

# MONTHLY ECONOMIC INDICATORS YEAR IN REVIEW 2013

## THE PORT AUTHORITY OF NY & NJ

Over the course of 2013, the Monthly Economic Indicators newsletter (MEI) has reported on an assortment of issues pertinent to the Port Authority and its mission to keep the region's commuters, travelers and global shippers moving. This edition looks back at the year and summarizes presents past topics in three main categories: the local and regional economies, the global and national economies, and various transportation trends important to the region.

The MEI has uncovered a variety of topics with specific relevance to New York City. Predictably, Manhattan has been the center of several of these topics. Not only has the borough experienced the disappearance of parking spaces but also [asking rents for class A office space have proved remarkably resistant](#) to change despite record regional office employment gains. The resiliency of all five boroughs after Superstorm Sandy, even in some of the hard hit areas such as the [financial district](#), was a testament to both the hard working individuals cleaning up after the storm and the people of New York and New Jersey.

The greater New York metropolitan area produced several interesting stories as well. The [federal statistical definition of the New York Metropolitan area grew to encompass 35 counties](#) and the [New York portion](#) of the region was shown to have strong growth in STEM related employment. Such events signal that the regional economy is primed for strong growth, a fact that may help explain some of [the dramatic increase in the regional market share of the airline travel market originating in China](#).

The global and national economies have also produced a number of issues relevant to the Port Authority that have been explored in the MEI. [Detailing the economic outlook for both the national economy](#) and specific sectors such as [the housing sector](#) or the developing natural gas industry is always important, but doing so in the face of [wholesale economic data revisions](#) or important [developments in the economies of important trading partners such as India](#), is all the more essential. Additionally, the MEI has paid close attention to important social and regulatory issues such as [income inequality](#) and the [national change in the limitations on hours of service for truck drivers](#).

Of particular interest to the Port Authority are the transportation trends observed both nationally and regionally. The MEI detailed not only [the creation and maintenance of a regional travel index](#) partially showing and illustrating the [national and regional decline in VMT](#). We reported that [travel-time across the Lincoln Tunnel was experiencing declining variability over the last three years](#). Also discussed were the major trends defining truck traffic in the region, such as the [shifts of trucks to off-peak travel periods](#) as well as advances in logistics that [improve truck routing to distribution centers such as the Hunts Point food distribution center](#). Additionally the MEI highlighted other trends such as the [implications of flexible work hours on transportation](#) and the [dynamics of the Chinatown bus market](#).

The diversity of the MEI is reflective of the diversity and complexity of the regional economy and transit system. Count on the MEI to deliver thoughtfully prepared analysis of these and other topics in 2014.

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Transportation Indicators Page

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*The views expressed herein are solely those of the authors and do not reflect the official position of the Port Authority of New York and New Jersey or its leadership.*

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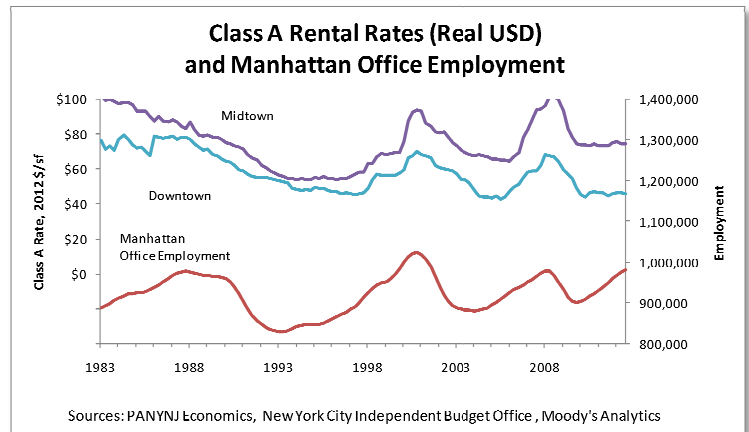
### JANUARY SPECIAL FOCUS Class A Office Space and Manhattan Office Employment: An On Again Off Again Relationship

The close association between Manhattan office employment and demand for Class A real estate—New York City's most expensive class of office real estate—has not recovered since the Great Recession. Since 2008, when Class A real estate commanded an average rent of nearly \$75 per square foot, the asking rent for Class A buildings has yet to climb back to \$70 per square foot as of November 2012 even as Manhattan office employment has grown to exceed its pre-recession peak of 980,000 workers. Changes in the composition of office-using industries in New York City and greater cost consciousness within the business community are likely drivers behind the current lack of demand for Class A office space.

Although Manhattan office employment and Class A rents have moved together since the late 1990s, the relationship has not always been a stable one. In 1982, a New York City rezoning measure opened up Manhattan's West Side for commercial development. This measure, combined with the introduction of national and local tax incentives that promoted commercial real-estate development, spurred a speculative boom in New York City's commercial real estate market. Class A rents *declined* in real dollars throughout the 1980s as supply outpaced demand from rising Manhattan office employment during the decade. Class A rents remained flat through most of the 1990s as growing demand from finance and professional services slowly absorbed the abundance of new office stock. Rents for Class A real estate rose dramatically in the mid-2000s, driven by business demand and investment speculation, ultimately peaking in 2008.

The faster growth of professional and business service and information sectors relative to the financial service sector since the Great Recession and a more cost-conscious business climate are among the main factors that may be contributing to the slow growth in the price of Class A rents. According to the Quarterly Census of Earnings and Wages, the number of jobs in professional and business services (marketing, consulting, accounting, etc.) increased by 2.4 percent from March 2009 to March 2012 and information sector employment grew 8.1 percent. Over the same period, employment in financial services declined by 1.2 percent. As a result, professional and business services and information sector jobs now account for a slightly larger share of the office employment market relative to finance workers than they did in March 2009. Many companies in the business service and information sectors, particularly in creative fields, may prefer offices with open architecture not available in older Class A buildings. In addition, cost-conscious businesses of all stripes may be shrinking the size of their employees' workspaces or actively seeking out cheaper space to save money. Changes in technology that have made telecommuting more affordable for businesses may also be contributing to reduced demand for high-end office real estate.

Demand for Class A office space may eventually kick into high gear if U.S. economic growth picks up substantially, but more time is required to understand whether the low growth of Class A rents signals a permanent shift in the business models of New York City's office-using companies, or just a temporary post-recession lull.



#### Key Points

- The volume of Class A office space in Manhattan expanded rapidly through the 1980s, though rents declined as supply outpaced demand.
- Recently, growth of Class A asking rents has slowed in part due to the growing diversity of office-using industries and the rise of more cost-conscious businesses.

### JANUARY TRANSPORTATION FOCUS The Year 2012—A Look Back

In January 2012, we published our economic forecasts for the nation and the 18-county Port Authority region. Now, we want to revisit these forecasts and assess their accuracy in light of actual year-end data. A year ago, our assessment was that 2012 would be a rather slow year with 2.5 and 2 percent real GDP growth for the country and region, respectively. While complete annual data is not yet available, we expect that largely because of Superstorm Sandy's impact in October and November, actual 2012 economic growth now might come in somewhat slower than our forecasts suggested. Otherwise, actual economic performance may have slightly exceeded our forecasts in part due to a revitalized consumer sector, strong light vehicle sales, improving housing statistics, and confidence returning among businesses.

The US unemployment rate was projected to fall to 8.6 percent on average for the year but somewhat ahead of schedule, unemployment fell below 8 percent by year-end. The US employment rate [U-3] now stands at 7.8 percent. The improvement in the labor market turned out to be noticeable even though labor force participation did not bounce back post-recession, which was a factor that we included in our forecast for the year. Employment in the PA region was forecast to increase by 1.1 percent and exceed 8 million. In reality, total employment for the region may have come in ahead of our prediction. New York City experienced record job growth in the second half of 2012 and that, combined with some improvements in labor market conditions in New Jersey counties, pushed up total employment slightly above our predicted number. However, it will not be until the release of the spring benchmark release by the Bureau of Labor Statistics that these actual numbers can be confirmed.

We expected that India and China would continue a moderate growth path, and, in particular, that China would avoid a hard landing. That forecast proved to be correct even though we were slightly too optimistic about GDP growth in both countries. In fact, we overstated expected real economic growth by roughly 1 percent, respectively. Our forecast for the Eurozone was already pessimistic in calling for a recession in 2012 and early 2013 but actual data now suggests an even deeper downturn largely driven by contractions in countries such as Spain, Italy and Greece. While the financial crisis in Europe seems to have been at least temporarily contained, it is likely that it will weigh heavily on the performance of the Eurozone economy in coming years.

On balance, our baseline forecasts have been roughly in line with the actual headline economic data for 2012. There have been some discrepancies, for instance we did not anticipate what now looks like the beginning of a recovery in housing in 2012. But 2012 also teaches us that forecasts are notoriously difficult and likely wrong. Superstorm Sandy hit the region unexpectedly and created large damage for private and public assets while also creating an at least temporary hit on economic output. The region is still recovering, some infrastructure assets are still being negatively affected, and policy makers are busy discussing potential strategies to mitigate damages from [now more] likely future storms. The shift in mindset is far reaching and is going to affect our and other forecasters' predictions.

#### Key Points

- The US unemployment rate fell below the 2012 projection of 8.6 percent to 7.8 percent, even though labor market participation did not bound back post recession.
- Projections for moderate growth in India and China and an economic downturn in the Eurozone were largely realized.
- There were positive and negative events we did not anticipate. For example, we did not anticipate what appears to be the beginning of the housing recovery, nor did we foresee that Superstorm Sandy would deal a temporary blow to near-term economic output.

## FEBRUARY SPECIAL FOCUS Income Inequality: A Long-Term Problem

Income inequality was front and center during the last election cycle. Everyone was reminded of the income differential between the top 1% and bottom 99% of US households. While the data on this issue are complex, as are the number of ways you can look at the data, we can still glean some important information from them without getting too technical. Data recently published by Saez & Piketty (2013) suggest that the level of income inequality of U.S. households in 2011 has nearly equaled that of U.S. households prior to the Great Depression. Based on their analysis, the degree of income inequality in the United States has doubled as measured by total income, including capital gains. Nearly 20% of total income can be attributed to the top 1% income-earning households in 2011. This compares to approximately 9% of total income in the early 1970s.

