CSCMP'S ANNUAL

STATE OF LOGISTICS REPORT®

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Freight Moves the Economy in 2014

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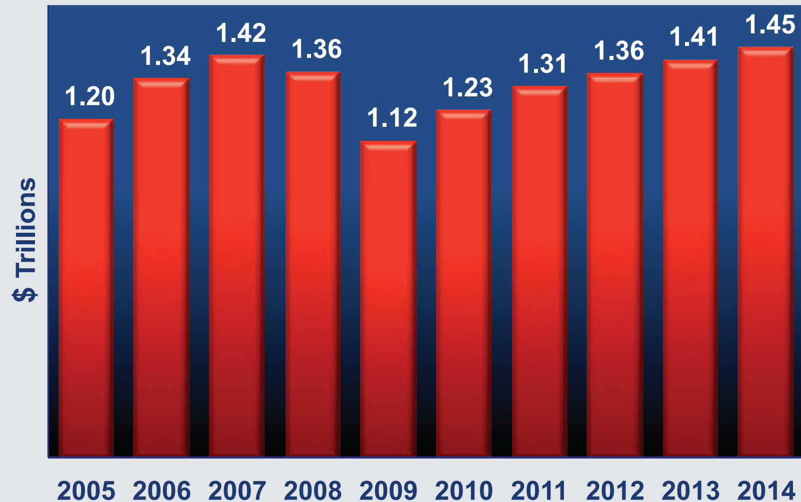
INTRODUCTION

The cost of the US business logistics system rose 3.1% in 2014 (Figure 1). Business logistics costs increased to $1.45 trillion, up $43.4 billion from 2013. In 2014, logistics costs as a percent of the nominal gross domestic product (GDP) was 8.3%.

FIGURE 1: US BUSINESS LOGISTICS COSTS



Both inventory carrying costs and transportation costs increased in 2014. Inventory carrying costs rose 2.1% (Figure 2). Total business inventories rose again in 2014, pushing up related costs, such as taxes, depreciation, obsolescence, and insurance. Warehousing costs increased as rates rose and vacancy rates fell. Interest rates edged down again in 2014, pushing the interest component down 4.8%. Transportation costs were up 3.6% in 2014 because of stronger shipment volumes.

FIGURE 2: THE US BUSINESS LOGISTICS SYSTEM COST IS THE EQUIVALENT OF 8.3% OF CURRENT GDP IN 2014

		$ Billions
Carrying Costs - $2.496 Trillion All Business Inventory		
Interest		2
Taxes, Obsolescence, Depreciation, Insurance		331
Warehousing		143
	Subtotal	**476**
Transportation Costs		
Motor Carriers		
Truck – Intercity		*486*
Truck – Local		*216*
	Subtotal	**702**
Other Carriers		
Railroads		*80*
Water	*(International 31, Domestic 9)*	*40*
Oil Pipelines		*17*
Air	*(International 12, Domestic 16)*	*28*
Forwarders		*40*
	Subtotal	**205**
Shipper Related Costs		**10**
Logistics Administration		**56**
	TOTAL LOGISTICS COSTS	**1,449**

Source: Federal Reserve Bank of St. Louis.

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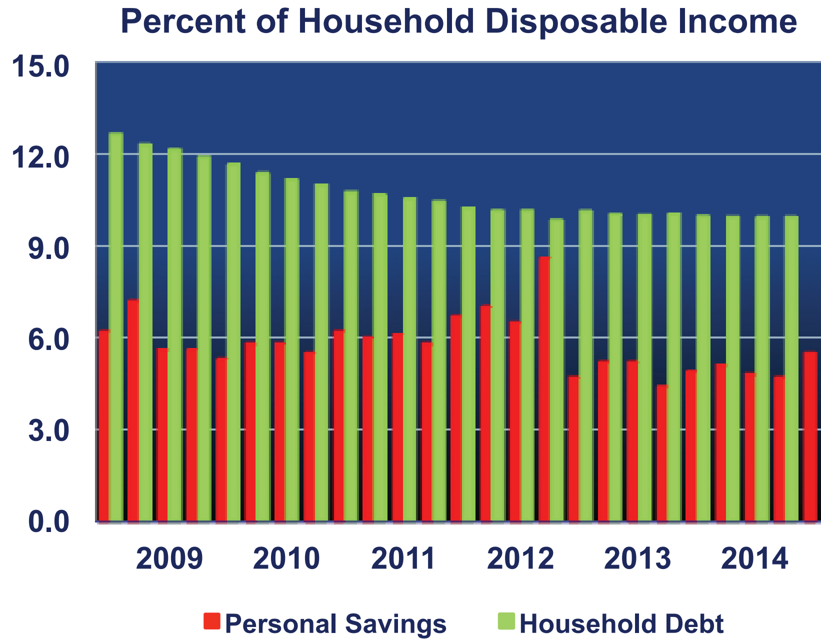
2014 was the best year for the supply chain industry since the Great Recession. Consumers began to drive the economy once again as confidence measures soared back into the 90s. Consumers are the element that has been missing from the recovery (Figure 3). Personal savings grew in 2014 and household debt held steady, indicating that lessons were learned during the lean years following the recovery. Money is being saved before spending occurs.

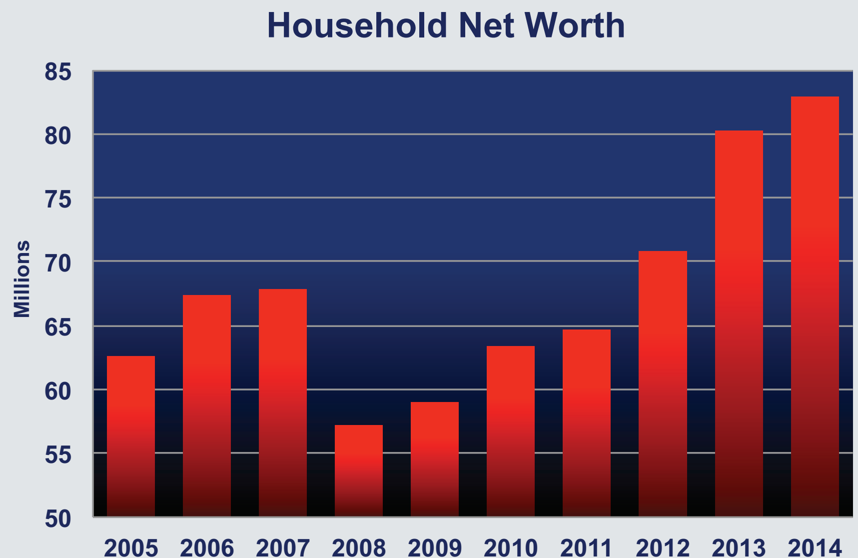
FIGURE 3: PERSONAL SAVINGS AND HOUSEHOLD DEBT



Source: Federal Reserve

Household net worth overall has surpassed prerecession levels, but not everyone has benefitted equally (Figure 4). Between 2007 and 2010, the Federal Reserve calculated that the median net worth of American families dropped by just under 40%. Since then, the typical household has seen very little change in its net worth because their wealth tends to overwhelmingly be tied to their homes, and housing prices have not recovered significantly. The financial markets, however, have increased substantially, allowing some households to fare better than others. Household wealth has risen for the upper tiers of US earners and this has generated more spending, which trickles down to create more work and income for lower-end earners.

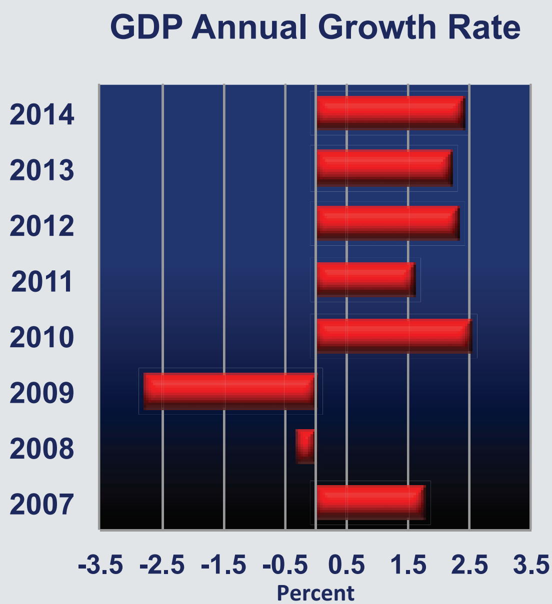
FIGURE 4: CONSUMER SECTOR IS RECOVERING, BUT NOT EVENLY



Source: Federal Reserve Bank of St. Louis.

The job market has improved with more hiring and a declining unemployment rate (Figure 5). The US economy was on fairly solid ground—new job creation was consistent, real net income and household net worth moved up, inflation was low to moderate, and gas prices tumbled. US GDP grew faster than 3.5% in four of the previous six quarters. Following negative GDP growth in the first quarter of 2014 caused mainly by bad winter weather, GDP grew at 4.6% in the second quarter, 5% in the third quarter, and ended with a 2.2% fourth quarter growth rate. The last time the US experienced a sustained period of economic growth higher than 3% per quarter was from 2003 through 2005, when GDP grew faster than 4% in five out of ten quarters.

