Export Nation 2013:
U.S. Growth Post-Recession

Brad McDearman, Ryan Donahue, and Nick Marchio

"Exports have played an outsized role in the nation's post-recession economic recovery."

Findings

An analysis of key export trends between 2003 and 2012 for the 100 largest metro areas finds that:

- **Exports drove post-recession growth in the 100 largest metro areas.** Exports accounted for 54 percent of output growth in the top 100 metro areas from 2009 to 2012, compared to 37 percent nationally.
- **Few metro areas are on track to achieve the NEI goal of doubling exports in five years.** Twelve of the top 100 metros have maintained the 15 percent annual growth rate required to double exports.
- **The 10 largest metro areas, by export volume, produced 28 percent of U.S. exports in 2012.** The rankings of the largest exporting metro areas remained basically unchanged since 2010.
- **Two-thirds of the largest metro areas underperform the United States as a whole on export intensity, suggesting that there is significant potential for the expansion of exports at the metro level.**
- **The most export-intensive metro areas are highly specialized in certain industries.** For the 11 metros in which exports made up at least 20 percent of output in 2012, on average 53 percent of exports came from one industry.
- **Metro areas whose export intensity grew fastest experienced higher economic growth.** From 2003 to 2012, average output growth was 3 percent in the top 10 metros for export intensity growth, compared to 1.7 percent in the bottom 10 metro areas.
- **Metro area manufacturing exports grew to record levels in 2012.** Transportation equipment, petroleum and coal products, and computers and electronics accounted for nearly half of post-recession export growth in the top 100 metros.
- **Services accounted for more than half of post-recession export growth in 11 metros, including San Francisco, Washington DC, and New York.** Service exports were among the fastest growing over the past decade, but have not kept pace with recent manufacturing exports growth.
- **Certain industries, especially in the services sector, produce almost all of their exports in the top 100 metro areas.** Fifteen industries generated more than 80 percent of their exports from the 100 largest metros in 2012.
- **Both highly specialized and highly diversified metros performed well from 2003 to 2012.** Metros that are highly concentrated in one industry exhibited some of the fastest export growth rates, but the most diversified metros generally experienced more consistent, moderate growth.

Since its first release in 2010, Export Nation, coupled with Brookings' Metro Export Initiative, has asserted the importance of exports as a key component of the next economy that must be integrated into regional economic development efforts.

Growing Demand for Metro Area Export Data

Exports matter to U.S. metro areas and their firms because the vast majority of global growth in the 21st century is projected to occur outside the United States, driven by demand in emerging markets such as Brazil, India, and China. Exports represent one critical way to grow the tradable sectors of the economy, which are the very sectors that drive wealth, boost productivity, and grow local industries.

Given the benefits of global trade, an increasing number of regional leaders across the country are adopting export strategies to drive economic growth and jobs. The energy around local export

Methodology

There are two primary features of Export Nation that distinguish it from federal trade data.

First, Export Nation's goods export estimates are based on the origin of production, rather than the origin of movement.

Federal goods trade data produced by the Census Bureau (including the metropolitan goods exports data released annually by the International Trade Administration) is based on origin of movement measurements, meaning that exports are tracked by the location from which they ultimately leave the country. Often the point of departure is not the same as the point of production (Census estimates that one-third of U.S. manufacturing exports and virtually all bulk commodity exports are sold by intermediaries).[1] Electronics made in Austin, for example, might be consolidated for their final journey to Mexico in McAllen, TX, a border metro. In federal trade data, the exports produced in Austin would be credited to McAllen, thereby presenting a distorted picture of the export production value chain. According to Census data, McAllen exported $2.4 billion in computers and electronics products in 2012—a figure 97 times higher than McAllen's entire production of computers and electronics of $24.7 million.

Brookings data instead allocates national export values by industry based on county output in that industry. By this method, if the counties which comprise the Austin metropolitan area together produce 5 percent of the nation's electronics output, it is assumed that the Austin metropolitan area also produces 5 percent of the nation's exports of electronics. Returning to the example of McAllen, Export Nation estimates that McAllen exports a more realistic $19.5 million of computer and electronics products annually.

Below is a comparison chart of the top 10 metro areas by export volume, as calculated using Census and Brookings goods export estimates. The different results are notable. Census counts of goods exports from port metro areas (such as Houston, Los Angeles, and New York) are significantly higher than Export Nation estimates in part because those metro areas are credited for goods produced elsewhere that pass through their ports.

