

Truck Transportation

Chapter 13

Chapter 13: Truck Transportation

Transportation facilitates agricultural development, allowing production to be specialized, rural communities to develop, and economies to grow. Trucking was the first mode of transportation widely available in the nation. It is easily obtained everywhere and offers flexible service. Several aspects of the relationship between the trucking industry and agriculture/rural areas are examined in this chapter, with particular focus on the capacity and services provided by the trucking sector as well as issues affecting the movement of agricultural commodities. Capacity, economic competition, rates, and investments in rural roads, bridges, and other facilities are discussed. The trucking industry is outlined and some issues important to the agricultural sector are examined.

Importance of Trucking to Agriculture

Trucking is a critical mode of transportation for rural America. It carries 70 percent of agricultural and food products, alcohols, fertilizers, lumber, wood products, paper, pulp, and paperboard articles.²⁶⁶ It links farmers, ranchers, manufacturers, and service industries to grain elevators, ethanol plants, processors, feedlots, markets, ports, intermodal, rail, and barge facilities. Trucking's efficiency enables the United States to be competitive in the global marketplace for agricultural products. The linkage with barge and rail facilities is especially important because of the complementary and competitive relationship among modes of transport.

In the supply chain that stretches from the farm to the consumer, trucking provides the first miles, the last miles, and sometimes all the transportation miles. This is as true for agriculture as it is for other industries. Trucking is heavily used for farm inputs such as chemicals, feed, fertilizer, seeds, and equipment. More than 80 percent of cities and communities are served exclusively by trucks.²⁶⁷ Flexibility, timeliness, and door-to-door service are vital to shippers who handle perishable agricultural products.



Figure 13-1: Unloading a truck. Trucks are usually the first and last links in the supply chain.

Source: © 2009 World Shipping Council

Nationwide, trucking carries 10.8 billion tons of freight—68.8 percent of all domestic freight tonnage.²⁶⁸ It accounts for 83.1 percent of the total transportation bill for all types of freight, earning \$660.3 billion in gross freight revenue in 2008. By comparison, agricultural freight accounted for 23 percent of all commodities transported by truck in 2002, the latest agricultural modal share data available.²⁶⁹ Trucking is a critical link for the national economy, and moving agricultural products is a significant portion of total trucking activity.

Trucking competition moderates freight rates. Trucking is both a complement and a competitor to air, rail, intermodal, barge, coastal, and ocean shipping. The lack of, decline of, or withdrawal of rail service, restrictions on access and routings to competing railroads, and rail rate increases, especially for grain and forest products, have increased dependence on trucking in rural areas. Disruptions in barge traffic and sharp increases in barge rates divert cargo to trucks as well as rail.

A highly competitive trucking industry benefits agriculture by keeping costs down and expanding markets domestically and abroad. Trucking is competitive because of:

- The ease of entry and exit of the business.
- The large number of owner-operator drivers.
- The large number of used trucks, tractors, and trailers available.

When combined, these phenomena enhance competition, squeezing profit margins for truckers and lowering freight rates for shippers. Although it varies widely, the average ratio of operating cost to operating revenue is a tight 95 percent in over-the-road long-haul truckloads, demonstrating that the sector is highly competitive, approaching what economists call atomistic or perfect competition.²⁷⁰ The average marginal cost of operating a truck is \$1.73 per mile and \$83.68 per hour.²⁷¹

Because of agriculture's reliance on trucking, the availability of drivers, especially during critical times such as planting and harvest, is critical to farmers' profitability. The economic downturn, volatility in fuel prices, tolls, traffic congestion, delays in loading and unloading, regulations, lower freight rates, and taxes on fuel, trucks, trailers, and tires, all affect the viability of trucking and the industry's ability to recruit and retain drivers. Over 96 percent of trucking companies are small businesses with fewer than 20 trucks; 87 percent have 6 or fewer trucks.²⁷² Nearly 50 percent of trucking companies have only one truck (owner-operators), with an average annual net income of \$37,000 annually.²⁷³ The average port drayage truck driver nets \$30,000.²⁷⁴ Most long-haul drivers are paid by the mile, by a flat fee, or portion of the gross revenue, not by the hour. The estimated average driver's pay is \$0.44 per mile or \$16.59 per hour.²⁷⁵

Figure 13-2: Half of all trucking operations are owner-operator companies.



Source: Luann Johnson, StockXchng

lower freight rates, and the lack of full reimbursement for increased fuel costs all played a role in putting truckers out of business. If the trucking industry is not healthy and vibrant, agriculture suffers because of its dependence on trucking.

During 2008, fuel and engine oil became the single largest marginal expense, at \$0.63 per mile, or 36 percent of total marginal operational costs.²⁷⁷ Additional costs, for diesel particulate filters, auxiliary power units for idling, aerodynamic tires and skirts to save fuel, or new trucks, tractors, trailers, and refrigeration units needed to meet California environmental rules add to the costs of small and large trucking companies alike. Federal, State, and port grant programs are available to defray a portion of these costs, but the available resources are limited in comparison to the needs of the trucking industry. These issues are especially important to agricultural exporters because of the sector's heavy dependence on foreign trade.

Fuel costs also affect driver availability. Although fuel surcharges are part of many contracts, some drivers have difficulty recovering the full cost of diesel fuel because of inadequate contracts, competition, decreases in economic activity, and reliance on third parties. When drivers can't fully recapture fuel costs, it affects the pool of drivers available for agriculture and can cause serious problems, especially during critical periods of planting and harvest when the sector's demands on trucking capacity are the greatest.

According to recent reports by Avondale Partners on carriers with five or more trucks, some 3,065 carriers with 137,650 tractors went out of business in 2008 and 480 additional carriers went out of business in the first quarter of 2009.²⁷⁶ Many smaller carriers and owner-operators with only one to four trucks probably went out of business as well, reducing availability to agricultural shippers. High diesel fuel prices, the declining economy, fewer products to be transported, increased competition,

Because agriculture needs large amounts of fertilizers and chemicals, it needs motor carriers that can safely haul hazardous materials. Federal statistics show that over 4.7 million commercial drivers are licensed, and 1.7 million of these are authorized to haul hazardous materials.²⁷⁸

There are 691,000 trucking businesses, and nearly 4.5 million trucks (including straight trucks and tractors), many of which are available to carry agricultural products and inputs. These data include over-the-road for-hire truckload and less-than-truckload carriers, private fleets that carry property for their own companies, owner-operators, local pickup and delivery carriers, and service vehicles. However, many farm drivers and farm trucks are not included in the Motor Carrier Management Information System, and this type of data is no longer part of the Economic Census which profiles the U.S. economy every 5 years.

Trucking is vital to agriculture—it is the sector’s most-used mode of transportation, it provides a critical link between rural areas and distant markets, it links farms to other modes of transportation, it is efficient, it is competitive and provides reasonable rates, and it is widely available in all areas of the country.

Trucking Capacity and Service

Trucking rates are kept low by the number of trucks available—the *capacity* of the trucking industry. Truck capacity depends on three components: drivers, the roads they travel on, and their vehicles and their operation.

Availability of Drivers

To understand agricultural truck capacity, it is important to understand the structure of the industry and the commercial drivers’ license (CDL) classifications that apply to all commercial carriers. The formal definition of commercial motor carriers is given in Appendix 13-2, Commercial Drivers’ License Classifications.

This section discusses several issues that concern the trucking industry and agricultural shippers, including the need for operating flexibility, agricultural exemptions, vehicle capacity, driver availability, and issues affecting roads. The agricultural sector is interested in the outcome of these issues because of their potential impact on the availability of service.

Trucking Industry Structure

The trucking industry is broken into two broad categories: the over-the-road long-haul trucking operations, where the principal occupation of the driver is driving (and often being away from home for long periods), and local operations, including farm trucks, where the driver often has other duties in addition to driving and may not be required to have a CDL.*

Long-haul interstate operations can be for-hire carriers, that contract to transport goods owned by others, or private fleets, that primarily carry their own company's goods. According to an American Trucking Associations' report, in November 2009 there were 227,930 for-hire carriers, 282,485 private carriers, and 81,466 other interstate carriers that did not specify their status.** Interstate carriers earned \$660.3 billion in revenue in 2008.†

For-hire trucking operations may have employees and/or owner-operator independent drivers. Owner-operators lease their services to carriers, driving their own tractors, and in some cases, providing their own trailers.

For-hire carriers specializing in full truckload (TL) operations move full loads of freight from origin to destination on regular schedules or provide random service, going where the loads are located. These companies operate on a regional or national basis.

For-hire less-than truckload (LTL) carriers move small shipments from 500 to 2,000 pounds in regularly scheduled moves that involve both local and long haul operations. Local trucks pick up shipments from many shippers and consolidate them at terminals for long haul trucking to destination terminals, where the full loads are broken down for local delivery to many receivers. Most agricultural shipments are full truckloads; food and some farm inputs arrive in LTL shipments.

Private fleets, which include some of the nation's largest food and beverage manufacturers, distributors, grocery stores, restaurant chains, and retailers, accounted for over \$288 billion of gross freight revenue in 2008.‡ Engaged in manufacturing or distribution operations, such carriers move their own freight on regular schedules to meet customer service requirements. They sometimes offer for-hire capacity in their trailers to reduce costly empty backhauls. Some private fleet operations are similar to for-hire LTL operations in that their freight is transported from a manufacturing plant to distribution centers, and/or multiple local retail stores.

Local operations can also be for-hire carriers or private fleets, which include farm trucks. These operations spend less time driving on the road than over-the-road carriers. They make more stops to pick up or deliver goods and provide customer services such as applying a pesticide or providing consultation, usually on regular routes that are less than 150 miles, as defined by the Federal Motor Carrier Safety Administration (FMCSA).† Port drayage trucking companies moving containers on chassis are the key link for U.S. imports and exports. Local trucks in rural areas provide crucial services such as utility work, well drilling, custom harvesting, delivery to grain elevators and processing plants, and moving farm supplies such as feed, seeds, fertilizer, herbicides, and pesticides to the farm or ranch from nearby distribution points, often on a seasonal basis. In some cases, driving may not be the principal occupation.

* FMCSA. Regulatory Impact Analysis for Hours of Service Options. November 2008.

** ATA, *Standard Trucking and Transportation Statistics*, Volume 16, Issue 1, January 2010.

† ATA. U.S. Freight Transportation Forecast to... 2020. 2009.

‡ ATA. U.S. Freight Transportation Forecast to... 2020. 2009.

† FMCSA. Regulatory Impact Analysis for Hours of Service Options. November 2008.

