



2012

## PORTLAND-METRO'S TRADED SECTOR

A source of good jobs, higher wages and small business growth

# A look into Portland-metro's traded sector

In December 2010, the Value of Jobs Coalition began an effort to gain a better understanding of the Portland-metro region's economy. The goal of this work was to inform policy-makers and the general public about the region's economic challenges and opportunities and illustrate how private-sector jobs support our region's quality of life and public services.

The following study, focusing on Portland-metro's traded sector, is a continuation of this effort, and it sheds some new light on why the traded sector is a critical part of the region's economy. Before the coalition commissioned this study, we knew it was important as state, regional and local economic development strategies were centered on growing traded-sector jobs. For example, Portland recently issued one of the nation's first metro international export strategies. The following pages, however, reveal even more reasons why Portland-metro should support a strong and healthy traded sector.

Highlights include:

- ▶ Expanding the Portland-region's traded-sector firms can help small business and inspire business creation. At the same time, the report shows an unsettling decline in the region's new business creation rate.

- ▶ Generating more traded-sector jobs may increase family incomes because, on average, traded-sector workers earn about \$15,300 more per year.
- ▶ The traded sector is competitive and changes over time. To be successful in growing, retaining and attracting future traded-sector jobs, the region must invest in its human, natural and physical capital.

The higher wages from traded-sector jobs have another important benefit: in our income-tax-dependent state, traded-sector jobs will, on average, generate more revenue for critical services like schools, health care and social services than local-sector jobs. For example, to generate the state taxes to pay for one teacher you need to create about 150 new average wage local-sector jobs, but only 90 new average wage traded-sector jobs.

Through this study, we hope to engage policy-makers in constructive dialogue about how the region can focus on the factors that attract and retain these firms. By doing so, we can continue to build a stronger and more diverse economy for the Portland-metro region and a sustainable base from which important public services, and a good quality of life, can be funded.

*This report examines Portland-metro's traded sector - the industries and employers that are located here but sell the majority of their goods and services outside Portland-metro. The report looks at how Portland-metro's traded sector is faring and its impact on the region's employment, wages and overall economic health. The research was conducted by ECONorthwest at the request of the Value of Jobs Coalition, which consists of Portland Business Alliance, Port of Portland, Associated Oregon Industries, Oregon Business Council and Oregon Business Association.*

*Portland-metro in this report refers to the Metropolitan Statistical Area of Portland-Vancouver-Hillsboro, OR-WA MSA. Other metro regions in this study are based on the Metropolitan Statistical Areas used by the U.S. Census Bureau.*

## BY THE NUMBERS

**42%.**

Average percent more a Portland-metro, traded-sector worker earns per year compared to a local-sector worker.

**2.5.**

Number of local-sector jobs created by one high-skilled traded-sector job on average.

**32.**

Number of new businesses created in Oregon per 10,000 adults in 2011, comparable to the U.S. average, but below 1999-2001 level in Oregon.

**\$56,000.**

Average wage of a Portland-metro, traded-goods sector worker.

**\$47,200.**

Average wage of a Portland-metro, traded-services sector worker.

**\$63,700.**

Average wage of a Denver-metro, traded-goods sector worker.

**\$61,400.**

Average wage of a Seattle-metro, traded-services sector worker.

**60%.**

Percentage increase of inflation-adjusted wages in Portland-metro's traded-goods sector since 1970 (faster than the U.S. metro average).

# Why the traded sector matters

The traded sector includes industries and employers which produce goods and services that are consumed outside the region where they are made.<sup>1</sup> The local sector, on the other hand, consists of industries and firms that produce goods and services that are consumed locally in the region where they were made.

Both sectors – traded and local – are essential to economic health. Traded-sector employers export products or services, bring in new money into a region. In part, this money gets spent in the local economy, supporting jobs and incomes in the local sector. Local-sector employers provide necessary goods and services that both improve quality of life and contribute to the productivity and competitiveness of the traded sector.

Most forms of manufacturing, specialized design services, advertising and management, and technical consulting are classified as traded in this analysis. Retail trade, construction, healthcare, education, real estate and food services are found in all metropolitan areas and mostly fall into the local sector.

Figure 1 presents the share of major industry categories classified as traded in the U.S. overall and in the Portland-metro area.

