Export West

How Mountain West Metros Can Lead National Export Growth and Boost Competitiveness

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"Expanding the region's exports holds out the promise of at once lifting the region's sights, widening its horizons, and creating thousands of new jobs in metros that desperately need them."

Findings

An analysis of export activity in the 10 largest metros of the Intermountain West for the years 2003 to 2008 reveals that:

- **Exports are an important source of good jobs in the Mountain West and export growth has the potential to generate significant and much-needed job creation in the region.** In 2008 fully 454,000 workers in the 10 largest Intermountain region metros were employed in export-related jobs, with thousands of other local jobs dependent on the spending on local services that those earnings generate. What is more, export jobs are good jobs: The typical Mountain metro worker employed in his or her metro's top export industry earns nearly 1.5 times the wage of the average American worker.

- **The major Mountain region metropolitan areas are not exceptionally large exporters in dollar terms but a number of them export a significant portion of their overall output.** Seven out of 10 of the Intermountain West's large metros depend on exports for larger shares of their gross metropolitan product (GMP) than the nation's largest 100 metros taken together. Mountain metros, moreover, not only expanded their export sales but also grew more export intensive from 2003 to 2008. Only in Phoenix did export intensity decline.

- **Services constitute a greater share of export activity in the Intermountain West metros than they do in the average large metro nationally.** Service exports—ranging from architecture and engineering to consulting, education, and tourism—represent a strength of the Mountain region. Service sales comprise a much larger share of Mountain metro exports, at 45 percent, than they do for the country's largest 100 metros as a group In two Mountain metros—Las Vegas and Denver—services account for the majority of all regional exports. In fact, Las Vegas generated a larger share of its GMP from service exports in 2008 than any other major metro.

- **The Mountain region's large metros are quite varied in their export specializations.** Computer and electronic product manufacturing stands out as one of the region's clear specializations, as well as transportation equipment (frequently related to defense); service production, including tourism; and metal manufacturing. Across metros, however, the export bases of some economies appear far more diversified. However, export earnings in the prominent computer and electronics industry actually fell in seven metros over the five-year period studied, pointing to the need to maintain constant vigilance in the face of changing global markets.

- **Strengths in manufacturing and innovation tend to drive metropolitan export power.** Manufacturing industries nationally are the most export oriented and tend to be more innovative, defined by patent production. Exemplifying this in the West is Boise, the region's patent leader and number two metro on manufacturing and export intensity indicators.

- **Canada and Mexico remain the region's leading export markets but major growth opportunities reside in large emerging markets like Brazil, India, and China (the "BICs").** With years of potentially tepid domestic sales ahead, companies need to redouble their search for new sources of demand. Despite the region's close proximity, exports from the large Mountain metros are no more likely to be destined for Mexico than the average large metropolitan area's. And while five of the Mountain metros capitalized on opportunities farther afield—in the BICs, for example—five stood on the sidelines with below average growth in exports to these markets.

Confronted by a malfunction of the region's real estate-driven long boom, the Mountain West metros need to locate new sources of demand to power sustainable growth. Exports of goods and services to international markets can provide one such source. For that reason, metropolitan leaders and their federal, state, and private sector partners need to engage in exports to create good-paying jobs at home.

Introduction

In the beginning of 2010, with U.S. output growth modest and job growth nonexistent, President Obama devoted a portion of his State of the Union Address to "fixing the problems that are hampering our growth." One of these problems, according to the president, was a lack of international export sales.

The president linked an increase in exports to an increase in jobs, and pledged to double the nation's exports over the next five years.[2] Since then, export growth has emerged as a key tenet of numerous economic visions including those of the Metropolitan Policy Program at the Brookings Institution which has suggested that the "next economy" in the West and nationally will likely be "export-oriented, lower-carbon, and innovation-driven."[3]

This report focuses attention on the benefits of exporting and highlights the existing and emerging strengths—and some weaknesses—of the Intermountain West's large metropolitan areas in global trade.

Doubling exports, whether or not it happens in the next five years, would be a major boon to the Intermountain West's largest metropolitan areas. Such a doubling would bring the West's large metros thousands of good jobs and see them expand on their existing strengths in the world economy.

The prospect of such gains is especially attractive in the Mountain zone, moreover, given the present moment of self-reflection in a region that appears faced with the partial breakdown of its traditional migration- and real estate-driven growth machine. With such sources of domestically-driven growth looking less reliable, export-based development holds out one possible new source of sustainable job-creation and broadly shared prosperity.

International exports, after all, present an important opportunity for the Mountain metros and promise tremendous benefits to workers, companies, regions, and the nation as a whole. Export markets in Brazil, India, and China are growing rapidly at a time of slower projected domestic growth. Export-related jobs pay relatively well. And for metropolitan area industry clusters and firms, international engagement and competition brings its own benefits of heightened innovation and productivity growth.

In this respect, it is a good thing that metropolitan areas in the Mountain West already have depth in a variety of export industries, and in some cases enjoy high rates of industrial innovation—both a result of firms' engagement in international competition and a driver of further global competitiveness itself. All in all, numerous metropolitan areas in the Mountain West could be well-positioned to benefit from the current national focus on doubling exports and from targeted metropolitan efforts to expand the foreign markets for their goods and services.

To take advantage of their global connections and the new federal focus on exports, however, the region's metropolitan areas—particularly those that have been heavily oriented to population growth and real estate development—will have to rethink what they do and how they do it. They will have to look outward. They will have to be more innovative, both in determining what new products and services they develop and in retooling their existing activities to capture a larger share of global demand. And they will need to be deliberate and strategic in their efforts.