Some may assert that income inequality has actually declined over time, taking into account that many products that add value to our quality of life have become more affordable, and that income mobility is still alive and well in the U.S. Data on the first claim are difficult to collect, although the impact of cheaper, high-quality goods could contribute to reducing income inequality. With regard to the second issue, a Treasury Department analysis in 2007 found that there is some mobility. Between 1996 and 2005, 42% of households that fell into the lowest income quintile (defined as one fifth of the total) did not move out of this position over the next decade. Over the same period, nearly 70% of the households in the top quintile remained in the same position. For the median income household, the analysis showed that one third remained in their relative position, 42% moved higher, and 25% moved lower.

Maybe the more critical issue is to what extent overall economic gains are shared across the entire household distribution. Again, based on analysis by Saez & Piketty (2013), it is clear that while during the Clinton and Bush expansions, 45% and 65% of total income growth accrued to the top 1% of households, the bottom 99% still achieved total real income gains of 20 and 7% - by no means an insignificant relative overall gain. The recent post-recession years tell a different story: For the 2009-2011 economic recovery, all of the income gains have accrued to the top 1% of households. In fact, the bottom 99% saw their real incomes fall by 0.4%.

If the trend of flat average income gains persists beyond 2011, then households in the majority 99% of the income distribution may not be in a position to support spending to the same extent to which we have been accustomed. And these income figures only tell the story of the vast 99% of US households. Even more troubling trends of stagnant wages and other economic calamities would appear if we focused on the two lowest income quintiles. But we will reserve this analysis for a future MEI.

Real Income Growth by Groups				
	Average Income Real Growth	Top 1% Incomes Real Growth	Bottom 99% Incomes Real Growth	Fraction of total growth (or loss) captured by top 1%
	(1)	(2)	(3)	(4)
<b>Full period 1993-2011</b>	<b>13.1%</b>	<b>57.5%</b>	<b>5.8%</b>	<b>62%</b>
Clinton Expansion 1993-2000	31.5%	98.7%	20.3%	45%
<b>2001 Recession 2000-2002</b>	<b>-11.7%</b>	<b>-30.8%</b>	<b>-6.5%</b>	<b>57%</b>
Bush Expansion 2002-2007	16.1%	61.8%	6.8%	65%
<b>Great Recession 2007-2009</b>	<b>-17.4%</b>	<b>-36.3%</b>	<b>-11.6%</b>	<b>49%</b>
Recovery 2009-2011	1.7%	11.2%	-0.4%	121%

Source: Saez & Piketty (2013)

### Key Points

- **Income inequality has become an important topic of national discussion. Nearly 20% of total income can be attributed to the top 1% income-earning households in 2011.**
- **If the trend of flat average income gains persists beyond 2011, then households in the majority 99% of the income distribution may not be in a position to support spending to the same extent to which we have been accustomed.**

## FEBRUARY TRANSPORTATION FOCUS The Desire for Travel Time Reliability

Highway congestion and delay is common in many U.S. cities, and especially in the high density NY/NJ metropolitan region. Most travelers and freight operators do expect and plan for some delay and adjust their schedules or budget extra time to allow for traffic delays. But sometimes traffic delays are much worse than expected due to uncertainties, such as demand fluctuations, traffic incidents, weather, work zones, special events etc.

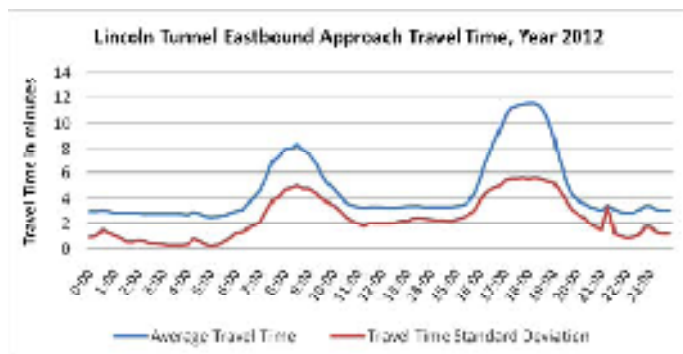
Travel time reliability is defined as the consistency or dependability in travel times, as measured from day-to-day and/or across different times of the day. Reliable and consistent travel times are related to improved safety, efficiency, and quality of life. On the other hand, unreliable travel times could impose substantial costs to transportation system users.

The figure below shows the general trends of travel time variation by time of day at 15 minute interval in year 2012, for the eastbound traffic approaching Lincoln Tunnel, covering a distance of a 2-mile stretch immediately west to the toll plaza. The standard deviation, in this case, measures the volatility and dispersion of travel times away from the average travel time.

The travel time standard deviation is highly correlated with the average travel time. In general, longer delays are associated with higher variability in travel times. However, the standard deviation tapers off when traffic condition become hyper-congested as during the PM peak hours (5 to 7PM). Hyper-congested condition starts when travel time keeps increasing while traffic throughput decreases.

In addition to the standard deviation, the 90th percentile travel time is another critical indicator of travel time reliability. It measures the extremes and is often used in making scheduling decisions in order to ensure on-time arrival 90 percent of the time. The minimum and maximum travel times are also used since they represent the best and the worst case scenarios.

The table below shows the annual average AM peak (6 to 10AM) travel time statistics of eastbound traffic approaching the Lincoln Tunnel. It shows that the travel time reliability has improved from 2010 to 2012 both in terms of reduced average and reduced standard deviation of travel time. According to the 90th percentile travel time, one can be 90% sure to cover the 2-mile distance in 12.52 minutes in 2012, saving more than 1 minute compared to 2010. The maximum travel time which indicates the worst case scenario decreased significantly and consistently by more than 68% during this period.



(Data source: INRIX Inc.)

Travel Time (minutes)	2010	2011	2012	%Change 10/11	%Change 11/12
Average	6.69	6.66	5.98	-0.41%	-10.29%
Standard Deviation	4.51	4.61	4.13	2.13%	-10.33%
Minimum	1.70	1.88	1.87	10.32%	-0.15%
90th Percentile	13.63	13.77	12.52	1.03%	-9.08%
Maximum	61.30	20.39	19.44	-66.75%	-4.65%

### Key Points

- Increased travel time reliability (defined as the consistency or dependability in travel times) contributes to improved safety, efficiency and quality of life.
- The travel time reliability was estimated by comparing travel time standard deviation, average travel time and the 90<sup>th</sup> percentile travel time.
- The data shows that the travel time reliability for eastbound traffic approaching Lincoln Tunnel improved from 2010 to 2012.

## MARCH SPECIAL FOCUS Baseline Economic Forecasts March 2013

Ah, the life of an economist... Just when one thinks that despite the fiscal drag, the domestic economy finally is sustaining some momentum into the new year, the European debt crisis raises its ugly head again. The fiscal restraint on spending as a result of the sequestration agreement, combined with the expiration of the payroll tax holiday and extension of long-term unemployment benefits, also came at exactly the wrong time in the business cycle and will lower 2013 real GDP growth without a doubt. Additional concerns about Europe may dim prospects for the year but, on a more hopeful note, 2013 might still be the year in which the underlying private sector fundamentals of the economy provide significant support for growth.

Overall, employment and other economic data suggest that starting in the summer of 2012, strength developed for the current economic expansion. Throughout the rest of 2012, consumer spending, nearly 70 percent of total economic activity, grew at a healthy clip. This was in large part due to a measurable improvement in the residential housing sector and an uptick in consumer confidence. Based on Federal Reserve data, household de-leveraging seems to have been completed, and consumers feel more confident again to take on additional debt, especially at current low interest rates.

The improvement in housing in particular is quite impressive. Sales transactions are up and many markets around the country now find themselves in a position of very low inventory levels. Private sector firms have been exploring investments in lower priced homes for a while and funds have begun to flow into the most devastated markets in the country, turning formerly owner-occupied homes into potentially lucrative rentals. The Case-Shiller 20-City Index experienced its largest year-over-year increase in January since the summer of 2006, with growth of 8.1 percent.

Nevertheless, our baseline forecast for 2013 and beyond has come down from last year's baseline. As shown in the table below, we expect real GDP growth for 2013 to be 1.7 percent. Beyond 2013, growth is projected to pick up to approximately 3 percent in 2014 through 2016. Total employment growth in 2013 is likely going to be held back by the fiscal drag, especially in the first half of the year. In fact, we would not be surprised if hiring slowed to approximately 100,000 jobs per month at some point. So far private sector job growth has appeared to be relatively unaffected early in 2013, but that might change during the second quarter as the sequestration cuts start to take hold more broadly.

For the PA region, our forecasts have real output growth to be slightly stronger than for the US economy. This is largely due to the strong regional employment growth, in particular the record jobs growth in New York City, last year. On balance, we expect employment growth to slow slightly for the city and the region but continue on a path that will continue its healthy pace into next year and beyond. As was the case since the end of the Great Recession, we expect that sectors such as leisure and hospitality, healthcare, education, and professional business services will be the main drivers for growth in the region.

Economic Forecasts		2013	2014	2015	2016
US	Real GDP [%]	1.7	2.9	3.1	3.2
	Unemployment [%]	7.9	7.7	6.8	5.8
Region	Real GRP [%]	1.9	3.5	3.5	3.1
	Employment gains [%]	0.7	1.2	1.6	1.6

*Source: Oxford Economics Macro Model, calibrated by PA Economics Unit.*

### Key Points

- We expect real GDP growth for 2013 to be 1.7 percent. Beyond 2013, growth is projected to pick up to approximately 3 percent in 2014 through 2016.
- Our baseline forecast for the US economy 2013 is lower than last year's baseline due to the impact of fiscal drag.
- We expect growth in the region to be slightly stronger compared with the U.S.
- Leisure, hospitality, healthcare, education, and professional business services are expected to be the main industry drivers for the region.

## MARCH TRANSPORTATION FOCUS A Greater Region

The New York metropolitan region continues to expand. According to new federal metropolitan area designations, the greater region now extends across 35 counties in four states.

The federal government delineates metropolitan regions to facilitate meaningful statistical comparisons nationwide. It defines a Metropolitan Statistical Area (MSA) as a region meeting certain population criteria and having “a high degree of social and economic integration with the central county or counties as measured through commuting.”