Operating Flexibility for Agricultural Operations

Maintaining operating flexibility for distribution of harvests and farm supplies is always important, but is especially important during the busy planting and harvest seasons. In the spring, grain farmers need a substantial amount of fertilizer during a 3- to 4-week period during the planting season. Fertilizer delivery and application is dependent on the weather, making it difficult to hire and schedule temporary drivers for short periods of work. During the harvest, weather, field conditions, and crop maturity create variability in the need to harvest and store billions of bushels of grain during a 3- to 4-week period.²⁷⁹ In aggregate, this massive amount of seasonal transportation is needed in a concentrated period of time. For example, for the 2007/08 marketing year, the Nation's farmers harvested 13.038 billion bushels of corn, equivalent to about 15.2 million truckloads; 2.677 billion bushels of soybeans, equivalent to about 3.34 million truckloads; and 2.051 billion bushels of wheat, equivalent to about 2.56 million truckloads.²⁸⁰

Figure 13-3: Potato harvest being loaded into trucks. Agriculture makes heavy use of transportation during planting and harvest seasons.



Source: Gene Hanson

Once the seasonal needs of planting and harvest are met, demand lessens for the rest of the year. Because of the specialized seasonal transportation services it requires, agriculture needs operating flexibility.

Most farming States are rural and sparsely populated. Distances from farms to suppliers, grain elevators, ethanol plants, storage facilities, and markets have increased because of the consolidation of farms and facilities. The pool of available part-time seasonal drivers is small, and the usual activity of the farmer or supplier is farming or customer services, rather than full-time long-haul year-round commercial driving.

Agricultural Exemptions

These legal exemptions increase the operating flexibility of trucks servicing agriculture:

- Exemption from the hours-of-service rules for drivers transporting agricultural commodities or farm supplies for agricultural purposes within a 100 air-mile radius from the source or distribution point during planting and harvest seasons, and for drivers transporting livestock feed at any time of the year.²⁸¹
- Temporary exemption from hours-of-service rules for drivers in response to natural disasters and disruptions in fuel supplies, often in rural areas, enabling timely rescue and recovery operations, including the delivery of food, shelter, fuel, and other supplies, under emergency declarations by the President, the Governor, or FMCSA.²⁸²
- Exemption from the CDL requirement for drivers of farm vehicles used to transport agricultural products, farm machinery, or farm supplies, to or from a farm within 150 miles of the farmer's farm.²⁸³
- Exemption from the minimum qualifications for drivers engaged in custom harvest operations transporting farm machinery or supplies to and from a farm, or custom harvested crops to storage or market and seasonal transportation of bees.²⁸⁴
- Exemption from the freeze on longer combination vehicles for custom harvest operations in Nebraska.

During the busy planting and harvest seasons, farmers and retail farm suppliers spend substantial on-duty time on activities other than driving, necessitating the agricultural hours of service exemption. By law, as determined by each State, the agricultural exemption is limited to an area within a 100 air-mile radius from the source of the agricultural commodity or the distribution point for the farm supplies during the planting and harvest seasons.

Requiring a farmer or supplier to go off duty would disrupt critical planting and harvest activities, especially for perishable crops subject to volatile weather and market conditions.

In 2005, Congress clarified the 100 air-mile radius agricultural exemption from the hours of service rules, first granted in 1995.²⁸⁵ It means that drivers transporting an agricultural commodity or farm supplies for agricultural purposes are exempt from the maximum driving and on-duty time provisions required of long-haul drivers.

The Agricultural and Food Transporters Conference (AFTC) of the ATA, and 49 other food and agricultural organizations support maintaining the exemption. AFTC has published the *Manager's Guide to Safe Trucking During Agricultural Planting and Harvest Season*.²⁸⁶ The

Commercial Vehicle Safety Alliance (CVSA) wants Congress to sunset all Federal exemptions and encourage States to do the same.²⁸⁷ CVSA contends that trucks operating under the agricultural exemption may be more likely to be involved in accidents than those following standard Hours of Service regulations. CVSA also believes that no exemptions should be provided to simplify enforcement of driver rules. Agricultural trucking interests, however, maintain that the needs and nature of agricultural trucking is very different from that of long-haul trucking and therefore special flexibility is needed.

Issues Affecting Local Agricultural Movements

The application of Federal motor carrier safety regulations to the intrastate and interstate movement of farm trucks as small as 10,001 pounds is of concern to many in the agricultural community because of the cost and recordkeeping burden for seasonal use of their vehicles over relatively short distances. In general, most haulers of farm products do not believe they should be under the same regulatory scrutiny and requirements as year-around commercial long-haul truckers. They believe to do so is unfair, unnecessarily burdensome, and is impractical because of the seasonality and nature of the hauling that is done for agriculture.

The Oregon Wheat Growers League and Washington Grain Alliance report that farmers who use their own farm trucks to move their own commodities

Historical Perspective on Agricultural Hours of Service Exemption

In 1994, Congress required DOT to conduct a rulemaking on the maximum driving and on-duty time requirements that could be waived for farmers and retail farm suppliers for agricultural purposes within a 50-mile radius of their farm or distribution point.* USDA filed comments in February 1995 in support of a 150 air-mile exemption, rather than the 50-air mile radius that was proposed, in light of the relatively small safety risk presented by farm and retail farm supply drivers relative to other types of commercial vehicle operations on low volume rural roads.**

USDA considered that a 150 air-mile radius exemption would coincide with the waiver authority granted in 1988 that allows States to exempt from the Commercial Drivers License requirements operators of farm vehicles that are used to transport agricultural products, farm machinery, or farm supplies, to or from the farm within a 150 air-mile radius of the farm, including adjoining States with reciprocity agreements.

In November 1995, Congress directed DOT to provide a 100 air-mile radius exemption in its hours of service regulations for drivers transporting agricultural commodities or farm supplies for agricultural purposes.† In August 2005, the exemption, including definitions of “agricultural commodity” and “farm supplies for agricultural purposes,” was made permanent in law.‡

* Government Printing Office. Hazardous Materials Transportation Authorization Act of 1994. Public Law 103-311, Sec. 113. Washington, DC. August 26, 1994.

** Regulations.gov. United States Department of Agriculture Marketing Service – Comments. Maximum Driving and On Duty Time Waiver; Farmers and Farm Suppliers, Request for Comments. FHWA-1997-2312-0018 [formerly FHWA MC-94-32-36] Washington, DC. February 6, 1995.

† Government Printing Office. National Highway Designation Act of 1995. Public Law 104- 59, Sec. 345. Washington, DC. November 28, 1995.

‡ Government Printing Office. Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. Public Law 109-59, Sec. 4130. Washington, DC. August 10, 2005.

for short distances within a State are considered to be engaged in interstate commerce if the commodity is part of trade originating or terminating outside the State or the United States (see Appendix 13-1). These farmers are required to register as interstate carriers with the FMCSA and obtain a USDOT number.

Farmers must undergo safety audits, follow hours of service rules, mark all vehicles, maintain an accident register, and establish preventive maintenance and inspection procedures, even for trips as short as 2 miles to a local elevator. Drivers of farm trucks of 26,001 pounds or more must obtain a CDL and implement a drug and alcohol testing program. These are the same regulations that apply to commercial for-hire long-haul interstate trucking companies and full-time truck drivers.

Even when commodities are sold with transfer of title within the State, FMCSA regulations and Unified Carrier Registration Agreement procedures consider that the commodities eventually could be destined for another State or country, defining it as “interstate commerce.” Prior case law supports this interpretation. In a Michigan sales tax case, the Court agreed with the ATA that “interstate commerce is defined by the overall movement of the freight, not whether a truck crosses a State’s borders.”²⁸⁸

Oregon farmers have been faced with this situation for many years. The deadline for compliance in Washington was June 30, 2009, for commercial motor vehicles with a gross vehicle weight of 26,001 pounds or more, and June 30, 2012, for commercial motor vehicles with a gross vehicle weight of 16,001 pounds or more.²⁸⁹ The Oregon Wheat Growers League is calling on the U.S. Congress for a national exemption from interstate commerce regulation for the movement of commodities from farm to market.²⁹⁰ On February 26, 2009, Representatives Boren and Fallin, with 18 co-sponsors from nine other farm States, reintroduced H.R. 1220 to exempt intrastate farm trucks from many regulations and raise the threshold for interstate regulation to 26,001 pounds, without the loss of Federal grant funds.²⁹¹ On March 19, 2009, Senators Inhofe, Merkley, and Coburn reintroduced S. 639 to allow States to exempt farm trucks with a gross vehicle weight under 26,001 pounds from the burden of interstate regulation, without the loss of Federal grant funds.²⁹²

Thirty-two States define a commercial motor vehicle as 26,001 pounds or more, compared with the Federal definition of 10,001 pounds or more. At the lower weight threshold, a ½-ton farm pickup truck with a livestock trailer, crossing a State line, is subject to the same interstate regulations as a year-round long-haul commercial tractor-trailer weighing up to 80,000 pounds. This regulation affects farmers and ranchers located near the borders of adjoining States, where the closest market for their products and livestock or source of their farm supplies is over the State line.²⁹³ Although this bill is supported by farm organizations, the ATA, arguing truck safety, supports extending the 10,001 pound threshold for Federal regulation to all vehicles, even those operating in intrastate commerce.

Issues Affecting National Vehicle Capacity: Vehicle Size and Weight²⁹⁴

A debate is under way concerning the appropriate size and weight limits for commercial motor vehicles on the Nation's highways. National weight standards apply to commercial vehicle operations on the Interstate Highway System, a 46,876-mile system of divided highways with limited access that spans the nation. Off the Interstate Highway System, States may set their own commercial vehicle weight standards.

The current Federal commercial vehicle weight restrictions on the Interstate Highway System are:

Single axle:	20,000 pounds
Tandem axle:	34,000 pounds
Gross vehicle weight:	80,000 pounds

However, the gross vehicle weight is also controlled by Federal Bridge Formula B. The bridge formula was introduced in 1975 to reduce the risk of damage to highway bridges. The formula calculates allowable weights based on the number, weight, and spacing of the axles in combination vehicles²⁹⁵ that may result a lower gross vehicle weight than 80,000 pounds.

These weight restrictions, and the size restrictions noted below, reflect the balance between vehicle productivity, safety, and system preservation that Congress determined were appropriate in the early 1980s. Since the early 1980s, the makeup of the trucking industry has changed and there have been many technological advances. In addition, our country now faces serious environmental and energy challenges that might be assisted by larger vehicles. However, the current weight and size restrictions reflect the design capacities of interstate highway pavement and bridges. Any revisions to size and weight standards must address the costs of maintenance and capital replacement of highways as well as the operating costs of truckers. These factors are precipitating a debate over changes to commercial motor vehicle size and weights.