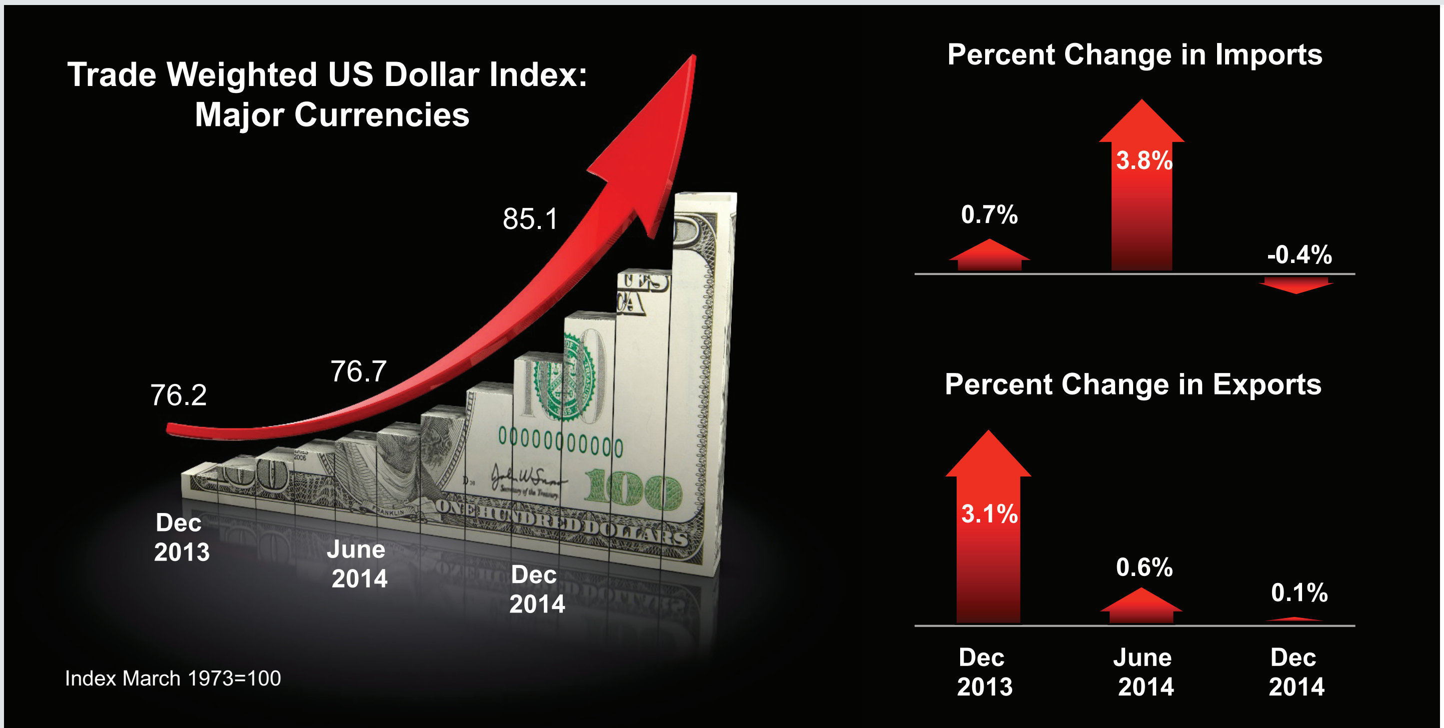
FIGURE 5: POSITIVE ECONOMIC SIGNS IN 2014



Source: Federal Reserve Bank of St. Louis

The rise of the US dollar relative to other world currencies is hampering US export sales because it makes American goods more expensive compared to similar items from other countries (Figure 6). Businesses are expressing some concern about the continued strength of the dollar and rightfully so. Drops in corporate profitability since 1970 can be directly correlated to periods of relative strength in the US dollar. Prolonged strength leads to lower global sales. Indeed, the second estimate of GDP growth for first quarter 2015 was revised from an anemic 1.2% growth to a 0.7% contraction. This can partially be attributed to the 7.2% downturn in exports. On the flip side, foreign products are cheaper in the US. This should boost imports, which rose 1.8% in the first quarter, again pushing GDP down.

FIGURE 6: STRENGTH OF US DOLLAR AFFECTING EXPORTS AND IMPORTS



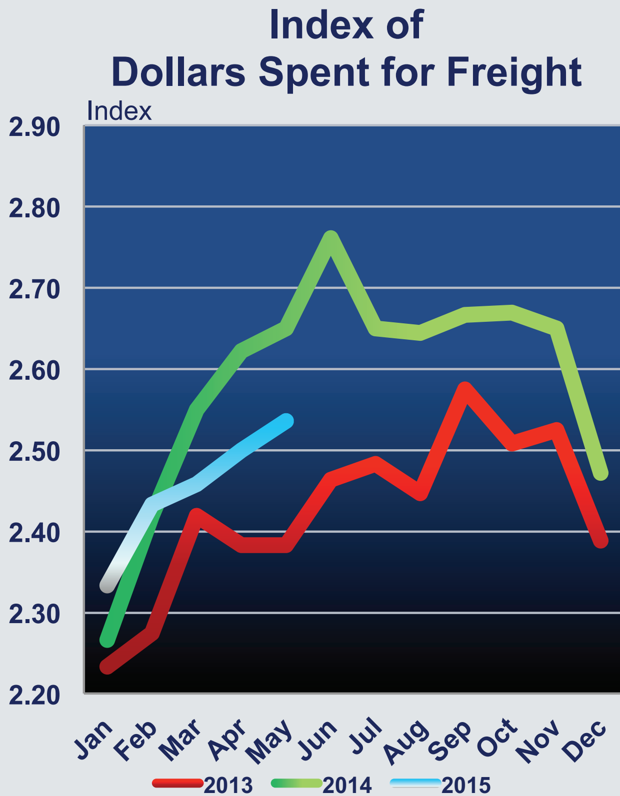
Sources: Federal Reserve Bank of St. Louis and Bureau of Economic Analysis

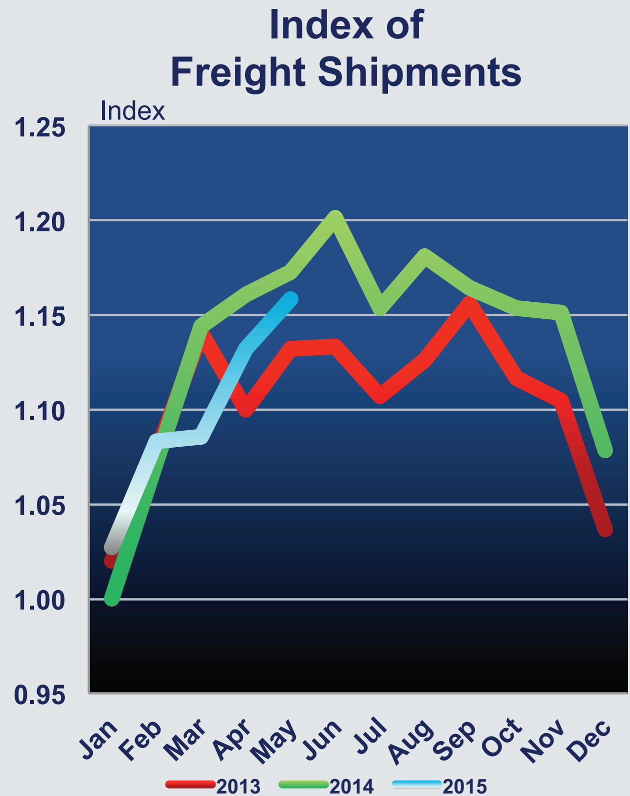
2014 FREIGHT TRANSPORTATION IN RETROSPECT

The US economy put out mixed signals in the first quarter and, in general, did not exhibit strong signs of growth. As new jobs grew, consumer spending began to increase so freight levels slowly climbed during the first quarter. The continuing bad winter put a damper on spending at the end of the first quarter, but pent-up demand contributed to higher spending in the second quarter. Exports are very dependent on factors beyond our control, and the global economy was lackluster. Consumers were spending, which was fueling domestic production and imports. Imports were up in the second and third quarters, with some of the increased volume attributable to the expired union contract at West Coast ports. However, the final quarter was dismal, with holiday retail sales fizzling, port slowdowns and shutdowns, and poor export demand. Retailers began offering Black Friday sales well before the actual date, watering down sales figures.

Freight shipment volume has been following a predictable trend—starting the year at or below the end of the previous year, rising throughout the spring, flattening or even dropping during the summer months, peaking in August-September, then falling close to the levels at which the year started (Figure 7). 2014 was no exception for the start of the trend, as the January level was the lowest since 2010. February followed the trend and began the climb upward. Total carloads in February were the highest since November 2013. February intermodal loadings also had the best showing since November 2013. Things got even better in the second quarter with freight payments in April hitting the highest point in 15 years. Shipment volume also rose in April reaching the highest level since June 2011. Freight continued to gain momentum although the performance of the economy overall during this period was weak.

FIGURE 7: CASS MONTHLY FREIGHT INDEX





Source: Cass Logistics, Cass Freight Index, January 1990 = 1.0

During this time, the trucking industry edged even closer to 100% utilization. The FTR Trucking Conditions Index rose substantially in March, indicating that truck capacity has grown extremely tight. The demand for spot market truck capacity has been high as well. According to the FTR report, reduced productivity caused by regulatory drag and the negative impact of the winter weather pushed capacity to its limits. Truck sales had been building and, in March 2014, Class 8 truck orders grew 25.6%, which was the largest gain since mid-2012. In May 2014, freight payments were 11.2% higher than during the same month a year before, and 77.7% higher than at the recession's end in 2009. Rates held steady despite the tightening capacity. Both number of shipments and freight spend reached a crescendo in June, with shipment volume surpassing the November 2007 pre-recession level. Both of Cass' freight indexes increased every month for the first half of 2014. At that point, the freight sector was a great deal stronger than many other parts of the economy.

In June, the third revision of the GDP by the US Department of Commerce was dismal. It was revised downward for a second time to show that the economy shrank by 2.9% in the first quarter, which was the worst contraction in five years. The severe weather in January and February was partly to blame, but a sharp reduction in healthcare spending as the Affordable Care Act took effect and the impact of the end of extended unemployment benefits also curtailed GDP. Many of the economic measures that pull down the GDP do not adversely impact transportation. For instance, declining inventory levels and increases in imports are pluses for the transportation sector, but are negatives for GDP. The first estimate of second quarter GDP was released and it showed a growth rate of 4.0%, more in line with what the freight sector had been experiencing.