2012 Goods Exports (billions, 2012 dollars)

CBSA Name	Census	Rank	Brookings	Rank	Difference: Census vs. Brookings
Houston, TX	110.3	1	64.2	1	46.1
Los Angeles, CA	75.0	3	56.5	2	18.6
Chicago, IL	40.6	7	44.7	3	-4.1
Dallas, TX	27.8	8	37.5	4	-9.7
Seattle, WA	50.3	5	35.3	5	15.0
New York, NY	102.3	2	32.8	6	69.5
Detroit, MI	55.4	4	31.5	7	23.9
Portland, OR	20.3	15	27.6	8	-7.3
San Jose, CA	26.7	9	26.4	9	0.3
San Francisco, CA	23.0	12	23.3	10	-0.3

The second major distinguishing feature of Export Nation is the inclusion of detailed metro-level services data. Federal services export data is produced by the Bureau of Economic Analysis (BEA), and is only available at the national level. Federal services data, furthermore, offers little industry detail and is rarely integrated with goods export data. In Export Nation, goods and services are estimated using the same detailed, county-level allocation method and presented at similar levels of industrial detail. The inclusion of services exports, in addition to origin of production values, makes the variations between Census and Export Nation estimates even more dramatic.

1. *Cassey, Andrew. "State Export Data: Origin of Movement vs. Origin of Production." University of Minnesota, 2006.*

planning is readily apparent in the growth of the MEI. Begun in 2011 with four pilot metro areas that collaborated with Brookings to produce the first ever metro export plans (which they are now implementing), the initiative scaled up in 2012-13 to include nine additional metro areas that are currently developing their plans, and to date more than 35 U.S. metro areas have expressed interest in pursuing export strategies.

These leaders are pushing for more localized and up-to-date export data to support their more intentional export promotion efforts. Federal export data masks important dimensions of how different regions across the large and diverse national economy are contributing to U.S. trade performance. Export Nation sheds light on the unique assets of metropolitan areas but also areas of underperformance that are key to ensuring that more firms, more industries, and more regional economies are participating in and benefiting from international trade.

To meet the growing demand from metro areas and continue to fill key gaps in federal export data, Export Nation will be released as an annual update for the next four years. While its primary focus is on export performance in U.S. metropolitan areas, Export Nation also includes export data for the nation as well as every state and county. It is the only available data source that provides estimates of goods exports by point of production rather than point of movement and estimates of services exports at the sub-national level (see methodology sidebar for further detail).

Briefings (such as this one) will accompany each annual data release, providing a high-level summary of export trends for the top 100 metro areas, along with explanations of methodology and data sources. The goal of these releases is to enable researchers to use the data, along with the state and metro area profiles, to assess their region's performance and assemble key market findings and opportunities for their metro area. More complete examinations of exports and their critical role in the success of metro area economies are available in the 2010 and 2012 Export Nation reports, and two recent, related Brookings publications: "Metro Trade: Cities Return to their Roots in the Global Economy"; and "Ten Steps to Delivering a Successful Metro Export Plan."

Dataset Comparability

Though Export Nation 2012 and 2013 use the same export estimation method, there are three major differences that make the results between the two incomparable. First, Export Nation 2013 estimates are based on fully revised source data from Census, BEA, and Moody's Analytics, so the results will differ even for the 2003-2010 period that was covered in Export Nation 2012. Second, the data in Export Nation 2013 does not include export-created jobs (due to lack of timely federal source data), or export values by national trading partners. (The latter is tracked at the national level for detailed industry and product segments in the Census Bureau's USA Trade Online service, for goods only.) Finally, services industry categories have been updated in Export Nation 2013 to be more intuitive and accurate, and do not match those used in Export Nation 2012.

For further detail on methodology and data sources, see the *Export Nation 2012* report.

Terminology

Unless otherwise noted, all growth rates are real, and represent compound annual growth over the specified time period. The "100 largest" or "top 100" metro areas are based on population size. The analysis in the report uses both "major" and "detailed" industries, which correspond to 3- and 4-digit NAICS codes for goods industries. For services industries, some of the "major" and "detailed" categories align with BEA definitions, and others were constructed by Brookings.

National Overview

Exports, which accounted for 37.3 percent of U.S. GDP growth between 2009 and 2012, have played an outsized role in the nation's recovery. Exports grew at an annual rate of 11.9 percent from 2009 to 2012 (ranging from nearly 17 percent in 2010 to below 5 percent in 2012), compared to 2.2 percent GDP growth during the same period. The faster export growth rate has made the U.S. economy more driven by international commerce than ever before: the share of U.S. output derived from exports grew from 11.2 percent in 2009 to 13.5 percent in 2012.

Despite the year-to-year swings in growth rates, the balance between goods and services in national exports has remained consistent from 2003 to 2012: U.S. exports are approximately 70 percent goods and 30 percent services. Services reached a peak share of 32 percent when manufacturing slumped in 2009.

The nation's 366 metropolitan areas, and particularly the 100 largest metro areas, generate the vast majority of national exports. Metropolitan areas generate between 80 and 90 percent of exports of goods, manufactured products, and services. The top 100 of these metro areas are especially dominant, producing between 60 and 75 percent of the nation's exports. Metropolitan shares of national exports have been consistent over the past decade.