**Figure 1: Share of major industry categories classified as traded, 2010**

INDUSTRY	PORTLAND	U.S.
Agriculture, Forestry, Fishing & Hunting	100%	100%
Management of Companies & Enterprises	100%	100%
Manufacturing	86-100%	85-100%
Professional, Scientific & Technical Services	87%	86%
Finance & Insurance	67%	66%
Transportation & Warehousing	61%	59%
Wholesale Trade	43%	43%
Arts, Entertainment & Recreation	53%	36%
Public Administration	16%	29%
Utilities	18%	20%
Accommodation & Food Services	12%	13%
Retail Trade, Health Care, Education & Construction	0-8%	0-7%

Source: ECONorthwest analysis of U.S. Census and American Community Survey data.

<sup>1</sup> In this report, traded- or local-sector industries are classified following the approach developed by economists J. Bradford Jensen and Lori Kletzer of Jensen and Kletzer (2006). For more details on the methodology, see the full report at [www.valueofjobs.com](http://www.valueofjobs.com).

# Differences between traded sector & local sector

On average, while both local and traded sectors include large and small, young and old, and high- and low-wage firms, historically, the traded sector differs from the local sector in several important ways:

- ▶ The amount of output (or value-added of the product or service being produced) per job is higher in traded-sector industries. This higher value is often referred to as value-added.
- ▶ The growth in traded-sector value-added per job accelerated during the past decade and outpaced the growth in value-added in the local sector.<sup>2</sup>
- ▶ Workers in the traded sector tend to be better educated, work more hours and earn higher average wages.
- ▶ Traded-sector workers in low value-added jobs are more exposed to being replaced by lower-cost workers or automation.

<sup>2</sup> Spence and Hlatschwayo (2011) estimate that between 1990 and 2008, value-added per job increased by 44 percent, but the economy overall only experienced a 21 percent increase in value-added per job.

**Figure 2: Characteristics of traded vs. local sectors, 2010**

	PORTLAND		U.S.	
	TRADED	LOCAL	TRADED	LOCAL
Median Annual Income	\$39,300	\$27,000	\$36,000	\$25,000
Share Full-Time	70%	56%	72%	59%
Median Hourly Wage	\$20.59	\$16.56	\$19.31	\$14.71
Share with college degree	40%	31%	33%	26%

Source: IPUMS USA; ECONorthwest analysis of U.S. Census and American Community Survey data.

All of these factors result in traded-sector workers in the Portland region earning wages that are significantly higher than their counterparts in the local sector, on average about \$15,300 or 42 percent more per year.<sup>3</sup> Some of the annual wage difference is due

<sup>3</sup> These results are in part "on average." Traded-sector firms still have lower paying jobs in administration and maintenance, but they have a greater proportion of jobs in higher-paying occupations like management, finance and engineering. But it is also the case that successful traded-sector businesses tend to pay higher wages for similar positions filled by more skilled employees.

to longer hours worked by traded-sector employees, but even on an hourly basis, traded-sector employees earn about 18 percent, or about \$4.23, more per hour than local-sector workers.

## Portland's traded-sector clusters

The Portland-metro region has identified groupings of traded-sector firms – companies that specialize in particular manufactured products or services that tend to cluster together because they draw competitive advantage from their proximity to competitors, a skilled workforce, specialized suppliers and a shared base of sophisticated knowledge about their industry.

Local and regional economic development strategies have identified a number of key traded-sector industry clusters as a focus for job and wage expansion strategies. This list shows the clusters identified in Portland-metro's economic development strategies and a sampling of the companies in each cluster.

### Activewear & Outdoor Equipment

- adidas
- Benchmade Knife Company
- Columbia Sportswear
- Icebreaker
- KEEN Footwear
- Nike
- Pendleton

### Clean Tech & Sustainable Industries

- CH2M Hill
- Gerding Edlen
- Glumac
- SERA Architects
- ZGF Architects

### Renewable Energy & Energy Efficiency

- Iberdrola Renewables
- PECO
- Solaicx
- SolarWorld
- Solopo
- Vestas

### Software & Electronics

- Coaxis, Inc.
- Hewlett-Packard
- IBM
- Intel Corp.
- Jama Software
- McAfee
- Tripwire
- TriQuint Semiconductor
- Wacom Technology

### Traditional & Advanced Manufacturing

- Boeing
- Blount
- ESCO Corp.
- Evraz, Inc.
- Gunderson LLC/Greenbrier
- Madden Fabrication
- NACCO Materials Handling Group
- Oregon Iron Works
- PCC Structural
- Schnitzer Steel
- Vigor Industrial

## A traded-sector story

### Nike & Hydro Graphics, Inc.

When the University of Oregon football team took the field at the 2012 Rose Bowl, television viewers across the nation were awed by the new Nike Pro Combat uniforms. Particularly notable were the one-of-a-kind Liquid Metal helmets.