The drop in July was not unanticipated as this is generally a slow month for freight and it was following the seasonal trend of previous years. As expected, the freight transportation market picked up again in August. The Institute for Supply Management's Purchasing Managers Index (ISM PMI®) rose 3.3% in August, the highest reading since March 2011. New orders were up 5.2% and order backlog climbed 5.1%. The Association of American Railroads (AAR) reported that average weekly US rail volume, in terms of carloads plus intermodal containers and trailers, was higher in August 2014 than in any month since October 2007. Later in September, the government released August US factory orders, which declined by the largest amount on record according to the Department of Commerce. The 10.1% decline in August was on the heels of a record 10.5% increase in July. Almost all of the changes in two months can be attributed to the commercial aircraft industry. The remaining sectors were largely unchanged in August, so the impact was narrowly targeted on carriers moving aerospace materials.

The freight logistics sector was relatively flat in September, with a drop in volume of shipments and a slight increase in total freight payments. The economy as a whole cooled in August and September. The ISM PMI also declined in September, falling 4.1%, which could be attributed to the recent drop in global demand and the relative strength of the US dollar, which made US goods more expensive overseas, dampening exports. The ISM PMI sub-index for new orders dropped 10% and the backlog of orders sub-index was down 10.4%. New export orders reached a 4½ year high in China, which supported predictions of strong imports to end the year.

By October, the freight logistics system was in turmoil as freight shipments, particularly imports, increased in anticipation of a stronger holiday shopping season in 2014. The real story, however, was that the freight was having trouble entering the country. The congestion in ports, especially on the West Coast, caused trouble for retailers who were stocking shelves for the season kick-off on Black Friday. The October slide in freight volume can be attributed to the port congestion and to a drop in new orders for manufactured goods in September. The Department of Commerce reported that orders to US factories went down 0.6% in September, after having plunged 10% in August. This decline contributed to the drop in shipments of manufactured goods in October. Despite the slowdown in September, the ISM PMI rose 4.2% in October, with production up 0.3%. New orders rose 9.7%. Even better, the backlog of orders was up 12.8%. Exports continued to fall off, down 3.7%, as the strength of the dollar exacerbated weakening demand globally. Imports, on the other hand, were up 2.3% as retailers continued to order to stock shelves.

The congestion and slowdown at the ports deteriorated at the end of October and reached crisis proportions, particularly at the Port of Los Angeles/Long Beach. LA/Long Beach handles more than 40% of all ocean imports and a disproportionately large percent of consumer goods—the very goods that were supposed to be stocking shelves for the upcoming holiday buying season. Toy retailers, in particular, were hard hit. By the end of the month, there was over a three-week delay at LA/Long Beach.

The underlying problem at the ports was, and still is, primarily supply issues. Trucks, especially drayage trucks, were in short supply as the profitability of that segment of the truck sector continued to decline. Perhaps the biggest problem though was a critical lack of chassis on which to move the containers. The ports of NY/NJ, Houston, and Norfolk were also experiencing similar congestion problems, though not as severe as LA/Long Beach since they did not experience union labor problems. The issue is that the larger, twenty-foot equivalent unit (TEU) ships bring more cargo in a condensed time frame and there is not enough equipment available to handle the surge. The new containerships can be up to one-third larger than Los Angeles and Long Beach ports have the capacity to handle. Drayage carriers reported that they made fewer turns because of the congestion, eating into their profitability. Truckers reported waiting hours in line to pick up a container only to find that there was no chassis available. That makes the day a total loss for the driver because he or she is not paid by the hour but rather by the mile. If truckers are not moving cargo, they are not getting paid. The lack of an International Longshore and Warehouse Union (ILWU) contract is contributing to the slowdowns on the West Coast as parties traded barbs in the media. The economics of supply and demand looked like they might come back into play as chassis, trucks, and drivers became scarce commodities, but rates still did not rise.

The economy showed signs of life with growth in areas that are good for the freight community. Residential construction was up 6.3% in September. Consumer sentiment reached a seven-year high due to drops in gas prices and labor market gains. The unemployment rate was 7.2% in October 2013 and stood at 5.9% a year later. Although freight shipments slid 0.2% from October to November, the November shipment level was 4.2% higher than the same month in 2013 and represented the highest freight shipments index level since the Great Recession for the Cass Freight Indexes.

Labor issues, port throughput limitations when processing heavily loaded, large TEU ships, chassis shortages and inefficient chassis distribution, and rail capacity problems combined to create costly freight bottlenecks at the ports of LA, Long Beach, and Oakland. Early discounting made a dent in traditional Black Friday sales figures and traffic. Estimates showed that traffic was down 5.2% compared to last year's Black Friday totals, and sales were expected to be 11% lower than a year ago. Retailers had hoped that lower gas prices would fuel more spending, but consumers behaved conservatively and held out for more discounting. Cyber Monday sales soared again in 2014, rising between 8.5 and 16%, depending on the measure you follow. Small package and parcel shippers, such as UPS and FedEx, dramatically expanded their capacities to avoid the late deliveries of 2013.

December followed the expected seasonal trend with a 6.3% drop in shipment volume and a matching 6.7% decline in freight payments. However, the December figures marked the highest end-of-year values since the beginning of the recession in 2007. Traditionally, the peak holiday shipping season falls in the July to September time frame as retailers build up their inventories. In 2014, the peak shifted even earlier as shippers imported goods earlier because of concerns about the July 1 expiration of the ILWU labor contracts with the ports of LA and Long Beach. Some shippers also shifted their deliveries to East Coast and Gulf Coast ports. In fact, it has been estimated that the West Coast port disruptions cost the ports about 150,000 TEUs by year end. The union and port operators initially cooperated to prevent work slowdowns or backups, but as time elapsed, the Ports of LA and Long Beach were increasingly challenged to provide on-time deliveries. Ships waited days to be unloaded and some shippers reported significant delays in receiving their goods.

THE BUSINESS LOGISTICS SYSTEM—2014

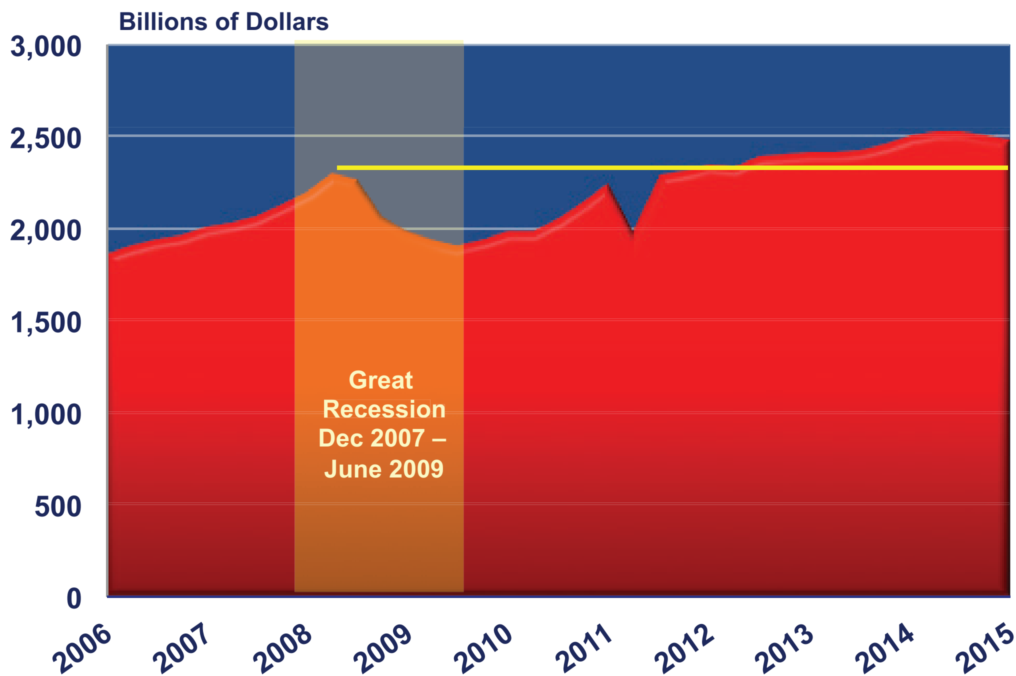
Total logistics costs increased only 3.1% in 2014. Transportation costs rose 3.6% in 2014, reflecting growth in all modes except air. Logistics represents 8.3% of our nominal GDP (Figure 8).

FIGURE 8: LOGISTICS COST AS A PERCENT OF GDP

We are now issuing quarterly updates to the State of Logistics Report. Several of the figures used in this report have been estimated since the actual figures are not yet available. These will be updated in future quarterly updates. Additionally, many data series are updated or rebased by the originators of the data. This often requires restating older figures as well. For instance, an update and recalculation of GDP and inventory levels actually changed the 2013 logistics as a percent of GDP from the 8.2% originally released last year to 8.4%.

Inventory carrying costs rose 2.1%. Interest rates dropped yet again and inventory levels continued to climb. All business inventories remained above the recession high point despite some drawdown near the end of the year. The average investment in all business inventories (agriculture, mining, construction, services, manufacturing, wholesale, and retail trade) increased 2.1% over 2013 to $2.47 trillion in 2014 (Figure 9). The second and third quarters were the high water marks for inventory levels to date.