Metro Area Shares of National Exports and Output, 2012 (millions of dollars)

	Goods Exports –All Industries	Goods Exports – Manufacturing	Total Exports	Total Output	Services Exports
Unites States	**1,463,316**	**1,346,066**	**2,063,487**	**15,577,417**	**600,171**
All Metro	**1,171,927**	**1,116,529**	**1,708,905**	**13,568,355**	**536,978**
Share US	80.1%	82.9%	82.8%	87.1%	89.5%
Top 100	**866,331**	**836,447**	**1,317,239**	**11,022,854**	**450,908**
Share All Metro	73.9%	74.9%	77.1%	81.2%	84.0%
Share US	59.2%	62.1%	63.8%	70.8%	75.1%

Metropolitan areas also dominate exports at the state level, generating at least half of all exports in 42 states (including predominantly rural states such as Arkansas, Idaho, and Kansas) and over 90 percent of exports in 11 states (including major exporters like California, Florida, and Washington).

The backdrop to the impressive expansion of U.S. trade is the administration's National Export Initiative (NEI), launched with a goal of doubling exports from 2009 to 2014. The NEI goal is arguably a lofty one, requiring average annual growth throughout the five-year period of approximately 15 percent (in nominal terms). With annual nominal growth of 11.9 percent since the beginning of the NEI, the U.S. finished 2012 approximately $217 billion off pace (if U.S. exports had grown at 15 percent annually since 2009, the 2012 total would have been $2.43 trillion, rather than the actual total of $2.21 trillion). Given U.S. performance through 2012, reaching the goal will require annual nominal growth of over 19 percent for the final two years. While the NEI goal will be difficult to achieve, this should not obscure the core message – that U.S. export performance has been extremely strong over the past several years, and that exports have played a central role in the ongoing recovery. Further, strong U.S. exports continue to contribute to declines in the trade deficit, which reached $34 billion in June 2013, its lowest level since October 2009. Exports have been just as critical to the recovery of metro areas, which are the focus of the remainder of the report.

The report's 10 major findings fall under three broad categories: the size and growth of metro exports, export intensity, and industry specializations with global reach.

Findings

The Size and Growth of Metro Exports

Metro areas naturally mirror national trends, given their dominant role in the national export enterprise. In 2012, when national exports ascended to record highs, metro area exports also reached a historical peak of $1.7 trillion. Of the 100 largest metro areas, 76 posted record export volumes in 2012. The strong recent growth of metro areas represents the continuation of a long-term trend interrupted briefly but substantially by the recession. During the ten years from 2003-2012, exports grew in 99 of the top 100 metro areas. (The exception was Allentown, PA, which registered a slight decline.) But an analysis of the size and growth of exports from individual metro areas reveals that there is broad variation in the degree to which, and in what ways, metro areas are capitalizing on their distinct assets in the global economy.

1. Exports drove post-recession growth in the 100 largest metro areas.

In 2010 and 2011, the first two years of the recovery, exports grew at approximately five times the rate of output in the 100 largest metro areas. The gap narrowed somewhat in 2012, but exports still grew at nearly double the rate of output. In the three years following the recession, exports were responsible for 54.4 percent of the recovery in the 100 largest metro areas (compared to 37.3 percent for the nation as a whole).

Metro Areas in Which Exports Contributed Most to Post-Recession Growth, 2009-2012

Metro Area	Export Growth (mil 2012 $)	Output Growth (mil 2012 $)	Export Share of Output Growth	Largest Detailed Industry by Volume Growth, 2009-2012	Industry Share of Total Metro Export Growth, 2009-2012
Harrisburg, PA	325.23	25.82	1259.7%	Nonferrous Metal Products	22.3%
Las Vegas, NV	1,495.12	409.88	364.8%	Accommodation Services	39.9%
Albuquerque, NM	774.50	346.35	223.6%	Semiconductors	50.1%
Jackson, MS	390.21	217.49	179.4%	Motor Vehicles	32.7%
Youngstown, OH-PA	2,113.60	1,222.69	172.9%	Nonferrous Metal Products	41.5%
Kansas City, MO-KS	2,554.66	1,655.28	154.3%	Motor Vehicles	23.2%
North Port, FL	224.89	148.89	151.0%	Communications Equipment	13.8%
Detroit, MI	16,220.38	11,229.47	144.4%	Motor Vehicles	45.2%
Cleveland, OH	2,817.71	2,240.96	125.7%	Nonferrous Metal Products	12.1%
Ogden, UT	1,963.35	1,715.16	114.5%	Nonferrous Metal Products	54.2%
Providence, RI-MA	1,687.49	1,618.80	104.2%	Nonferrous Metal Products	27.5%

In 54 of the 100 largest metro areas, the export share of post-recession growth was higher than the national share. In the 11 metro areas above, post-recession output growth depended entirely on growth in traded sectors, as output from non-traded industries contracted while exports grew.

2. Few metro areas are on track to achieve the administration's National Export Initiative goal of doubling exports in five years.

In the first year of the recovery, metro area export growth substantially outpaced national export growth: 40 of largest 100 metro areas witnessed higher real export growth rates than the nation as a whole– in many cases substantially higher. Metro area and national growth rates converged somewhat over the last several years, and in 2012 only 25 metro areas surpassed the national export growth rate. There is, however, a small set of metro areas that have managed to significantly outperform the nation since 2009. Twelve are on track to double exports during the five year NEI period (in nominal terms, as the official NEI goal is measured). Adjusting for inflation, only four metro areas remain on pace to double exports by the end of 2014.