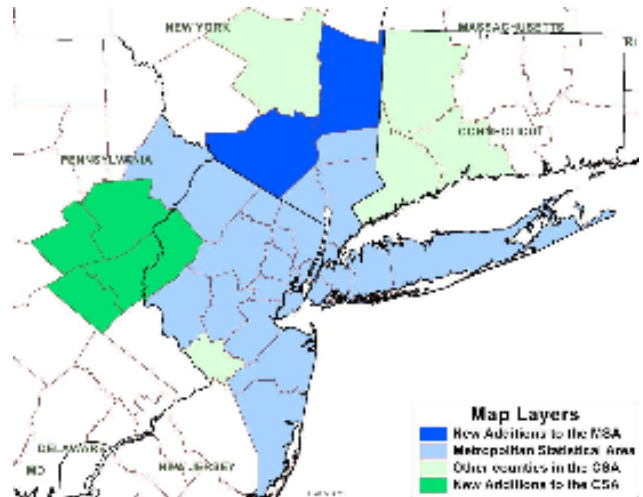
The federal Office of Management and Budget (OMB) establishes the standards used to delineate metropolitan areas for the purposes of statistical analysis. According to the 2010 standards, an outlying county is added to an MSA if at least 25 percent of the workers living in the county work in the MSA, or if at least 25 percent of the employment in the county is accounted for by workers who reside in the MSA. A county or smaller MSA that borders a larger

MSA becomes part of its larger Combined Statistical Area (CSA) if the share of its employed residents who work in the larger MSA plus the share of its employment held by residents of the larger MSA (the “employment interchange measure”) exceeds 15 percent.

OMB’s new metropolitan area delineations, applying these rules to the results of the 2010 Census and the American Community Survey, were released this month. They show a broader area of economic integration than ever before. The central “New York-Newark-Jersey City, NY-NJ-PA Metropolitan Statistical Area” now includes the former Poughkeepsie MSA (Orange and Dutchess counties) for a total of 25 counties, nearly 8,300 square miles, and over 19.5 million residents (shown in blue below).

The larger “New York-Newark, NY-NJ-CT-PA CSA” gained five counties with the addition of the Allentown and East Stroudsburg MSAs. It now includes ten counties outside the central MSA (shown in green), for a total of 13,800 square miles and 23 million residents. These outer areas are not necessarily “suburbanizing” or changing in other ways, but by the measure of commuting, their ties to the metro area are strengthening.

No single definition of the region fits all purposes. The Port Authority’s traditional 18-county planning area is still the hub of most of the region’s economic activity. And with distribution centers increasingly located 150 miles or more from their markets, a much larger scale is often needed for goods movement planning. But the new 35-county region is interesting because it roughly matches the area from which commuters can reach the Port Authority Bus Terminal, Penn Station or Grand Central Terminal by transit, and suggests an expanded way to think about our metropolis.



### Key Points

- The New York metropolitan region continues to expand. According to new federal designations, the New York-Newark Combined Statistical Area gained five counties with the addition of the Allentown and East Stroudsburg metropolitan areas.
- The greater metropolitan region now extends across 35 counties in four states, for a total of 13,800 square miles and 23 million residents. This represents a broader area of economic integration than ever before. The outer areas’ economic ties to the center of the metro area are strengthening.

## APRIL SPECIAL FOCUS The STEM Industry in the Region

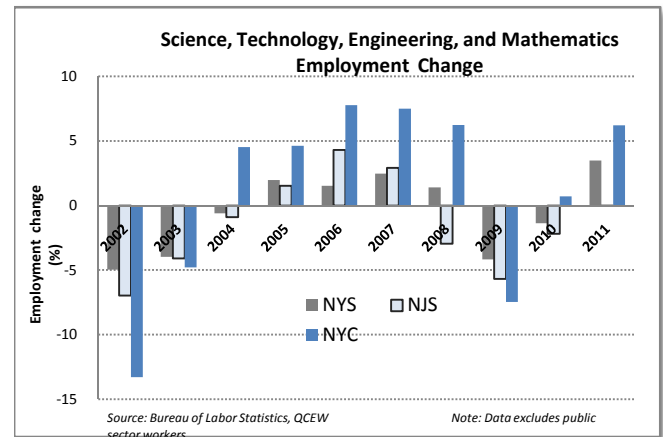
Since at least 2002, the U.S. government has projected that jobs requiring skills in science, technology, engineering, and mathematics (STEM) fields will experience rapid growth as technology-focused jobs play an increasingly important role. The U.S. economy largely realized this projection over the past decade: employment in STEM fields grew 7.9 percent from 2000 to 2010 while non-STEM employment grew just 2.6 percent for the same period according to the U.S. Department of Commerce. However, the STEM workforce has grown unevenly in the PA region over roughly the same period and since the Great Recession in particular.

New Jersey's STEM workforce has been declining since 2007. In 2011, the last year for which full-year data are available, the workforce touched its lowest level since 2001. While employment in the aerospace product and parts manufacturing industry increased 20 percent, this burst of growth did not offset employment declines in other STEM industries. For example, employment in the pharmaceutical and medicine manufacturing industry decreased 8 percent on average for the last four years and the computer and peripheral equipment manufacturing industry employment decreased an average of 18 percent over the same period.

Conversely, in 2011, New York State realized STEM employment growth of 3.5 percent, its highest increase between 2001 and 2011. In the same year, the computer systems design and related services industry increased 10.6 percent statewide with Manhattan contributing almost 50 percent of that increase. In 2011, Manhattan almost returned to its peak STEM employment level since 2008.

One of the potential reasons for different trends in STEM job growth in New York compared with New Jersey is the fact that the STEM jobs in New York have been focused on information services rather than manufacturing. While human resources are not easily substituted with capital in the development of digital applications—a large focus of New York's STEM industries—labor and capital are often substituted in manufacturing: a core focus of New Jersey's STEM industries. It is possible that STEM manufacturers in New Jersey realized cost savings by substituting capital for labor during the recession and have subsequently been less inclined to invest in labor given current levels of demand for their products.

Given that the earning levels of STEM workers are among the highest of the skilled workforce in the U.S., the PA region and the U.S. have a great incentive to encourage education and entrepreneurship in STEM fields. Although still relatively small in number compared with other sectors of the labor pool, the STEM workforce has an outsized impact on a nation's competitiveness, economic growth, and overall standard of living. The ability of the U.S. to adapt and foster technological innovation in STEM fields will play a large role in determining its level of economic competitiveness relative to other developed and emerging nations that are also investing in STEM education and business development.



### Key Points

- **New Jersey's STEM workforce has been declining since 2007 while New York's STEM workforce has grown rapidly.**
- **The different trends in New York/New Jersey may be due to the different focuses of the STEM industries in each state.**
- **Although still relatively small in number compared with other sectors of the labor pool, the STEM workforce has an outsized impact on a nation's competitiveness, economic growth, and overall standard of living.**

## Monthly Economic Indicators Year in Review 2013

### APRIL TRANSPORTATION FOCUS The PA Pulse Revisited

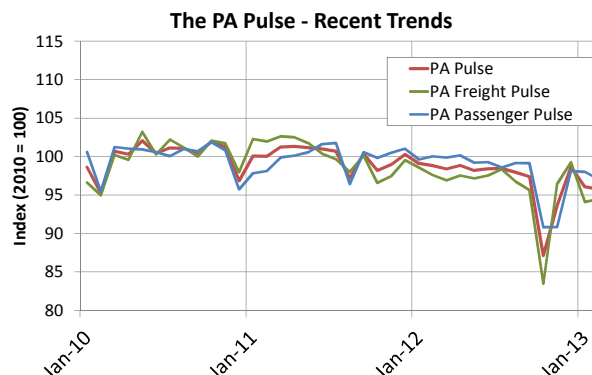
Last spring, the Port Authority announced the creation of the PA Pulse, an indicator that tracks the ebb and flow of freight and passenger activity levels at the region's ports, airports, and interstate transportation facilities. This index controls for the effects of seasonality and quirks of the calendar on transportation activity levels, providing a more meaningful way to compare month-to-month changes than analysis of raw data would allow.

One year later, we are pleased to release the first annual update to the PA Pulse. The fundamental methodology and components of the index remain the same as before. But as with all such indices, it is important for the index itself to keep up with change as activity patterns themselves evolve over time. The 2013 annual revision included incorporation of revisions to data series; re-estimation of seasonal adjustment factors using data series through December 2012 and the Census Bureau's new X-13-ARIMA-SEATS software; development of new weights for the freight variables using the latest FAF data; and greater use of both historic and contemporary bus survey data to improve estimates of bus passengers.

Overall, as of February 2013, the PA Pulse stood at 95.8, several percentage points below its 2010 baseline. This seems counterintuitive at a time when the region's economic indicators have been generally positive, but is consistent with a number of other trends. Overall, automobile use has been falling, a national trend that has been attributed to high gasoline prices, retirement of the auto oriented Baby Boomer generation, and the relative preference for an auto-free lifestyle by the Millennials who are replacing them in the workforce. And while Manhattan has seen a modest employment recovery, it is not clear that the workforce for these new jobs is drawn as heavily from the suburbs as the workforce that lost jobs in the recession. As for goods movement, a similar, persistent drop in truck traffic has also contributed to the index's decline from the 2010 baseline. This decline in truck activity is consistent with indications in national freight data that the trucks on the road today may each be carrying more freight than they have in years past.

Finally, the end of 2012 was a tumultuous time for the regional transportation network, with Superstorm Sandy causing the greatest disruption to the system since 9/11. While most regional transportation services have been restored, trans-Hudson travel levels remain below their pre-storm values. The reasons for this are not clear, but it is likely that overall activity levels in Lower Manhattan, as well as other parts of the region, have not fully recovered.

For more information on the PA Pulse, including downloadable data series and a discussion of its methodology, visit <http://www.panynj.gov/about/papulse.html>.