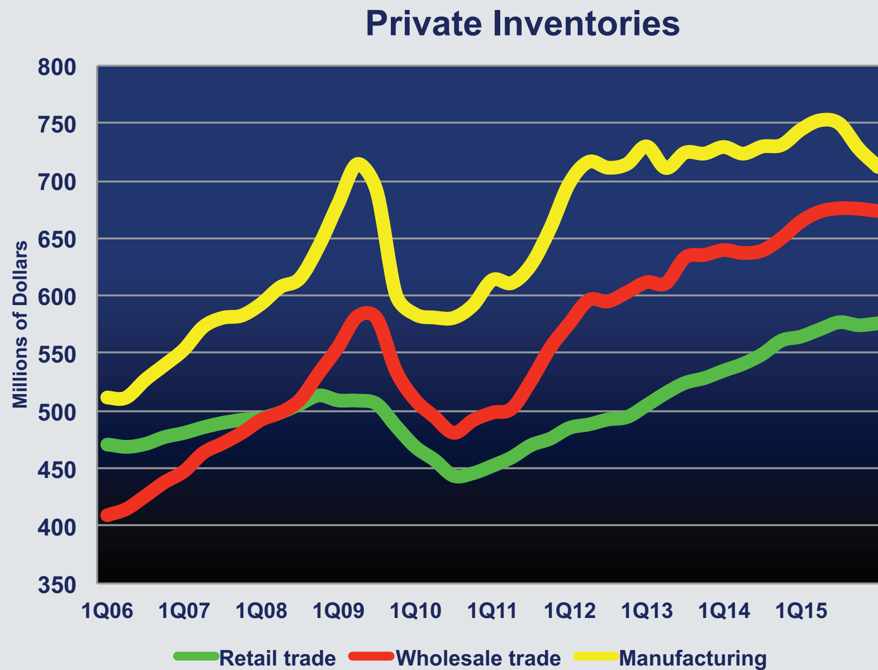
FIGURE 9: TOTAL US BUSINESS INVENTORIES



Source: US Department of Commerce, Census Bureau

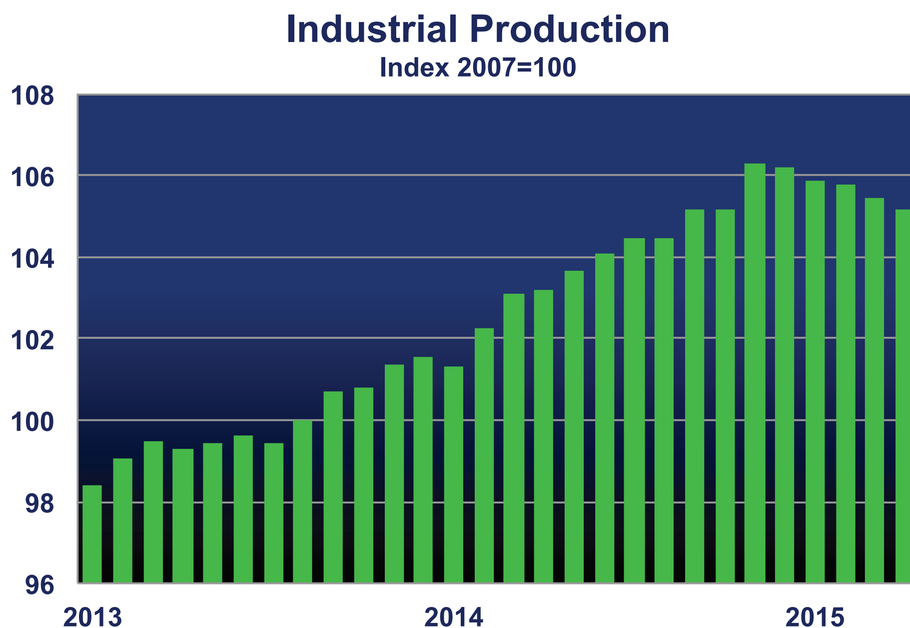
Two subcategories of inventory, retail and wholesale, climbed up in 2014, but manufacturing inventories were down slightly. (Figure 10). Wholesale inventories increased 3.9%, while retail inventories rose only 2.3% year over year. Despite the strong trend in industrial production for much of 2014, manufacturing inventories continued to erode well into 2015. (Figure 11).

FIGURE 10: INVENTORIES GROWTH SLOWED IN 2014



Source: US Department of Commerce, Census Bureau

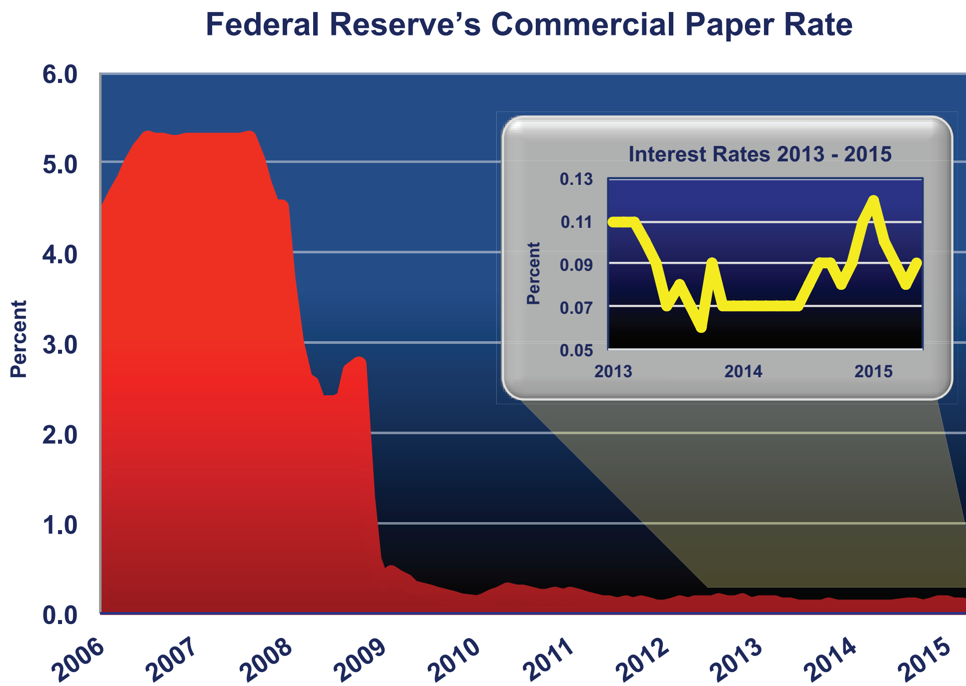
FIGURE 11: INDUSTRIAL PRODUCTION WAS STRONG IN 2014



Source: Federal Reserve Bank of St. Louis.

2014 inventory carrying costs increased modestly as inventories expanded (Figure 12). Although still well below prerecession rates, interest rates, as measured by the Federal Reserve's Commercial Paper Rate, were up 71% from January 2014 to January 2015.

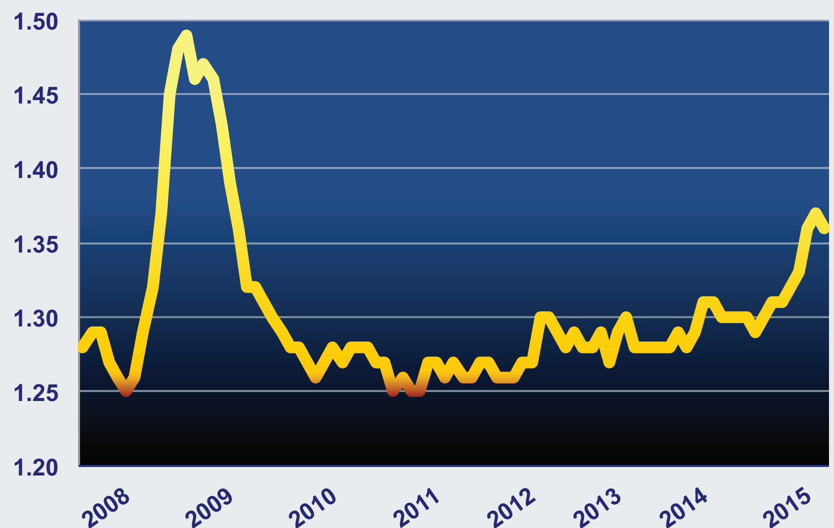
FIGURE 12: INTEREST RATES ARE STILL WELL BELOW 1%



Source: Board of Governors of the Federal Reserve System

The retail inventory-to-sales ratio grew slightly at the beginning of the year and then leveled off until September. (Figure 13). As wholesalers and retailers shifted their ordering strategies to avoid the anticipated West Coast port issues, inventories began to pile up. Sales did not materialize as expected and retailers began to discount goods. Consumers did not respond and inventory turnaround slowed, pushing the sales-to-inventory ratio up to 1.33 by year's end. Since then, it has reached 1.37 in February 2015. With inventories above prerecession levels, any further reduction in inventory turns could become a financial drag. Coupled with higher interest rates and rising warehouse costs, companies should begin to drawdown their inventories to a more sustainable level.

FIGURE 13: THE INVENTORY TO SALES RATIO IS RISING RAPIDLY

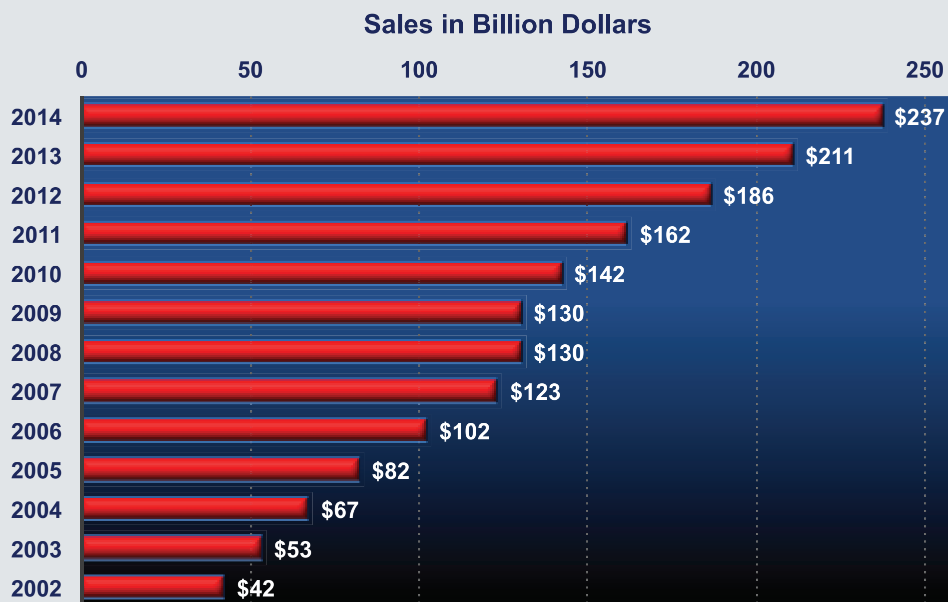


Source: US Department of Commerce, Census Bureau

Taxes, obsolescence, depreciation, and insurance increased 1.2% in 2014. The increase in these components is directly related to the growth in inventories. Insurance rates remained level, as did taxes, leaving depreciation and obsolescence to make up the bulk of the rise in this component.