This list is not necessarily representative of the strongest or most strategic exporters. Two of the metro areas on track to double in real terms are benefitting from exceptionally large plunges in exports in 2009: Youngstown and Detroit experienced 43 percent and 33 percent drops in export volume, respectively. The growth in Salt Lake City and New Orleans, meanwhile, is almost entirely due to massive growth in exports of primary metals and petroleum and coal.

Metro Areas on Track to Double Exports Between 2009 and 2014, As Of 2012

Metro Area	Annual Growth, 2009-2012 (Nominal)	Annual Growth, 2009-2012 (Real)	Largest Detailed Industry by Volume Growth, 2009-2012	Industry Share of Total Metro Export Growth, 2009-2012
Youngstown, OH-PA	27.4%	22.2%	Nonferrous Metal Products	41.5%
New Orleans, LA	27.3%	17.1%	Petroleum and Coal Products	73.2%
Baton Rouge, LA	23.6%	*	Petroleum and Coal Products	24.6%
Detroit, MI	23.3%	20.4%	Motor Vehicles	45.2%
Salt Lake City, UT	21.2%	15.5%	Nonferrous Metal Products	71.0%
Ogden, UT	20.7%	*	Nonferrous Metal Products	54.2%
Houston, TX	20.1%	*	Petroleum and Coal Products	32.1%
Toledo, OH	18.5%	*	Petroleum and Coal Products	33.7%
Grand Rapids, MI	16.8%	*	Motor Vehicle Parts	37.5%
El Paso, TX	16.3%	*	Nonferrous Metal Products	28.4%
Charleston, SC	15.8%	*	Aircraft Products and Parts	36.8%
Louisville, KY-IN	15.8%	*	Motor Vehicles	39.6%

** Annual real export growth less than 15 percent*

3. The 10 largest metro areas, by export volume, produced 28 percent of U.S. exports in 2012. Despite substantial variations in post-recession export growth rates between metro areas, the largest exporters by volume remain basically unchanged since Export Nation was last released with 2010 data. San Jose moved from 11th to 10th, Portland fell from eighth to 11th, and Los Angeles, New York, and Houston remained atop the list. In 2012, the 10 largest metro areas alone accounted for 28 percent of U.S. exports and 90 percent of the exports from the 100 largest metro areas. Seattle, Detroit, and San Jose are notable in that their export rank significantly exceeds their output rank, reflecting their specializations in highly traded advanced industries.

Largest Metro Area Exporters by Volume, 2012

Metro Area	Export Volume (mil $)	Export Volume Rank	Output Rank	Population Rank
Los Angeles, CA	93,871.65	1	2	2
New York, NY-NJ-PA	88,561.78	2	1	1
Houston, TX	77,765.52	3	4	5
Chicago, IL-IN-WI	66,217.27	4	3	3
Dallas, TX	54,238.63	5	6	4
Seattle, WA	47,103.72	6	12	15
San Francisco, CA	38,046.75	7	9	11
Detroit, MI	37,996.94	8	16	13
Boston, MA-NH	37,213.8	9	8	10
San Jose, CA	34,641.22	10	19	32

Metro Export Intensity

The largest exporters tend to be the largest metro areas in terms of output, and generally in terms of population. Arguably, however, a more appropriate measurement of the degree to which a metro is taking advantage of global opportunities is its export intensity, or export share of GDP. In the absence of firm-level export data, export intensity offers an indicator of the competitiveness of a metro's traded sectors and the extent to which its industries are participating in global trade, regardless of the size of the metro's economy.

1. Two-thirds of the largest metro areas underperform the United States as a whole on export intensity, suggesting that there is significant potential for the expansion of exports at the metro level.

There is considerable unrealized potential for increased metro area exports: 67 of the top 100 metro areas underperform the United States on export intensity as of 2012. While the top 100 U.S. metro areas still drive the majority of national exports, their average export intensity in 2012 was only 12.7 percent; more than a full percentage point below the nation, which is itself less export intensive than most advanced economies. This is especially notable given that these metro areas overwhelmingly possess the infrastructure and innovation assets that drive global competitiveness – 94 percent of venture capital, 82 percent of air freight, and 78 percent of patents, for instance. Some of the low export intensity of large metro areas can be attributed to the fact that they also produce a large quantity of non-traded goods and services to serve industry and residents (as well as non-residents), but nevertheless there remains a huge opportunity for the expansion of metro area exports, supported by federal policy and advanced through coordinated regional strategies.

2. The most export-intensive metro areas are highly specialized in certain industries.

Of the 100 largest metro areas, 11 had export intensities greater than 20 percent in 2012. These are primarily mid-sized manufacturing centers, with Wichita specializing in aircraft and Portland in semiconductors, along with a few large, highly specialized metro areas. Only three of the largest exporters by volume—Seattle, Detroit, and San Jose—also appear in the top echelon of export-intensive metro areas.