In sum, while bolstering exports will not replace the thousands of jobs lost to the Great Recession—many of them real estate and locally-serving jobs that disappeared once migration and consumption slowed down—the export of goods and services is likely to be an important source of quality and sustainable job growth for the region in the future. Western leaders should at a minimum investigate that possibility and consider the data and information presented in the following pages.

Why Export?

For more than 200 years, economists have linked trade with economic growth.[4] Trade drives growth for several reasons. First, exporting forces companies to stay on the cutting edge of competition and exposes firms to international best practices. Even if companies initially struggle in foreign markets, there is evidence that this intense competition forces them to improve over time.[5]

Second, trade allows companies to spread the costs of developing a particular product over a much larger number of consumers. Many products with large upfront costs (like Hollywood movies, pharmaceuticals, solar technologies, and computer processing microchips) simply could never be profitable if not for vast international markets, which allow producers to realize scale and cut down on the unit costs of producing a product.[6] In the Mountain West metros, concentrations of research and development, design, marketing, and management services also support—and depend on—global product sales.

Third, export trade generates high-quality job creation that ripples through regional economies. Export-related jobs exist not only in companies that sell abroad, but also in firms that are part of the supply chain of the exporting companies. Further, export industry workers support local jobs themselves as they spend their wages on local services like retail, schooling, and medical care.

Just as important as the firm-level and regional benefits of export trade are the benefits to individual workers. Export-related jobs offer good pay to workers at all levels of education, including those without college degrees who are generally overrepresented in exporting industries. Evidence suggests that even within industries wages are higher for workers in exporting firms. In the manufacturing industry, for example, firms that produce for export markets pay higher wages even after adjusting for the effects of firm size and capital intensity.[7] Other research finds that in the 1990s exporting companies paid wages that were roughly 11 percent higher, adjusting for industry and state location. This held true for both production and non-production workers and implies that even those with low educational attainment stand to profit from export wage premiums.[8] Therefore increasing exports has the added potential benefit of decreasing wage inequality between skill groups.

New Brookings research further quantifies the export wage premium: For every $1 billion increase in the exports of the industry in which they work, workers in the exporting industries located in the top 100 metro areas earn roughly 1 to 2 percent higher wages. Even workers without high school diplomas who work in export industries earn this premium. This result does not depend on worker characteristics, occupation, or characteristics of the metropolitan area. The explanation for the premium seems to be that working in a metro exporting industry makes workers themselves more productive. Other studies have suggested that exporting firms are more innovative, which may explain why they can afford higher wages.[9]

Now is a particularly critical time for Intermountain West metro areas to be smart about their export strategies, moreover, given major global and national developments in the wake of the Great Recession. There is new national attention to increasing the volume of U.S. exports. In addition to President Obama's State of the Union message, Lawrence Summers—the head of the National Economic Council—has on numerous occasions stressed that federal policy as well as local discretion should focus much more intensely on rebalancing the American economy so that more communities produce goods and services for sale abroad, if only because "ninety-five percent of the world's customers are outside our borders."[10] The implication: Mountain West metros must sell to these customers to make up for slackened demand in the United States and of course to take advantage of fast-growing markets. With rapid growth and urbanization in emerging economies around the world, developing countries will drive the growth of global consumption in the future. The United Nations forecasts, for example, that 70 percent of the world's population will be urbanized by 2050.[11] This urbanized population

will increasingly have more purchasing power and demand more specialized goods and services.

There are, therefore, many reasons for the Mountain metros to pursue an export-growth strategy to increase jobs, incomes, and prosperity. In view of that, it is worth assessing the standing of the region's recent export capacity and activities as a prerequisite for future strategizing.

Findings

An analysis of newly developed information on export activity in U.S. metropolitan areas and the 10 large metros of the Intermountain West for the years 2003 to 2008 finds that (see Appendix A for methodology):

1 **Exports are an important source of good jobs in the Mountain West and export growth has the potential to generate significant and much-needed job creation in the region.** With employment recovery still elusive in the region exports offer a prime route to jumpstarting the economy and creating jobs at home by tapping into demand abroad.[12] In 2008 fully 454,000 workers in the 10 largest Intermountain region metros were employed in export-related jobs, with thousands of other local jobs dependent on the spending on local services that those earnings generated.

Table 1. Exports support nearly half a million jobs in the Intermountain West

Rank annual real growth	Metro	Export jobs (2008)	Export jobs as share of total	Annual growth in real value of exports (2003-2008)
5	Provo-Orem, UT	17,477	8.9%	17.5%
9	Las Vegas-Paradise, NV	29,778	3.2%	16.2%
15	Ogden-Clearfield, UT	19,561	9.2%	14.4%
16	Salt Lake City, UT	57,022	8.7%	14.3%
33	Denver-Aurora-Broomfield, CO	74,397	5.9%	10.9%
72	Boise City-Nampa, ID	30,549	10.8%	6.6%
73	Tucson, AZ	29,820	7.6%	6.4%
82	Colorado Springs, CO	17,232	5.9%	5.6%
87	Albuquerque, NM	26,498	6.6%	5.3%
94	Phoenix-Mesa-Scottsdale, AZ	152,435	8.0%	3.5%
	Intermountain West metros	454,767	7.0%	8.0%
	Top 100 metros	7,688,744	8.1%	8.7%
	United States	11,854,350	8.3%	9.2%

In terms of the relative importance of exports to regional economies, Boise and the three Utah metropolitan areas registered above-average shares of export-related employment in 2008, while the others retained middling (Phoenix, Tucson) or slightly below-average employment shares. Meanwhile exports employed a rather meager 3.2 percent of metro Las Vegas' workforce—and approximately one in ten of those export workers were employed in the relatively low-wage tourism industry.