National vehicle size standards, as shown in Table 13-1, apply on about 200,000 miles of what is known as the National Network of Highways, which includes the Interstate Highway System and highways capable of safely handling larger commercial motor vehicles, as certified by States to FHWA. These latter highways were formerly called Primary System routes.

Table 13-1 provides the Federal commercial vehicle size limits on the National Network.

Table 13-1: Commercial vehicle size limits

Overall vehicle length	<p>No federal length limit is imposed on most truck tractor-semitrailers operation on the National Network.</p> <p>Exception: On the National Network, combination vehicles (truck tractor plus semitrailer or trailer) designed and used specifically to carry automobiles or boats in specially designed racks may not exceed a maximum overall vehicle length of 65 feet, or 75 feet, depending on the type of connection between the tractor and trailer.</p>
Trailer length	<p>Federal law provides that no state may impose a length limitation of less than 48 feet (or longer if provided for by grandfather rights) on a semitrailer operating in any truck tractor-semitrailer combination on the National Network. (Note: A state may permit longer trailers to operate on its National Network highways.)</p> <p>Similarly, federal law provides that no state may impose a length limitation of less than 28 feet on a semitrailer or trailer operating in a truck tractor-semitrailer-trailer (twin-trailer) combination on the National Network.</p>
Vehicle width	<p>On the National Network, no state may impose a width limitation of <i>more or less</i> than 102 inches. Safety devices (e.g., mirrors, handholds) necessary for the safe and efficient operation of motor vehicles may not be included in the calculation of width.</p>
Vehicle height	<p>No federal vehicle height limit is imposed. State standards range from 13.6 feet to 14.6 feet.</p>

Agricultural and forest products shippers are generally in favor of increasing the truck weight limits for the Nation’s Interstate highways. They believe size and weight limits should be increased because:

- Agricultural and forest products are generally heavy and bulky.
- The markets for these products are highly competitive.
- A high percentage of the final price of the products is spent on transportation.
- Trucking is the largest single mode for transporting these products.

The current gross vehicle weight limit on Interstate highways is 80,000 pounds, with some exceptions. Forty-eight States routinely permit heavier axle weights and higher gross vehicle weights for trucks on some of their non-Interstate highways. Thirty-eight States have grandfather rights or statutory exemptions that allow such trucks to operate on their portions of the Interstate.²⁹⁶

States must allow 48-foot-long trailers, and every State allows trailers 53 feet or longer on Interstate highways.²⁹⁷ Only the District of Columbia does not. However, many States do not allow 53-foot trailers on non-Interstate highways, reducing the value of this trailer type. Twenty-two States allow longer combination vehicles—tractors with 2 trailers with a total combined weight over 80,000 pounds or 3 trailers of any weight—with their length, weight, and routes of operation frozen in place under the Intermodal Surface Transportation Efficiency Act of 1991.²⁹⁸ Proponents and opponents of increasing sizes and weights have testified before the 110th and 111th Congresses, and legislation for and against increases is before the 111th Congress as part of the highway reauthorization process.

Some States already permit the operation of trucks heavier than 80,000 lbs. on local roads, including areas where rail service is not available or is uneconomical over shorter distances. Advocates of heavier trucks believe that allowing these vehicles to use Interstate highways rather than rural roads could potentially improve safety, since the Interstate highways are built to higher geometric standards and have wider shoulders, slide resistant pavements, better guard rails, signs, and markings, better sight distances, and breakaway sign posts and utility poles. On the other hand, if the use of heavier trucks caused more freight to move by truck and less by rail, safety could get worse. Moreover, these heavier trucks still have to use local roads to access the Interstates, and many local roads are simply not built or maintained to support heavy truck traffic. These local roads are also supported by local taxes, which fall most heavily upon rural communities. Even on Interstate highways, heavier trucks would increase the rate of deterioration of pavements and bridges.

A coalition of over 60 agricultural and forest products trade associations and companies has requested Congress to allow a limit of 97,000 pound gross vehicle weight for trucks with a sixth axle on Interstate highways. The coalition believes the change would improve productivity and safety, stem forest product industry job losses, minimize pavement wear due to the sixth axle, and reduce vehicle miles traveled, fuel use, and emissions.²⁹⁹ While the sixth axle would reduce pavement wear (if properly designed), these heavier trucks would still violate Federal Bridge Formula B, leading to accelerated deterioration of bridges. The coalition has proposed a sixth axle user fee to be dedicated to bridge repair. On March 30, 2009, Representatives Mike Michaud and Jean Schmidt introduced H.R. 1799, the Safe and Efficient Transportation Act, to allow States to authorize six-axle vehicles up to 97,000 pounds on their Interstate Systems, and provide for an overweight vehicle tax and trust fund for bridge modifications and repair.³⁰⁰ The bill had 53 cosponsors as of April, 2010.

Opponents of increasing size and weight limits cite the following concerns:

- The need for highway system preservation
- Wear and tear on underfunded roads and bridges
- Highway safety
- Competition between large and small trucking companies
- The need to buy new equipment in order to compete
- The need for fewer drivers
- Competition between truck and rail
- The environmental benefits for shifting truck traffic to rail.³⁰¹

On March 19, 2009, Representative James McGovern, with 48 cosponsors, introduced H.R. 1618, the Safe Highways and Infrastructure Preservation Act, to freeze the size and weight of trucks on the 160,000 miles of the National Highway System (NHS), which includes the 46,876 mile Interstate Highway System.³⁰² As of April, 2010, the number of cosponsors increased to 123.

H.R. 1618 would prohibit States from permitting the operation of trailers longer than 53 feet or longer combination vehicles that were not in actual operation on a regular or periodic basis on or before June 1, 2008. Grandfather rights, granted to States in 1956 and 1974, and statutory exemptions allowing the issuance of permits for heavier gross vehicle weights and axle weights, would be terminated and any permits issued after June 1, 2008, would be revoked. Under this legislation DOT would define the term “vehicles and loads which cannot be easily dismantled and divided,” list the commodities affected, and apply regulations to all vehicles and loads operating on the National Highway System.

Safety Regulations

Drivers must comply with a variety of safety regulations, often at their own expense. The cumulative impact of regulatory requirements affects the availability of drivers and trucks in rural areas. The driving is often seasonal, the labor pool for drivers is smaller, and such drivers may pursue full-time work elsewhere. Under some circumstances driving is just one part of a person’s daily responsibilities, which may include delivering seeds, fertilizer, pesticides, advising farmers and ranchers, planting, and harvest.

Drivers need a CDL if they operate in interstate, intrastate, or foreign commerce, and drive a vehicle that meets one of the definitions of a commercial motor vehicle (see Appendix 13-2: Commercial Drivers’ License Classifications for a listing of CDL classifications). Entry-level commercial drivers receive training in four major areas—hours of service regulations, driver wellness, driver qualification requirements, and whistleblower protections—in order to meet Federal standards and pass a CDL test related to the type of vehicle to be operated.³⁰³ The implications for agricultural truck drivers are discussed below.

In the CDL rules, exemptions and waivers may be provided for the following drivers: active duty military drivers, firefighters, emergency response vehicle drivers, farmers, drivers removing snow and ice, seasonal drivers in farm-related services, and remote drivers in Alaska.

States may issue learner's permits for purposes of behind-the-wheel training on public highways as long as learner's permit holders are required to be accompanied by someone with a valid CDL appropriate for that vehicle and the learner's permits are issued for limited time periods. Under these restrictions the days of a farmer's son or daughter helping on local roads at harvest or planting times may be a thing of the past.

Driver Training

A proposed rule by FMCSA would require 110 hours of training for entry-level drivers of heavy trucks seeking a Class A CDL. It would require 80 hours for those seeking either a Class B or C license. The program of instruction would include both classroom and behind-the-wheel training. The behind-the-wheel driving component would require at least 44 hours for Class A and 32 hours for Classes B and C.³⁰⁴

Custom harvesters, rural electric cooperatives, farm suppliers, and other rural businesses have expressed concerns over whether the proposed rule would apply to them in light of existing CDL exemptions. Concerns were also expressed that the rule would potentially exclude them from training their own drivers unless they were accredited to do so. Custom harvesters are responsible for 50 percent of the wheat, 25 percent of the feed corn, 50 percent of the corn silage, and 25 percent of the cotton harvested in the United States.³⁰⁵

In comments to FMCSA, custom harvesters and others noted the relatively limited pool of drivers and the seasonal nature of the work. They noted the high costs of training for U.S. residents, and for non-resident temporary H2-A visa holders who are hired when a sufficient number of U.S. resident drivers are not available, and the approximately 50 percent turn-over rate of newly-trained U.S. resident drivers who leave to take year-round steady employment with a trucking company. Custom harvester trucks are driven less than 20,000 miles per year and for relatively short distances (less than 30 miles) from farm to farm, except when moving equipment across State lines.³⁰⁶

Figure 13-4: Trucks in line to load during a wheat harvest. Many extra drivers are needed during the harvest season.



Source: Jeremy Lasater <www.wheatfarm.com>

Hours-of-Service Rules

The hours-of-service rules are based on extensive research to provide long-haul drivers with enough rest and for flexibility in making pickups and deliveries while assuring highway safety. These benefits are achieved by limiting drivers to a maximum of 11 hours of driving within a 14-hour window of on-duty time. Once on duty, the time drivers spend waiting to load and unload, and the time they spend at meals, rest areas, or refueling counts against the 14 hours on duty. Delays in loading and unloading are of concern to long-haul drivers, who are often paid by the mile.³⁰⁷

Drivers must spend at least 10 consecutive hours off duty between shifts. They cannot operate a truck if they have been on duty for a total of 60 hours in 7 consecutive days or 70 hours in 8 consecutive days. Drivers that rest for at least 34 consecutive hours can restart their weekly work schedule. A lack of adequate truck parking, and a patchwork of State, city and county restrictions on truck engine idling impact drivers with sleeper berths trying to get their mandated rest in safety and comfort.

Driver salespersons, well-drilling operators, farm drivers not required to have a CDL within a 150 air-mile radius, local short-haul drivers operating within a 100 air-mile radius, and drivers in Alaska and Hawaii are provided with specific exceptions and increased flexibility under the hours-of-service rules. Likewise, drivers transporting an agricultural commodity or farm supplies within a 100 air-mile radius for agricultural purposes and utility service vehicle drivers are exempt from the maximum driving and on-duty time provisions.