Nike partnered with Newberg-based Hydro Graphics, Inc. (HGI) to develop the eye-catching finish for the helmet. HGI developed a mirrored appearance using a proprietary HydroSkin water transfer printing technology to create the highly reflective surface, fittingly named HydroChrome.

“Working with Nike to develop these iconic helmets that were seen by millions of viewers around the country was huge for us. Without that partnership, we never would have had that opportunity,” says Chris Thom, HGI President.

HGI was founded in 2006 as an extension of their previously established painting facility, Finish Line Industries, which began operations in 2001. HGI currently has 37 valued employees.

“Working with a small firm like HGI gives us the flexibility to do something really unique and special,” says Nike's Global Creative Director for Football Todd Van Horne. “We can tap into special talents and processes by partnering with small firms such as HGI.”

# How Portland-metro measures up

## Traded goods

In past economic studies, the coalition has compared Portland-metro to a number of other metro regions that either have similar characteristics or that the region traditionally benchmarks its economic performance against. For the purpose of this study, Portland-metro is compared to Seattle, Minneapolis, Denver, Cincinnati, St. Louis and Sacramento metros. Seattle, Minneapolis and Denver are seen as 'aspirational' metros since Portland-metro's economy once kept pace with those three metros, but, since 1990, has fallen behind them significantly.

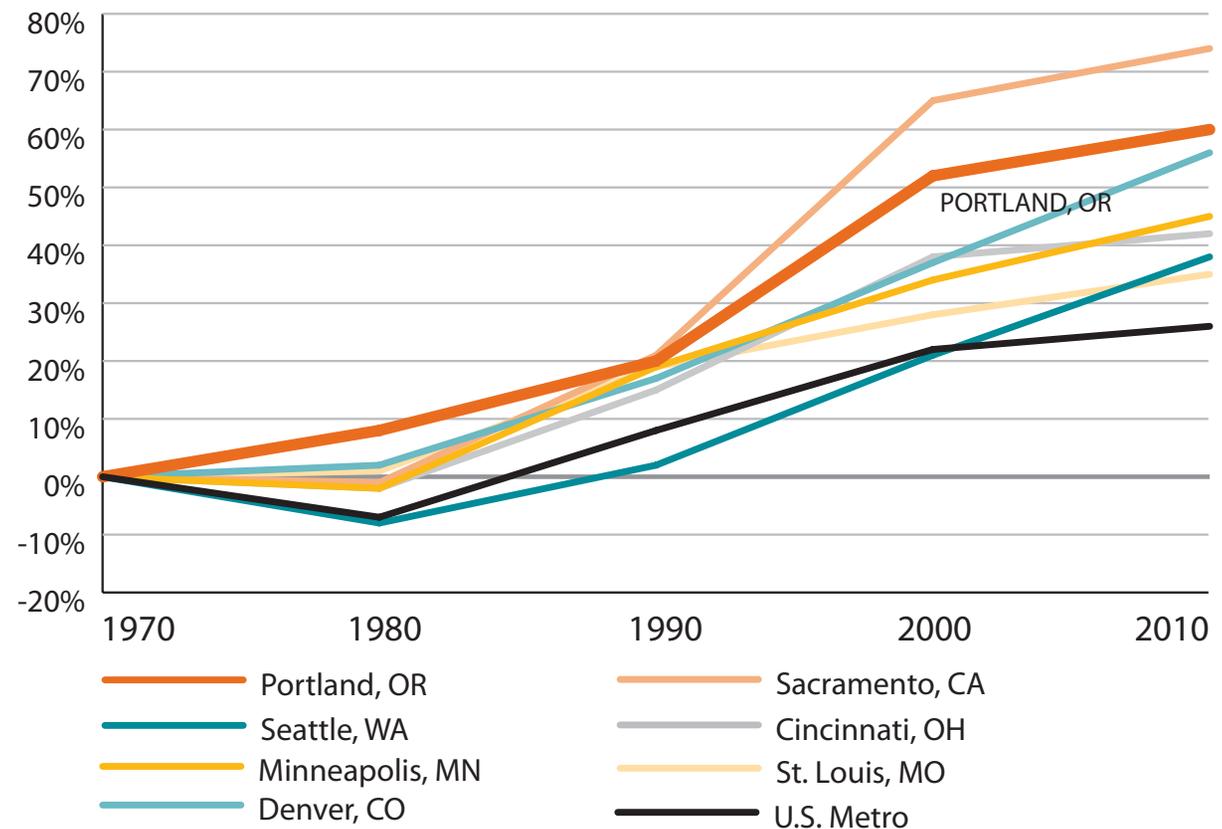
Across metro regions, the traded sector typically makes up 35 to 40 percent of total employment; however, the industries that comprise each region's traded sector differ. As a result, differences in traded-sector industries across regions explain much of the variation in economic performance across cities.