These metro areas tend to be highly concentrated in single industries: On average, 53 percent of the above metro areas' exports in 2012 came from a single major industry, though that figure reached as high as 67 percent in Portland. The average for the 100 largest metro areas was far lower, at 26 percent. Greenville stands out among the most export-intensive metro areas in that it is only slightly above average in industry specialization. This may reflect Greenville's strategic approach to foreign direct investment, which has brought a range of export-intensive firms from diverse industries to the region, such as BMW and Michelin.

Most Export-Intensive Metro Areas, 2012

Metro Area	Export Volume (mil $)	Export Intensity	Largest Major Industry	Industry Share of Total Metro Exports
Baton Rouge, LA	14,557.25	30.5%	Chemicals	53%
Ogden, UT	6,005.446	29.2%	Primary Metal	51%
Wichita, KS	7,673.165	27.7%	Transportation Equipment	60%
Portland, OR-WA	33,941.46	24.4%	Computers & Electronics	67%
San Jose, CA	34,641.22	23.8%	Computers & Electronics	62%
Youngstown, OH-PA	4,677.692	23.0%	Primary Metal	42%
Salt Lake City, UT	15,699.5	22.1%	Primary Metal	53%
Detroit, MI	37,996.94	20.8%	Transportation Equipment	60%
New Orleans, LA	14,636.04	20.5%	Petroleum & Coal Products	47%
Seattle, WA	47,103.72	20.3%	Transportation Equipment	59%
Greenville, SC	5,595.87	20.2%	Machinery	34%

3. Metro areas whose export intensity grew fastest experienced higher economic growth.

Five of the 11 metro areas with the highest export intensities in 2012 are also among the top 10 in terms of growth in export intensity since 2003. The dramatic shifts towards traded sectors in the below metro areas, many of which were highly domestically-oriented in 2003, illustrate the power of global supply chains to rapidly alter the economic profile of large metropolitan areas. In just a decade, Ogden and Salt Lake City experienced a tripling in the share of their economy that is derived from exports.

Metro Areas with Highest Growth in Exports as a Share of GDP, 2003-2012

Metro	2003 Export Share of GDP	2012 Export Share of GDP	Increase in Export Share of GDP, 2003-2012	Output Growth Rate, 2003-2012
Salt Lake City, UT	7.1%	22.1%	213.7%	3.5%
Ogden, UT	9.7%	29.2%	200.2%	3.0%
New Orleans, LA	7.2%	20.5%	186.3%	1.5%
Baton Rouge, LA	12.7%	30.5%	139.9%	3.8%
Houston, TX	9.3%	19.5%	109.0%	4.1%
Raleigh, NC	5.4%	11.3%	108.4%	3.7%
Provo, UT	7.6%	14.9%	96.6%	3.8%
Charleston, SC	7.4%	14.5%	96.5%	2.0%
Little Rock, AR	3.9%	7.6%	95.4%	2.4%
Seattle, WA	10.5%	20.3%	94.1%	2.4%

Only five of the 100 largest U.S. metro areas experienced a decline in export intensity from 2003 to 2012. In none of those five metros, however, did export volume shrink; rather, the non-traded sectors of the economy simply grew faster than the traded sectors. Austin and San Jose are outliers in the below group. In both metros, exports expanded at a rate of over 7 percent annually but had little effect on the overall profile of the economy, as the non-traded sectors kept pace.

Metro Areas with Lowest Growth in Exports as a Share of GDP, 2003-2012

Metro	2003 Export Share of GDP	2012 Export Share of GDP	Increase in Export Share of GDP 2003-2012	Output Growth Rate, 2003-2012
Albuquerque, NM	16.1%	11.7%	-27.1%	1.2%
Phoenix, AZ	13.3%	10.6%	-20.3%	1.7%
Tucson, AZ	14.6%	13.1%	-10.6%	1.5%
Boise City, ID	16.4%	15.1%	-7.9%	2.6%
Colorado Springs, CO	8.7%	8.5%	-1.6%	1.0%
San Jose, CA	23.4%	23.8%	2.1%	2.9%
Austin, TX	12.1%	12.5%	3.5%	4.0%
Poughkeepsie, NY	10.0%	11.1%	10.0%	1.2%
Greenville, SC	18.2%	20.2%	10.9%	0.6%
Allentown, PA-NJ	11.4%	12.9%	13.3%	0.5%

These two groups of metros experienced very different overall growth patterns over the past decade: average GDP growth was nearly twice as high (3 percent versus 1.7 percent) for the 10 metro areas with the highest export intensity growth as it was for the bottom 10 metro areas on that measure. This relationship is generally consistent throughout the 100 largest metro areas. There are exceptions, as New Orleans demonstrated that it is possible to grow exports but stagnate overall, and Austin showed that a metro area can remain below average in terms of exports and grow substantially. The message, however, is clear: The continued growth of global purchasing power relative to the domestic market means that there are fewer and fewer pathways to sustainable growth without a focus on exports.

