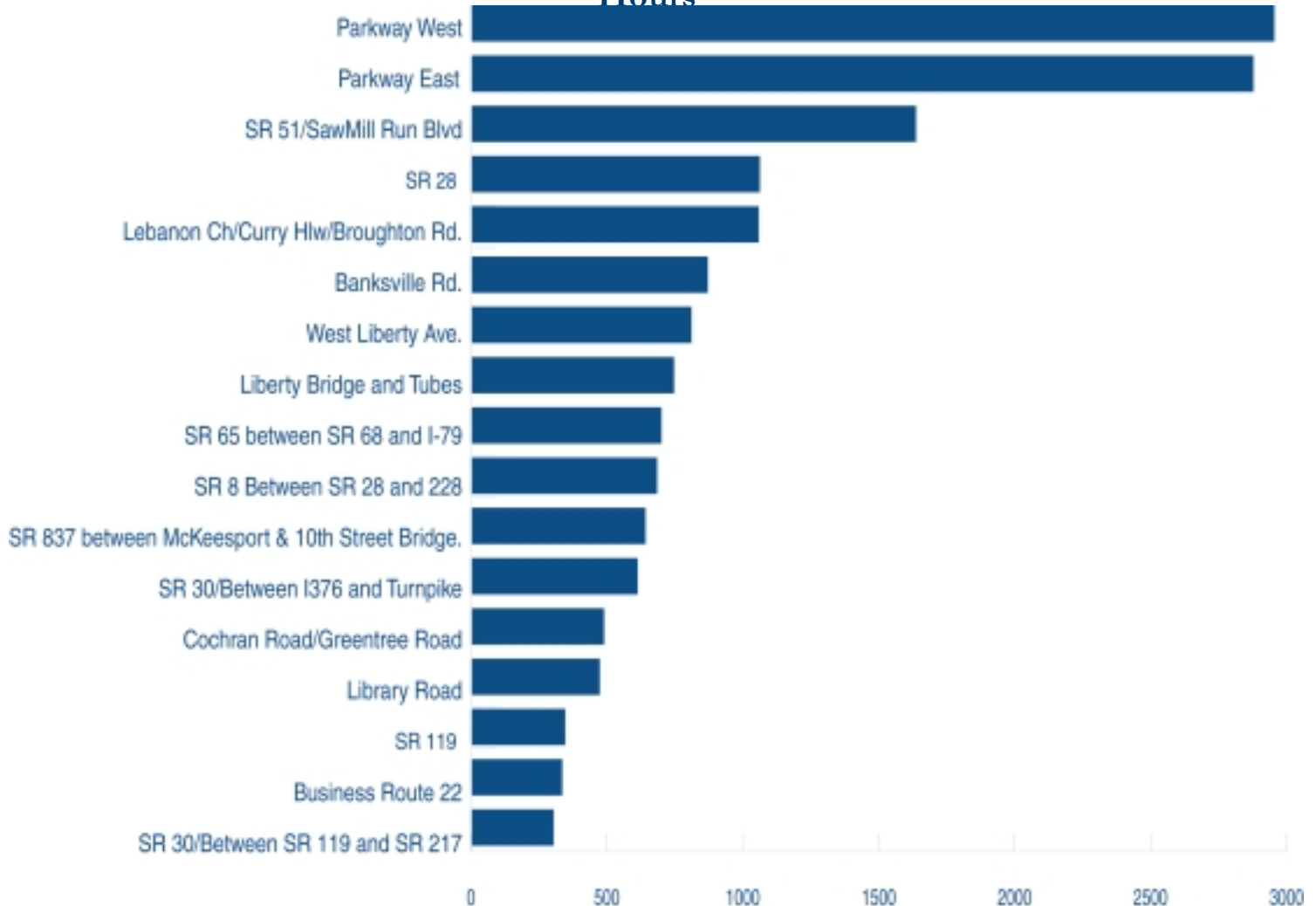
Despite a low level of congestion overall in the region, specific road segments have high levels of congestion and