The rule has been repeatedly challenged by Public Citizen Advocates for Highway and Auto Safety, the International Brotherhood of Teamsters, and the Truck Safety Coalition. On January 16, 2009, DOT denied their petition for reconsideration, citing no significant increase in fatigue-related crashes, and the fact that drivers value the 34-hour restart because it gives them more rest and time off duty, including more time at home. FMCSA noted that it “is highly unlikely that drivers could, in practice, maximize their driving and on-duty time and minimize their off-duty time” due to delays in loading and unloading, traffic and weather-related delays, and mechanical and equipment problems.³⁰⁸

DOT noted that the number of large truck fatalities declined for the fourth year in a row in 2008 with 4,229 fatalities, down from 5,240 in 2005.³⁰⁹ Meanwhile, safety data show that between 2004 and 2006, only one fatigue-related fatality occurred between the tenth and eleventh hour of driving.³¹⁰ On March 9, 2009, Public Citizen et al filed their third lawsuit with the U.S. District Court of the District of Columbia.³¹¹ The Court reviewed the rule in 2004 and 2007; FMCSA addressed procedural issues as required and reissued the rule in 2005 and 2008.

Loading and Unloading

Since most drivers are paid by the mile, and earn an average of \$37,000 per year, time spent waiting to load and unload, or at ports to pick up or deliver a container, reduces income and increases emissions. In protest, port drayage truck drivers have temporarily blocked or stayed away from several ports in the United States and Canada in the past few years. When such movements are of a perishable or time-sensitive nature, as are many agricultural movements by container, significant impacts are felt.

FMCSA is responsible for investigating documented loading and unloading abuses, where drivers are illegally coerced to hire someone to assist them. FMCSA also investigates truck brokers who refuse to pay truckers after loads have been delivered. The \$10,000 bond that brokers provide when registering with the FMCSA is a fraction of the value the cargo, and is insufficient to satisfy the claims and costs of litigation.

Guidelines and initiatives have been developed to reduce delays in loading and unloading, treat drivers with respect, provide adequate parking for mandatory hours-of-service rest periods, and resolve freight claims.. The potential gain to carriers in overcoming inefficiencies include \$3 billion per year by reducing loading and unloading times, \$2.7 billion by reducing empty miles, \$900 million by reducing time waiting in ports, and \$8,200 per driver by reducing turnover.³¹²

Effective December 17, 2009, ocean carriers, railroads, chassis pool operators, and other intermodal chassis providers are required to register and establish a systematic inspection, repair, maintenance, and recordkeeping program to ensure the safe operating condition of chassis before they are offered for use.³¹³ All chassis must be marked with DOT identification numbers or other acceptable methods permitted under the final rules by December 17, 2010. Drivers must inspect the chassis before beginning their trips and complete a driver vehicle inspection report when they return the chassis. Drivers must document problems in order to file complaints with FMCSA. The industry is taking positive steps to ensure the safety of chassis by establishing chassis pools at port and inland terminals. The pools contribute to efficient use of fuel, labor, and equipment, by reducing repositioning costs and driver time at terminals.

Congress initiated a \$25 million Truck Parking Pilot Grant Program in 2005. States, metropolitan planning organizations, and local governments are eligible for funds to construct, open, promote, or improve access to parking facilities. DOT selected two Intelligent Transportation System projects at a cost of \$11 million in the I-95 (seven States) and I-5 (CA) Corridors to quantify truck parking availability in the corridors and disseminate the information to truckers using those corridors.³¹⁴

Lowering Minimum Age to Increase Driver Pool

Prior to the economic downturn in 2008, driver retention and driver shortages were top concerns.³¹⁵ Driver pay, uncompensated delays in loading and unloading, and lifestyle issues—including time away from home—are among the reasons for driver turnover. As the economy improves, additional drivers will be needed as older drivers continue to retire, and drivers find other work that pays better without the need to be away from home.

One solution for the driver shortage focuses on the minimum age for interstate drivers, which is now 21. Farm vehicle drivers of articulated commercial motor vehicles can now be age 18-20 but are confined to intrastate operations.³¹⁶ The Truckload Carriers Association petitioned the FMCSA in 2000 to grant a graduated CDL pilot program for 18- to 20-year-old drivers.³¹⁷ However, due to concerns expressed by safety groups and others, the FMCSA denied the petition. Concerns were raised that younger drivers would be less safe and more expensive to insure.

Driver Credentialing

Because substantial amounts of agricultural products are exported to overseas markets, access to the Nation's ports is very important. Drivers must now undergo new Federal security checks to receive a Transportation Worker Identification Credential (TWIC), which is necessary to gain unescorted access to port areas. As of June 12, 2009, nearly 15,000 drayage truck drivers that regularly serve the Nation's ports and over 214,000 other truck drivers have enrolled in the TWIC program.³¹⁸

Two separate, similar, background checks for a hazardous material endorsement and TWIC are required, and drivers must bear the cost of paying separate fees and time away from driving while at TWIC enrollment centers. The trucking industry has requested that only one background check be required.

Issues Affecting Capacity of the Roads

Maintaining the trucking industry's ability and capacity to serve agriculture and rural areas requires more than drivers and vehicles. It also requires a road and bridge infrastructure, and the funds to maintain and improve them.

Maintenance and Improvement of Roads and Bridges

According to Federal data in 2004, 77 percent of the Nation's bridges, 75 percent of the 4 million miles of public roads, and 36 percent of all vehicle miles traveled are in rural areas (those with populations less than 5,000).³¹⁹ Only 23 percent of rural road mileage is eligible for Federal grants; the rest is maintained by State and local funding. Over one-half of the Federal-aid highways are in less-than-good condition, and more than one-quarter of the Nation's bridges are structurally deficient or functionally obsolete.³²⁰

Figure 13-5: Colorado Department of Transportation is replacing bridges on I-76 with \$11 million in Federal stimulus funds.



Source: Colorado DOT

To fund some of this shortfall in infrastructure investment, quantified below, the American Recovery and Reinvestment Act of 2009 appropriated \$27.5 billion in grants to the States for maintenance and improvement of roads and bridges. The law authorizes the Secretary of Transportation to make an additional \$1.5 billion in grants, including between \$20 million to \$300 million for highway or bridge projects, port connections, etc. Smaller grants may be made for significant projects in smaller cities, regions, or States.³²¹

The Omnibus Appropriations Act of 2009 authorizes up to \$41.44 billion in spending from the Highway Trust Fund and rescinds \$3.15 billion in unobligated balances from the States. The law provides for a USDA Rural Business Program grant not to exceed \$500,000 to a qualified national organization to provide technical assistance for rural transportation to promote economic development. It also allows the Forest Service to spend up to \$40 million to decommission roads no longer needed, after public notice and comment.³²²

Substantial funds could be provided in the highway reauthorization bill that will succeed the current authorization, Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Public Law 109-59, which expired September 30, 2009. The National Surface Transportation Infrastructure Financing Commission in February 2009³²³ and the National Surface Transportation Policy and Revenue Study Commission in December 2007³²⁴ both recommended increasing fuel taxes and alternative ways of raising revenue to address the backlog of road, bridge, and transit system maintenance and improvement needs.

The financing commission stated the average annual Federal, State, and local revenue needed for maintenance of highway and transit systems was \$172 billion per year. The average annual revenue needs for improvements was an additional \$42 billion per year. Based on these revenue needs, the estimated average annual gaps in funding over 28 years were \$96 billion for maintenance, and \$42 billion for improvements.

Funding

Rural agriculture, manufacturing, and service industries depend on access to the national highway network. Maintenance and improvement of the Nation's roads and bridges affects congestions, productivity, and the competitiveness of rural agriculture, manufacturing, and service industries in world markets. The annual cost of congestion in the Nations' 437 urban areas was estimated to be \$87.2 billion in 2007, including 4.2 billion hours waiting in traffic while wasting 2.8 billion gallons of fuel.³²⁵ Many of agriculture's movements are through these congestion bottlenecks which need to be maintained and improved.

The trucking industry has expressed concern about diversion of Federal highway trust funds for non-highway uses such as mass transit. Some in industry support increased fuel taxes if they are dedicated to maintenance and improvement of highways.

The reauthorization of SAFETEA-LU, provides an opportunity for discussion of highway funding mechanisms. At present, all highway users pay a tax per gallon of fuel used. The way in which this tax is assessed leads to various inefficiencies. For example, users of crowded highways do

not pay the marginal costs they impose on the network, except to the extent that they are delayed. A relatively small part of the road network (less than a third) carries three quarters of all traffic; so many rural roads do not generate sufficient revenue to provide for their upkeep.

Various financing mechanisms are being discussed, including congestion pricing and vehicle-mile tolling. Historically, the trucking industry has been opposed to highway tolls. However, there is a need to make the process of recovering the costs of highway maintenance more equitable for all users.

One possible solution is the creation of a single transportation trust fund to cover necessary investments in highways, freight railroads, public transportation systems, ports, and harbors. In this way, the efficiency of the nation's transportation system could be maximized across all modes. For example, States might find it more economical to subsidize rail branch lines than to improve rural highways to support heavier trucks.

Investment Needs

As discussed above, the Commissions found that the Federal, State, and local investment needs for maintenance and improvements of roads and bridges are substantial. The debate on how to pay for them continues. The trucking industry must invest substantial funds in retrofitting or replacing equipment to meet environmental regulations, as discussed in the next section. Trucking companies also must hire and train new drivers and purchase additional equipment as the economy improves.

On June 18, 2009, the House Transportation and Infrastructure Committee proposed, through a publically released Committee Print, \$337.4 billion for highway construction investment over six years in The Surface Transportation Authorization Act of 2009, including at least \$100 million for the National Highway System, \$50 billion to reduce congestion, and \$25 billion for projects that focus on goods movement and freight mobility. Some of the relevant text may be found in Appendix 13-3: Excerpts from the *Surface Transportation Authorization Act of 2009*.³²⁶ On June 17, the Administration requested that Congress instead focus on an 18-month reauthorization that will replenish the Highway Trust Fund to prevent it from becoming insolvent.³²⁷ On August 7, the President signed H.R. 3357 to restore \$7 billion to the Highway Trust Fund.

Impact of New Environmental Regulations

Because agriculture is a significantly competitive industry with narrow profit margins and high transportation costs, and is dependent on distant export markets, agricultural shippers are conscious of costs. As a matter of survival in their businesses, they routinely and carefully scrutinize all costs, and are concerned with any regulatory or other requirements that can impact their competitiveness. National and State environmental regulations to reduce exhaust emissions of ozone precursors, particulate matter, and greenhouse gases are adding substantial capital costs for truck owners, the majority of which are small businesses.

New requirements for trucks entering ports have been imposed. These are examined in detail in Chapter 14: Ocean Transportation, and summarized here.