Industry Specializations with Global Reach

In the recently released Brookings publication, "The 10 Traits of Globally Fluent Metropolitan Areas", one of the highlighted traits is "Specializations with Global Reach". The report makes the case that the most globally fluent and successful cities initially established their global positions by capitalizing on what is unique about their region—particularly related to industry concentrations. However, the more highly specialized a regional economy is, the more vulnerable it is, especially in an era of rapid global change and increasing competition. To create a more diversified and sustainable regional economy, metro areas will need to research and develop additional opportunities to match local specializations with global demand.

Metro areas have begun to do this through strategic export planning. Portland, which is a national leader in exports based on its specialization in computers and electronics, is also peerless in its green reputation. Its metro export plan therefore seeks to further diversify by leveraging its strengths in urban planning, green building, and low carbon technology on the global stage. Minneapolis is dominant in the medical technology field, which, as its export plan asserts, offers one of its most promising avenues for global competitiveness. As the imperative to go global becomes clearer to metro leaders, these stories are bound to be replicated.

Every metro area contains traded sectors with international reach. Until recently, however, a major barrier to local action was the lack of data capable of determining a metro's most globally-competitive sectors, especially in services industries. Export Nation fills this gap, providing a lens into the industries that are driving growth in the new post-recession economy.

1. Manufacturing exports in the U.S. grew to record levels in 2012.

Transportation equipment, petroleum and coal products, and computers and electronics accounted for nearly half of post-recession export growth in the top 100 metros. Other industries also performed well during different time periods, such as machinery and chemicals from 2009 to 2010. Beneath these overarching trends, however, there is significant metro-to-metro variation in the clusters that drive regional economies.

Export Nation 2012 showed that manufacturing contributed disproportionately to export growth in the first year of the recovery. Updated data shows that manufacturing continues to be the core driver of post-recession export growth. In the first year of the recovery, manufacturing contributed 75.7 percent of overall export growth in the 100 largest metros. That figure increased to 77.7 percent over the 2010-2012 period. In 18 of the 100 largest metro areas, manufacturing accounted for at least 90 percent of export growth between 2009 and 2012.

Rapid shifts in post-recession industry performance point to a dynamic and broad-based manufacturing recovery. Exports of computers and electronics expanded as much in the first year of the recovery as they did in the following two years combined. The chemicals industry was the third highest-growth industry in the first year of the recovery, but fell out of the top 10 during the next two years. Meanwhile, transportation equipment and petroleum and coal products emerged to lead growth from 2010 to 2012.

Manufacturing Industries That Drove Top 100 Metro Export Growth, 2009-2010 And 2010-2012

2009-2010			2010-2012		
Industry	**Export Growth (mil 2012 $)**	**Share of Total Export Growth, Top 100 Metro Areas**	**Industry**	**Export Growth (mil 2012 $)**	**Share of Total Export Growth, Top 100 Metro Areas**
Computers & Electronics	24,933.26	21.5%	Transportation Equipment	29,857.28	22.6%
Machinery	14,317.64	12.4%	Petroleum & Coal Products	18,379.23	13.9%
Chemicals	13,067.45	11.3%	Computers & Electronics	15,028.61	11.4%
Transportation Equipment	6,179.23	5.3%	Primary Metal	12,808.83	9.7%
Medical Equipment, Sporting Goods	5,894.84	5.1%	Machinery	10,148.24	7.7%
Primary Metal	3,703.36	3.2%	Medical Equipment, Sporting Goods	5,405.898	4.1%
Petroleum & Coal Products	3,417.28	3.0%	Electrical Equipment	4,029.568	3.0%
Fabricated Metal Products	3,322.09	2.9%	Fabricated Metal Products	3,826.223	2.9%
Electrical Equipment	3,072.97	2.7%	Food Products	2,166.455	1.6%
Food Products	2,632.71	2.3%	Plastics & Rubber Products	1,186.316	0.9%

2. Services accounted for more than half of post-recession export growth in 11 metro areas, including San Francisco, Washington, D.C., and New York. Services sector exports were among the fastest growing over the past decade as a whole, but have not kept pace with recent manufacturing exports growth.

The 100 largest metro areas are more services-oriented than the nation as a whole. Services comprised 34 percent of top 100 metro exports in 2012, compared to 30 percent for the nation. Though manufacturing continues to eclipse services in the overall export picture, services accounted for more than half of post-recession export growth in some of the nation's largest and most dynamic economies. In San Francisco, exports increased overall even as goods exports fell as a whole, as services such as information technology royalties and research and development drove growth. Tourism hubs such as Orlando and Las Vegas, grew exports by attracting international visitors, while major financial, logistics, and research hubs leveraged those strengths.

Services have also been among the fastest-growing industries in the top 100 metro areas. From 2003 to 2012, five of the 10 fastest-growing industries in the largest metro areas were in the services sector. Breaking industry growth trends into pre- and post-recession periods, however, reveals two different stories. Most noticeable is the absence of services industries in the 10 fastest-growing since the recession. From 2009 to 2012, the fastest-growing service industry was engineering services, at 8.5 percent.