delays on a daily basis. Congestion and overall traffic flows in the region are monitored by the Congestion Management System (CMS), maintained by the Southwestern Pennsylvania Commission (SPC) and are based on data collected in 1997. Ranking total delay in terms of vehicle hours, the most congested road segment in the region, among 50 monitored by the SPC in 1995 and 1996, is the Parkway West (I-279 between SR 65 and I-79), with a total of 2,806 hours in estimated total vehicle delay daily during peak periods. Total ve-

hicle delay is measured as the time difference between the observed flow of traffic and the flow of traffic that would occur if vehicles were traveling at the posted speed limit, multiplied by the number of vehicles affected. The result is a total measure of time spent due to congestion.

The table below shows some of the most congested road segments in the Pittsburgh region and the level of delay measured during peak hours.

**Selected Road Segments, Pittsburgh Region - Measured in Total Vehicle Delay in Hours**



## Location Quotients

In studying the local economy, a common question that arises is what industries are concentrated in the region. Specialization in a specific industry, or cluster of related industries, is often a goal of economic development policy. Also, it is essential to know what industries are concentrated in a particular region when analyzing how national industry changes will impact local economic trends. National economic trends can be very different across industries, and industry specific trends may or may not impact the local economy depending on the level of specialization.

This article is designed to explain how specialization is measured in a regional economy. A commonly used tool of regional economic analysis is the Location Quotient (LQ). The purpose of the LQ is to compare the local economy to some reference area, usually the national economy. The LQ technique is based upon a ratio between the size of a particular industry in the local economy and its size nationally. The relative size can be measured in many ways, but a typical metric is the percentage of employment of a particular industry in a region. Thus, the two numbers needed to compute an LQ for a specific industry in a specific region is the percentage share of employment in that industry for the two regions. When divided, those two numbers produce a ratio that is a standard measure of specialization. This ratio, called an industry “location quotient” gives this technique its name.

If a particular industry had a local concentration identical to the national concentration of that industry, then the LQ calculated would be exactly 1.0. An LQ that is greater than zero suggests that there is a greater concentration of that industry in a particular region than would be expected from national averages. The most common reason for a high LQ is that the industry is selling to a national market and exporting much of their goods and services outside of the region. An LQ that is less than zero suggests that local employment is less concentrated locally compared to the rest of the country. The distinction between an LQ greater than 1.0 to values less than 1.0 is key in determining what industries are concen-

trated in the region.