California regulations limit idling and require lower emissions from truck engines and transport refrigeration units by phasing in prohibitions on older model trucks and refrigeration units. Ultimately, diesel particulate filters will be required on virtually all diesel trucks operating in the State. In order to reduce fuel use, reduce greenhouse gas emissions, and assist the trucking industry with some of the costs of retrofitting or upgrading equipment, the EPA offers a voluntary SmartWay tractor and trailer program.³²⁸ This program encourages the use of low-rolling-resistance tires and aerodynamic technologies on 53-foot trailers and the tractors pulling them. Beginning in 2010, California has mandated portions of this program.

California Air Resources Board estimates their diesel emission, greenhouse gas reduction, and TRU rules will cost the entire business sector over \$15 billion, which is justified by fuel savings and improvements in public health.³²⁹ Given the number of trucking companies that went out of business in 2008 and the current state of the economy, there is concern about shortages of tractor-trailers and drivers, and elevated freight rates in 2010 as the economy improves and simultaneously more stringent rules come into force.

Several port, State, and Federal grant, fee, and tax credit programs have been established to reduce emissions and help defray the costs of upgrades, especially for port drayage truck drivers and long-haul owner-operators, whose average net incomes are \$30,000 to \$37,000 per year. Some \$300 million of Recovery Act funding for clean diesel activities are available, including \$30 million for the SmartWay Clean Diesel Finance Program. Seventy percent of the funding will be distributed nationally by EPA and 30 percent by States. Some \$156 million of the \$300 million will be available as competitive grants. The funds can be used toward the purchase of new

Cost of Environmental Compliance

Auxiliary power units to eliminate truck engine idling while providing driver heating and cooling comfort during mandatory rest periods cost between \$6,000 to \$8,500; diesel particulate filters cost \$10,000 or more and generally incur a fuel economy penalty; aerodynamic fairings for trailers to reduce drag, fuel consumption, and emissions cost approximately \$2,400; and a set of aluminum wheels for single wide tires to reduce rolling resistance, fuel consumption, and emissions cost \$5,600.*

The capital costs of the initial transport refrigeration unit (TRU) retrofits to reduce diesel particulate emissions have a suggested retail price of \$4,000. Compliance with the more stringent California standard taking effect in 2010 is expected to further increase TRU compliance cost. Manufacturer's estimates for new TRU engines are \$10,000 with a new TRU costing as much as \$20,000.[†] Although these capital costs may be recouped over time through increased efficiencies, lower fuel consumption, and better motor performance, they do require substantial up-front capital investments.

* EPA. What SmartWay Can Do For You: SmartWay Tractor and SmartWay Trailers. Technologies, Strategies and Policies: Upgrade Kits
<http://www.epa.gov/smartway/transport/what-smartway/tractor-trailer.htm>.

[†] Air Resources Board. Staff Report: Initial Statement of Reasons for Proposed Rulemaking. Airborne Toxic Control Measure for In-use Diesel Fuel Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities where TRUs Operate. October 2003.

tractors, diesel particulate matter filters, auxiliary power units to provide driver heating and air-conditioning while waiting to load or unload, or during mandated rest periods, SmartWay tires and aerodynamic tractor trailer fairings and skirts, and other retrofits for older equipment.³³⁰

The OffPeak PierPASS traffic mitigation fee is charged during daytime hours at the ports of Los Angeles and Long Beach to encourage the movement of containers by drayage trucks at less congested times.³³¹ For perishable agricultural products that must move during peak periods to meet vessel loading and customer requirements, fees affect the competitiveness of exports and imports. To the extent that grants, fees, and tax credits help trucking companies adapt, reduce fuel consumption, and stay in business to allow adequate competition, agriculture and rural America will benefit.

Twenty-five States restrict idling while drivers are resting, or waiting to unload or unload, and within these States the regulations are specific to 46 counties and cities.³³² Time limits, fines, and exemptions vary across jurisdictions, creating a patchwork of border, compliance, and comfort issues for interstate drivers who need heating, air-conditioning, and power in their cabs. The Energy Policy Act of 2005 gave States the option to grant a 400 pound weight tolerance to vehicles equipped with on-board auxiliary power units over the 80,000 pound weight limit.³³³ While several States have enacted laws or are exercising discretion, the trucking industry has asked Congress to specifically pre-empt State law to ensure a national weight tolerance for the benefit of interstate commerce.

In summary, environmental regulations give rise to higher capital—and sometimes operational—costs for the trucking industry, the majority of which is composed of small businesses. Should more trucking companies go out of business because they are not able to afford or pass on the capital costs of upgrading their equipment through higher freight rates, agriculture and rural America could be adversely affected.

Economic Regulation and Rates

To some degree, agricultural trucking has always benefited from exemptions from interstate economic regulation. Interstate truck transportation of most unmanufactured agricultural commodities has never been subject to Federal economic regulation. Prior to deregulation of the entire trucking industry, studies showed that rates for exempt commodities were 20 to 40 percent lower than regulated movements.

Deregulation

Agriculture benefited further when The Motor Carrier Act of 1980 progressively eliminated Interstate Commerce Commission (ICC) restrictions on entry, expansion, rates, routes, stops, backhauls, and commodities carried. The increased competition from thousands of new trucking companies led to lower freight rates, lower inventory costs, increased intermodal shipments, just-in-time shipping, and economic growth. According to Thomas Gale Moore, truckload rates fell 25 percent from 1977—the year before ICC Commissioners appointed by Presidents Ford and Carter began making changes—to 1982.³³⁴

The Interstate Commerce Commission Termination Act of 1995 further deregulated the trucking industry by prohibiting States other than Hawaii from regulating intrastate rates, routes, services, and tariff filing. After restricting motor carrier bureau collective ratemaking, routes, rules, classification, mileage guides, and pooling activities for many years, the Surface Transportation Board removed antitrust immunity on January 1, 2008.³³⁵

Carriers of non-exempt commodities must apply for operating authority with FMCSA, which reviews the carrier's fitness, financial responsibility, surety bonds, and designation of legal process agents. However, FMCSA approval of operating authority requires only the finding that the applicant is fit, willing, and able to perform the involved operations and to comply with all applicable statutory and regulatory provisions. Applications can be opposed only on the grounds that applicant is not fit—is not in compliance with financial responsibility and safety fitness requirements.³³⁶

Truck Rates

Truck rates affect the viability of trucking companies, the majority of which are small businesses, and the viability of agriculture, manufacturing, and service industries that use this transportation mode. Rate information is limited due to the deregulated nature of the trucking industry; truck rates and services, including fuel surcharges, are privately negotiated by the load or by contract, with no Federal regulation, and typically treated as confidential. Consequently, comprehensive government data are not available for truck rates. Nevertheless, some private companies offer truckload and less-than-truckload (LTL) rate analysis to subscribers via the Internet based on confidential bill of lading information voluntarily provided to them by some trucking companies.* In addition, C. H. Robinson Worldwide[†] provides confidential rates and services to members of many major agricultural shipper trade associations, based on a network of owner-operators and trucking companies.

Even though truck rates are not widely available, they are generally believed to be competitive due to the nature of the industry. The average ratio of operating cost to operating revenue is 95 percent in long-haul truckloads.³³⁷ The total marginal costs of operating a truck were \$1.73 per mile.³³⁸ From a market power perspective most analysts believe truck rates are not excessive and are governed by market factors that influence rates.

* For example, Truckloadrate.com. *Freight Rates*. <http://www.truckloadrate.com/market_truck_rates.htm>

[†] <<http://www.chrobinson.com/logistics.asp>>

Due to the high fuel rates in 2008, the current economic recession, and lower freight rates, 3,065 carriers with five or more trucks went out of business in 2008, and 480 additional carriers went out of business in the first quarter of 2009, according to Avondale Partners.³³⁹ Many smaller carriers and owner-operators that haul fruit, vegetables, and grains with only one to four trucks could have gone out of business as well, but Avondale Partners do not report them. As the economy and demand for trucking improves, fuel costs may rise, causing driver and equipment shortages to materialize and rates to increase again.

Truck Rates for Fruit and Vegetables

The Fruit and Vegetable Market News Branch of USDA's Agricultural Marketing Service (AMS) compiles the weekly *Fruit and Vegetable Truck Rate Report* based on voluntarily provided information.³⁴⁰ The weekly range of rates represents spot market prices that shippers or receivers pay for the most usual truckload volume, in 48–53 foot refrigerated trailers, including broker's fees. The rates are from the point of origin to markets in Atlanta, Baltimore, Boston, Chicago, Dallas, Los Angeles, Miami, New York, Philadelphia, and Seattle. The Transportation Services Division of AMS further analyses the same rate and truck availability data to compile the *Agricultural Refrigerated Truck Quarterly*.³⁴¹

Fuel prices are a major component of truck operating costs, especially while they are high, when they can be the dominant cost of operation. Because fuel is a variable cost of operation, there is a strong correlation between fuel prices and rates.