Over the past 40 years, Portland's traded-goods sector – such as manufacturing – has performed relatively well, increasing employment and wages at a rate faster than the U.S. metro average. Inflation-adjusted wages in Portland-metro's traded-goods sector grew by 60 percent over that period, faster than the U.S. metro average and all of the comparison regions except Sacramento. Portland-metro lost ground, however, on both employment and wages to Seattle, Minneapolis and Denver over the past decade.

Today, the average wage in Portland-metro's traded-goods sector is approximately \$56,000 per year. This amount exceeds the U.S. metro average of approximately \$52,000, but falls below the average in some of the other comparison metros such as Seattle (\$67,600), Denver (\$63,700), Minneapolis (\$60,600) and Cincinnati (\$59,100).

In previous studies, the Value of Jobs Coalition explored the potential reasons for the wage differential between Portland-metro and other metros. These factors impact wages in both the traded-goods and traded-services sectors.

**Figure 3: Percent change in inflation-adjusted wages for traded goods since 1970**

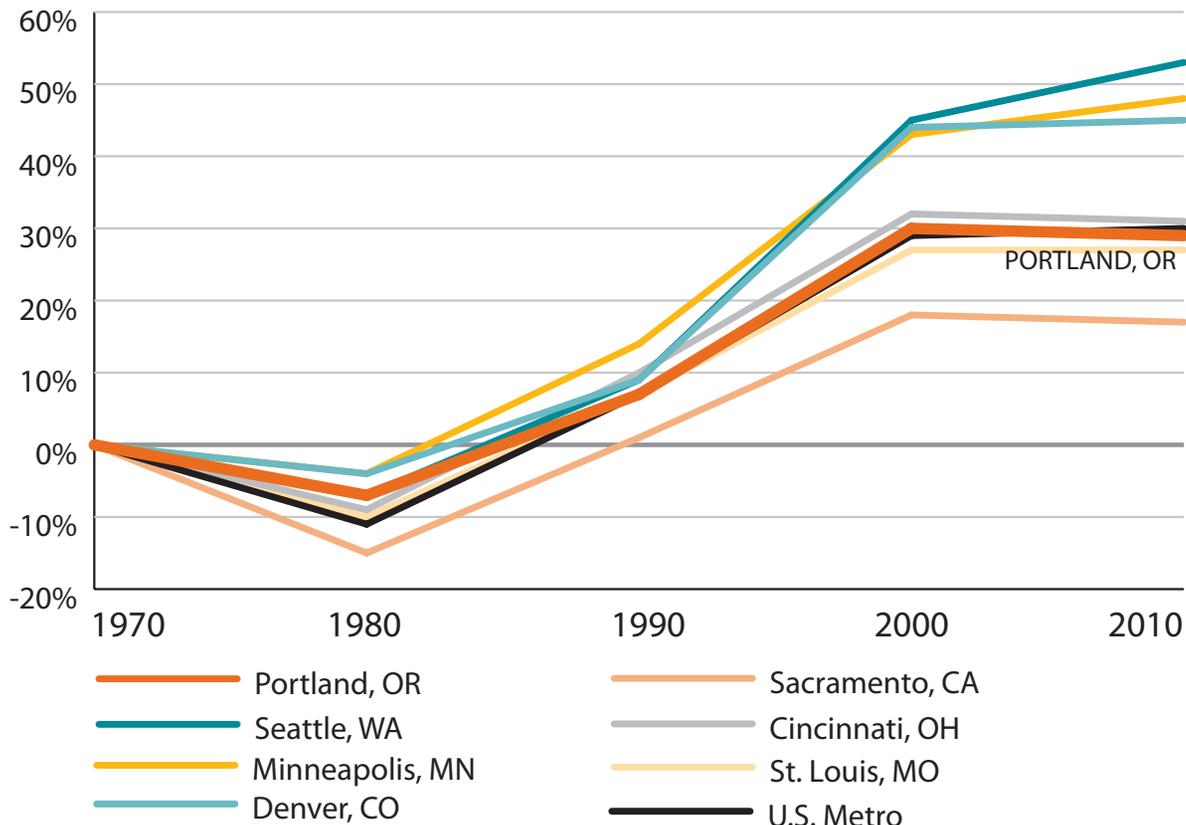


Source: IPUMS USA; ECONorthwest analysis of U.S. Census and American Community Survey data.

While multiple factors contribute to the differences, the coalition identified three main factors:

- 1) **SIZE:** The aspirational metros are larger than Portland-metro, and there is a strong relationship between larger size and higher wages (although the coalition's 2011 economic study indicated that Portland underperforms even when accounting for size).
- 2) **EDUCATION:** The aspirational metros have a higher share of their population with college degrees and there is a strong relationship between education levels and wages.
- 3) **COMPOSITION OF INDUSTRIES:** The aspirational metros have a higher share of their employment in higher-paying specialties such as aerospace and advanced electronics in the case of manufacturing, and finance and management in the case of services.

**Figure 4: Percent change in inflation-adjusted wages for traded services since 1970**



Source: IPUMS USA; ECONorthwest analysis of U.S. Census and American Community Survey data.

## A traded-sector story

### The Standard & Alyssa Gasca

Founded in Portland in 1906 by German immigrant Leo Samuel, The Standard provides life, disability, dental and vision insurance and financial management services nationwide. Because most of its 7 million customers are located outside the Portland-metro area, The Standard is considered one of the largest traded-sector service companies in the region.

The Standard generates more than \$660 million in annual economic activity in Oregon, including \$347 million in personal income. The company employs 2,400 at its headquarters in Portland, and generates 3,000 other jobs through contracting and purchasing of goods and services – often with small, local companies.