#### Key Points

- **The Port Authority released the first annual update to its regional transportation activity index, the PA Pulse. Both components of the PA Pulse (passenger and freight) have drifted downwards since the launch of the index a year earlier, despite an improving economic outlook.**
- **This reflects a general delinking of transportation activity from economic performance that has been seen here and in many parts of the country.**

## MAY SPECIAL FOCUS A Shorter Long Haul?

In late 2011 the Federal Motor Carrier Safety Administration (FMCSA) made headlines by approving the first new commercial truck operating hours of service (HOS) rules since 2003. Regulators argue that the new rules, for which compliance is required by July 1, 2013, will help reduce fatigue-related accidents on the road. In contrast, some industry representatives claim that the rules will drive up costs and reduce industry productivity without measurable health or safety benefits. Others assert that the costs will likely have a minimal effect on commercial carriers' profitability based on analysis of the effects of earlier rule changes. Below, we discuss the most significant change in the HOS rules compared with the current rules and the different views offered by the FMCSA, industry interest groups, and academic researchers on the new regulations' costs and benefits.

The main change in the HOS rules applies to what is known as the "34-hour restart provision." Currently commercial truck operators are limited to driving 60 hours on duty over 7 consecutive days, or 70 hours on duty over 8 days. However, operators may "restart" these periods after taking 34 consecutive hours, or more, off duty. The new HOS regulations mandate that the restart provision include two periods between 1 AM and 5 AM and that drivers limit the frequency of restarts to once per week.

The new provision is intended to improve working conditions for the segment of over-the-road ("long haul") operators who work the most intense schedules in the industry. These operators comprise roughly 15 percent of the commercial truck operator workforce and average 70 to 80 hours of work time per week according to the 2007 FMCSA Field Survey. The estimated benefit/cost ratio of the new regulation varies depending on the assumptions used to compute lost industry productivity, health benefits from sleep, and safety benefits from fewer fatigue-related crashes. According to regulatory impact analysis released by FMCSA in 2011, the estimated net benefits of the new HOS rules amount to \$205 million.

The FMCSA's analysis has drawn fire from the American Trucking Association (ATA), a leading industry representative. A report produced by an independent consultant commissioned by ATA questioned the FMCSA's assumptions about the frequency of fatigue-related large truck crashes, the benefits of increased sleep time to driver health and argued that the costs of the new regulation far outweigh any benefits. Analysis produced by Ahren Johnston, a logistics researcher at Missouri State University, suggests that the additional costs associated with new HOS rules may not have much of an effect on industry profitability (analysis of health and safety benefits were not considered). Johnston's analysis shows that while changes in the 2003 HOS rules were associated with an increase in the ratio of operating expenses to revenue for U.S. carriers (not including administrative expenses), the carriers' profitability, estimated by total return on assets, remained constant. This finding suggests that higher operating expenses were offset by reductions in assets, administrative expenses, or both.

Wages make up about one-third of shippers' total costs, so if the new rules require carriers to add more employees to compensate for the loss of long distance routes, some of these additional costs could make their way to consumers. Ultimately, time will tell whether the HOS rule changes will have a significant effect on the profitability of the trucking industry, the health and safety of commercial truck operators, and public safety.

Driver Group	Avg Weekly Work Time	% of Workforce
Moderate	45	66%
High	60	19%
Very High	70	10%
Extreme	80	5%
Total Drivers: 1.6 million		
Source: FMCSA 2007 Field Survey		

### Key Points

- **New hours of service regulations for long-haul truck state that operators driving 60 hours over 7 days or 70 hours over 8 days can restart their period of on-duty time after 34 hours of consecutive rest off-duty that includes two periods between 1AM and 5AM.**
- **The Federal Motor Carrier Safety Administration, industry groups, and policy experts have different, sometimes conflicting, views on the potential impact of the regulatory change on operator and public safety and the cost to carriers.**

### MAY TRANSPORTATION FOCUS Truck Patterns at Hunts Point, Bronx NY

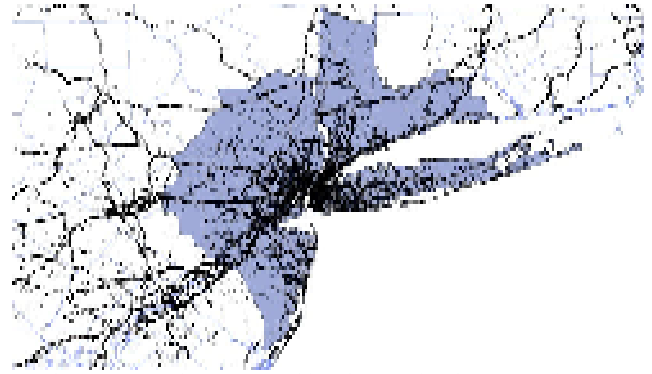
Hunts Point Food Distribution Center, the largest in the nation, handles produce, meat, fish, and specialty food products. These commodities are highly perishable, and therefore require fast and reliable transportation. Although the center's location was chosen in part due to its access by highway, rail, and water, trucking has become the dominant mode serving the Hunts Point area due to its relatively high speed and flexibility. The environmental, health, and safety impacts of truck traffic on the local transportation network has been a matter of ongoing concern for the community.

A better understanding of the truck activity generated at Hunts Point from a regional perspective would shed light on the potential for serving the area with alternative goods movement strategies. A previous NYSDOT study indicated that about 44% of the trucks in/out of Hunts Point are large trucks. Here we focus on the activities of large trucks serving Hunts Point, based on data from the American Truck Research Institute.

The trucks selected from the ATRI truck database were those that travelled in the 28-county NY/NJ Metro region during the week from May 2 to May 8, 2011. As described in the December 2012 edition of this newsletter, these trucks were traced for a three week period surrounding this selection week. Of the total 17,291 unique trucks in the dataset, 426 (2.5%) visited Hunts Point at least once in this period, and 300 of these (70%) specifically visited the food distribution center. The map below shows the GPS location reads generated by these Hunts Point trucks in the NY/NJ Metro region.

Of the 426 trucks visiting Hunts Point, about 11.5% of them returned to the peninsula more than once per week. Only 8% were local trucks that never traveled outside of the 28-county NY/NJ Metro region over the three week period. At some point in the study period, about 38% of the trucks visited Long Island, 98% of the trucks crossed the Hudson River, and 38% used the George Washington Bridge. Many of the trucks traveled quite long distances over this period: 9% visited the Pacific coast states; 47% visited New England and 3.3% visited both the west coast states and New England. In addition, 11% visited Florida, and 5.4% visited both FL and New England.

The majority of the trucks in the ATRI sample serve long distance markets, and 85% are large trucks, so these results may not be representative of the overall truck patterns at Hunts Point. However, they do provide some useful insights into the geography covered by many of the larger trucks visiting the site, as well as the nature and utility of the ATRI dataset for local analysis.



GPS location reads generated by the trucks that visited Hunts Point

#### Key Points

- **Truck GPS data was used to analyze from a regional perspective the activities of the large trucks visiting Hunts Point Food Distribution Center.**
- **The geographic coverage and behavior characteristics of the truck visiting the Hunts Point was examined.**
- **The analysis could shed light on the potential for serving the Hunts Point area with alternative goods movement strategies to reduce the negative impacts of truck traffic on local community.**

### JUNE SPECIAL FOCUS Uncertain Growth in Home Prices

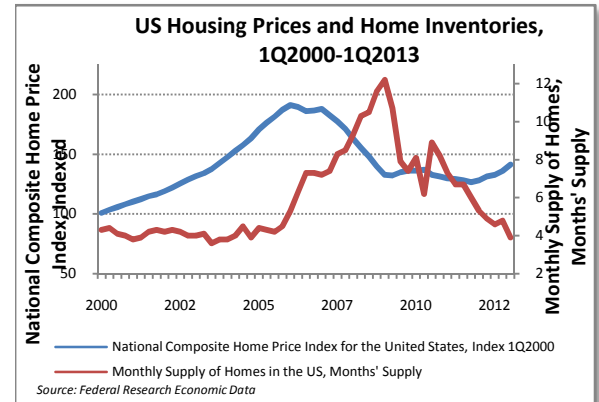
While the pace of the current economic recovery remains modest, one sector has picked up speed in recent months: housing. Despite tight credit conditions, house prices are rebounding from lows reached in late 2011 with prices in some regional markets growing more than 20 percent in the last year. This unexpected recent growth may be fueled by unprecedented market dynamics, including record low inventories and pent-up demand for properties.

The growth in demand for homes is fueled by the combination of traditional homebuyers looking to take advantage of current market conditions, and investors on the hunt for rental properties; according to the *Campbell HousingPulse Survey*, the percentage of homes purchased by investors was 20 percent in May. While purchases by institutional investors like BlackStone and Colony Capital constitute a miniscule portion of national home purchases, their tight geographic focus is driving strong price growth in Atlanta, Las Vegas, and other booming markets, reports CoreLogic. This competition is made more fierce as 76 percent of investor purchases in March were made in cash, compared with just 19 percent of purchases by current homeowners and first-time homebuyers. The ease of transacting in all cash means that purchasers who finance must raise their bids, pushing prices higher still.

Competition for properties is also reducing supply, pushing home inventory to its lowest level since 2005, a mere 4.1 months of sales. Additionally, considerable numbers (44 percent) of homeowners with mortgages are unable to sell their homes because of low or negative equity, according to the *Zillow Negative Equity Report*. While rising house prices lifted approximately 730,000 homeowners from negative equity in 1Q2013, the average underwater homeowner owes \$73,059 more than the current value of their home. Although construction starts, building permits, and new home sales have soared above 2011 lows, they remain below long-term averages and new construction is not currently able to meet surging demand. Homes in foreclosure and real estate owned (REO) properties constitute 4.6 months of additional “shadow inventory”, says CoreLogic, although this latter category is shrinking quickly due to purchases by investors.

Differences in foreclosure processes also have a material impact on regional housing price recovery. Port Authority analysis of house price trends in 20 metropolitan found that states with judiciary foreclosure (including New York and New Jersey) have experienced an increase in house prices of 7 percent on average, less than half of the 16 percent on average price recovery seen by states with few or no judiciary foreclosures.

As low inventories, record low interest rates and cash purchases drive home price appreciation across the country, it is questionable whether recent price increases are sustainable in the face of rising mortgage rates and tight credit.