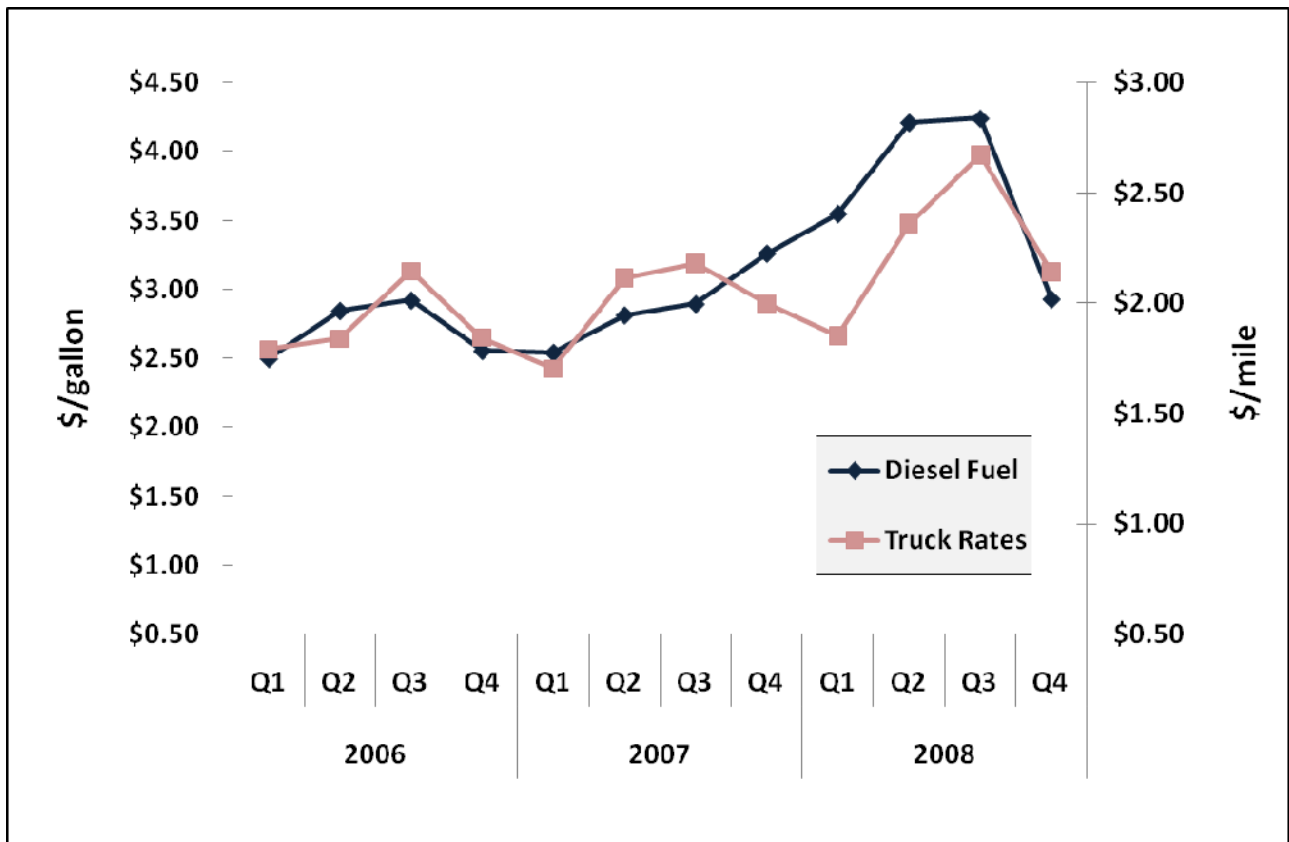
Truck rates, however, also are determined by the supply of, and the demand for, trucking services. Because of the seasonal nature of agricultural production, demand for agricultural trucking services can vary much more than trucking availability, resulting in truck rates that do not always correlate with fuel prices.

In cases where the going rate for truck services does not cover all costs, the variable cost of operation is the floor price for the transportation of goods. Due to the government provision of highways, truck transportation has relatively lower fixed costs than other modes of transportation.

The rapid rise in diesel fuel prices from the first quarter of 2007 through the second quarter of 2008 caused a surge in truck rates in the second and third quarters. However, when fuel prices declined in the fourth quarter—along with the world economy—truck rates for fruit and vegetable hauling dropped significantly. During that period, many trucking businesses ceased operation. Figure 13-6 shows the strong correlation between average fuel prices and truck rates for fresh fruit and vegetables from 2006 through 2008. Beyond fuel costs and surcharges, the seasonal nature of rates is influenced by a wide range of variables, including import demand, harvest dates, prior year prices, production volumes, weather, holidays, consumer demand, and the availability of higher paying, less perishable cargo.

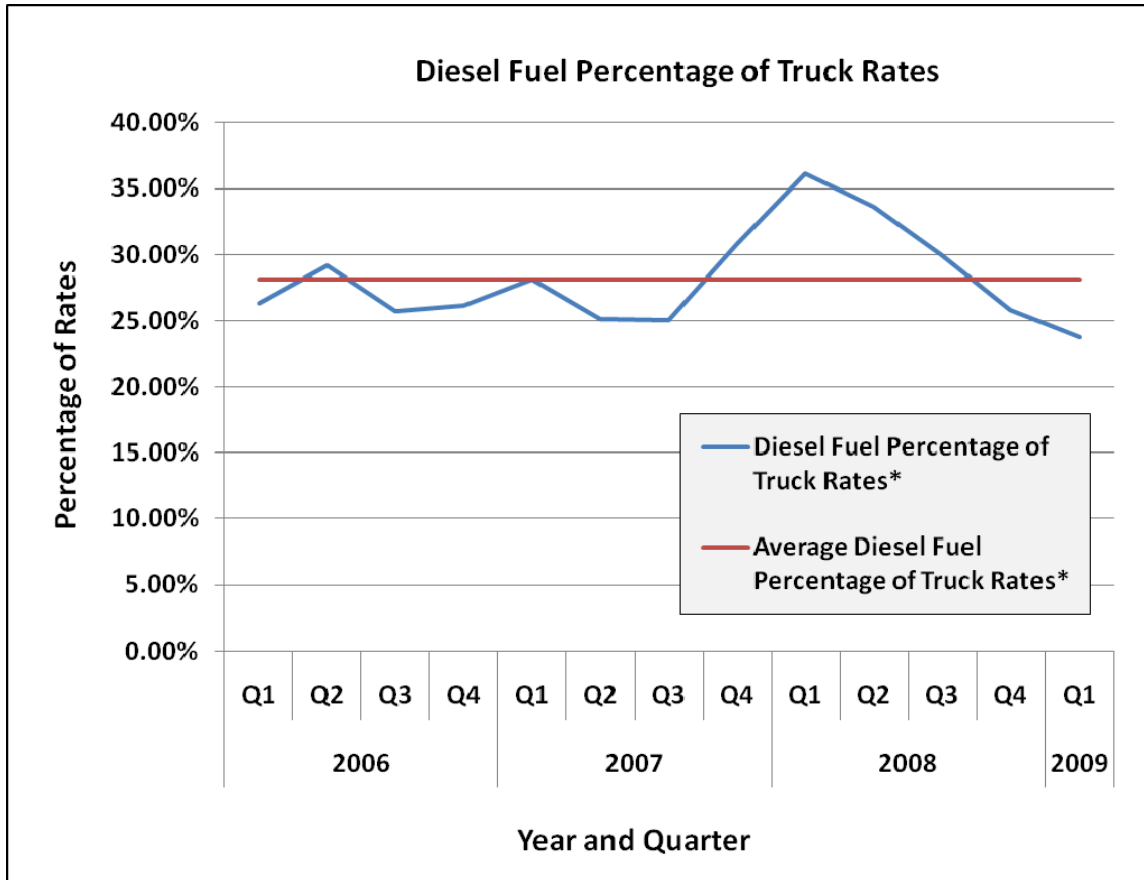
As can be seen in Figure 13-6, fuel prices and dollars per mile were closely correlated until the second quarter of 2007, when fuel price volatility started to add increased uncertainty to the truck market. After that point, fuel prices and truck rates were still somewhat correlated, but not to the same degree as before. As is shown in Figure 13-7, during most of 2006 and 2007 diesel fuel accounted for 28 percent of the truck rate. It climbed in 2008—in the first quarter, fuel reached 36 percent of the truck rate. This may demonstrate the inability of produce truckers to levy fuel surcharges. Truck rates did not move as quickly as fuel costs, accounting for the increased share of fuel costs in truck rates during the period.

Figure 13-6: Correlation between average on-highway diesel fuel prices and truck rates for fruits and vegetables



Sources: Diesel Fuel: Weekly Retail On-Highway Diesel Prices, Energy Information Administration. <http://tonto.eia.doe.gov/oog/info/wohdp/diesel.asp> EIA; Truck Rates: USDA, Fruit and Vegetable Market News

Figure 13-7: Diesel fuel percentage of truck rates



*Based on 5.3 mpg average fuel economy

Sources: Diesel fuel: Weekly Retail On-Highway Diesel Prices, Energy Information Administration.

<<http://tonto.eia.doe.gov/oog/info/wohdp/diesel.asp>>; Truck Rates: USDA, Fruit and Vegetable Market News;

Average Fuel Economy: National Commission on Energy Policy, Policy Discussion – Heavy-Duty Truck Fuel Economy

Truck Rates for Grain

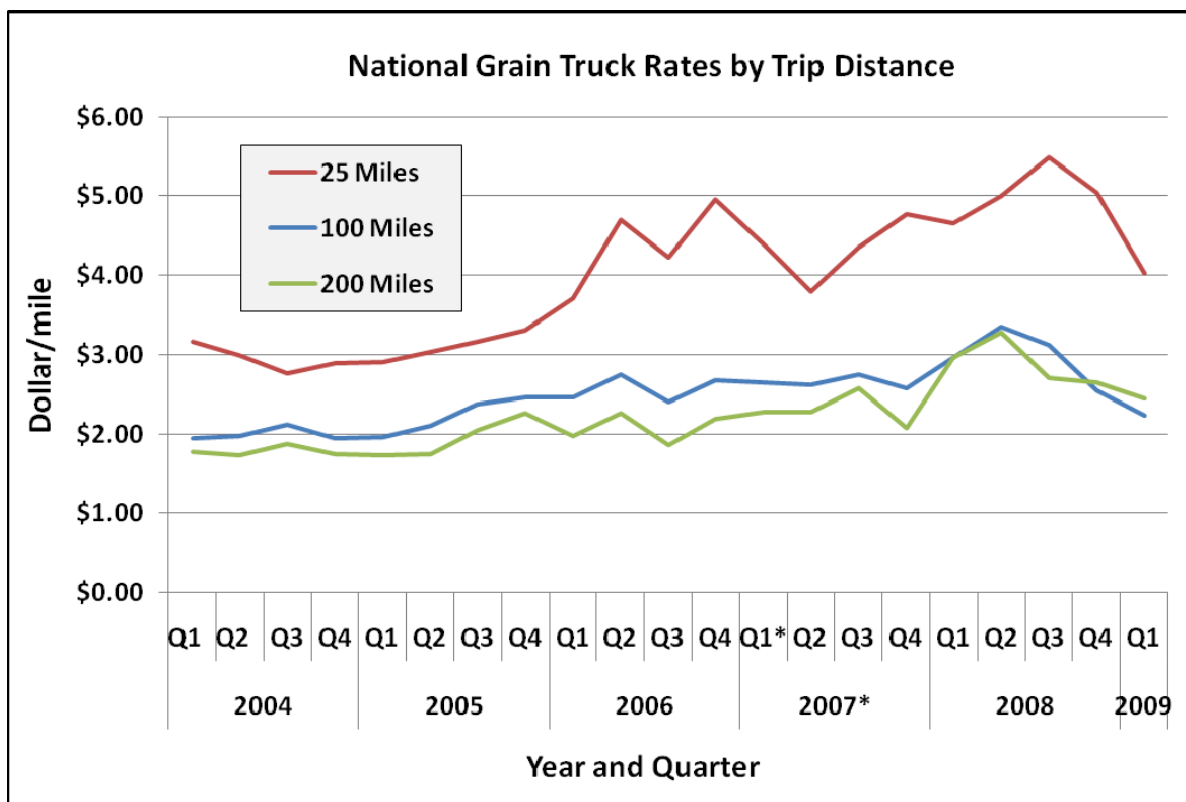
AMS also compiles a quarterly *Truck Transportation* report based on information voluntarily provided to the Upper Great Plains Transportation Institute at North Dakota State University.³⁴² Grain elevators across nine States designated by their State grain and feed organizations as leaders in truck grain-hauling provide responses on truck availability, anticipated truck demand, and rates. These States are the major producers of corn, wheat, and soybeans. They report rate information for local hauls of 25 miles and for longer trips of 100 and 200 miles. In addition, they report current and expected levels of truck demand, compared with the same period last year.