One example is Alyssa Gasca's organizational consulting business. The Standard regularly uses Ms. Gasca's firm to help with strategic planning and professional development. The relationship has allowed Ms. Gasca to grow her company with local hiring to meet The Standard's needs.

"This is a virtuous cycle," said Ms. Gasca, "The Standard's national presence translates into more jobs and the resources to hire a firm like mine here in Portland. In turn, my firm helps The Standard to be even more successful as they compete on that bigger national stage, meaning they provide even more economic activity here at home."

## Traded services

From 1970 to 2010, Portland-metro's traded-services sector – such as insurance, architecture and investment consulting – has grown rapidly. In this sector, Portland-metro's performance is relatively typical for U.S. metro areas, but falls below several standout regions. Relative to all U.S. metro areas, Portland-metro's traded-service sector saw greater employment growth, but slightly slower wage growth. Portland-metro's wage growth, however, significantly trails behind the metro areas of Seattle, Minneapolis and Denver, particularly since 1990.

In previous economic studies, the Value of Jobs Coalition pointed to concerns about Portland-metro's wage and income levels falling below the national average and lagging behind Seattle, Minneapolis and Denver. This traded-sector study reveals that a significant portion of the Portland region's declining income relative to some metro areas is the result of lagging wage growth in the traded-services sector.

In 2010, wages in Portland-metro's traded-services sector fell below the U.S. metro average (\$47,200 vs. \$52,300) and all of the comparison areas. While Portland's wages were close to Sacramento, St. Louis and Cincinnati (all in the \$47,000 to \$49,000 range), Portland's traded-service wages are significantly below Seattle (\$61,400), Minneapolis (\$56,700) and Denver (\$56,200).

# Benefits of traded sector activity

## Impact on local jobs

The traded sector affects the size and health of the local sector. Growth in the traded sector generates growth in the local sector.<sup>4</sup>

As employment and income in the region increases, demand for local goods increases. More people and more money mean more

*4 There are both positive and potentially negative aspects of traded-sector growth. Job and wage growth are positive but may impact housing costs if housing supply is constrained relative to demand.*

customers for local grocery stores, restaurants, hairdressers, carpenters, etc. Figure 5 helps to illustrate this relationship. The line in the figure represents the average relationship between the growth in employment over the past 30 years.