The cost of warehousing rose 4.4% in 2014 and the industry had another good year. Growing inventory levels filled all available capacity, with the national vacancy rate dropping 2.7% to 7% (Figure 14). Same-day delivery models and expanding e-commerce are reshaping warehousing needs and expanding the penetration of warehouse management software to handle some or many tasks that are well beyond the traditional warehouse offerings of the past. New operating strategies and warehouse location requirements are changing the face of this sector. The warehousing industry is also experiencing some of the same labor issues that are so prevalent in the trucking industry. Turnover is high and companies report difficulty in recruiting and keeping employees. Expect warehouse costs to rise as companies offer higher pay and benefits to prevent workforce shortages.

FIGURE 14: RETAIL E-COMMERCE SALES



Source: Statista, http://www.statista.com/statistics/273424/retail-e-commerce-sales-in-the-united-states

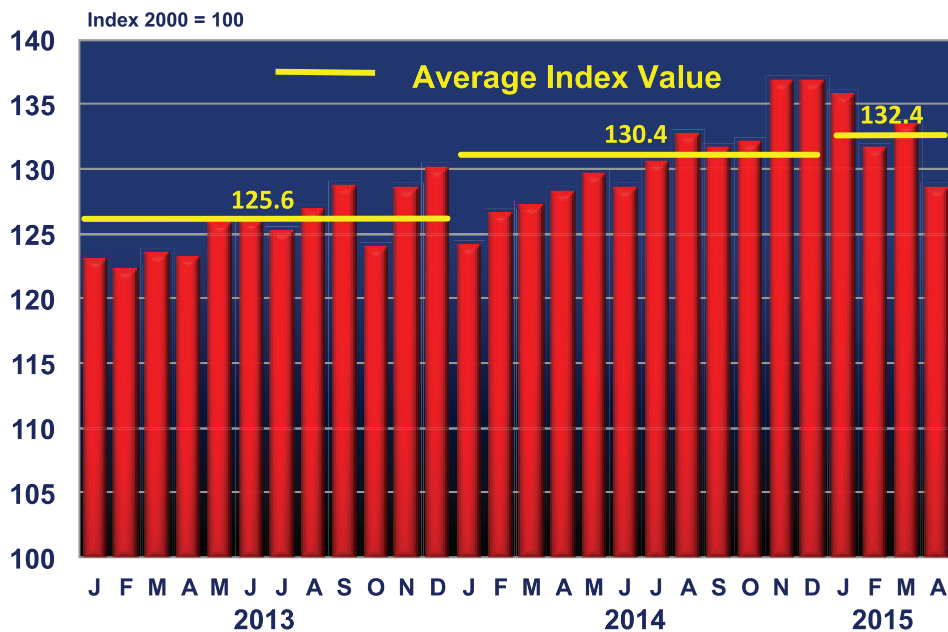
Carrier revenues are used to measure the cost to shippers in the State of Logistics model. Some historical figures have been restated, taking advantage of some new methods of data estimation, which were developed over the last year in conjunction with the move to quarterly updates. The overall impact is slight, but it will be evident in some of the modes (Figure 15). Transportation costs went up 3.6% in 2014. All modes, except air, posted increases.

FIGURE 15: THE US BUSINESS LOGISTICS SYSTEM COST IS THE EQUIVALENT OF 8.3% OF CURRENT GDP IN 2014

		$ Billions	
Carrying Costs - $2.495 Trillion All Business Inventory			
Interest		2	
Taxes, Obsolescence, Depreciation, Insurance		331	
Warehousing		143	
	Subtotal	**476**	**Up 2.1%**
Transportation Costs			
Motor Carriers			
Truck – Intercity		*486*	
Truck – Local		*216*	
	Subtotal	**702**	
Other Carriers			
Railroads		*80*	
Water	*(International 31, Domestic 9)*	*40*	**Up 3.6%**
Oil Pipelines		*17*	
Air	*(International 12, Domestic 16)*	*28*	
Forwarders		*40*	
	Subtotal	**205**	
Shipper Related Costs		**10**	
Logistics Administration		**56**	
	TOTAL LOGISTICS COSTS	**1,449**	**Up 3.1%**

Trucking, the largest component of transportation costs, rose 3.0% in 2014 (Figure 16). The inter-city truck segment rose 2.7% and the local delivery segment was up 3.7%. The number of truck shipments declined, but truck tonnage increased 3.5% in 2014. This supports the anecdotal evidence collected that suggests loads are heavier and more trucks are moving at or near full capacity. Interestingly, total freight payments rose less than the increase in the number of shipments. This indicates that rates were flat and competitive overall. Spot market prices seesawed up and down, a good indicator of the sporadic capacity problems. Once again in 2014, truck freight rates did not rise as a traditional supply and demand model would have indicated. However, on a cost per ton-mile basis, there was a 2.5% uptick, but on an average cost-per-mile basis, there was a 2.1% drop in 2014.

FIGURE 16: TRUCK TONNAGE INDEX



Source: American Trucking Associations

According to the American Trucking Associations' (ATA) chief economist, Bob Costello, truck turnover is a good barometer of the truck driver shortage. Turnover remains very high for truckload carriers. On an annualized basis for the fourth quarter of 2014, turnover rates for large and small truckload fleets were 96 and 95% respectively. For large fleets, this is actually a decline of 1% over 2013, but smaller fleets turnover grew from 90% in 2013 to 95% at the end of 2014. The growth in the small fleets turnover rate is primarily due to the larger fleets attracting drivers away with higher pay, bonuses, and better benefits. Less-than-truckload (LTL) fleets are faring much better, with an average turnover rate for the year of only 11%. The ATA estimates the driver shortage is between 35,000 and 40,000 drivers. Trucking employment is on the rise, but not at the levels needed to replace aging Baby Boomers who are exiting the market.

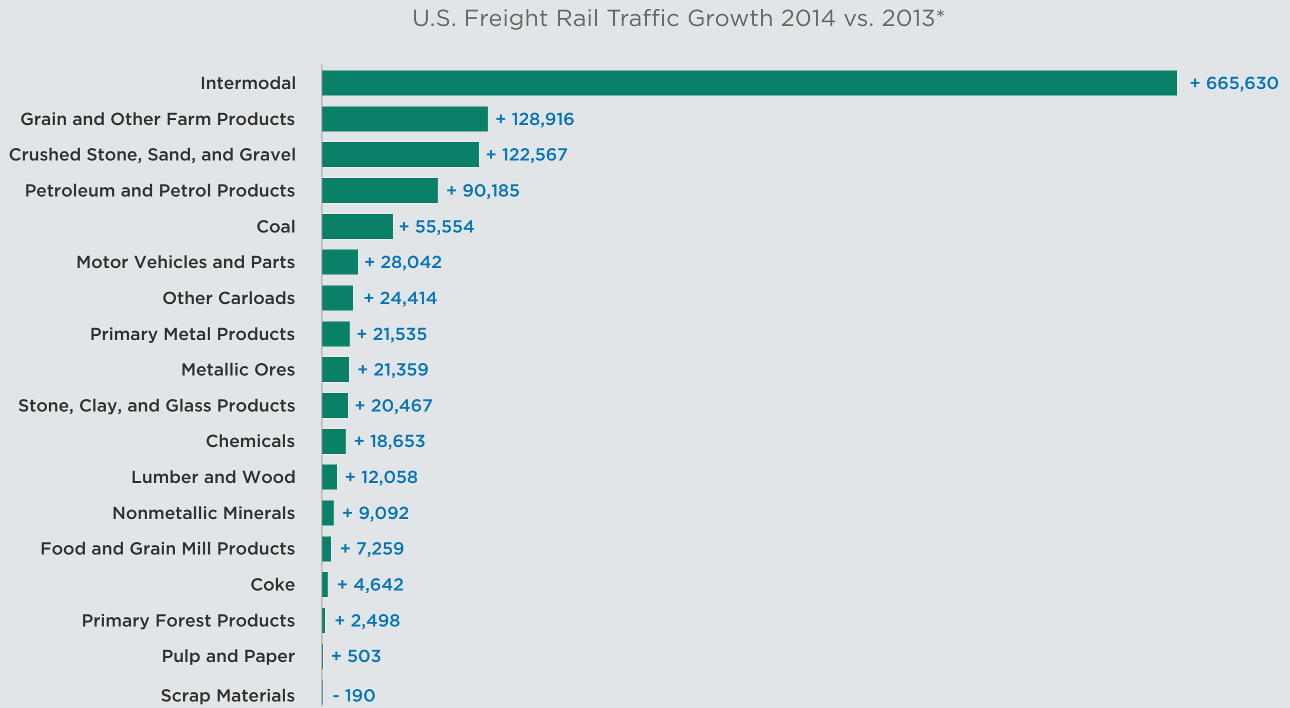
Smaller trucking companies are still being forced out of the business because of costs. Three hundred and ninety trucking companies went into bankruptcy in the first quarter of 2014 and these companies averaged 27 vehicles each. Avondale Partner's chief market analyst Donald Broughton concluded that: "There is a direct link between new federal truck safety regulations and the rash of small carrier bankruptcies. Many of the companies that went out of business were ordered by federal authorities to install electronic logging devices that made it easier to enforce hours of service rules. As a result, those companies saw their truck utilization drop as drivers with fewer miles earned less money and quit, forcing carriers to hire and train new drivers, often at higher wages." Although these companies represent a small part of the industry compared to the nation's largest 13 carriers that have more than 60,000 vehicles on the road, they are often the only source of competition.