The primary source of truckload rates and services for grain transportation is communication between the shipper and local trucking companies. Locality is important in grain truck transportation; a bulk movement of grain is usually only price-competitive with rail up to 300 miles (but the distance may extend to 500 miles under some market conditions). Trucking

companies may range from a single truck owner-operator to a global transportation company that runs a trucking operation as a part of another business. Some of the larger publicly traded agricultural processing and trade companies own and operate their own truck fleets to ensure rates, availability, and consistency.

Figure 13-8, shows the national truck rate averages for hauling grain, by three categories of hauling distance, from 2004 through the first quarter of 2009. Underlying the grain truck rates are factors such as ease of hiring truck capacity (Figure 13-9) and the demand for trucks (Figure 13-10), all of which are influenced by ownership, fuel prices, surcharges, the region of operation, seasonal harvest and storage practices, world and domestic demand, competition for drivers, truck availability, and competition with other cargo, as well as trip distance.

Figure 13-8: National average grain truck rates by trip distance



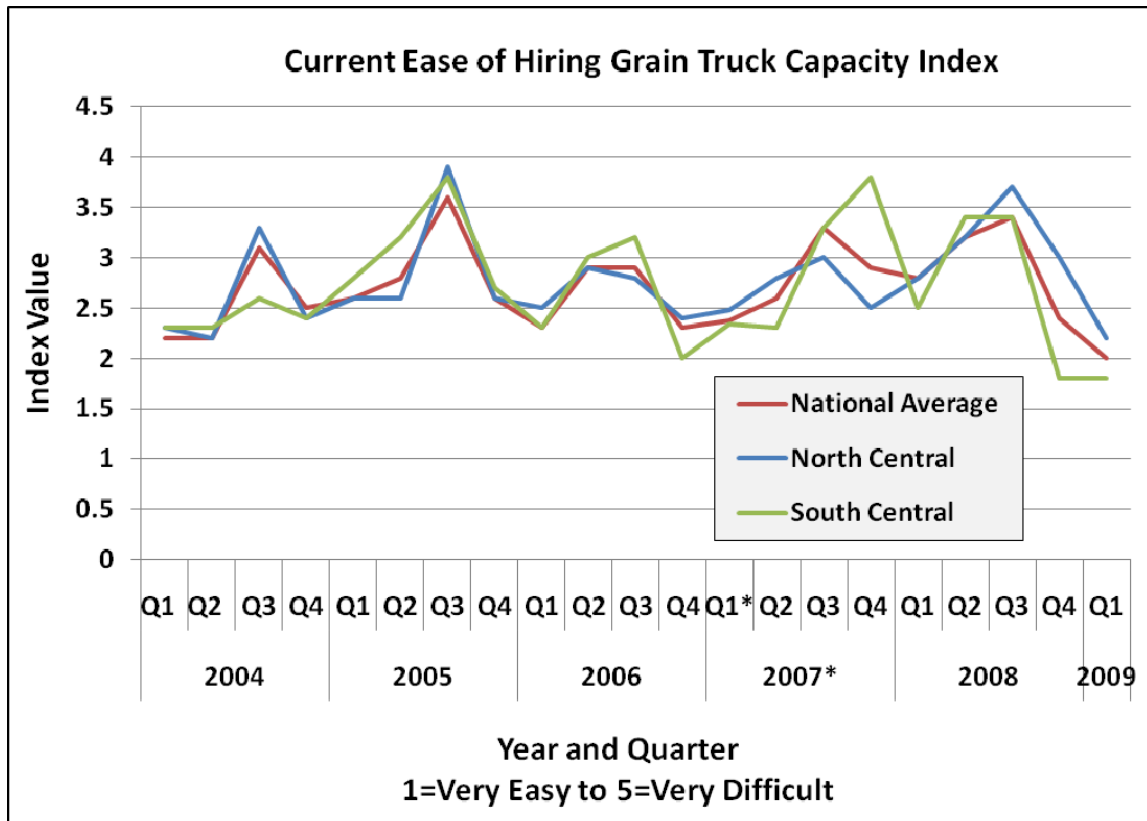
*Data for Q1 2007 is unavailable; however, data is extrapolated from the historical series

Source: AMS

As indicated in Figure 13-8, shorter hauls pay more per mile than do longer hauls, reflecting the economies of scale of distance on the cost of operation. Rates for hauls of 25 miles or less are higher because of the time spent loading and unloading, which is the same for any length trip. Longer hauls spread the cost for loading and unloading over more miles. As can be seen from the figure, there also is more variability in the rates for shorter hauls than those for hauls of 100 or 200 miles. In general, the rates rose during the period shown, especially for shorter distances. The long-haul rates were more stable.

Figure 13-9 shows an index for the ease of hiring grain truck capacity on a quarterly basis from 2004 through the first quarter of 2009. The ease of finding and hiring truck capacity is related to changes in seasonal demand which peaks in the third quarter, the start of the harvest season. The region does not seem to make much difference in trucking availability, although the South Central region is a little more variable. This could be due the closer proximity of export ports.

Figure 13-9: Index of current ease of hiring grain truck capacity



*Data for Q1 2007 is unavailable; however, data is extrapolated from the historical series
Source: AMS

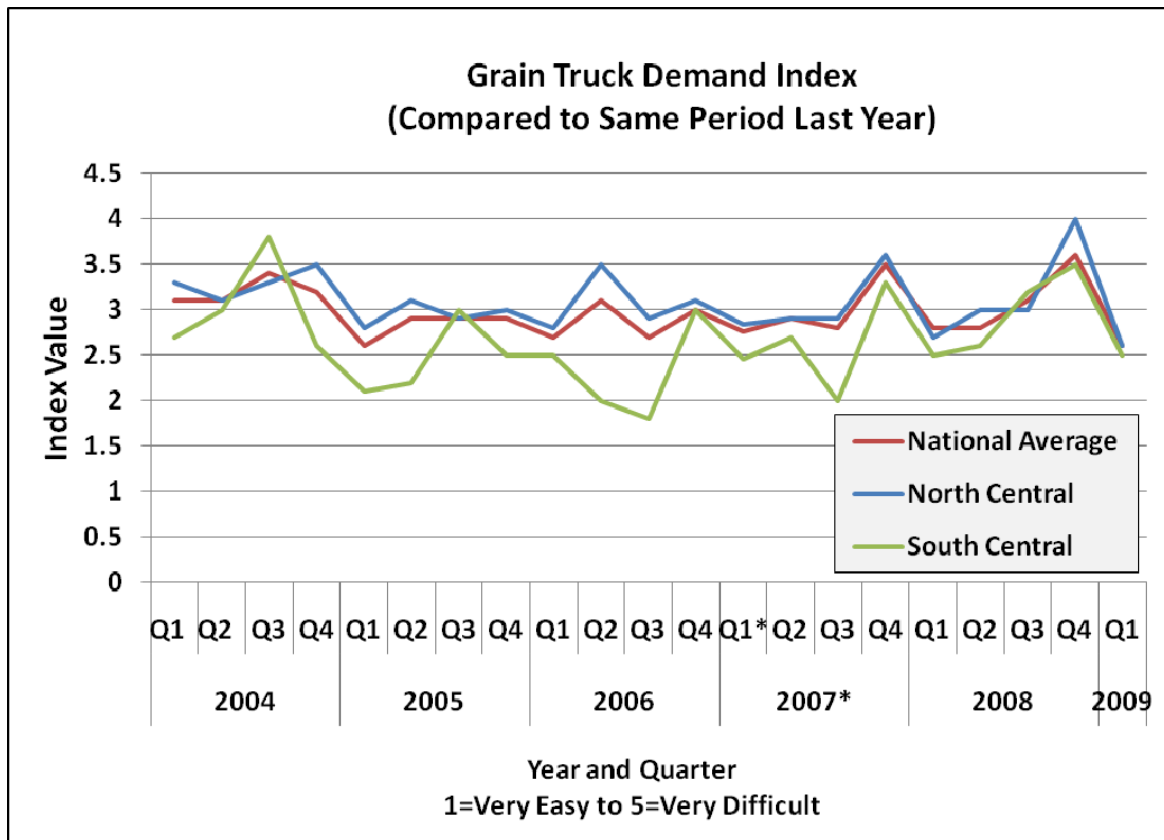
Figure 13-10 shows the patterns and trends in the demand for grain trucks from 2004 through the first quarter of 2009, compared with the same quarter the year before. Demand is higher in the North Central region, which contains the major grain-producing States. The index of the demand for trucks is related to changes in seasonal and export demand for grain.

Over the period observed, the demand for grain trucks for the Nation and the North Central region generally peaked in the fourth quarter, following the harvest of corn and soybeans, and was lowest in the first quarter. An interesting anomaly to this pattern occurred between 2005 and 2006. During this period, the peak occurred during the second quarter of 2006, probably because exports were higher than normal due to recovery from Hurricanes Katrina and Rita. The hurricanes struck the Gulf Coast in the early fall of 2005; even though infrastructure

recovered faster than expected, Gulf grain exports were below normal for the rest of 2005, then above normal for the first half of 2006. Corn for ethanol movements also may have contributed to trucking demand because the gasoline industry began to replace methyl tertiary butyl ether (MTBE) with ethanol in April 2006.

The demand for grain trucks rose to its highest level in the fourth quarter of 2008 but dropped in the next quarter to its lowest level because a drop in ethanol production reduced the demand for corn. It is interesting to note that the peak in the fourth quarter of 2008 is substantially higher than the peak in the fourth quarter of 2007. The growth in truck's modal share for grain (see Chapter 2: The Importance of Freight Transportation to Rural America) helped increase truck demand over this period and is another indication of truck's competitiveness with rail and barge in moving grains, especially for short hauls. The drop in fuel prices also contributed to the increased truck demand in the fourth quarter of 2008; high fuel prices created a pent-up demand that was relieved once fuel costs declined.