#### Key Points

- **Housing prices have rebounded due in part to cash buyers exerting significant upward pressure in a housing market with a low level of houses available for sale and a low level of new housing starts.**
- **Differences in foreclosure processes also have a material impact on regional housing price recovery; states with judiciary foreclosures have seen lower rebounds in house prices compared with states with few or no judiciary foreclosures.**

### JUNE TRANSPORTATION FOCUS Drivers Hit the Brakes: The Puzzling Decline of National and Regional Auto Activity

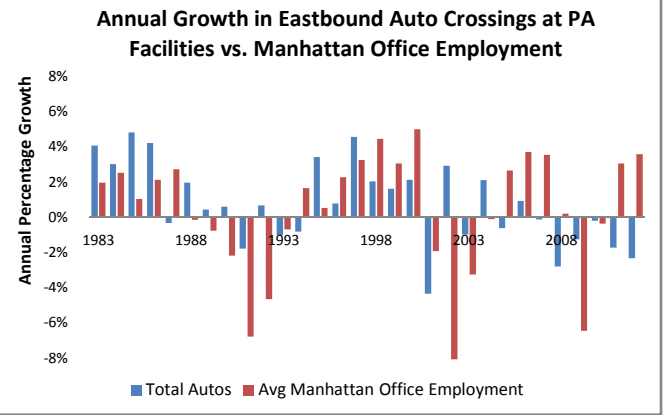
In November 2012, we wrote about the decline in automotive vehicle miles traveled (VMT) per capita across the nation and within the New York-New Jersey region. This trend, which dates back to 2006, has continued unabated. Lower driving activity has also been reflected in declining crossings at Port Authority and Metropolitan Transportation Association (MTA) bridges and tunnels, even after the end of the Great Recession. The decline is associated with a number of factors, including higher gas prices, the aging of the U.S. population, and changing driving habits of the U.S. labor force.

Since 2000, both the level and volatility of real gas prices have increased compared to previous decades, which partly explains the reduction in automotive VMT per capita since 2006. Gas prices, which are driven by global demand, have been significantly affected by China's rise as a manufacturing powerhouse and political instability in the Middle East over the last ten years.

Another key factor affecting driving trends nationally and regionally is the aging of the U.S. population. The cohort of drivers in their prime driving years, defined as drivers aged 35-54, peaked around 2000 and has been declining since that time. Younger cohorts have not picked up the slack. In fact, the number of miles driven by 16 to 34 year olds dropped 23 percent from 2001 to 2009 according to research by U.S. Public Interest Research Group. The effect of the Great Recession on younger workers accounts for some of this decline, but it is also indicative of the growing share of younger workers who eschew automobile ownership and seek to work and live in cities.

At the regional level, changes in the commuting and discretionary driving habits of the workforce may also be contributing to fewer vehicle trips over regional bridges and tunnels. For example, finance, insurance and related service sector employment, once a strong indicator of demand for regional auto activity, has returned to its pre-recession heights while auto crossings on regional transportation facilities have continued to fall. Strong growth rates in sectors that do not use offices, such as healthcare, hospitality, and education, are also running against the trend of declining crossings at regional bridges and tunnels.

It is far too early to say whether the shift toward lower automotive VMT per capita is permanent or temporary. What is clear is that the association between auto activity and the economic and demographic forces that helped propel U.S. and regional automotive usage upward through the 20th century appears to be weakening at present. The onset of persistent high gas prices and the effects of the Great Recession may explain part of this phenomenon, but changes in national and regional transportation mode preferences, home locations, and changes in the age and work schedules of the labor force may also be contributing to the decline of national and regional automotive activity.



#### Key Points

- Since 2006, national and regional vehicle miles traveled (VMT) have declined at the national and regional levels.
- Declining VMT may be due in part to high gas prices, the aging of the U.S. population, and changing driving habits of the U.S. labor force.

## JULY SPECIAL FOCUS Natural Gas: The Future of Energy?

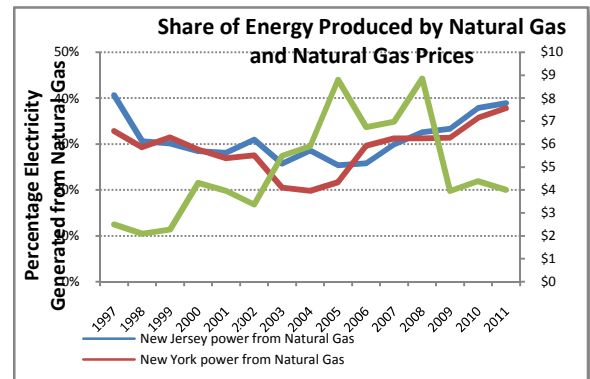
In March 2012, Monthly Economic Indicators discussed the drivers and implications of the volatile market for oil and gasoline. This month we return to analysis of the energy market with a focus on natural gas. For the last several years, the growing role of natural gas has been the biggest story in domestic energy. The explosive growth in natural gas production is driven by the development of hydraulic fracturing technology, commonly known as “fracking”, where millions of gallons of water, sand, and chemicals are injected underground to break up rock formations and release the gas and oil trapped therein. Growth in production from fracking has averaged over 40 percent *per year* from 2007 to 2011 and fracking is now responsible for nearly 30 percent of domestic natural gas production. While total production of natural gas has grown 15 percent since 2007, production from fracking has more than tripled. The United States still consumes more natural gas than it produces, though exports are expected to surpass imports by 2020.

Plunging prices from increased supply are already having local impacts. Combined with the growing transportation cost of coal, cheap natural gas is driving many power companies to switch to gas as their main input. Although natural gas is not predicted to overtake coal as the nation’s primary source of power generation until 2030, natural gas claimed the top spot in New York in four of the last five years and may pass nuclear as New Jersey’s top power source by 2018. Natural gas has also been highlighted in President Barack Obama’s recent Climate Action Plan as a “bridge fuel” to help America transition away from fossil fuels as energy generated with natural gas emits half the carbon dioxide of power from coal.

While electricity providers have been able to quickly transition from coal to natural gas, industry is actually the single largest consumer of natural gas in America, where natural gas is used both as a low-cost base ingredient for products such as plastics and anti-freeze, and as an input for various industrial processes. Industry supporters claim that manufacturers for whom natural gas is a major processing component may in fact relocate facilities back to the U.S. to take advantage of low natural gas prices.

Natural gas has its detractors as well. Estimated employment benefits vary widely and potential long-term health impacts of drinking water contaminated by fracking chemicals are still unknown. However, methane, the main ingredient of natural gas, traps over 20 times the amount of heat in the atmosphere as carbon dioxide. Depending on how much methane escapes during production, natural gas’s greenhouse effect may be larger than that of coal. Critics also argue that investment to increase the capacity for energy generation from natural gas is crowding out development of renewable energy resources such as wind and solar.

While natural gas production will undoubtedly play a major role in the region’s energy picture, the extent to which natural gas will act as a catalyst for the region’s economy remains to be seen.



### Key Points

- Natural gas has become a larger component of the energy supply of the United States in recent years and is posed to play a more significant role in the region as well.
- Critics argue that the benefits offered by the production of a robust supply of natural gas are outweighed by environmental and health costs attributed to extraction techniques, such as hydraulic fracturing (“fracking”).

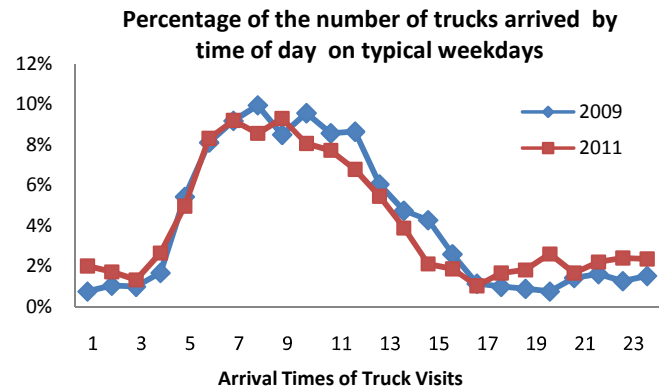
### JULY TRANSPORTATION FOCUS Off-Peak Hour Trucking in Manhattan

For trucking service providers, Manhattan is a rich source of clients, but poses significant operational challenges. Manhattan's congested, narrow streets and high parking fines take a toll both on the cost of doing business and on the environment, especially during peak hours. Shifting trucking operations to off-peak hours (e.g., 8PM to 4AM) can help reduce shipping costs and reduce the impacts of trucks on city traffic. The analysis of Manhattan truck movement data from the American Truck Research Institute (ATRI) database presented below suggests that a higher percentage of trucks serving Manhattan are shifting to off-peak hours, though the sample data used in this analysis may not be representative of all the trucks serving Manhattan.

The figure below is based on the GPS data collected from the trucks making visits (delivery or pick up) in Manhattan for one week (Monday to Friday) in the months of October, 2009 and October, 2011. The data sample captured 295 distinct trucks making 1276 customer visits (or trips) in Manhattan in the week of 2009 and 397 trucks making 2028 customer visits in the week of 2011. The analysis is limited to estimated customer visits—trucks that stopped for a continuous 15 minutes at a given location—in order to avoid including stops due to severe congestion and traffic signals.

The figure shows that on a typical weekday, the shares of visits made during regular business hours from 7AM to 5PM were consistently lower in 2011 than in 2009, with the exception of 9AM where 2011 was slightly higher. On the other hand, the shares of visits made during non-regular business hours were consistently equal or higher in 2011 than in 2009. From 2009 to 2011, the periods of late morning and early afternoon showed the greatest declines, while the greatest increases occurred in the periods of evening and midnight. The shares of visits made in the early morning hours of 5AM to 7AM barely changed, likely because, for many companies, taking deliveries during this period are critical for their operations—in particular, for firms receiving shipments of perishable goods.

The success of the off-peak strategy largely depends on the participation of the shippers and receivers. For many of them, operating outside their regular business hours means increased labor and inventory costs. New York and many other cities are exploring policies and technologies to promote off-peak deliveries, such as financial incentives, reform of ordinances restricting operating hours, recognition programs for businesses adopting neighbor-friendly practices, and unassisted delivery systems. Statistical analysis of GPS data provides a potential tool for tracking trends and measuring the impact of these policies.