Class 8 truck registrations increased 3.8% and were at the highest level on record. 2014's 226,228 new registrations brought the total up to 3.78 million vehicles at the end of the year, according to IHS Automotive. There were close to 60,000 new registrations in both the third and fourth quarters of last year. Large fleets were doing most of the buying and accounted for 48% of all new registrations. This represented a 23% rise in new registrations for fleets operating more than 500 trucks, and is a sign that carrier confidence is also on the rise. Most manufacturers were reporting full order books going into 2015, but new orders curtailed sharply in April and May of 2015.

The cost for rail transportation increased 6.5% in 2014. Class I freight revenue per ton-mile increased 0.1%, from 3.961 cents to 4.054 cents. Ton-miles rose in 2014 to 1.85 trillion.

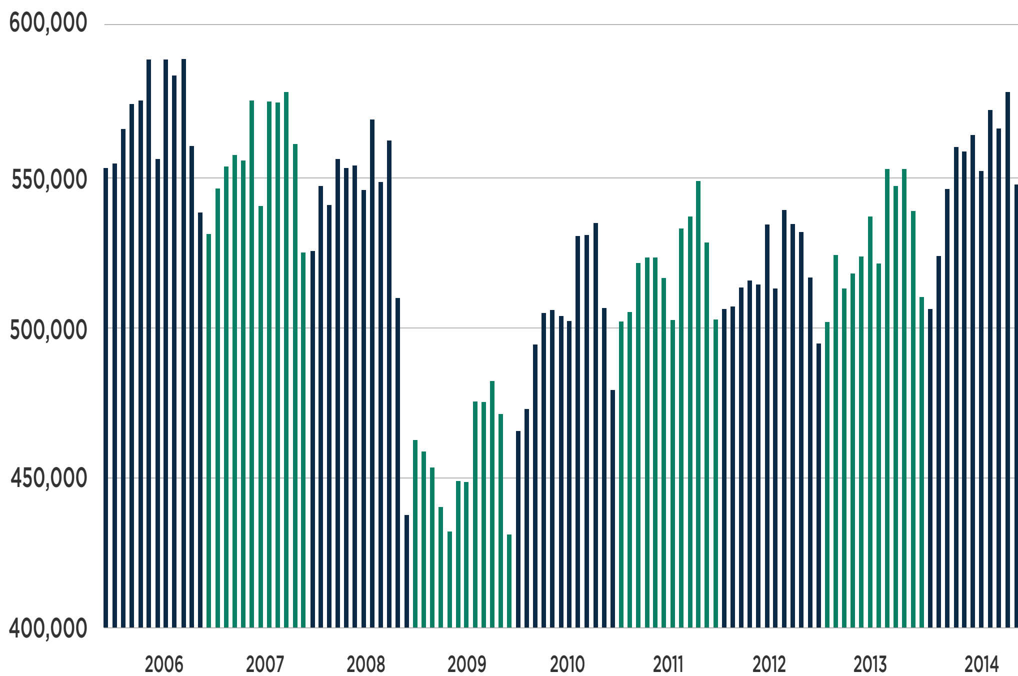
Overall, rail traffic was up 4.5% for the highest annual total on record of 28,673,776 carloads, containers, and trailers. Total carloads for the year increased 3.9% to the highest total since 2006. Intermodal volume went up 5.2%, beating 2013's record-setting total. The AAR reported that the demand for rail freight service surged in 2014 for almost every commodity, but especially for intermodal service (Figure 17). A record grain crop resulted in almost 129,000 more grain carloads, while increased demand for electricity lead to more than 55,000 additional coal carloads. The rail industry is now close to prerecession traffic volumes (Figure 18). While the traffic levels are near the same, the mix of products and growth in various traffic segments have provided the railroads with challenges to meet and overcome. The explosive growth in intermodal service to and from West Coast ports required significant investment in infrastructure and equipment to meet evolving demands.

FIGURE 17: 2014 GROWTH IN RAIL DEMAND



Source: Association of American Railroads

FIGURE 18: TOTAL RAIL CARLOADS AND INTERMODAL LOADS



Source: Association of American Railroads

Between 2009 and 2013, freight railroads invested $115 billion dollars in track and bridge maintenance and improvement, in thousands of new locomotives and freight cars, and in other infrastructure and equipment. In 2014, the industry increased capital expenditures on road and equipment by 15.2%. More than 1,300 new and rebuilt locomotives were added to the fleet at an average cost of $2.2 million dollars each. About 3,800 new freight cars were purchased and 700 new leased freight cars were put into service. The AAR reported that September 2014 employment was the highest of any year since November 2000 and was 4.0% higher than at the beginning of the year in January. This is one of the highest employment growth rates among all industries. In 2015, railroads plan to invest another $29 billion dollars on capital spending and maintenance and hire 15,000 new employees.

Costs for the water sector rose 8.9%, the second highest growth sector in 2014. All segments of the water sector experienced growth in 2014. Ocean shipping was up as trade grew fitfully, despite paralyzing congestion on the West Coast and to a lesser extent in most ports that accepted mega containerships in 2014. Inland waterway freight traffic rebounded in 2014 because of successful agricultural harvests, higher demand for coal and other nonmetallic minerals, and an expansion of petroleum transportation by barge. The domestic costs for the movement of freight in and out of the US through the nation's deepwater ports, not including the actual ocean shipping cost, accounts for $31 billion and the inland, lakewise, and coastwise water freight account for the remaining $9 billion.

Despite the weak global market, freight shipments, especially container shipments, recovered well in 2014 (Figure 19). The East Coast ports saw the biggest percentage gains overall due to traffic pick up because of the congestion and turmoil caused by the expired ILWU port workers' contracts at the Ports of LA and Long Beach. Hanjin Shipping, which accounted for 78% of container traffic, has completely pulled out of the Port of Portland because of slow loading and unloading caused by the protracted three-year long labor dispute at this port. Portland also lost Hapag-Lloyd, effectively removing container traffic at the port.

FIGURE 19: US CONTAINER SHIPMENTS RECOVER IN 2014

Port	2014 TEUs	2013 TEUs	Percent Change
Los Angeles	8,340,065	7,868,582	6.0%
Long Beach	6,820,806	6,730,573	1.3%
New York	5,772,303	5,467,347	5.6%
Seaport Alliance*	3,427,561	3,456,161	-0.8%
Savannah	3,346,024	3,034,014	10.3%
Oakland	2,394,069	2,346,528	2.0%
Norfolk	2,393,038	2,223,532	7.6%
Houston	1,958,251	1,952,122	0.3%
Charleston	1,791,978	1,601,367	11.9%

**Ports of Seattle and Tacoma*

Source: Individual port reports

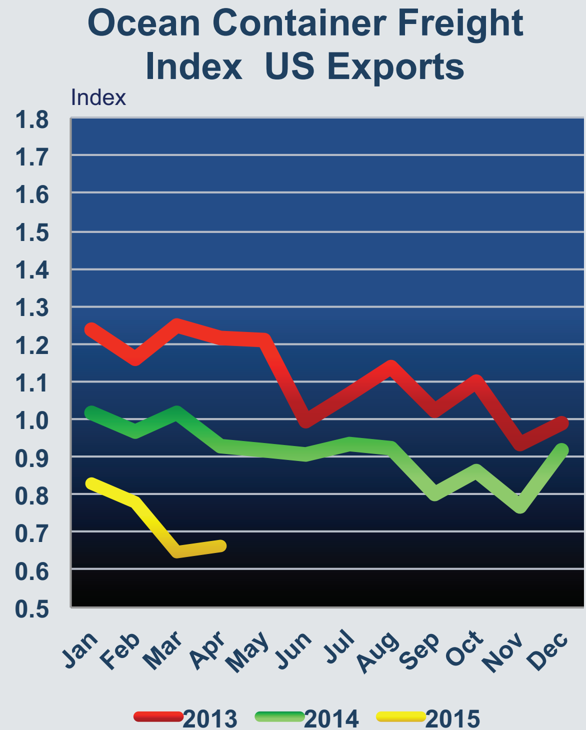
Not only did the turmoil and delays on the West Coast hurt domestic customers, many shippers who export through western ports were unable to complete their transactions.

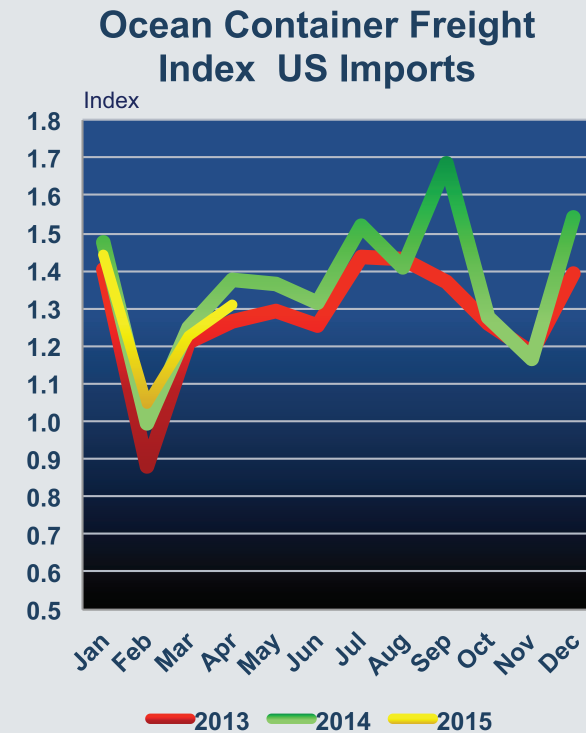
The Chinese New Year shipping season runs from December to February and is an important seasonal sales period for western agricultural growers. The demand for Washington State's apples is at its peak during this period, as red delicious apples are prized for their deep red color and lucky five-point seed pattern. Because of the port issues, growers were unable to get their products to China in time, and with a bumper crop in 2014, unused apples were dumped into canyons to rot. Potato growers have similar demands for their crops to be processed into fries, which are also popular during Chinese New Year. Washington and Idaho potatoes sat in storage unable to move. Both groups expressed concern that they may have permanently lost markets as customers turned to different suppliers in other countries or regions. The cost to reroute their products to other ports hurt their prices and delivery-time competitiveness.