One recent estimate developed by economist Enrico Moretti suggests that, on average, one additional high-skill traded-sector job creates 2.5 local-sector jobs, and one additional low-skill traded-sector jobs is associated with one additional local-sector job.

**Figure 5: Change in local and traded sector employment**



Source: IPUMS USA; ECONorthwest analysis of U.S. Census and American Community Survey data.

## Impact on local income

A clear correlation exists between changes to traded-sector income and changes to local-sector income for U.S. metro areas.

Much of the difference in income (and prices) across various metro areas comes from differences in the productivity of the region's traded sector.<sup>5</sup> Because traded-sector employers compete in large markets, the price of traded products is tied to the prices charged by companies from other regions. For Portland-metro workers to earn more than metro workers, who are producing the same good for a similar price, Portland-metro works must produce more value-added products or services.

Higher value-added products or services lead to higher traded-sector wages that can help grow the wages of a region's local sector. Because a region's local- and traded-sector employers compete for the same workers, the local-sector employer must pay higher wages to attract employees.<sup>6</sup> As a result, higher regional income levels stem from higher productivity in the traded sector. This higher income level can, however, also impact costs for housing in a highly productive region.

## Boosts to small business growth and development

A healthy traded sector can lead to the formation and growth of small, local businesses. As the traded sector increases employment and wages, it also encourages entrepreneurs to start new businesses. Furthermore, if traded-sector firms

<sup>5</sup> Avent (2011)

<sup>6</sup> Economists refer to this result as the Balassa-Samuelson effect (after the economist who first advanced this theory).

attract skilled workers or encourage the creation of ample, independent suppliers, then starting a new business in the area may become more attractive and less costly.

Some traded-sector businesses reach such scale that they become anchor firms, forming the nucleus of an industry cluster with small start ups, relocations and spin-off companies seeking the talent, ideas and innovation surrounding the anchor employer. One example in the Portland-metro region is the activewear and outdoor equipment cluster that has grown around Nike and Columbia Sportswear.

Traded-sector industries frequently invest in research and development that attract smart, innovative people. The hiring of these individuals makes it more likely that a local entrepreneur will have a new, breakthrough idea that supports the creation of new firms and the growth of new or existing industries.

The health and characteristics of a region's traded sector may affect the level of entrepreneurial activity in a location. Historically, Portland-metro (including its traded sector) provided a favorable climate for small and new businesses.

The rate of new business creation in Oregon used to be well above average. In 1996, each month 49 out of every 10,000 adult Oregonians started a new business at which they worked at least 15 hours per week.<sup>7</sup> In contrast, across the U.S., only 31 out of every 10,000 adults started a new business each month in 1996.

<sup>7</sup> Fairlie, R. (2012) *Kauffman Index of Entrepreneurial Activity, 1992-2011*. [www.kauffman.org/kiea](http://www.kauffman.org/kiea)

## A traded-sector story

### Boeing & PECO Manufacturing

Boeing is the world's leading manufacturer of commercial jetliners and defense, space and security systems. Boeing's Gresham operation employs about 1,700 people and serves as the company's center of excellence for complex machining, gear systems and pilot controls for all Boeing Commercial Airplane programs. It ranks as one of the largest profile milling facilities in the world and produces some of the most critical machined parts and structures for Boeing's jets.

Founded in 1938 as an aluminum and zinc die cast job shop, Portland's PECO Manufacturing has been building components used in Boeing's commercial and military aircraft for more than 50 years. Boeing is PECO's largest and also one of its longest-standing customers.

"PECO builds components that are used in a range of Boeing products," said Boeing's Portland General Manager, Perry Moore. "Their products go into airplanes that are sold and operated around the world."

Because of its strong ties to Boeing, PECO has been able expand its product line and markets. Today PECO employs about 250 people at its Southeast Portland plant.

"We make very specialized products that require highly skilled workers," said Steve Scheidler, PECO President. "Our product isn't something that you buy at the corner store. Without Boeing's global market reach, our employee count would be far less."

However, in recent years, Oregon's rate of new business formation has declined. Between 2009 and 2011, Oregon's rate of new business creation fell to 32 new businesses for every 10,000 adults, approximately equal to the U.S. average of 33 businesses per 10,000 adults. The decline in entrepreneurship is troubling and may be indicative of or related to weaknesses in the traded sector, since many new businesses are launched to support traded-sector partners. This concerning trend is evident in Figure 6, which shows how Oregon has historically trended above the U.S. average but has fallen below in recent years.