Looking forward, big Mountain metros stand to gain thousands of jobs over the next five years should the region double its exports as President Obama has urged. But even

matching the pre-recession growth rates reported here for the years 2003 to 2008 would go a long way towards replacing some of the jobs lost in the region to the recession.

The real value of exports grew by 10.9 percent or more annually in five large Mountain metros from 2003 to 2008, outstripping the national export growth rate of 8 percent. Of these, the three Utah metros—Provo, Ogden, and Salt Lake—displayed their export prowess by increasing sales more than 14 percent annually, thanks in large part to strengths in primary metal manufacturing. Meanwhile, transportation equipment manufacturing and business services led Denver's 10.9 percent growth and Las Vegas can thank travel and tourism, passenger fares, and financial services for much of its 16.2 percent surge in exports. In contrast, Phoenix's exports grew by only 3.5 percent a year over the five year period, largely due to huge declines in computer and electronic product exports that nearly overwhelmed increases in transportation equipment manufacturing exports and a diverse range of service exports.

Finally, it bears noting that export jobs are good jobs. On average, a Mountain metro worker employed in his or her metro's top export industry earns almost 1.5 times more than the average American worker, who takes home $45,563 a year. New Brookings research has found that across the top 100 metro areas, a $1 billion dollar increase in an industry's exports translates into a roughly one to two percentage point wage premium above the metro average for that industry's workers. Even workers without high school diplomas enjoy this export premium.

2 **The major Mountain region metropolitan areas are not exceptionally large exporters in dollar terms but a number of them export a significant portion of their overall output.** In terms of volume, only metropolitan Phoenix—with its $18 billion in total exports in 2008—ranked among the 15 largest metro exporters nationally. Denver's $10 billion in sales ranked 28th. Las Vegas—the third largest exporter in the region—ranked 39th nationally with $7 billion in total sales.

Table 2. Approximately one-tenth of the Intermountain West's metro areas' GMP is generated by exports

Rank export intensity	Metro	Total exports (bln)	Change in exports as a percentage of GMP (2003-2008)	Exports as a percentage of GMP (export intensity)
20	Albuquerque, NM	$4.50	0.3%	13.4%
22	Boise City-Nampa, ID	$2.81	0.0%	12.9%
25	Ogden-Clearfield, UT	$2.24	4.5%	12.7%
26	Provo-Orem, UT	$1.82	4.7%	12.7%
41	Tucson, AZ	$3.98	0.5%	11.3%
48	Salt Lake City, UT	$6.12	3.3%	10.5%
50	Phoenix-Mesa-Scottsdale, AZ	$18.63	-1.0%	10.4%
84	Las Vegas-Paradise, NV	$7.27	2.3%	7.7%
85	Colorado Springs, CO	$1.94	0.7%	7.6%
87	Denver-Aurora-Broomfield, CO	$10.10	2.4%	7.3%
	Intermountain West metros	$59.41	1.2%	9.6%
	Top 100 metros	$1,036.88	2.5%	10.3%
	United States	$1,609.41	3.1%	11.4%

Las Vegas: Exporting Tourism

Global trade in services is an often-overlooked dimension of exports. And yet, in 2008, services exports accounted for about one-fifth of global trade. What is more, the U.S. is by far the world's leading service exporter, capturing 13.6 percent of the $3.8 trillion trade.

Metropolitan Las Vegas, for its part, is an entertainment and leisure activities export powerhouse—with good prospects of becoming a leading producer services trade center too. The gaming industry attracts foreign tourists. Major hotel and gaming firms such as MGM Resorts International, Wynn Resorts, and Harrah's Entertainment export their hospitality, gaming, and entertainment services globally. And for that matter, Las Vegas continues as a leading meeting center. Thanks to all of this engagement in world travel, tourism, convening, and gaming activities, no metro in the nation derived a larger share of its regional output from services exports than Las Vegas, where services accounted for 6.2 percent of the metro's gross metropolitan output. And only Albuquerque saw its service export intensity grow faster in the years before the world consumption slow-down.

To be sure, the world consumption slow-down raises questions about the future of Las Vegas' particular specialization in services. And yet, prospects for growth remain. Las Vegas is moving rapidly in the direction of becoming a permanent global trade show center. For example, the Consumer Electronics Industry recently announced that it has obtained the rights to the title World Trade Center, Las Vegas, which will now make its annual trade show a fixed presence. Meanwhile, the completion of a new international terminal at McCarran Airport in 2012 will facilitate better world air links. Previous Brookings research has shown that direct air connections are related to the location of global producer services firms headquarters and branch offices. As non-stop destinations expand to Europe and Asia, Las Vegas could emerge as an important logistics center in goods trade.

Sources: Robert Lang; World Bank Group, World Development Indicators: Commercial services exports (2008) (Accessible at: http://data.worldbank.org/data-catalog);

Adie Tomer and others, "An Analysis of Air Traffic Patterns in the Intermountain West" (Washington: Brookings Institution, 2009).