There were other extenuating circumstances that had an impact on the level of container shipments moving through the West Coast in 2014. Imports from China normally account for close to 50% of US container imports, but there was a 25.7% surge in September. The large increase was attributed to the more than seven million shipments of new iPhone 6s from the iPhone factory in Zhengzhou. Apple Inc.'s new version of the iPhone was expected to boost China's flagging exports by about 1% a month for the final months of 2014, according to Bank of America Corp. The average number of containers imported from China monthly was more than 10% higher than the average monthly shipments from China for the last four years.

The Cass/INTTRA Monthly Ocean Container Indexes clearly demonstrate the sustained drop in US container exports. China is one of our largest trading partners outside of NAFTA and the economic downturn experienced there is showing up in our export figures. China has also instituted its own form of financial support and austerity measures for its economy (Figure 20). Global demand for products is weak outside of the US, and the drop in export orders forced China to shut down plants and dismiss factory workers. The country downgraded its growth forecast several times throughout the year. While not pronounced, the slight improvement in import activity is shown in the second graph.

FIGURE 20: CASS/INTTRA MONTHLY OCEAN CONTAINER INDEXES

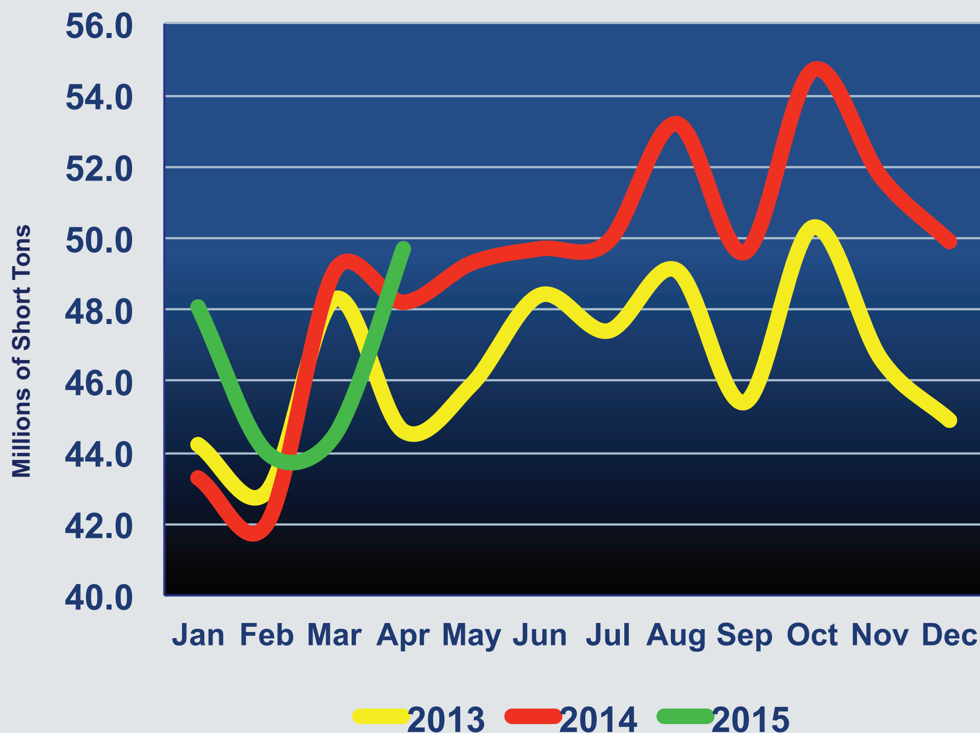




Source: Cass Logistics, Cass/INTTRA Ocean Container Index, January 2010 = 1.0

Tonnage on the inland waterways grew substantially in 2014 as seen in the monthly indicator data put out by the US Army Corps of Engineers. Actual detailed data for 2014 will not be available for some time since 2012 waterborne commerce figures were just released (Figure 21). Coal and coke shipments by barge increased in the second two months of the first quarter in response to the wintery weather that was widespread, but after that, tonnage declined and leveled off for the remainder of the year. Tonnage for petroleum increased substantially in 2014, and remained above previous years' levels to finish out the year. Food and farm product tonnage followed the same seasonal trend established in the preceding three years, but at a slightly higher absolute level for most of the year. As world fuel prices plummeted, so did domestic petroleum shipments because the cost to extract the oil is too high compared to the price of the oil here in the US. After climbing to a record high in November 2014, tonnage began to sharply decline and has continued to do so into 2015. Tons of chemicals moved by inland waterway in 2014 was quite unremarkable when compared to the previous three years. Tonnage picked up in September and August, but dropped off again in November and December.

FIGURE 21: MONTHLY TONNAGE INDICATOR FOR INTERNAL WATERWAYS



Source: US Army Corps of Engineers, Navigation Data Center

Oil pipeline costs rose 9.7% in 2014. The industry is still regulated so it has a mandated rate ceiling that is determined by the Federal Energy Regulatory Commission's Oil Pipeline Index. In 2014, the index declined 0.7% from the 2013 level, but ton-miles carried grew 5.6% in 2014.

Air freight revenue fell 1.2% in 2014, domestic revenue was up 0.4%, and international was down 3.6%. Overall, revenue tons carried by air rose 3.4% for domestic traffic and 6.0% for international. Cargo yields dropped again in 2014 as load factors remained weak. In 2014, a record $968 billion of high value merchandise was moved by air, with $443.8 billion being exports and $543.3 billion being imports.

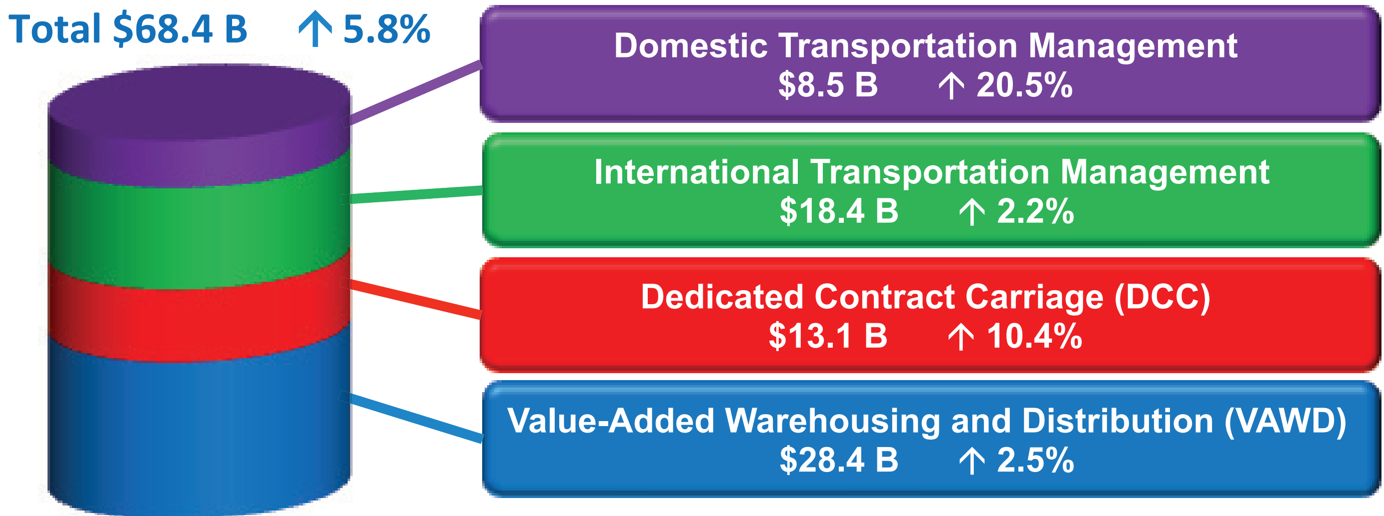
Freight forwarder revenue rose 5.4% in 2014 (Figure 22). The forwarders category represents non-asset-based freight service providers; the third party logistics (3PL) segment is the largest. Revenues for the 3PL sector rose 7.4% in 2014. 3PLs have been responding to changes in the supply chain and fulfillment strategies, such as the rise of omni-channel retailing, to grow their markets. Technology (including visibility, order and fulfillment management, and transportation and warehouse management) is always high on the list of services offered, but new areas include risk management, workforce planning (especially in the truck driver and warehouse worker arenas), and improved supply chain flexibility and agility to accommodate growth and the changing consumer landscape.

FIGURE 22: US THIRD PARTY LOGISTICS MARKET

Source: Armstrong & Associates, Inc.

The 3PL sector can be sliced into four segments, each representing a subset of the industry (Figure 23). The fastest growing segment for the last several years has been domestic transportation, and 2014 was no exception with an increase of 20.5%. The growth can be attributed to a growing base of customers using 3PL services as well as an increase in the types and levels of services being offered. According to survey results from the 19th Annual Third-Party Logistics Study, shipper/3PL relationships are more collaborative and are yielding positive results. Shippers using 3PLs have experienced an average logistics cost reduction of 9%, an average inventory cost reduction of 5%, an average fixed logistics cost reduction of 15%, and improvements in order fill rates of 60 to 66% and order accuracy of 61 to 66%. There remain a number of uncertainties in the US supply chain that 3PLs are nimble enough to guide customers through. Availability of carrier capacity, changes in the economy, cost structures of developing nations that impact the value proposition for outsourced production, and supply chain and transportation disruptions to name just a few. The second fastest growing segment is dedicated contract carriage, which increased 10.4% in 2014. This sector is growing in response to the need for guaranteed transportation as capacity for both trucking and rail tightens.