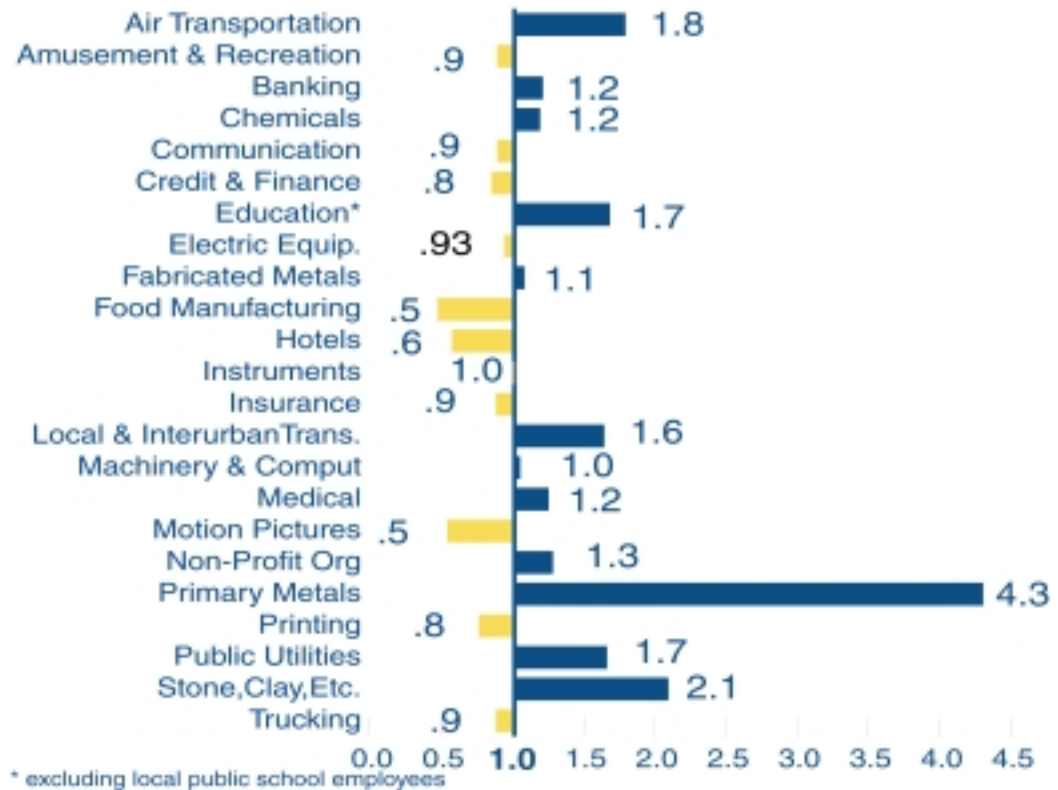
The figure below shows the calculated LQ for selected industries in the Pittsburgh region. Locally, a high degree of specialization still exists in the primary metals or steel industry. How much of a specialization and how it has changed over time can be studied with the use of the LQ. The changing LQ for total manufacturing industry employment in the Pittsburgh region is shown on page 5.

Other industries that have location quotients significantly greater than 1.0 include air transportation and education. Significantly lower LQs are calculated for the local hotel, food manufacturing, and motion picture industries.

Note that the LQ in itself does not directly reflect the

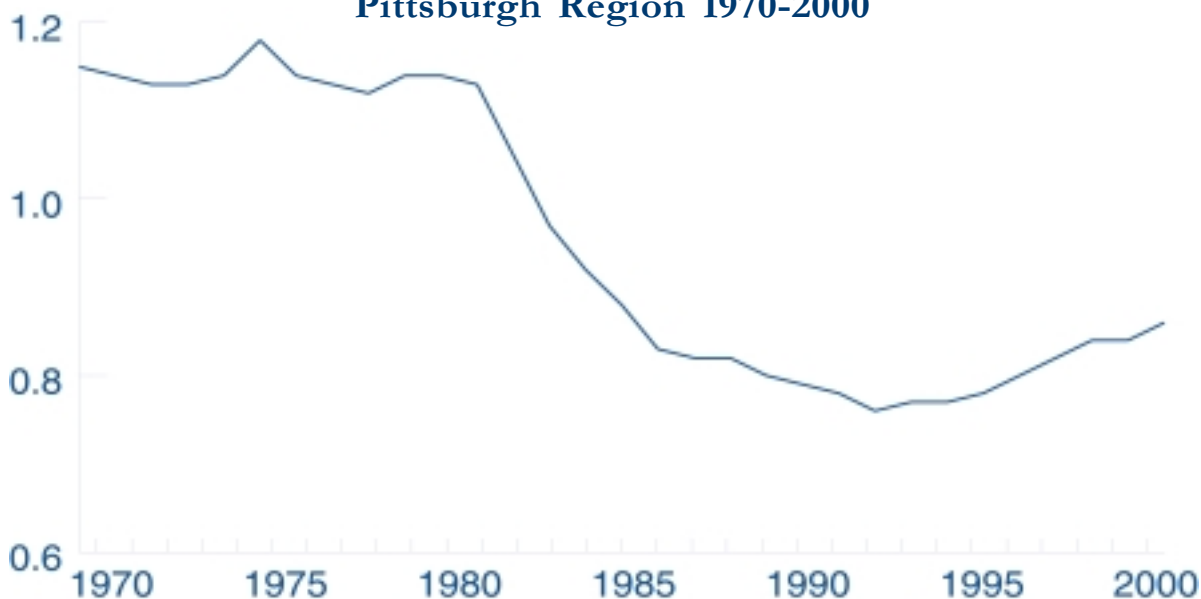
total economic impact an industry has on a region. An industry may be small but still be much more concentrated here than elsewhere. Conversely, an industry may have a LQ less than 1.0 but may still have a significant presence in the region. Food manufacturing is a particular example in Pittsburgh. The local Heinz plant and related firms have a sizable employment in the region. Nonetheless, other regions in the country are more suited for food manufacturing plants, and the lower overall LQ for Pittsburgh’s food manufacturing industry reflects that.