Along these lines, seven of the 10 Intermountain West large metros export a greater share of their overall output than is average in the nation's largest 100 metros. In 2008, Albuquerque, Boise, and Ogden all ranked among the 25 most export-intensive metropolitan areas in the nation, with Provo just behind as number 26. In 2008, Albuquerque was selling fully 13.4 percent of its output abroad, closely followed by Boise, where exports accounted for 12.9 percent of GMP, and Ogden and Provo, where exports accounted for 12.7 percent. Before the downturn, then, these economies—relatively small by national standards—proved themselves to be downright precocious exporters. Las Vegas, Colorado Springs, and Denver, by contrast, constituted three of the nation's least export intensive metro economies and with rankings in the lowest quintile in terms of export intensity.

Most large Mountain metros, moreover, are not only inordinately reliant on exports but have been expanding their sales to foreign consumers relative to domestic ones at the same time. Every metro economy in the region grew more export intensive from 2003 to 2008 with the exception of Phoenix, where export growth lagged behind output growth. This increase in export intensity occurred against a backdrop of rapid economic growth that was busy transforming virtually every corner of the metropolitan Intermountain West—to such an extent that these 10 metros' economies together grew by one-fifth over the five-year period. That exports grew at an even faster clip attests to both the growing significance of global markets and to the competitiveness of many of the region's core competencies—a competitiveness that must be continuously asserted and reassessed as global markets change.

Such competitiveness, moreover, may well have helped buffer the worst effects of the recession in some metros. In this respect, it bears noting that the Mountain region metropolitan areas that increased their exports as a share of GMP the most running up to the recession—Provo, Ogden, Salt Lake, and Denver—have suffered milder spikes in unemployment and maintained comparatively robust output when compared to their less export-oriented peers.[13]

3 **Services constitute a greater share of export activity in the Intermountain West metros than they do in the average large metro nationally.** Exporting services to foreign markets is good business, because such often well-paying trade is not only growing around the globe but represents a center of U.S. advantage. Fortunately, service exports—which range from large categories such as finance, tourism, and royalties to architecture or engineering work and business, professional, and technical services—represent a strength of the Mountain region as well. Services sales comprise a much larger share of Mountain metro exports, at 45 percent, than they do for the country's largest 100 metros as a group, where they account for only 37.5 percent of exports. The share of services exports from Las Vegas, Denver, Colorado Springs, Salt Lake, and Phoenix all exceeded that national 100-metro average. In two Mountain metros—Las Vegas with its travel and tourism strength and Denver with its specialization in business, professional, and technical activity—services account for the majority of all exports. In fact, Las Vegas earned more of its GMP in 2008 from service exports than any other major metro in the country. (See table on page 7.)

Equally importantly, service export intensity was growing—measured as a percentage point increase in services exports as a share of GMP—in the region before the recession. In fact, Albuquerque, Las Vegas, and Denver ranked first, second, and 12th among large metros nationally on this dynamic measure of service export competitiveness. Las Vegas' strong pre-recession performance on this front implies an important degree of international engagement—albeit in relatively low-paying, consumption-oriented industries.

Meanwhile, Albuquerque and Denver's growing service export prowess earlier in the decade bodes well for the creation of higher-value, better-paying, and more sustainable economies in those regions. Albuquerque's growth was driven by business, professional, and technical services as well as research and development activity--two high-value, high-wage, and crucially labor-intensive niches with solid job growth potential. Likewise, Denver's heavy focus on business, professional, and technical services reflects the continuing maturating of a powerful high-end economy at a large scale.

Table 3. The region is somewhat more oriented toward services exports than the rest of the country

Rank services export intensity	Metro	Percentage point change in services export intensity (2003-2008)	Services exports as a share of GMP (services export intensity)
1	Las Vegas-Paradise, NV	1.6%	6.2%
4	Albuquerque, NM	1.7%	4.7%
8	Salt Lake City, UT	0.9%	4.5%
14	Denver-Aurora-Broomfield, CO	1.1%	4.2%
18	Phoenix-Mesa-Scottsdale, AZ	1.1%	4.1%
43	Colorado Springs, CO	1.0%	3.4%
44	Provo-Orem, UT	0.6%	3.4%
51	Boise City-Nampa, ID	1.0%	3.3%
76	Ogden-Clearfield, UT	1.0%	3.0%
79	Tucson, AZ	0.7%	2.9%
	IMW Total	1.2%	4.3%
	Top 100 Metro Total	1.0%	3.8%
	United States	1.1%	3.7%

4 **The Mountain region's large metros are quite varied in their export specializations. Computer and electronic product manufacturing stands out as one of the region's clear specializations.** Such manufacturing represents the top export category in four metros and the second-most-important one in two more. Albuquerque and Boise each derive more than 40 percent of their export activity from electronics manufacturing, for example. In Colorado Springs before the recession the figure was 28 percent. One note of concern, however: Export earnings in this industry actually fell in seven metros over the five-year period studied, pointing to the need to maintain constant vigilance about changes in global markets. As to other specialties, transportation equipment (frequently related to defense); service production, including tourism; and metal manufacturing play important roles across the region's export map. (See table on page 8.)

The export bases of certain Intermountain West metro economies are far more diversified than others. No single industry contributes much more than 12 percent to Denver or Salt Lake City's total exports. Both metros chalked up relatively strong and diversified growth over the five-year period studied so that no single industry was responsible for more than one-fifth of either metro's above-average growth rate. Each complemented significant business and professional services sectors with travel and tourism segments and manufacturing. By contrast, tourism comprised nearly 45 percent of Las Vegas exports in 2008. And Tucson, for its part, not only depended on transportation equipment manufacturing for 45 percent of its exports but also relied on the sector for over 90 percent of its export earnings growth. Such heavy reliance on a single industry can be perilous.