#### Key Points

- Analyzed the truck GPS data for the trucking operations in Manhattan where truck traffic has a big impact on congestion, especially during peak hours.
- The analysis results suggested that a higher percentage of trucks serving Manhattan are shifting to off-peak hours.
- Statistical analysis of GPS data provides a potential tool for tracking traffic trends and measuring the impact of transportation related policies.

### AUGUST SPECIAL FOCUS The New GDP: Do You Feel Richer?

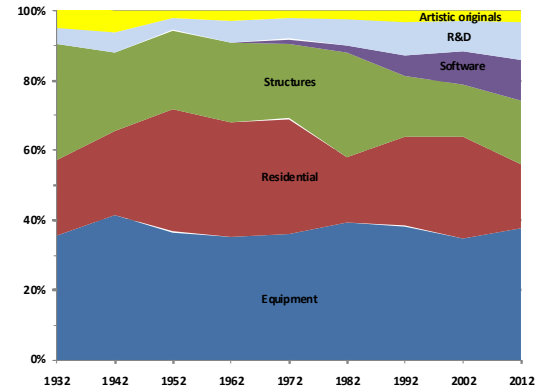
Last month, the Bureau of Economic Analysis released a comprehensive revision to its calculations of Gross Domestic Product (GDP) that incorporated new categories of investment and bumped current US GDP up by more than \$500 billion. The revisions also showed that the recession was not quite as deep and the recovery stronger than originally thought. For 2012, US GDP growth was revised from 2.2% – fairly middling growth – to 2.8% – much more robust. Does this mean that we're richer than we thought?

In some sense, yes, although our individual bank accounts may not have seen a boost. GDP is an *estimate* of the value of goods and services produced in the US. Our understanding of the goods and services that are produced, and our ability to estimate their values, is continually evolving. Over the last decades, for example, intellectual properties such as research and development (R&D) have become a bigger part of our economy (see chart). Yet our measure of GDP had effectively ignored R&D by assuming it had no lasting value. In line with new international standards, the government now recognizes R&D as an investment that produces value over time. The government's calculations had also ignored the work that goes into creating "artistic originals" such as movies, music, books, and television programs. The new method now captures the work of film and TV producers, musicians, writers, and other artists – at least where the work is thought to have a value beyond the first year. Combined with several other corrections, GDP now appears about three percent higher than the earlier under-estimate.

It is important to realize that measures of economic output are inaccurate in nature as they only provide a best estimate of the monetary value of the volume of goods and services produced by an economy over a certain period of time. This revised GDP is still an incomplete estimate, in that it continues to ignore the value of certain goods and services. For example, over the last few years, so-called "green" accounting has begun to place a value on the services provided by our natural environment. A GDP measure that incorporated green accounting would consider the negative effects of pollution and strip-mining along with the beneficial effects of reforestation and land conservation, beyond the spending on these activities that is already counted. GDP also does not take into account quality of life indicators, such as increases or decreases in leisure time or life expectancy, nor does it account for how evenly GDP is distributed among the population.

(We should note that the revisions to GDP that show that the recession was slightly less deep and the recovery slightly stronger are mostly unrelated to these methodology refinements. Instead, these revisions reflect normal calibrations that occur as better data become available.)

In the end, then GDP is a useful measure of the performance of our economy; but it should not be taken as the definitive measure of everything in the economy. This year's revision does not put more money in our pockets; but it does help us understand better the value produced by our economy.



#### Key Points

- For 2012, US GDP growth was revised from 2.2% to 2.8%, bumping up US GDP by more than \$500 billion.
- The revised calculation of GDP includes estimates for new categories such as artistic originals, which measures the value of entertainment products, and intellectual properties, which measures the value of scientific research and development.

### AUGUST TRANSPORTATION FOCUS Flexible Work Schedules and Travel Trends

There has been great interest recently in the decline in personal travel nationally and within the region. Between June 2007 and June 2013, national Vehicle Miles Traveled declined by 0.8 percent (despite population growth of 5 percent) and automobile traffic at PA facilities fell by 8.2 percent. Among the many explanations for this trend are that employment has not fully recovered from the Great Recession (at least nationally), and that cultural and demographic changes are occurring (such as the Millennial generation's preference for urban living and reduced car ownership.)

Using the American Time Use Survey, we assessed additional possible explanations, including trends in the frequency in which people work at home and commute to work during the week. The results obtained from the survey show that over the last decade there has been an increase in the share of people working from home and a decline in the share of people working at work sites on any given day.

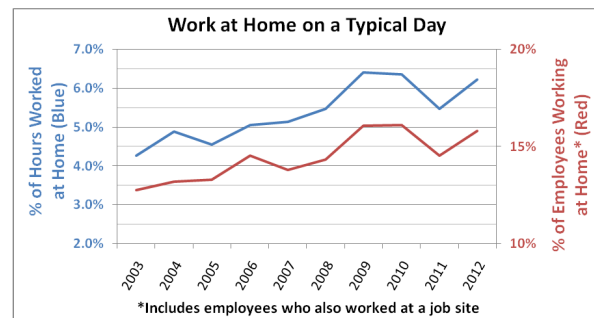
The American Time Use Survey is conducted by the Bureau of Labor Statistics and it provides estimates of how, where, and with whom Americans are spending their time. The data files from the survey include information collected from over 13,000 interviews conducted each year from 2003 to 2012.

Among many other indicators, the survey tracks the time employees spend working at home or at a jobsite on an average day (including both weekdays and weekends). In all cases, the overall number of people working in the country has increased, due to the nation growing in population over the ten years the survey has been conducted. Among the employees who worked on a typical day, the share who worked at a job site declined from about 87% in 2003 to about 84.5% in 2012. The share who worked at home rose from about 19% in 2003 to about 23% in 2012. People who worked at both locations are included in both groups.

The survey also tracks the average hours worked in each location. The results suggest that the share of hours worked at home has been increasing over the last decade, from about 4.3% in 2003 to about 6.2% in 2012. The following graph illustrates the trends in the share of employees that work from home and the share of hours worked from home by employees from 2003 to 2012.

Another possible explanation for the apparent decline in peak hour demand could be that more of the workforce has unconventional work schedules, such as work shifts on weekends. The American Time Use Survey includes data on the number of hours worked on weekdays vs. weekends, so it can provide some insight into this question. However, the data does not show a clear trend toward more work on weekends. Overall, the percentage of hours worked on the weekend/holiday has increased by roughly .2%.

The American Time Use Survey suggests that on average more people are working more often from home, working longer hours at home, and commuting less to work. However, there is no support for the hypothesis that commutes are shifting from weekdays to weekends. These results are independent of the unemployment rate and any cultural changes that may be occurring concerning popularity of the automobile, and may help explain the decline in travel observed over the last couple of years.



#### Key Points

- **Analysis of results from the American Time Use Survey suggest that over the last decade there has been an increase in the share of people working from home and a decline in the share of people working at work sites on any given day. Workers are commuting to work less frequently.**
- **There does not appear to be support for the hypothesis that the decline in weekday commuting is due to an increase in work on weekends.**

## SEPTEMBER SPECIAL FOCUS India's Manufacturing Sector Sputters

India, the United States's thirteenth largest trading partner by dollar value and the Port Authority's third largest import partner by volume, has recently seen its economic growth sputter, particularly its manufacturing base, due to a variety of domestic policy challenges. The country's recent economic struggles suggest that although the country has excelled in developing markets for its technology-oriented services, which account for over half of GDP, economic growth has been uneven, in part due to its lagging manufacturing sector, which accounts for 15 percent of GDP according to The World Bank.

Business got particularly rocky for Indian manufacturers this past summer. In August, HSBC's Purchasing Managers' Index for India's manufacturing sector dipped below 50, signaling a contraction in manufacturing production for the first time in over four years. The reasons behind the slowdown are numerous, but chief among them are gridlocked roads, inefficient ports, and government regulations that limit the ability of manufacturers to grow and cluster around suppliers. As demand for exports has declined, the rupee's value has declined considerably, falling 32 percent against the U.S. dollar since 2010. Textbook economics suggests that India's cheap exchange rate should bolster exports, but the country has in fact experienced declining productivity due in part to the structural impediments that have dampened demand. In 2012, India's GDP per employed person grew at 3.7 percent, its lowest rate in nearly a decade, according to The Conference Board.

India's slowdown is meaningful to the Port because the country has become an increasingly valuable partner to the Port in recent years, though the total volume of goods imported from India is still smaller than the volume from China or Italy—the Port's top two import origins by volume, respectively. From 2009 to 2010 only two vessel services connected the Port and India. Today, nine do. From August 2010 to August 2013, annual growth of containerized imports from India neared double-digits, rising from 87,000 in 2010 to 101,000 in 2013. The Port is positioned competitively to receive goods from India because freight arriving from South Asia is typically received on the East Coast of the U.S. via the Suez Canal rather than the West Coast via the Panama Canal, which receives most of the United States's imports from China. Unlike goods from China, which are driven by demand in the Port Authority region, imports from India are driven by nationwide demand. The top imports from India by volume are broadly used construction commodities, such as plaster and Belgian block.

India remains one of the pre-eminent emerging economies, having developed global niches in information technology services and software development, but a number of major structural reforms are necessary in order for the country to establish a strong growth rate in non-service sectors. To date, the flow of goods from India to the U.S., and the Port in particular, has grown at a steady rate. Whether or not this trend continues over the long-term is dependent in part on India's ability to overcome its current domestic woes and provide its manufacturing sector with the tools to grow.



### Key Points

- The productivity of India's manufacturing base has slowed recently due to poor infrastructure and high land values.
- The Port is positioned competitively to receive goods from India because freight arriving from South Asia is typically received on the East Coast of the U.S. via the Suez Canal.

## SEPTEMBER TRANSPORTATION FOCUS A Dynamic but Elusive Travel Market

Long in decline, intercity buses have seen a significant revival since the late 1990s, when low-fare curbside services began to connect the Chinatowns of major cities in the Northeast. These routes quickly gained a following, soon reaching beyond the immigrant community and college students to a broader market. The mid-2000s saw the rapid rise of a curbside market in midtown, as new entrants lured customers with WiFi and other amenities. Well-capitalized legacy carriers joined this discount curbside market in 2008, with Stagecoach's launch of its Megabus brand in the U.S. and Greyhound and Peter Pan's launch of BoltBus, both based in Midtown. In the past two years, federal safety crackdowns shuttered several of the larger discount Chinatown operators, further shifting the balance of activity toward Midtown.