**Location Quotients for Selected Industries  
Pittsburgh Region - 2000**



Source: Pittsburgh REMI Model. Center for Social and Urban Research

### Location Quotients for Total Manufacturing Employment Pittsburgh Region 1970-2000



### State Population Changes 2000-2001 (cont)

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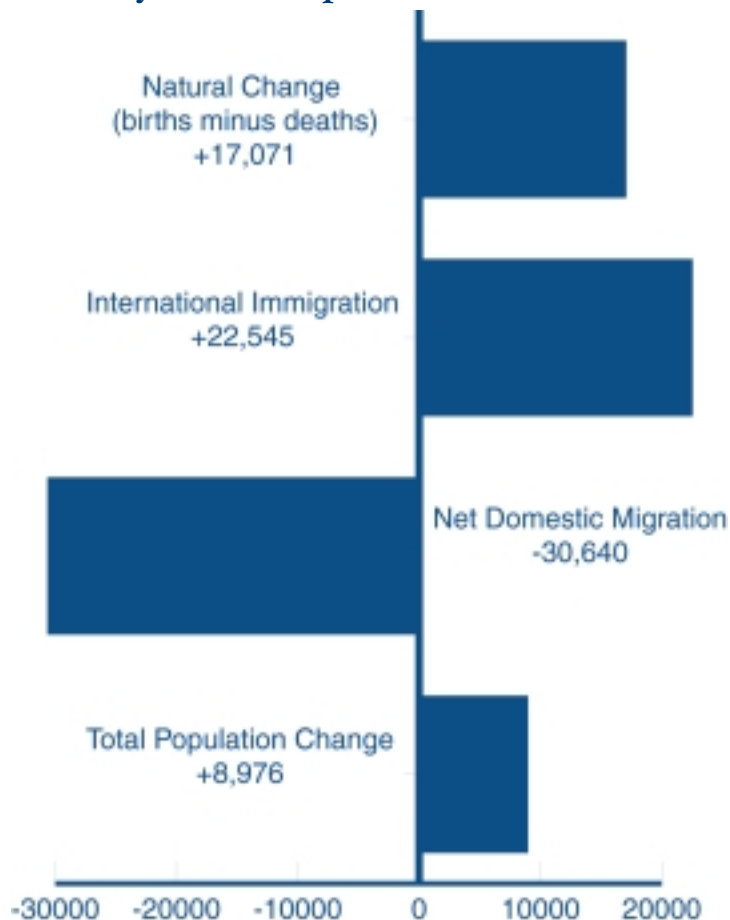
nia has the second lowest per capita rate of natural population growth in the country. The large elderly population in the state produces a relatively higher mortality rate and lower birth rate as compared to states with younger population demographics. The same trend affects the Western Pennsylvania region due to its older age demographics.

Population is estimated to be leaving the state on average, with a net domestic outmigration of 30,640 annually. International immigration

across the state was estimated at 22,545 over the same period.

These estimates are for population changes in the year since the 2000 Decennial Census. Estimates are compiled by the Census Bureau from multiple sources, including health records of regional births and deaths, migration estimates derived from multiple sources, and patterns of international immigration derived from the Immigration and Naturalization Services.