5 **Strengths in manufacturing and innovation tend to drive metropolitan export power.** Manufacturing industries nationally are the most export oriented, and so metro areas that specialize in manufacturing tend to export the largest shares of their GMP. Export-oriented metropolitan areas also tend to be significantly more innovative, defined by their rate of patent production—which existing evidence suggests may be explained by more innovative firms being more likely to export and exporting activity itself reinforcing innovation through competition.

MIOX Corporation: Seeking New Applications and Markets Abroad

Albuquerque-based MIOX Corporation began life in 1994 as a largely domestic play. Employing a cost-effective technology that creates potable water from three simple ingredients—water, salt, and electricity—the start-up manufactured on-site water disinfectant generators for the military with the support of a SBIR/STTR grant from the Navy.

Today MIOX has grown to be New Mexico's largest venture-backed firm by value, with its technology treating more than 6.5 billion gallons of water per day in over 30 countries, and its growth is increasingly a story of exports. Until 2005 exports accounted for less than 20 percent of company sales. Since then, however, a new management team has more than doubled its workforce to 65 people and substantially expanded its foreign business, in part by securing a more strategic international distributor and targeting new markets around the world.

This year the firm both sold water purification systems to the poor Mexican state of Chiapas and saw its water treatment systems installed in the swimming pools of Macau's City of Dreams, an ultra-luxurious resort. Currently the company is busy setting up offices in Mexico and Asia to expand its foreign trade. The upshot: In 2010 CEO Carlos Perea expects exports to account for nearly 50 percent of the company's sales on the back of 100 percent year-on-year revenue growth.

Sources: Michael Hartranft. "Success flows from innovation." Albuquerque Journal Business Outlook, July 5, 2010.

Conversation with Carlos Perea, July 7, 2010. MIOX Corporation website.

Table 4. Mountain region metros together export a variety of goods and services but still have discernible specializations in a few key industries

Metro	Largest exporting industries by value	Industry share of metro exports
Albuquerque, NM	Computer and Electronic Product Manufacturing	47.2%
	Business, Professional, and Technical Services	10.9%
	Royalties	8.9%
Boise City-Nampa, ID	Computer and Electronic Product Manufacturing	41.9%
	Farming, Agriculture	9.1%
	Royalties	8.4%
Colorado Springs, CO	Computer and Electronic Product Manufacturing	28.0%
	Business, Professional, and Technical Services	12.7%
	Travel and Tourism	10.6%
Denver-Aurora-Broomfield, CO	Business, Professional, and Technical Services	12.1%
	Travel and Tourism	11.5%
	Transportation Equipment Manufacturing	8.1%
Las Vegas-Paradise, NV	Travel and Tourism	45.1%
	Miscellaneous Manufacturing	9.3%
	Business, Professional, and Technical Services	8.7%
Ogden-Clearfield, UT	Transportation Equipment Manufacturing	26.6%
	Primary Metal Manufacturing	16.4%
	Petroleum and Coal Products Manufacturing	8.8%
Phoenix-Mesa-Scottsdale, AZ	Computer and Electronic Product Manufacturing	24.5%
	Transportation Equipment Manufacturing	17.2%
	Travel and Tourism	8.9%
Provo-Orem, UT	Primary Metal Manufacturing	26.7%
	Computer and Electronic Product Manufacturing	8.8%
	Business, Professional, and Technical Services	7.7%
Salt Lake City, UT	Primary Metal Manufacturing	10.3%
	Travel and Tourism	9.1%
	Business, Professional, and Technical Services	8.5%
Tucson, AZ	Transportation Equipment Manufacturing	45.0%
	Computer and Electronic Product Manufacturing	10.4%
	Travel and Tourism	7.1%

Table 5. Metros' patenting, manufacturing, and export intensity vary considerably

Rank patents per 1,000 workers	Metro	Export intensity	Share of workforce in manufacturing	Patents per 1,000 workers
2	Boise City-Nampa, ID	12.9%	10.1%	32.34
18	Tucson, AZ	11.3%	7.0%	5.72
22	Provo-Orem, UT	12.7%	9.8%	4.65
24	Colorado Springs, CO	7.6%	5.4%	4.16
30	Phoenix-Mesa-Glendale, AZ	10.4%	6.9%	3.49
35	Ogden-Clearfield, UT	12.7%	10.6%	2.90
42	Salt Lake City, UT	10.5%	8.8%	2.62
49	Denver-Aurora-Broomfield, CO	7.3%	5.5%	2.28
53	Albuquerque, NM	13.4%	5.5%	2.03
74	Las Vegas-Paradise, NV	7.7%	2.7%	1.10
	Intermountain West metros average	10.7%	7.2%	6.13
	Top 100 metros average	10.9%	8.9%	3.59

To see how this plays out in the Mountain West, note that a manufacturing industry contributed either the largest or the second largest amount to export earnings growth in every major Mountain metro except Colorado Springs. Manufacturing industries employ more than 10 percent of the workforce in two of the region's most export intensive metros, Boise and Ogden, and a close 9.8 percent in the next most intensive metro exporter, Provo. Albuquerque serves as the exception to the rule, though, where manufacturing employs only 5.5 percent of the workforce but fully 13.4 percent of the metro's output gets exported.