### Growing the traded sector

A region derives its economic capacity from innovation and the four forms of capital: natural capital (climate, natural resources), physical capital (machines, roads, buildings), human capital (people and their skills) and social capital (institutions and social norms).

Some traded-sector industries require natural resources, so they locate in regions that offer particular natural advantages such as good soil or low-cost energy sources. Other traded-sector industries need access to markets, so they

locate near transportation hubs such as ports, rail and road facilities. Still other traded-sector industries require access to well-educated or innovative people or ideas, so the sector grows up around particular individuals or groups, often linked to universities or an innovator's hometown, which was the case with Phil Knight and Nike or Bill Gates and Microsoft.

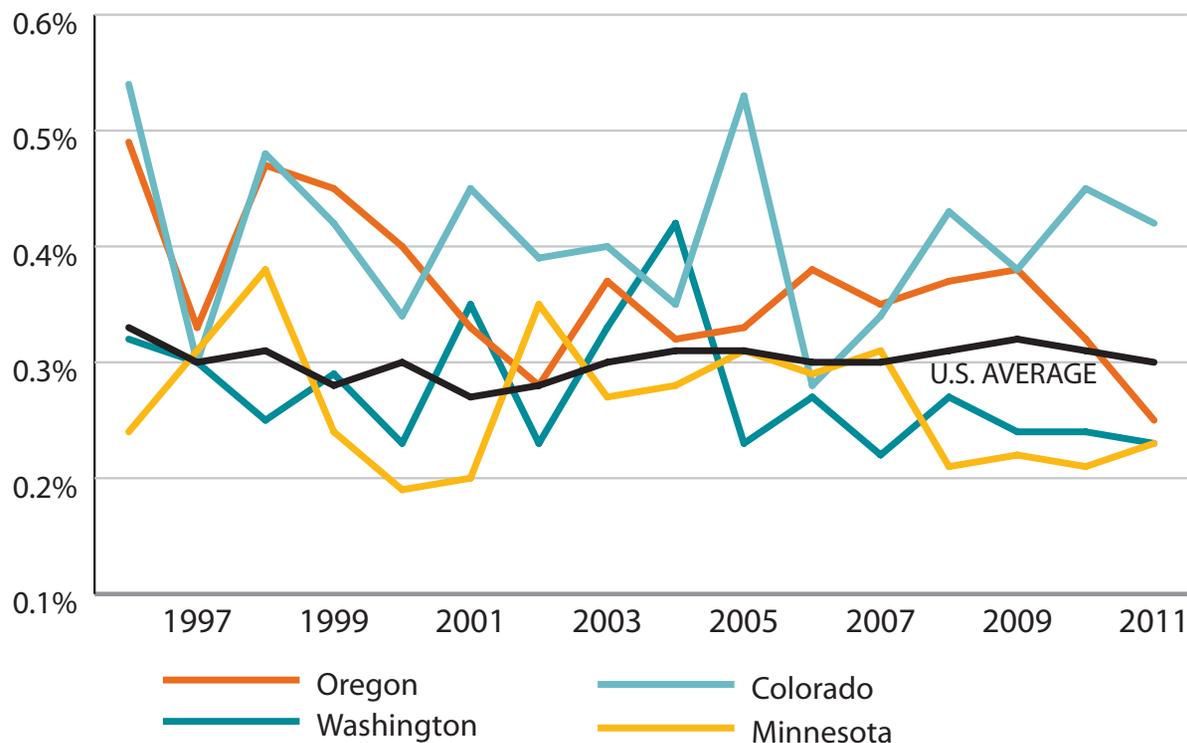
Some factors that influence the location decisions of traded-sector employers, like natural resources and global economic conditions, are largely outside a region's ability to influence.

Other factors, such as support for entrepreneurial activity and governance, can be influenced by public policy. For instance, if the local construction industry or local government land use and building regulations are inefficient, the cost of building new houses, factories, or office buildings will increase, decreasing regional traded-sector competitiveness.

If local school systems or health care systems provide low-quality services at a high cost, the quality of the local workforce will suffer and costs will increase, which tends to reduce regional traded-sector competitiveness. Or if tax policy inhibits business launches or wealth creation, the result may be more reluctance on the part of entrepreneurs to invest time, energy and capital in a particular area.