Unfortunately, there has been no data available to help trace the growth and evolution of this market, so its contribution to the overall intercity travel picture remains poorly understood. To address this, the Port Authority has conducted a scan of intercity bus operations each of the past three summers. This effort inventoried the schedules and operating locations of curbside bus services based on their websites and schedules posted on GotoBus.com. The survey day was a Friday in August, which should represent a 90-95th percentile day in activity levels. This method has limitations (e.g. it doesn't capture operators lacking an internet presence, or a single departure time served by multiple vehicles), but provides a reasonable snapshot of the market's scale and dynamics.

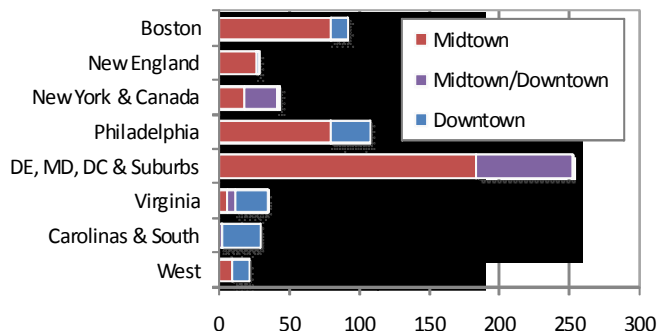
The graph below shows the estimated scheduled bus arrivals and departures from the most recent survey. In total, it captures 613 scheduled arrivals or departures from the Manhattan CBD. Of these, over 41 percent served the Delaware/Baltimore/Washington market. This is a very competitive market, with at least eight established operators. Most of these (BoltBus, DC2NY, Megabus, Tripper, and Vamoose) serve Midtown exclusively, while others (Eastern Travel/Hola Bus, Rockledge, and Washington Deluxe) stop in both Midtown and Chinatown on each run.

Boston and Philadelphia are each currently served by fewer than half of the curbside buses that serve the Baltimore/Washington market. Both have seen major carriers shuttered by federal safety crackdowns, leading to activity levels that are significantly lower downtown than they were a couple of years ago. But these downtown operations are beginning to bounce back, and will likely grow over the next year. Greyhound and Peter Pan are beginning to compete head-to-head with their downtown rivals for the Boston and Philadelphia markets through their new Yo! Bus brand. And two major Boston carriers (Fung Wah and Lucky Star) are petitioning USDOT to reinstate their licenses.

Longer-distance curbside operations serving locations further to the South and West tend to be concentrated in Chinatown rather than Midtown.

So far, operations outside the CBD have been limited. BoltBus has a small hub at Newark, and Megabus stops at Secaucus for its Northeast Corridor runs that skip Manhattan and in Ridgewood, NJ along its NYC-Albany service. There are also some very small carriers that operate out of Upper Manhattan and Brooklyn. As NYC's new permitting regime for intercity buses enters into force, it should help bring additional clarity to the scope of the operations in the outer boroughs. The permits may actually entice operators to test new markets, since they will now know that any new terminal locations have the city's approval.

Estimated Curbside Intercity Bus Operations, Aug. 9, 2013



### Key Points

- Intercity buses have seen a significant revival since the late 1990s, when low-fare curbside services began to connect the Chinatowns of major cities in the Northeast.
- This market has grown rapidly in ridership, geographic scope, and diversity of carriers participating.
- To address the lack of data available to help trace the growth and evolution of this market, the Port Authority has conducted a scan of intercity bus operations each of the past three summers.

### **OCTOBER SPECIAL FOCUS**   **Post–Sandy Financial District Employment Rebounds– Just Not in Finance**

A little more than a year ago, the Northeast Seaboard emerged from the onslaught of Superstorm Sandy and began to evaluate the extent of the damage. Through nearly heroic efforts, much of the region's infrastructure was back up and running within a week, but hard-hit coastal areas suffered longer-lasting physical damage. As an agency with a keen interest in regional commuting trends, we have begun to explore how this damage may have affected employment in those areas, beginning with Lower Manhattan.

While much of Lower Manhattan saw power restored within a week, many buildings suffered physical damage that took much longer to repair. Heating systems that were at ground level or below had to be repaired, and Verizon's copper telephone lines downtown were effectively destroyed by corrosion from salt water. Tenants had to either make do and wait for systems to be restored, or relocate to other parts of the city. For some, the physical damage and loss of customers likely meant they had to close their business.

Detailed employment data from the New York State Department of Labor help shed light for the first time on how this damage affected employment downtown. In most of the city, the upward trend in employment that had existed before the storm in Manhattan and throughout New York City continued without any noticeable effects after the storm. However, the Financial District, specifically the six zip codes below Chambers Street and part of Worth Street, showed some striking effects. Overall Manhattan private sector employment grew by 2.3% over the four quarters ending in March 2013, but total private sector employment in the Financial District fell slightly, and financial sector employment in the neighborhood dropped by 2,900 jobs, or nearly 7%.

Yet, the Financial District is no longer – if it ever was – just finance sector jobs. Although finance comprised nearly 28% of the Financial District's private sector employment in the first quarter of 2012, other sectors were responsible for sizable portions of the employment profile: professional services jobs made up 20% of Financial District jobs, administration – 9%, and health care – 10%. These other sectors offset some of the losses suffered in financial sector employment. Over the course of 2012, the professional services sector added more than 800 jobs and the administration and support sector added a little more than 1,200 jobs. Together these gains offset nearly 70% of the losses from the financial sector. The strength of these sectors in the wake of the storm reflects the continuing diversification of the downtown economy, as non-finance jobs have grown from 56% of the Financial District's jobs in 2000 to 72% today.

#### **Key Points**

- **Lower Manhattan suffered extensive physical damage due to Hurricane Sandy, but Manhattan private sector continued to climb upward.**
- **The loss of financial service jobs in the Financial District was partly offset by gains in professional services, administration, and healthcare.**

### OCTOBER TRANSPORTATION FOCUS Industry Logistics and Regional Truck Traffic

Since 2009, the Port Authority has observed a trend of declining truck trips on its Trans-Hudson facilities. With a growing regional population, this trend contradicts the expectation that an increased demand for goods should translate into increased truck traffic. The decrease may be attributable to higher vehicle operating costs but a careful review of the evidence suggests that other factors may be at work. After interviewing regional shippers, receivers, and third party logistics companies, one answer is clear: companies are investing in operational efficiencies. These efficiencies are largely the result of two complementary factors: (1) a new model for distribution center (DC) siting and (2) supply chain optimization. With operating costs, gas prices, land values, and congestion increasing in the metropolitan region, and the weak economy pressing trucking companies to develop smarter operations, these cost-saving efficiencies are becoming industry norms. Anecdotal evidence suggests these evolving practices may be contributing to the decline in truck traffic between the states.

Traditionally, companies located DCs near major population hubs. While a number of companies are constructing or expanding DCs near these hubs to accommodate expedited product delivery for on-line retailers, many companies, notably store-based retailers, are siting DCs outside of major population centers.

Instead of providing direct access to a single market, these larger, regional DCs provide ease of access to multiple markets, ample labor availability, and multimodal transportation, in addition to decreased land, congestion, and operational costs. For the New York-New Jersey metropolitan region, this means DCs are relocating to the Carolinas, Georgia, Tennessee, and Pennsylvania. As these facilities encompass an expanding service area, reliance on smaller, local warehouses wanes. Subsequently, the preferred size of truck shifts from smaller to larger to best accommodate the new, regional DCs. This shift increases carrying capacity, allowing shippers to reduce the number of trucks transporting goods.

Supply chain optimization also enhances a shipper's capacity to reduce truck trips. For instance, rather than delivering less-than-truckload shipments—as was common with the prevalence of smaller, local warehouses—many companies are combining shipments into one truck by developing merge or consolidation centers. Optimization also occurs as empty backhauls are eliminated by coordinating separate deliveries within one trip or through arranging backhauls at the shipping destination, such as transporting the receiver's recyclables or waste. Complementing these optimization efficiencies, shippers are enhancing space utilization to increase the trucks' carrying capacity. For one Fortune 500 retailer, this process has increased a truck's carrying capacity by 64 percent. These optimization techniques are becoming so critical for competitiveness that two national retail competitors have reported sharing space on less-than-truckload deliveries.

Evolving technologies are also facilitating supply chain optimization, and thus contributing to reduced truck trips. One example includes retailers investing in RFID technology to continuously track and monitor the location and inventory of their goods. Through more accurate tracking of inventory levels, retailers are reducing the number of truck trips serving a facility as goods are replenished more accurately.

There is no single answer as to why truck trips are declining between New York and New Jersey—the trend is likely compounded by larger economic forces and evolving business models. However, it is clear that shifting logistics models and private sector efficiency measures are directly influencing the goods movement system in the New York-New Jersey metropolitan region.

#### Key Points

- **Decreasing truck trips across the Port Authority's Trans-Hudson facilities are largely the result of two complementary factors: a new distribution center (DC) model and supply chain optimization.**
- **Changing business models influence national DC siting decisions. In the current business cycle, online retailers are more apt to site DCs near major population hubs while store-based retailers approach siting decisions from a regional perspective. These siting decisions influence truck size and carrying capacity.**
- **Supply chain optimization—supported by more efficient DC models—is contributing to the reduction of truck trips. Eliminating empty backhauls, enhancing truck space utilization, and evolving logistics technologies contribute to these optimizations in the supply chain.**

## NOVEMBER SPECIAL FOCUS Does Pricey Parking in Manhattan Account for Declining Auto Traffic?

Throughout the region, the volume of auto crossings at regional bridges and tunnels to Manhattan has been declining since 2007. At the same time, the number of off-street parking spaces in Manhattan's central business district (CBD) has hit a record low of 102,000 spaces and the prices of unreserved monthly parking in the CBD are among the highest in the nation. Could the shrinking supply of parking in midtown and downtown Manhattan and associated high prices for parking be linked with declining auto crossings to Manhattan?