Similar dynamics surround patenting. On average the region's five most innovative metros exported 11.0 percent of their GMP. And excluding Colorado Springs, a smaller and not especially export-oriented economy, the four other high patenting metros—Boise, Tucson, Provo, and Phoenix—export on average 11.8 percent of their total output. The average export intensity of the five less innovative metros, meanwhile, is 10.3 percent. And Las Vegas, specialized as it is in consumption, generated only 1.1 patents per thousand workers over the same time period and exported a meager 7.7 percent of all goods and services produced there. Denver exported even less of its output—7.3 percent—despite performing marginally better in terms of innovation. And again Albuquerque (the region's most export-oriented metro) and Colorado Springs (one of region's the least) buck the trend by generating relatively fewer and more patents, respectively. So while patenting rates are driven to some degree by a metro's industry mix, a relationship also exists between innovative activity and export intensity.

6 **Canada and Mexico remain the region's leading export markets but major growth opportunities reside in large emerging markets like Brazil, India, and China (the "BICs").** With years of potentially tepid domestic sales ahead, companies need to redouble their search beyond the U.S. border for new sources of demand. As it happens, though, exports from the large Mountain metros are no more likely to be destined for Mexico than those from the average large metropolitan area, despite the region's close proximity. Given that Canada and Mexico rank as the number one and two trading partners for almost every metro, Intermountain West exporters would be remiss to

Table 6. Emerging markets present opportunities for expansion

Rank BICs share of exports	Metro	BICs share of exports	Growth in exports to BICs	Industry contributing most to metro exports to BICs	Industry Share
3	Boise City-Nampa, ID	10.3%	99.6%	Computer and Electronic Product Manufacturing	38.2%
11	Provo-Orem, UT	9.6%	152.5%	Primary Metal Manufacturing	33.4%
13	Albuquerque, NM	9.3%	95.8%	Computer and Electronic Product Manufacturing	49.2%
17	Phoenix-Mesa-Scottsdale, AZ	9.2%	79.8%	Transportation Equipment Manufacturing	26.5%
20	Tucson, AZ	9.2%	103.4%	Transportation Equipment Manufacturing	60.3%
29	Colorado Springs, CO	8.9%	111.2%	Computer and Electronic Product Manufacturing	24.1%
90	Salt Lake City, UT	8.1%	165.6%	Primary Metal Manufacturing	14.9%
91	Denver-Aurora-Broomfield, CO	8.0%	157.5%	Passenger Fares	12.3%
95	Las Vegas-Paradise, NV	7.9%	211.0%	Travel and Tourism	41.2%
96	Ogden-Clearfield, UT	7.7%	165.2%	Transportation Equipment Manufacturing	33.4%
	Intermountain West metros	8.7%	116.6%		
	Top 100 metros	8.6%	122.7%		

overlook opportunities south (as well as north) of the border to build upon already strong footholds in these markets.

And other opportunities exist farther afield—in such large developing countries as the so-called "BIC" nations of Brazil, India, and China that are posting rapid growth rates and seeing significant wealth expansion. These nations represent an important source of future sales growth for the metros of the Intermountain West as companies and metropolitan areas that enter those markets will profit at a moment when domestic markets offer diminished returns. However, the region's metros appear only variably well positioned to seize this opportunity.

Five Mountain metros capitalized on BIC emerging market growth from 2003 to 2008, and five stood on the sidelines. On the down side, growth of export sales from Colorado Springs, Tucson, Boise, Albuquerque, and Phoenix to the BIC countries ranked in the bottom two quintiles among major metros nationally. These metros were failing to fully exploit opportunities in the new growth markets. By contrast, Las Vegas, Ogden, Salt Lake, Provo, and Denver all chalked up export growth rates to Brazil, India, and China that ranked in the top quartile nationally. The region's exports to emerging markets are diverse, encompassing travel and tourism (Las Vegas), passenger fares (Denver), computer and electronic products (Boise, Albuquerque, and Colorado Springs), and transportation equipment manufacturing (Ogden, Tucson, and Phoenix). These metros were moving to tap a critical source of potential future growth on the eve of the world recession.

Policy Implications

In the aftermath of the recession, the Mountain region as well as the nation must become more export oriented and less dependent on domestic consumption and all levels of government—and the private sector—need to work together to ensure that happens.

More specifically, the nation needs to work out a new brand of metro-focused, export-oriented federalism in which: The federal government leads in trade and currency policies, tasks unique to a national government; federal and state governments empower metros in key areas, such as export promotion, innovation, freight infrastructure, and data collection; and metropolitan areas themselves innovate to increase their export capabilities and overhaul outdated and wasteful economic development policies in favor of actions that leverage export sectors and local advantages to grow quality jobs.

The federal government has a significant role to play in bolstering U.S. exports by setting trade and currency policies. No other level of government has the clout and position to carry out such policies, so the federal government must lead. New vigor in negotiating fair exchange rates for the dollar and more liberal trade deals is a must.

At the same time, Washington and the states should work together to sharpen and coordinate their own export strategies (through the use of better data) in large part to empower metropolitan areas to develop and execute strong export strategies. Federal and state entities should align their own offerings behind strong, bottom-up strategies that move to align export promotion, bolster regional export clusters and innovation networks, and improve freight and data-collection policies. (More detailed recommendations for state and federal officials can be found in the full-length version of the "Export Nation" report of which this brief is a companion, available at http://www.brookings.edu/metro/exports.)

Metropolitan areas, though, should not wait for the federal and state governments to act. They should take steps on their own to understand their export strengths and bolster their competitiveness. While "Export Nation" lays out an array of ideas for individual metros; this brief will focus on the general need for every metropolitan area to develop its own concerted push to expand exports and develop competitive advantages in key growth niches.