In other words, a region's infrastructure – both human and physical – can impact a region's traded-sector productivity and wages.

**Figure 6: Kauffman Entrepreneurial Index (1996-2011)**



Source: Kauffman Index of Entrepreneurial Activity by State (1996-2011)

# Conclusions

Over the past several decades, the U.S. traded sector has shifted from predominantly goods producing to predominantly services producing. This transition can be linked to growth in global trade and technological changes.

Traded-sector evolutions are even more pronounced at the regional level. The perpetual birth, death or movement of industries (and employers) means that each region's traded sector is constantly in flux.

A region's traded sector can change when a new industry finds a home there or when an old industry declines.<sup>8</sup> Change can also occur in response to the movement of industries across places.<sup>9</sup> How regions cope with change is at the crux of regional economic development debate.

As this analysis has shown, Portland-metro benefits from a strong base of traded-sector jobs, and there are numerous reasons to grow and strengthen Portland-metro's traded sector: new money introduced in the economy; potentially higher wages for local- and traded-sector workers; and potentially higher entrepreneurialism and small business growth. These advantages and connections were further illustrated by stories about traded-sector companies that purchase goods or services from other smaller, local- or traded-sector businesses.

As a region, we need a better understanding of the role of the traded sector in our communities' local sectors. The Value of Jobs Coalition hopes this report is a good first step.

<sup>8</sup> Klepper (2010)

<sup>9</sup> Duranton (2007)

For state and regional policy-makers, the challenge is to determine what factors help or hinder both our traded-goods and traded-services sectors and develop a strategy for nurturing those factors that encourage the location, formation and growth of traded-sector firms.

While the Portland-metro region has certain "fixed" natural and physical advantages for some traded-sector firms, employers rely on "un-fixed" resources such as: an educated and trained workforce, modernized infrastructure, available land supply and a favorable business climate. Public- and private-sector leaders must work together to ensure that the Portland-metro region's natural, physical, human and social capital is up to par for traded-sector firm needs. This means:

- ▶ Investments in education as well as trade programs and research institutions;
- ▶ Modernized, affordable infrastructure that provides access to market;
- ▶ Sufficient supply of market-ready, developable land; and
- ▶ Tax structures that encourage investment and economic growth.

How can we work together to ensure the Portland-metro region continues to evolve its economy and create more capacity for prosperous growth and increased revenue for public services? We hope the Value of Jobs Campaign through this study and others continues to inform this discussion.

## A traded-sector story

### PCC Structurals & BOWCO

Headquartered in Southeast Portland, PCC Structurals manufactures large and small castings in nickel, titanium and stainless steel for aerospace, medical and other industries.

A division of Precision Castparts Corp., PCC Structurals was founded in the early 1950s, growing from a business that originally made chainsaw parts. By 2011, the company had diversified to highly engineered castings for the aircraft propulsion, aerospace and other industries. Today the company has sales of \$7.2 billion, more than 21,000 employees and 120 manufacturing facilities worldwide.

Casting metal requires accurate wax molds and when PCC Structurals needs one they often turn to BOWCO Industries, a provider of precision engineered molding services.

Founded in 1990, Canby, Oregon-based BOWCO has 20 employees.

"Parts we make using BOWCO molds end up in aircraft engines and other highly engineered products sold literally across the globe," said Steve Duea, Vice President of Human Resources for PCC Structurals.

"The parts PCC Structurals makes with our molds end up in products made by GE Aviation, Pratt & Whitney and Rolls-Royce," said BOWCO President Doug Bowen. "We're able to pay better wages and create more jobs through the connection with PCC Structurals than we could if we were only supplying to the local market."



### About the Value of Jobs Coalition

The Value of Jobs Coalition is based on the premise that in order to have a prosperous, healthy Portland region with a good quality of life, we need more private-sector jobs. The coalition began with an economic study in the fall of 2010, which uncovered troubling economic data about the Portland-metro region. A number of other studies have followed that highlight the region's economic opportunities and challenges. Find out more at: [www.valueofjobs.com](http://www.valueofjobs.com).

PUBLISHED BY:



**PORTLAND BUSINESS ALLIANCE**  
*Leading the way*

**PORTLAND BUSINESS ALLIANCE**  
200 SW Market Street, Suite 150  
Portland, OR 97201  
[www.valueofjobs.com](http://www.valueofjobs.com)