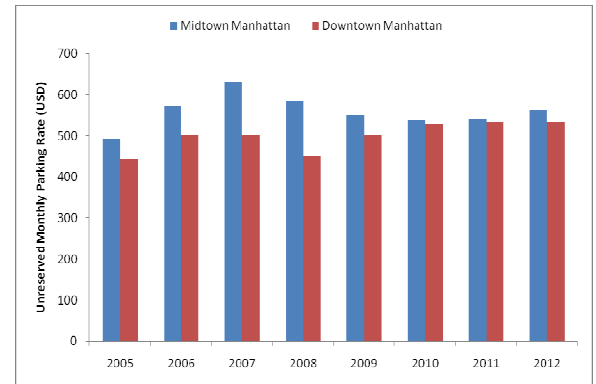
Over the past three decades, off-street parking spaces in Manhattan's CBD (blocks south of 60<sup>th</sup> street) have become scarcer. From 1978 to 2010, the number of public off-street parking spaces in the central business district, which includes retail garages and spaces associated with residential buildings (but operated as publicly accessible lots), has fallen almost 20 percent from 127,000 spaces to 102,000 spaces according to New York City's Department of City Planning. The decline is due in part to a 1982 change to city statutes regulating the amount of parking required by new development. Prior to 1982, new buildings in the CBD were required to provide a minimum amount of parking. After 1982, the statute made it optional for developers to add parking and set maximum parking allowances for new buildings. In addition, old public parking facilities have been converted into new commercial and residential developments, further reducing supply.

The smaller supply of off-street parking has contributed to making off-street parking spaces in the CBD among the most expensive in the nation. As of 2012, according to data from commercial real estate advisor Colliers International, the median value of CBD off-street parking in Manhattan was nearly \$145 higher than CBD off-street parking in Boston, which has the second most expensive rate at \$405. Yet sticker shock is likely not what is keeping drivers out of the CBD. If demand for parking had remained constant while the supply of spaces has continued to fall, then we would expect to see the price of spaces continue to rise. Instead, as of 2012, the median price of off-street parking in the CBD is about where it was in 2006.

One factor keeping prices in check may be the use of digital technology by visitors, residents, and commuters to identify the best available parking deals. More informed consumers might have created intense price pressure, leading garages to offer a variety of discounts for drivers.

But the more obvious explanation for lower parking demand is that the region's economy has changed in significant ways since the Great Recession. The number of high-paying jobs in finance, insurance and real estate has not returned to its pre-recession level. This is meaningful because the propensity for car ownership increases with income levels. Work schedules have also become more flexible and telecommuting has grown in popularity as a result. Gas prices, which until recently had hovered near the \$4.00 mark, may also have played a role in pushing visitors and commuters to public transportation.

It is tempting to single out the high price of parking as the main reason why auto crossings to Manhattan's CBD have been trending downward, but, as we have noted in previous newsletters, the data suggest that employment levels and other larger economic factors have stronger relationships with the current trend.



### Key Points

- From 1978 to 2010, the number of parking spaces in Manhattan's central business district (CBD) declined from 127,000 to 102,000—nearly 20 percent.
- The price of parking in Manhattan's CBD has remained roughly flat for the past several years, even while the number of spaces has declined. This suggests that demand for off-street parking has slackened.

## NOVEMBER TRANSPORTATION FOCUS Inbound International Air Market: China to U.S.

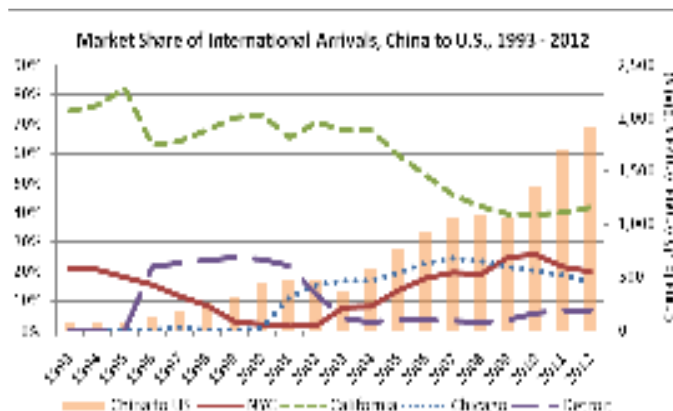
The aviation industry plays a vital role in enabling the economic growth of the region and promoting tourism and trade. By taking advantage of the region's busy airports, New York City continues to be the world's premier travel destination. In recent years, attracting international visitors to New York City became a priority for the regional travel and tourism industry, since international travelers spend much more than domestic travelers on every visit.

Boosted by rising disposable incomes and the relaxation of restrictions on foreign travel, China has become the world's fastest growing source of international tourists. In 2012, 83 million Chinese travelers spent \$102 billion abroad — overtaking Americans and Germans — to become the top nation in terms of tourist spending abroad. Chinese visitors spend about \$6,000 each on every visit to the U.S. — much more than the average spending from visitors of other nationalities.

Looking at the trend of arrivals from China to the U.S. over the past two decades, the growth is astonishing. China ranked the 11th in 2012 as origin of international arrivals to the U.S., rising from the 62nd place in 1993. While the trauma of 9/11 and the SARS outbreak in China in 2003 temporarily slowed air travel growth, the most powerful forces that have affected and continue to affect the U.S. — China travel market are political and trade restrictions and airline network strategies.

Inbound China – U.S. traffic was until recently concentrated at just a few U.S. airports, partly due to the “bilateral Air Service Agreements” (ASAs) between U.S. and China. Until 1996, NYC and California were the only two major U.S. ports of entry for arrivals from China. Beginning in the early nineties, the loosening of ASAs between the U.S. and China allowed more airlines and U.S. airports to enter the U.S. – China market. The new competition caused the market share of NYC and California to drop significantly after 1995.

Until 1996, Air China – a major international carrier of China – was the only airline serving the China – NYC market. When Air China stopped flights to NYC in 1999, NYC's share of the U.S. – China market tumbled to the lowest in its history. New services, such as United Airlines' nonstop service from Chicago to China, initiated in 2001, contributed to downward pressure on NYC and California. Beginning in 1996, Detroit absorbed more than 20% of the U.S. – China market share when Northwest Airlines struck a deal with Air China and started serving nonstop flights from Detroit. However, traffic dropped dramatically after 2002 as Northwest Airlines ended its nonstop operations. NYC picked up the slack right away as Air China resumed its NYC nonstop service in late 2002 using the new, faster polar route. In 2003 Air China joined a marketing alliance with United Airlines, boosting NYC's market share even further. In 2009, New York City's share of the U.S. – China market recovered to its 1993 level.



Data Source: Bureau of Transportation Statistics T-100 database

### Key Points

- New York City continues to be the world's premier travel destination.
- International travelers spend much more than domestic travelers on every visit. It is vital for the travel and tourism industry to attract international visitors, especially those from the fastest growing market: China.
- Among the powerful forces that have affected and continue to affect the U.S. - China travel market are political and trade restrictions and airline network strategies.

### DECEMBER SPECIAL FOCUS The New Food Economy

As part of our work to understand and forecast vehicle traffic between New York and New Jersey, we've taken a look at some of the top commodities shipped between the states. The number one commodity is one we all consume every day: food and beverages. Shipments of food and beverages appear to have grown only slightly over the last few years, reflecting the region's growing population, tourism, and maybe slight growth in our waistlines. Yet restaurants, bars, and other food service establishments have been one of the fastest-growing sources of employment in the metropolitan region. Since 2001, the region has added 150,000 food service jobs, growing 41 percent to 520,000 jobs in 2012. Manhattan alone added 50,000 jobs in this sector, an increase of 53 percent.

To some extent, job growth in the food services sector reflects the continuation of a decades-long trend of Americans increasingly eating out. Food service jobs nationally have grown 20 percent since 2001, compared with economy-wide job growth of just 2 percent. Faster regional growth may reflect both the surge in tourism in New York and the explosive growth of a new food culture. According to NYC & Co., tourist trips to New York City have increased 48 percent since 2001, with visits by international travelers, who tend to spend the most, up 86 percent. At the same time, the region has developed a new food economy, exemplified by food trucks trawling for lunch time customers, long lines for creations like the Cronut and ramen burgers, and the opening of dozens if not hundreds of restaurants in Manhattan by celebrity chefs. Dining out is no longer restricted to traditional restaurants: cafes at museums are often an attraction in their own right, CitiField has over twenty eateries, and the IKEA home furnishings store has become famous for its meatballs. The food economy trend is much stronger in the region than in the nation as a whole – the number of restaurants in the New York-New Jersey region has grown 36 percent since 2001, versus 23 percent for the US.

Despite this growth, jobs at these new establishments tend to be among the lowest-paying in the entire economy. Including tips, food service jobs in the region pay about \$22,000 per year – about one-third of what the average job pays. Shorter hours account for some of the difference – a large number of these jobs are part-time. Some of these jobs reflect regional residents taking advantage of the dynamism of our economy to make money from activities that for some used to be a hobby. But more broadly, the growth of the food service sector is part of a long-term shift to low-paying jobs in both the region and the nation. Nationally, the food service sector has grown by 1.7 million jobs since 2001, accounting for 80 percent of net new jobs. In our metropolitan region, the shift is even more dramatic: if growth in the food services sector is excluded, the rest of the economy, both in Manhattan and in the rest of the region, actually lost jobs since 2001. The magnitude of this shift to lower-paying jobs helps explain why so many households have seen their incomes stagnate or even drop over the last decade. Given the obvious importance of food in our lives, it seems poised to retain its status as the top commodity shipped across the Hudson. At the same time, food shipments are not likely to grow much faster than the region's population. After all, we each have a finite appetite (maybe we've even stopped loosening our waistbands). There's only so much pizza – and dried kale – a body can take.

#### Key Points

- Since 2001, the region has added 150,000 food service jobs, growing 41 percent to 520,000 jobs in 2012. Manhattan alone added 50,000 jobs in this sector, an increase of 53 percent.
- The growth in food service jobs is due to a surge in tourism, the development of a food economy oriented around food trucks and specialty items, as well as the expanding ranks of celebrity chefs.
- These new jobs are among the lowest-paying in the economy, and emblematic of the on-going national shift in the U.S. toward lower wage jobs. This has led the incomes of many households to stagnate.