In effect, each Mountain region metropolitan area (like each metro in the U.S.) should create a focused metropolitan export initiative. The initiative could be led by a local economic development entity, the Chamber of Commerce, or another group but in any case would draw on the resources and expertise of the region's public and private sectors. Such initiatives should be the clearinghouse for data collection and analysis on exports and export clusters, using surveys, publicly available data, and research like that in "Export Nation" to achieve a clear understanding of the metro area's strengths and its current and potential export markets.

Leaders in the Mountain region should think broadly about their export sectors, making sure to reach out to universities and federal labs which are key sources of intelligence, innovation, and international exchange. But at any rate, leaders of strong export initiatives should tirelessly advocate for metropolitan industry clusters and partner with or otherwise support private sector and non-profit sector organizations that provide cluster support services, such as industry-specific training, market intelligence, and loans.[14] Export initiatives could also encourage existing clusters to create—if they have not already—explicit export strategies as part of their development plan and to learn from the export-boosting strategies deployed by groups like the Bay Area Council Economic Institute and the Trade Development Alliance of Greater Seattle.

A metropolitan export initiative would be a new approach to economic development—one better suited to 21st century imperatives than the desperate corporate recruitment bids and California cherry-picking that Western metropolitan areas too often engage in. Mayors and metro leaders should understand that—instead of competing with other places in the United States or even jurisdictions with their metropolitan areas—they should focus more of their efforts on selling to city-regions abroad. After all, a home-grown export-related job is as good as a job from a relocated company and probably more sustainable.

Conclusion

The metropolitan areas of the Intermountain West region are already at work building the more export-oriented economy that the region's future requires.

They produce goods and offer services that are in demand around the world. Some of them are aggressively innovating and already engaged in selling to rapidly emerging markets like Mexico, or Brazil, India, and China. For all of them a national effort to double exports in the next five years holds great promise for recouping some of the lost demand implicit in the crack-up of the real estate-driven consumption economy of recent decades.

But this opportunity may be squandered if the region's metros do not focus intensely on entering new foreign markets and on innovation. Exporting is an intentional act and will require planning, strategy, and execution by firms and others. At the same time, exporting requires firms and regions to elevate their game; invent new and better goods, processes, and services; and then expand the range of their products and reach.

Given that, Mountain West metros and their myriad firms, trade associations, development organizations, governments, and workers should seize the moment. Expanding the region's exports holds out the promise of at once lifting the region's sights, widening its horizons, and creating thousands of new jobs in metros that desperately need them. If the Mountain metros can create, market, and then relentlessly recreate the products and services the world demands, more of their people can enjoy the benefits of a globalized economy, rather than suffer from its rigors.

APPENDIX A

Methodology

Before this report, if one wanted to measure exports from metropolitan areas, the only public resource was the International Trade Administration's metropolitan exports series, which is based on the Census Bureau's origin of movement exports data. There are two problems with this dataset. First, it excludes services which account for roughly one third of US exports. Second, as the ITA points out on its website, its data do not necessarily reflect where goods are produced; rather, the "origin of movement" is likely to often reflect where the goods are shipped from before reaching their final port of exit.

To generate estimates of metropolitan exports, the general technique used for this paper was to allocate U.S. exports in individual industries to metropolitan areas based on the metropolitan areas' share of national value added in each of those industries. This approach assumes that if Albuquerque produces 5 percent of the national value added in computer and electronic product manufacturing, then this metro area also exports 5 percent of U.S. computer and electronics manufactures. In the case of trading partners, this method apportions U.S. exports in a particular industry sold to a particular country to each of the 100 largest metro areas proportional to the metro's share of national output in that same industry. So, in a hypothetical Albuquerque example, if the U.S. exported $100 million to Turkey in computer and electronics manufacturing in 2008, and Albuquerque accounted for 5 percent of U.S. value added in that industry, Albuquerque would be credited with exporting $5 million (i.e. 5 percent) to Turkey in computer and electronics manufacturing. Thus, a metro's rank for share of exports in a particular industry to a particular U.S. trading partner is the same as that metro's overall ranking in exports in that industry.

As discussed in greater detail in the full-length Brookings report "Export Nation," there are three pieces of evidence that the Brookings exports data estimate more accurately the true value of exports produced in metropolitan areas than the ITA data. First, metropolitan areas in states that border Mexico or Canada are accredited with significantly more exports per dollar of GMP using the ITA data compared to the Brookings data, and the share of employment in manufacturing is unrelated to export orientation using the ITA data but significantly related to export orientation using the Brookings data. Second, the ITA data contradicts information from the Department of Transportation's Commodity Flows Survey on shipments of goods out of metros, with which the Brookings data are consistent. And third, for 15 out of the 100 metros studied here the ITA data tabulates goods exports that exceed in value all goods produced in the metropolitan areas; this never happens with the Brookings data.

The sources of data used by Brookings to generate the exports series were the USITC, the BEA, Moody's Economy,com, the IIE, and the IRS. The export data for each of the 100 largest metropolitan areas is available at http://www.brookings.edu/metro/exports.