This analysis, though focused on the top 10 industries in each period, is reflective of broader trends: on average, services exports grew at 6.3 percent from 2009 to 2012, compared to 8.1 percent from 2003 to 2008. In contrast, goods-producing industries grew at 8.4 percent on average from 2009 to 2012, compared to only 3.1 percent prior to the recession.

Metro Areas in Which Services Accounted for More Than Half of Export Growth Between 2009 And 2012

Metro	Services Share of Total Export Growth, 2009-2012	Largest Detailed Service Industry, 2012
San Francisco, CA	127.4%	Information Technology Royalties
Orlando, FL	80.3%	Accommodation Services
Cape Coral, FL	80.1%	Accommodation Services
Las Vegas, NV	69.6%	Accommodation Services
Honolulu, HI	64.0%	Air Transportation Services
Washington, DC	63.2%	Management & Consulting
New York, NY	62.5%	Financial Services
Miami, FL	61.9%	Freight & Port Services
Philadelphia, PA	60.1%	Financial Services
Albany, NY	53.8%	R & D Services
Jacksonville, FL	51.3%	Financial Services

Major Industries with Fastest Export Growth Rate, Top 100 Metro Areas, Pre- and Post-Recession

Industry	Top 100 Metro Growth Rate, 2003-2008	Industry	Top 100 Metro Growth Rate, 2009-2012
Software Products	19.9%	Primary Metal	15.5%
Petroleum & Coal Products	18.8%	Beverage & Tobacco Products	14.4%
Support Services	14.3%	Petroleum & Coal Products	12.9%
Financial Services	13.9%	Leather & Allied Products	12.7%
Insurance Services	13.9%	Furniture & Related Products	11.2%
Medical Equipment, Sporting Goods	13.5%	Fabricated Metal Products	11.0%
Mining	13.5%	Machinery	11.0%
Management & Legal Services	11.7%	Electrical Equipment	11.0%
Oil & Gas Extraction	10.9%	Mining	10.3%
Engineering Services	10.1%	Computers & Electronics	10.3%

3. Certain industries, especially in the services sector, produce almost all of their exports in the top 100 metro areas.

Based on the dominance of metro areas in national export production, it is clear that tradable industries generally cluster in metro areas. Certain export industries, however, are found almost exclusively in the largest metro areas. The nation's few major entertainment centers—led by Los Angeles—generate over 90 percent of film and music royalties exports, for example. But for another 15 industries, including nine services industries, more than 80 percent of exports are produced within the 100 largest metro areas.

Ten Industries with Largest Share of Exports Generated from the 100 Largest Metro Areas

Industry	Industry Export Volume, Largest 100 Metro Areas, 2012 (mil $)	Industry Export Growth Rate, 2003-2012	100 Largest Metro Share of Industry Exports, 2012	Metro Area with Highest Industry Export Volume, 2012
Film & Music Industry Royalties	13,931.89	-0.8%	91.4%	Los Angeles, CA
Software Products	795.294	12.4%	88.2%	Seattle, WA
Computer & Information Services	14,216.6	5.3%	87.5%	Washington, DC
Advertising Services	3,780.529	4.7%	86.0%	New York, NY
Management & Consulting	28,857.92	7.3%	85.6%	New York, NY
Industrial Engineering Services	5,383.251	12.8%	84.0%	New York, NY
Sports & Performing Arts	774.9238	7.6%	82.8%	New York, NY
Legal Services	6,470.546	5.4%	82.5%	New York, NY
Aircraft Products & Parts	87,022.7	4.6%	82.4%	Seattle, WA
Information Technology Royalties	36,905.55	7.3%	82.3%	New York, NY

4. There are numerous paths to export success: both highly specialized and highly diversified metro areas performed well from 2003 to 2012.

Just as certain industries concentrate in large metro areas, there are also certain metro areas that specialize overwhelmingly in a single export industry. Industry specialization can lead to impressive export growth, but is not a guarantee of success. To illustrate, Portland and Albuquerque are both highly dependent upon the semiconductor industry, yet Portland's exports have grown at an annual rate of nearly 13 percent since 2003, while Albuquerque's exports have grown less than 1 percent annually.

Another group of metro areas is characterized by highly diversified traded sectors. This set of metro areas—defined here as those for which the largest industry comprises less than 15 percent of total

Top 100 Metro Areas with More Than Half of Total Exports from One Industry

Metro Area	Largest Industry, 2012	Industry Export Volume, 2012 (mil $)	Share of Total Metro Area Exports, 2012	Metro Export Growth Rate, 2003-2012
Portland, OR-WA	Computers & Electronics	22,753.37	67%	12.8%
San Jose, CA	Computers & Electronics	21,480.47	62%	7.2%
Detroit, MI	Transportation Equipment	22,645.07	60%	3.6%
Wichita, KS	Transportation Equipment	4,566.835	60%	3.4%
Seattle, WA	Transportation Equipment	27,926.32	59%	9.5%
Las Vegas, NV	Travel & Tourism	5,305.755	53%	8.5%
Baton Rouge, LA	Chemicals	7,722.084	53%	9.4%
Salt Lake City, UT	Primary Metal	8,289.773	53%	16.3%
Ogden, UT	Primary Metal	3,057.106	51%	14.4%
Palm Bay, FL	Computers & Electronics	1,535.947	50%	6.0%
Boise City, ID	Computers & Electronics	1,955.097	50%	5.7%

exports—does not exhibit the same range of export growth as illustrated by Portland and Albuquerque. The majority of these metro areas saw exports grow by 4 to 7 percent between 2003-2012, exceeding output growth but not keeping pace with metro areas with clusters of highly innovative manufacturing industries above.