### Components of Change Pennsylvania Population 2000-2001



Source: Bureau of the Census

### Population Changes by State (2000-2001)

| Fastest        |          | Slowest              |          |
|----------------|----------|----------------------|----------|
| State          | % Change | State                | % Change |
| Nevada         | 5.3%     | North Dakota         | -1.2%    |
| Arizona        | 3.4%     | West Virginia        | -0.4%    |
| Colorado       | 2.7%     | Iowa                 | -0.1%    |
| Florida        | 2.6%     | Louisiana            | -0.1%    |
| Georgia        | 2.4%     | District of Columbia | -0.0%    |
| Texas          | 2.3%     | Pennsylvania         | 0.1%     |
| Idaho          | 2.1%     | Nebraska             | 0.1%     |
| New Hampshire  | 1.9%     | Wyoming              | 0.1%     |
| California     | 1.9%     | Ohio                 | 0.2%     |
| North Carolina | 1.7%     | New York             | 0.2%     |

Source: Bureau of the Census

# Natural Gas Prices

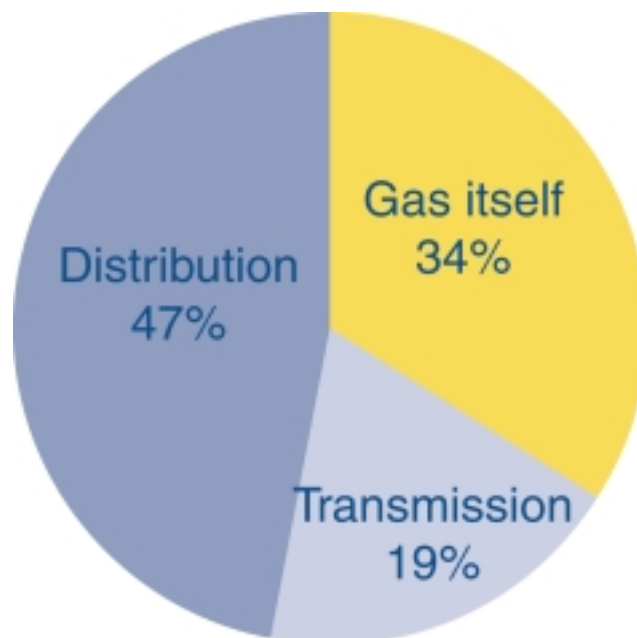
Winter typically brings large increases in local consumption of natural gas, which is a major heating fuel in Western Pennsylvania. Winter price spikes along with increasing volatility in recent years has resulted in large swings in the amount of money paid for home heating by local consumers. Relatively mild weather, a national economic recession, and stable national prices for natural gas have resulted in a lower total cost for heating this year compared to recent winters.

Unlike other petroleum resources, most conventional natural gas consumed in the U.S. is produced within the country. Imports are playing a gradually increasing role in the U.S. market. The imports share of consumption rose from 7.7% in 1990 to 16% in 2000. Canada is responsible

for over 90% of the total natural gas imports into the U.S., with Trinidad recently replacing Mexico as the next largest supplier to the U.S. market. Only 2% of total natural gas consumption in the U.S. is produced outside of North America.