APPENDIX B

Table B1. Export Volume Indicators

Metro	GMP (bil)	Total exports (bln)	Rank (100 metros)	Services share	Goods share	Growth in real value of exports (2003-2008)	Rank (100 metros)	Industry with highest contribution to export growth	Industry share of export growth
Albuquerque, NM	$33.6	$4.5	58	35.5%	64.5%	26.7%	87	Transportation Equipment Manufacturing	26.5%
Boise City-Nampa, ID	$21.7	$2.8	77	25.9%	74.1%	33.0%	72	Agriculture	16.5%
Colorado Springs, CO	$25.6	$1.9	94	45.3%	54.7%	27.9%	82	Business, Professional, and Technical Services	21.5%
Denver-Aurora-Broomfield, CO	$137.5	$10.1	28	56.8%	43.2%	54.6%	33	Transportation Equipment Manufacturing	15.5%
Las Vegas-Paradise, NV	$94.0	$7.3	39	79.6%	20.4%	81.0%	9	Travel and Tourism	36.8%
Ogden-Clearfield, UT	$17.6	$2.2	90	23.2%	76.8%	72.0%	15	Primary Metal Manufacturing	28.5%
Phoenix-Mesa-Scottsdale, AZ	$178.6	$18.6	15	39.4%	60.6%	17.3%	94	Transportation Equipment Manufacturing	59.1%
Provo-Orem, UT	$14.4	$1.8	96	27.1%	72.9%	87.6%	5	Primary Metal Manufacturing	45.3%
Salt Lake City, UT	$58.3	$6.1	48	42.5%	57.5%	71.4%	16	Primary Metal Manufacturing	19.8%
Tucson, AZ	$35.3	$4.0	62	25.6%	74.4%	31.8%	73	Transportation Equipment Manufacturing	90.9%

Table B2. Export Intensity Indicators

Metro	Export intensity	Rank (100 metros)	Change in export intensity (2003-2008)	Rank (100 metros)	Services exports intensity	Rank (100 metros)	Change in services exports intensity (2003-2008)	Rank (100 metros)
Albuquerque, NM	13.4%	20	0.3%	96	4.7%	4	1.7%	1
Boise City-Nampa, ID	12.9%	22	0.0%	98	3.3%	51	1.0%	35
Colorado Springs, CO	7.6%	85	0.7%	94	3.4%	43	1.0%	32
Denver-Aurora-Broomfield, CO	7.3%	87	2.4%	59	4.2%	14	1.1%	12
Las Vegas-Paradise, NV	7.7%	84	2.3%	61	6.2%	1	1.6%	2
Ogden-Clearfield, UT	12.7%	25	4.5%	12	3.0%	76	1.0%	31
Phoenix-Mesa-Scottsdale, AZ	10.4%	50	-1.0%	99	4.1%	18	1.1%	15
Provo-Orem, UT	12.7%	26	4.7%	11	3.4%	44	0.6%	92
Salt Lake City, UT	10.5%	48	3.3%	29	4.5%	8	0.9%	59
Tucson, AZ	11.3%	41	0.5%	95	2.9%	79	0.7%	86

Table B3. Export Employment Indicators

Metro	Total export-related jobs	Export-related jobs as a share of employment	Rank (100 metros)	Industry with the most export related jobs	Industry share of total export-related jobs	Export job growth (2003-2008)	Rank (100 metros)	Average wages in leading export industry
Albuquerque, NM	26,498	6.6%	73	Computer and Electronic Product Manufacturing	31.9%	50.6%	53	$69,023
Boise City-Nampa, ID	30,549	10.8%	15	Computer and Electronic Product Manufacturing	53.9%	35.7%	95	$67,502
Colorado Springs, CO	17,232	5.9%	82	Computer and Electronic Product Manufacturing	46.1%	20.4%	100	$85,372
Denver-Aurora-Broomfield, CO	74,397	5.9%	83	Business, Professional, and Technical Services	12.7%	67.0%	19	$77,981
Las Vegas-Paradise, NV	29,778	3.2%	99	Business, Professional, and Technical Services	16.3%	98.3%	1	$38,914
Ogden-Clearfield, UT	19,561	9.2%	34	Business, Professional, and Technical Services	14.6%	75.8%	12	$63,165
Phoenix-Mesa-Scottsdale, AZ	152,435	8.0%	54	Computer and Electronic Product Manufacturing	33.2%	64.0%	20	$85,395
Provo-Orem, UT	17,477	8.9%	39	Computer and Electronic Product Manufacturing	21.0%	61.4%	26	$60,289
Salt Lake City, UT	57,022	8.7%	42	Computer and Electronic Product Manufacturing	19.8%	81.2%	8	$68,703
Tucson, AZ	29,820	7.6%	61	Transportation Equipment Manufacturing	41.1%	45.1%	74	$63,165

Endnotes

1 This brief relies on new data and analysis performed for and explained in more detail in by Emilia Istrate and Jonathan Rothwell, "Export Nation: How U.S. Metros will Lead National Export Growth and Boost Competitiveness." (Washington: Brookings Institution, 2010). The survey is available at http://www.brookings.edu/metro/exports. While that paper describes the export strengths of the top 100 U.S. metropolitan areas as a whole, this report focuses on the 10 largest metropolitan areas in the Intermountain West region: Albuquerque, Boise, Colorado Springs, Denver, Las Vegas, Ogden, Phoenix, Provo, Salt Lake City, and Tucson. A detailed profile of the export activity of each of these metropolitan areas can be found at http://www.brookings.edu/metro/exports. Kenan Fikri and Dan Weaver provided crucial and gracious research assistance.

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11 UN Department of Economic and Social Affairs, Global Urbanization Rate from 1950 to 2050.

12 Mark Muro, Jonathan Rothwell, and Kenan Fikri, "Mountain Monitor: Tracking Economic Recession and Recovery in the Intermountain West's Metropolitan Areas," June 2010, available at **http://www.brookings.edu/~/media/Files/Programs/Metro/metro_monitor/2010_06_metro_monitor/2010_06_mountain_monitor.pdf**

13 Mark Muro and others, "Mountain Monitor."

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