Figure 13-10: Grain truck demand index



*Data for Q1 2007 is unavailable; however, data is extrapolated from the historical series

Source: AMS

Farmer-Owned Trucking Capacity for Grain and Produce

Farm ownership of commercial-sized trucks influences rates, competition, and availability. Trucks used for hauling from fields to the point of first storage or to other modes are not usually in short supply because many farmers now own their own trucks to haul grain and other products. There are no reliable statistics for this ownership nor is it known to what extent farmers with trucks haul grain for other farmers.

Farm trucks probably stabilize the supply and availability of trucks for this first movement as long as the variable costs are covered. Fewer farm businesses are likely to go out of business due to the pressures faced by full-time truckers because farm businesses derive their income from farming, not trucking. Farm trucks are part of the farming operation, not a full-time focus. Grain or produce agribusiness companies that have their own fleets are in the same favorable position; trucks are not their primary business, so are less apt to leave the market during hard times for the trucking industry.

Conclusions

Trucking is critical for American agriculture. It carries 70 percent of agricultural and food products, linking farmers, ranchers, manufacturers, and service industries to grain elevators, ethanol plants, processors, feedlots, markets, and ports. More than 80 percent of America's communities are served exclusively by trucks. The first and last movements in the supply chain from farm to grocery store are usually trucks. Trucking is a critical link for the national economy, and moving agricultural products is a significant portion of total trucking activity.

Agriculture needs a highly flexible trucking system. Its needs are seasonal, requiring frequent hauling during planting and harvest, but with less need during the rest of the year. Many agricultural products are perishable, requiring the efficiency, special handling, and refrigeration best provided by trucks.

The trucking industry is highly competitive. Half of all trucking companies own one truck, driven by the owner. Truckers require only a Commercial Drivers License, DOT registration, insurance, and a down payment on a used truck to enter the business. Because there is a lively market for used trucks, the industry is relatively easy to enter or exit. This competitiveness keeps rates low; the average operating costs are 95 percent of operating revenue. Competitiveness also addresses the flexibility agriculture requires. As the need for trucking dropped during the 2008 recession, over 3,000 trucking companies with five or more trucks went out of business and probably many more with fewer than five trucks went out of business as well.

The capacity of the trucking industry is governed by three main components: drivers, trucks, and the roads they travel. Many of the drivers are part-time workers, driving trucks during the busy planting and harvest seasons, and then working at something else the rest of the year. Congress, recognizing the needs of farmers and ranchers, provided a seasonal 100-air-mile radius exemption from hours-of-service rules for drivers transporting agricultural commodities or farm supplies for agricultural purposes.

The 100 air-mile radius exemption, exemption from CDL requirements within 150 miles, and exemption for custom harvest, offer the flexibility that agriculture needs. Any changes to driver rules and farm truck regulations will directly affect the cost and benefits to our Nation's farmers and ranchers and the small businesses dependent on them.

The second component of the trucking industry, the trucks themselves, is governed by National law limiting axle and gross vehicle weights on the Interstate Highway System. Agricultural interests argue that farm and forest products are heavy, bulky, and of low value, making transportation a large component of their final price, and would like to see higher weight limits on the Interstates. Heavier vehicles are currently restricted to non-Interstate highways and State and local roads.

America's roads are vital to truck transportation. Federal data in 2004 reported that over half of Federal-aid highways are in less-than-good condition and more than one quarter of the Nation's bridges are structurally deficient or functionally obsolete. Although additional funds for highways and mass transit have been made available under the American Recovery and Reinvestment Act, Omnibus Appropriations Act, and the restoration of \$7 billion to the Highway Trust Fund, average annual gaps in funding are still \$96 billion for maintenance and \$42 billion in improvements.

Closing this funding gap is necessary, but so is a careful consideration of the mechanisms for raising the necessary funds. It appears likely that some mechanism (or combination of mechanisms) other than the fuel tax may be necessary. The historical opposition of truckers to highway tolls is well known. However, segment tolls, congestion pricing, and a tax based on miles driven rather than on fuel use may be a more equitable solution than the current flat tax per gallon of fuel.

Environmental concerns impact the trucking industry. Meeting recent EPA and State regulations requires substantial investments in upgrades or new equipment. Because many companies are small businesses without capital to invest, compliance has become a challenge. It is difficult for companies that remain in business to pass on the increased costs in the form of higher freight rates. Agriculture is impacted by shortages of trucks.

Because many agricultural products are exported, reducing congestion in urban and port areas will provide national benefits in reduced emissions and transportation costs and also will lower costs for agricultural exports and improve the competitiveness of U.S. farm products in world trade.

Appendix 13-1: Commercial Motor Vehicle Definitions

The definitions of commercial motor carriers are provided in FMCSA regulations Part 390.5:

Commercial Motor Vehicle Definitions:

<p><i>Commercial motor vehicle</i> means any self-propelled or towed motor vehicle used on a highway in interstate commerce to transport passengers or property when the vehicle:</p>
<p>(1) Has a gross vehicle weight rating or gross combination weight rating, or gross vehicle weight or gross combination weight, of 4,536 kg (10,001 pounds) or more, whichever is greater; or</p>
<p>(2) Is designed or used to transport more than 8 passengers (including the driver) for compensation; or</p>
<p>(3) Is designed or used to transport more than 15 passengers, including the driver, and is not used to transport passengers for compensation; or</p>
<p>(4) Is used in transporting material found by the Secretary of Transportation to be hazardous under 49 U.S.C. 5103 and transported in a quantity requiring placarding under regulations prescribed by the Secretary under 49 CFR, subtitle B, chapter I, subchapter C.</p>

Interstate Commerce Definition:

<p><i>Interstate commerce</i> means trade, traffic, or transportation in the United States:</p>
<p>(1) Between a place in a State and a place outside of such State (including a place outside of the United States);</p>
<p>(2) Between two places in a State through another State or a place outside of the United States; or</p>
<p>(3) Between two places in a State as part of trade, traffic, or transportation originating or terminating outside the State or the United States.</p>

Appendix 13-2: Commercial Drivers' License Classifications

The Federal standard requires States to issue a CDL to drivers according to the following license classifications:
Class A – Any combination of vehicles with a GVWR of 26,001 or more pounds provided the GVWR of the vehicle(s) being towed is in excess of 10,000 pounds.
Class B – Any single vehicle with a GVWR of 26,001 or more pounds, or any such vehicle towing a vehicle not in excess of 10,000 pounds GVWR.
Class C – Any single vehicle, or combination of vehicles, that does not meet the definition of Class A or Class B, but is either designed to transport 16 or more passengers, including the driver, or is placarded for hazardous materials.
Drivers who operate special types of commercial motor vehicles also need to pass additional tests to obtain any of the following endorsements on their CDL:
T – Double/Triple Trailers (Knowledge test only)
P – Passenger (Knowledge and Skills Tests)
N – Tank Vehicle (Knowledge Test only)
H – Hazardous Materials (Knowledge Test only)
X – Combination of Tank Vehicle and Hazardous Materials

Appendix 13-3: Excerpts from the Surface Transportation Authorization Act of 2009

- Redefines the Federal role and restructures Federal surface transportation by consolidating or terminating more than 75 programs;
- Consolidates the majority of highway funding in four, core formula categories designed to bring our highway and bridge systems to a state of good repair; improves highway safety; develops new and improved capacity; and reduces congestion and greenhouse gas emissions and improves air quality;
- Focuses the majority of transit funding in four core categories to bring urban and rural public transit systems to a state of good repair; provides specific funding to restore transit rail systems; provides mobility and access to transit-dependent individuals; and provides for planning, design, and construction of new transit lines and intermodal facilities;
- Directs Federal highway safety investments to specific activities demonstrated to reduce fatalities and injuries on our roads;
- Establishes new initiatives to address the crippling congestion in major metropolitan regions, and eliminates bottlenecks in freight transportation;
- Creates a National Transportation Strategic Plan, based on long-range highway, transit, and rail plans developed by States and metropolitan regions, to develop intermodal connectivity of the nation's transportation system and identifies projects of national significance;
- Reforms the U.S. Department of Transportation to require intermodal planning and decision-making; ensures that projects are planned and completed in a timely manner; and ensures that DOT programs advance the livability of communities;
- Requires States and local governments to establish transportation plans with specific performance standards; measures their progress annually in meeting these standards; and periodically adjusts their plans as necessary to achieve specific objectives;
- Improves the project delivery process by eliminating duplication in documentation and procedures;

- Establishes a new program to finance planning, design, and construction of high-speed rail;
- Creates a National Infrastructure Bank to better leverage limited transportation dollars;
- The Surface Transportation Authorization Act:
 - Provides funding of \$450 billion over six years – the minimum amount needed to stop the decline in our surface transportation system; begins to make improvements, and restore and enhance the nation’s mobility and economic productivity.
 - Doubles the investment in highway and motor carrier safety to \$12.6 billion; provides \$337.4 billion for highway construction investment, including at least \$100 billion for Capital Asset Investment to begin to restore the National Highway System (including the Interstate System) and the nation’s bridges to a state of good repair.
 - Provides \$87.6 billion from the Mass Transit Account of the Highway Trust Fund and \$12.2 billion from the General Fund for public transit investment to restore the nation’s public transit systems to a state of good repair, and provide access and transportation choices to all Americans from large cities to small towns.
 - Within this \$450 billion investment, the Act provides \$50 billion for Metropolitan Mobility and Access to unlock the congestion that chokes major metropolitan regions; and \$25 billion for Projects of National Significance to enhance U.S. global competitiveness by increasing the focus on goods movement and freight mobility.
 - In addition to this \$450 billion investment, the Act provides \$50 billion over six years to develop 11 authorized high-speed rail corridors linking major metropolitan regions in the United States. The high-speed rail initiative will provide greater consideration for projects that: encourage intermodal connectivity; produce energy, environmental, and other public benefits; create new jobs; and leverage contributions from state and private sources.

- The \$450 billion for highway, highway safety, and transit investment over six years is a 38 percent increase above the current funding level (\$326 billion). The Surface Transportation Authorization Act also provides an additional \$50 billion investment for high-speed rail. Together, this \$500 billion investment will create or sustain approximately six million family-wage jobs.*
- In sum, the Surface Transportation Authorization Act of 2009 transforms the nation's surface transportation framework and provides the necessary investment to carry out this vision. This increased investment is accompanied by greater transparency, accountability, oversight, and performance measures to ensure that taxpayer dollars are being spent effectively and in a manner that provides the maximum return on that investment.

* This estimate is based on 2007 Federal Highway Administration data on the correlation between highway infrastructure investment and employment and economic activity, and assumes a 20 percent state or local matching share of project costs. The Federal Highway Administration estimates that \$1 billion of Federal investment creates or sustains 34,799 jobs.