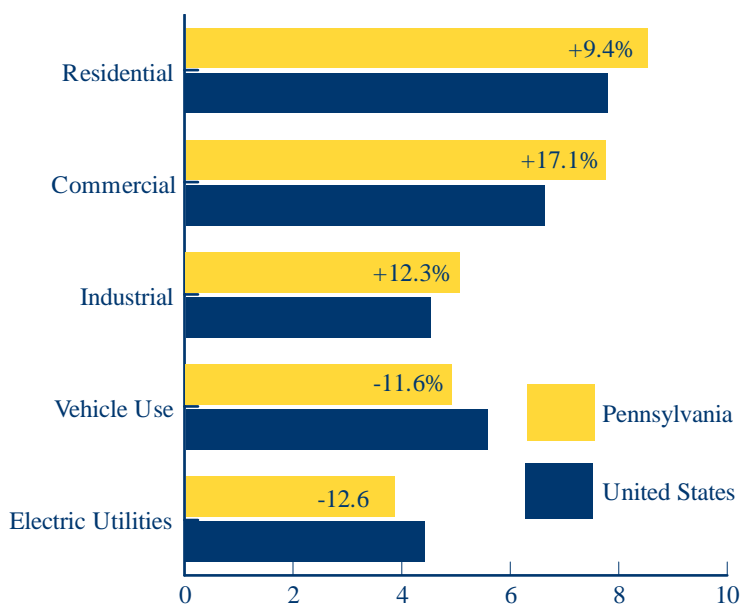
Most domestic production of natural gas is along the Gulf Coast. The distance between Pennsylvania and the natural gas well heads in the U.S. accounts for the higher price Pennsylvania pays for natural gas. The price of natural gas itself makes up only one-third of the total price paid across the U.S. Forty seven percent of total cost is accounted for by distribution costs and 19% for transmission charges. Natural gas is delivered from its main production regions in the south and midwest to markets

## Breakdown of Natural Gas Costs



Source: Energy Information Administration, Department of Energy

## Natural Gas Prices - Pennsylvania



Source: Energy Information Administration, Department of Energy

such as Pennsylvania primarily via pipeline distribution networks. There are approximately 206,000 miles of transmission pipelines for natural gas in the U.S. The map on the bottom of page 7 highlights the major natural gas transmission networks in the U.S.

Natural gas prices were relatively more stable than most other fuel and energy prices through most of the 1990s. That changed in recent years as prices became highly volatile. Large price spikes in 2000 were attributed to an imbalance between increasing demand and lack of response in supply output. Short-term supply of natural gas is relatively fixed, which means that significant changes in demand are readily translated into price changes. Changes in demand cannot be met by new production immediately. It takes up to 18 months for

price increases to translate into additional production. Prices have retreated to the levels of 1998-1999, which were typical of the decade before.

Demand imbalances were exacerbated by seasonal demand swings. Prices in winter peak as home heating use rises. Unexpectedly cold weather can have distinct adverse effects on natural gas prices. Specific prices paid for natural gas vary widely between type of users. Large industrial users generally pay the lowest prices for natural gas with residential prices being higher.

With the exception of prices paid for electric utilities and vehicle use, Pennsylvania prices for natural gas are 9-17% higher than natural averages. Vehicle use is a small but growing use of natural gas.