FIGURE 23: US 3PL MARKET SEGMENTS

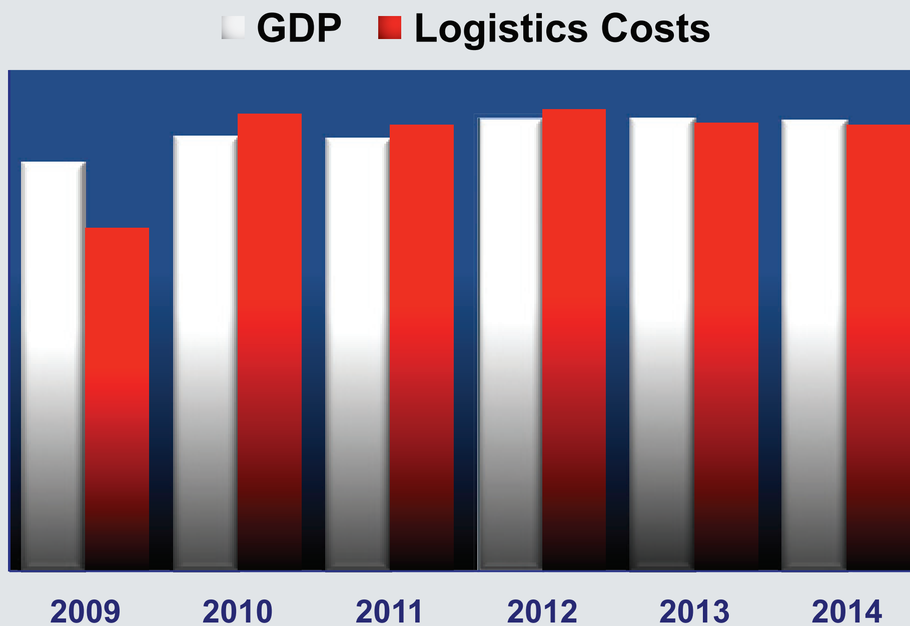


Source: Armstrong & Associates, Inc.

Shipper-related costs increased 1.0% in 2014, while logistics administration costs rose 1.9%.

After growing at a faster rate than GDP from 2010 to 2012, logistics costs grew at a slower pace than GDP in 2013 and 2014 (Figure 24).

FIGURE 24: GDP GROWTH AND LOGISTICS COST GROWTH



LOOKING AHEAD

The strong economic growth experienced for much of 2014 weakened in the fourth quarter of the year, and continued into the first quarter of 2015. The slowdown is not a sign for concern, as it conforms to the trends we have experienced for the last eight years or so. The drop in GDP growth in the fourth quarter of 2014 was caused by a growth in imports, slower business inventory investment (a plus given the high level of inventories), and a drop in government spending. The same held true for the recently reported contraction in GDP growth of 0.7%. The GDP growth rate has averaged 3.26% since 1947.

The capacity problems that emerged in 2014 will continue to worsen for at least the next two years before they begin to improve. Be aware that a trucking shortage allows carriers to be selective in who they do business with. They are interested in maximizing driver pay and satisfaction, which means more time actually driving to deliver or pick up goods since drivers are generally paid by the mile. Shippers who hold drivers for long periods of time waiting to load or unload, or who do not treat their drivers well, will fall to the bottom. Maximum equipment utilization, quicker turns, and fewer empties go right to the bottom line. Shippers willing to work with carriers to accomplish this will fare better than those who neglect these issues.

Two of the most important trends to look for in 2015 are sustained growth in freight volume and the capacity and cost problems this increase will create. 2014 was the best year for the supply chain industry since the Great Recession. In the second half of the year, the missing element of the recovery—consumers—began to get back in the game. Recovery from every recession since the Great Depression has been led by the consumer sector. The US economy was on fairly solid ground—the GDP growth rate is strengthening, unemployment is falling, real net income and household net worth are inching up, inflation is low to moderate, and gas prices are tumbling. Consumer confidence rose substantially during 2014. Spending on other than necessities continues to increase, which has spurred production and imports.

To summarize, most of the problems that the freight logistics industry will face in the next three years will boil down to capacity issues. Freight volume is expected to increase at a moderate rate, but capacity is not going to keep pace. The second half of 2015 is sure to be fraught with capacity issues and bottlenecks for most modes. Rates should rise faster in the second half of 2015 to cover the higher costs faced by carriers and needed investment. Based on equipment orders placed and announced investment plans, carriers are working to overcome some capacity constraints. They are, however, doing so with caution to make sure that they do not end up in the overcapacity situation they found themselves in prior to the Great Recession. Truck drivers will be the limiting factor for the growth in trucking capacity.

If the economy expands at its current rate or better in 2016, we could face the same capacity constraints. It is unlikely that we will sustain GDP growth above 3.5% into 2016 and beyond. While consumers boosted the economy in 2014, there are no signs that they will return to their prerecession buying and borrowing patterns. So expect consumer spending to level off. The global economy is not experiencing the same economic renaissance as the US economy, so this is limiting export growth. Recent global economic forecasts are not favorable for a turnaround in 2015. Rates should reach a higher level towards the end of 2015 and increases will be modest to moderate in 2016 depending on the level of economic activity. Carriers should be able to pass on their higher costs to shippers.

Assuming slower, but strong economic growth in the second half of 2015 and into 2016, the industry should make some positive gains in matching capacity to demand. This will be especially true for the trucking industry, assuming the driver shortage can be managed. Rail capacity in terms of equipment should be much improved. Investments in additional track will begin to pay off as congested areas lessen. There are no indications at this time that rates will rise significantly by 2017, however, with carriers still firmly in control, do not expect rates to fall.

Other issues that could affect freight logistics:

- Change in global economy up or down
- Increased modal regulation
- Changes in product sourcing—especially locating manufacturing in the US, Canada, and Mexico
- Rate structure for the new Panama Canal
- Drastic change in fuel prices
- Continued container shipments to Canada

The union contract issues at the western ports also contributed to the slower inventory growth, as well as a myriad of other issues we continued to face through the end of May. The recently ratified ILWU contract came after a prolonged nine-month series of slowdowns and port closures, causing a freight gridlock. It has taken nearly five months to clear out the backlog of freight and it's estimated that the resulting congestion cost retailers as much as $7 billion in increased carrying costs and lost sales. Much of the undelivered freight was discounted immediately upon receipt because it was no longer in season.

The fashion industry was particularly impacted by the port slowdown. An entire season of fashion spent its time in containers anchored off the ports, with the following season's fashions hot on the heels of those sitting off the West Coast. Many retailers had to immediately put the new arrivals on discount or clearance to avoid any further inventory buildup. A Nordstrom executive said that his company was planning to make the best of the situation by bolstering supplies at their outlet stores. The inventory at these stores was getting thin because traditional retail stores were holding onto their current stock longer.

FIGURE 25: THE COST OF THE BUSINESS LOGISTICS SYSTEM IN RELATION TO GROSS DOMESTIC PRODUCT

Year	Nominal GDP ($ Trillion)	Values of All Business Inventory	Inventory Carrying Rate	Inventory Carrying Costs	Transportation Costs	Administrative Costs ($ Billion Except GDP)	Total US Logistics Cost	Logistics % of GDP	Inventory as a % of GDP	Transportation as a % of GDP	Inventory as a % of GDP*	Transportation as a % of GDP*	Total as a % of GDP*	GDP as a % of GDP*	Total as a % of Transportation*
1981	3.21	779	34.7%	259	228	19	506	15.8	8.1	7.1	215	123	159	31	38
1985	4.35	876	26.8%	227	274	20	521	12.0	5.2	6.3	139	109	121	42	46
1990	5.98	1082	27.2%	283	351	25	659	11.0	4.7	5.9	126	102	111	58	59
1995	7.66	1257	24.9%	302	441	30	773	10.1	3.9	5.8	105	100	102	75	74
2000	10.28	1525	25.3%	385	594	39	1018	9.9	3.7	5.8	100	100	100	100	100
2001	10.62	1448	22.8%	330	609	37	976	9.2	3.1	5.7	83	99	93	103	103
2002	10.98	1495	20.7%	309	582	35	926	8.4	2.8	5.3	75	92	85	107	98
2003	11.51	1557	20.1%	313	607	36	956	8.3	2.7	5.3	73	91	84	112	102
2004	12.27	1698	20.4%	346	652	39	1037	8.5	2.8	5.3	75	92	85	119	110
2005	13.09	1842	22.3%	410	739	46	1195	9.1	3.1	5.6	84	98	92	127	124
2006	13.86	1994	24.0%	478	809	50	1338	9.7	3.5	5.8	92	101	98	135	136
2007	14.48	2119	24.1%	510	855	54	1419	9.8	3.5	5.9	94	102	99	141	144
2008	14.72	2050	21.4%	438	872	52	1362	9.3	3.0	5.9	79	103	93	143	147
2009	14.42	1927	19.3%	371	705	43	1119	7.8	2.6	4.9	69	85	78	140	119
2010	14.96	2130	19.2%	409	770	47	1226	8.2	2.7	5.1	73	89	83	146	130
2011	15.52	2301	19.1%	440	819	50	1310	8.4	2.8	5.3	76	91	85	151	138
2012	16.16	2392	19.1%	457	847	52	1356	8.4	2.8	5.2	75	91	85	157	143
2013	16.77	2444	19.1%	466	885	54	1406	8.4	2.8	5.3	74	91	85	163	149
2014	17.42	2496	19.1%	476	901	55	1449	8.3	2.7	5.3	73	91	84	169	154

**Indexed with base - 2000.*