Top 100 Metro Areas with Less Than 15 Percent of Total Exports from the Top Industry

Metro	Largest Industry	Industry Export Volume, 2012 (mil $)	Share of Total Metro Area Exports, 2012	Metro Export Growth Rate, 2003-2012
Denver, CO	Travel & Tourism	1,809.1990	14%	7.1%
Chicago, IL-IN-WI	Machinery	9,538.7180	14%	5.5%
Atlanta, GA	Travel & Tourism	3,636.4560	14%	4.7%
Minneapolis, MN-WI	Computers & Electronics	3,072.5020	14%	5.4%
Madison, WI	Machinery	496.0730	14%	6.2%
Springfield, MA	Medical Equipment, Sporting Goods	496.5183	14%	5.5%
Harrisburg, PA	Travel & Tourism	349.4778	14%	6.1%
Chattanooga, TN-GA	Chemicals	441.8205	13%	5.3%
Omaha, NE-IA	Food Products	571.0931	12%	7.1%
Memphis, TN-MS-AR	Travel & Tourism	772.1523	12%	5.9%
Riverside, CA	Travel & Tourism	1,497.7760	11%	5.7%
Little Rock, AR	Travel & Tourism	262.4713	11%	9.2%
New Haven, CT	Primary Metal	544.5668	11%	3.1%
Scranton, PA	Travel & Tourism	234.4030	10%	2.5%

Conclusion

For metro leaders charting their futures in an increasingly global economy, Export Nation data serves to underscore two positive messages. First, U.S. firms are responding to global demand, to such an extent that exports have driven 37 percent of post-recession GDP growth. Second, metro areas—which produce the majority of the nation's exports—have many paths to success. Over the past decade, some metro areas have succeeded through their inherited specialization in massive globally competitive industries whose location is determined by geography and natural resource availability. Others have intentionally cultivated a global mindset across a wide range of firms in mobile and dynamic industries. Manufacturing centers have succeeded, but so have metro areas oriented towards business and professional services, or tourism, medical services, and education.

Yet Export Nation highlights just as clearly the unevenness and missed opportunities that characterize metro economies. Much of the recent progress has been generated by relatively few large firms in key industries and by large, dynamic metro areas. Too many metro areas and industries are failing to keep up. The United States needs to continue to empower metro areas to undertake customized, data-driven approaches to getting more parts of their economy and firms into the export game, improving wages, innovation, resiliency, and employment in the process.

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The global cities Initiative aims to equip metropolitan leaders with the information, policy ideas, and global connections they need to bolster their position within the global economy. Combining Brookings' deep expertise in fact-based, metropolitan-focused research and JPMorgan Chase's longstanding commitment to investing in cities, this initiative aims to:

- Help city and metropolitan leaders in the U.S. and abroad better leverage their global assets by unveiling their economic starting points on such key indicators as advanced manufacturing, exports, foreign direct investment, freight flow, and immigration.
- Provide metropolitan area leaders with proven, actionable ideas for how to expand the global reach of their economies, building on best practices and policy innovations from across the nation and around the world.
- Create a network of leaders from global cities intent upon deepening global trade relationships.

The Global Cities Initiative is chaired by Richard M. Daley, former mayor of Chicago and senior advisor to JPMorgan Chase, and directed by Bruce Katz, Brookings vice president and co-director of the Metropolitan Policy Program, which aims to provide decision makers in the public, corporate, and civic sectors with policy ideas for improving the health and prosperity of cities and metropolitan areas. Learn more at **http://www.brookings.edu/about/projects/global-cities**

For More Information

Ryan Donahue
Policy/Research Assistant
Metropolitan Policy Program at Brookings
rdonahue@brookings.edu

Brad McDearman
Fellow
Metropolitan Policy Program at Brookings
bmcdearman@brookings.edu

Nick Marchio
Senior Policy Assistant
Metropolitan Policy Program at Brookings
nmarchio@brookings.edu

Metropolitan Policy Program at Brookings
1775 Massachusetts Avenue, NW
Washington D.C. 20036-2188
telephone 202.797.6000
fax 202.797.6004
web site **www.brookings.edu**

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1775 Massachusetts Avenue, NW
Washington D.C. 20036-2188
telephone 202.797.6000
fax 202.797.6004
web site www.brookings.edu

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Metropolitan Policy Program
at BROOKINGS

telephone 202.797.6139
fax 202.797.2965
web site www.brookings.edu/metro