## News at UCSUR: Newman Recognized for Intergenerational Work

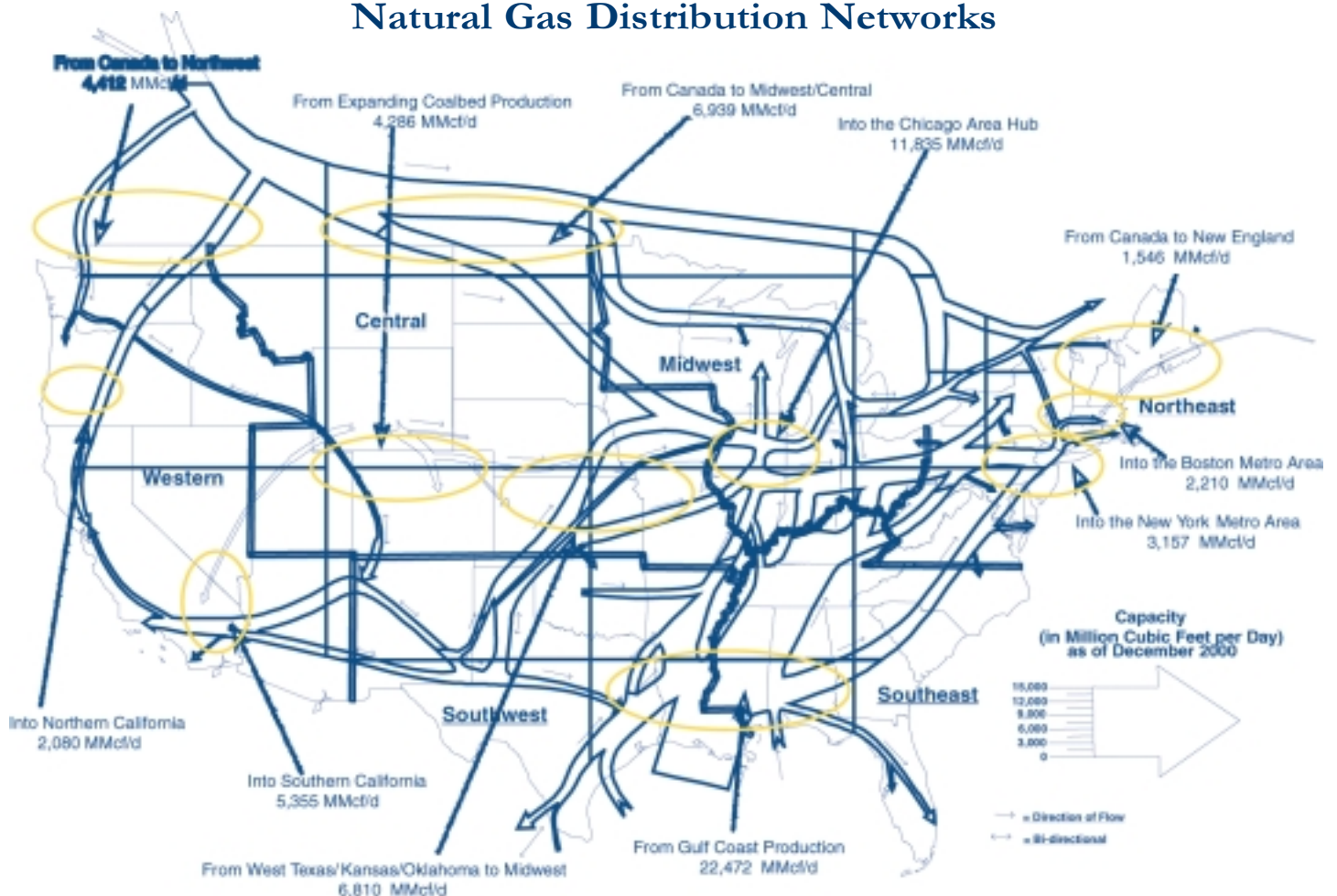
Sally Newman, director emerita of Pitt’s Generations Together (GT), a program at the Center for Social and Urban Research, was honored by the Association for Gerontology in Higher Education (AGHE) for her ongoing dedication to intergenerational work, both in this country and around the globe. Newman was presented with the Mildred M. Seltzer Distinguished Service Recognition at AGHE’s 28th Annual Leadership Conference. The Association for Gerontology in Higher Education (AGHE) was established in 1974 to advance gerontology as a field of study in institutions of higher learning.

Newman retired in June as head of Generations Together, where she worked for 23 years implementing and overseeing programs that united children with elderly adults. She continues to nurture the concept of both generations learning from one another in her new position as chair of the International Consortium for Intergenerational Programs, a nongovernmental organization based in the Netherlands.

Generations Together (GT) is an international center for intergenerational studies within the Center for Social and Urban Research. It is dedicated to the development and understanding of programs that bring the young and the old together to share experiences that promote mutual growth and foster understanding between the generations. It furthers program development, education and training, research and dissemination, and technical support that helps professionals acquire the knowledge, understanding, and skills to integrate intergenerational components into their work. Furthermore, it supports university/community collaboration and public policy initiatives that result in effective intergenerational partnerships that positively impact children, youth, and older persons in our communities.

Newman continues as editor of the *Intergenerational Programming Quarterly: An Intergenerational Journal of Program Development, Research, and Policy*, which is scheduled to begin publication early next year.

## Natural Gas Distribution Networks



Source: Energy Information Administration, Department of Energy

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