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June 26, 2014

BY E-FILING

Ms. Cynthia Brown
Chief, Section of Administration
Office of Proceedings
Surface Transportation Board
395 E Street, SW
Washington, DC 20423-0001

Re: *Rail Transportation of Grain, Rate Regulation Review*, STB Ex Parte No. 665 (Sub-No. 1)

Dear Ms. Brown:

Enclosed for electronic filing in the above-captioned matter is the non-confidential portion of the Comments of BNSF Railway Company, which includes the supporting Verified Statements of John H. Miller and William W. Wilson. Please note that the documents contain color images.

BNSF is filing under separate cover letter the highly confidential portion of its Comments, which consists of the Verified Statement and exhibits of Benton V. Fisher and Kaustuv Chakrabarti of FTI Consulting, Inc.

If you have any questions, please do not hesitate to contact me.

Regards,

Anthony J. LaRocca

Enclosures

BEFORE THE SURFACE TRANSPORTATION BOARD

STB Ex Parte No. 665 (Sub-No. 1)

RAIL TRANSPORTATION OF GRAIN, RATE REGULATION REVIEW

COMMENTS OF BNSF RAILWAY COMPANY

BNSF Railway Company ("BNSF") joins in the comments of the Association of American Railroads ("AAR") and submits these separate comments in response to the Surface Transportation Board's ("Board") request in the above-referenced docket.

I. Introduction

The Board initiated this proceeding due to a concern that no grain rate cases have been brought before the Board in recent years and the claim made by some shipper lawyers and consultants that the absence of such cases indicates that there are problems with the Board's rate reasonableness standards and procedures that render them unsuitable for grain cases. But the suggestion that a lack of litigation signifies the existence of a problem is actually counter-intuitive. The more straightforward and logical proposition is that the lack of grain rate litigation signifies that there is not a problem with grain rates. And, as BNSF explains in these opening comments, that logical proposition is borne out by the facts.

BNSF, which hauls more grain than any other U.S. Class I freight railroad, does not charge unreasonably high rates on grain movements. BNSF faces pervasive modal and geographic competition that constrain its pricing. BNSF accommodates its commercial actions to those of other commercially powerful grain supply chain participants. It is in BNSF's

commercial interest to grow the volume of grain it transports in export and domestic markets, and BNSF prices grain traffic at reasonable levels to further that objective.

The reality is that grain shippers have not brought grain rate cases – despite the Board's efforts to make its rate procedures more accessible – because the rates are low and effectively constrained by pervasive competition. The real issue in grain transportation, as the Board heard earlier this year at its Ex Parte 724 hearing on rail service issues, is not the level of grain rates, but the ability of railroads to provide sufficient capacity to move grain to market in a timely manner. Despite recent service challenges affecting grain transportation, BNSF is fully committed to investing in its grain transportation network to increase capacity and to enable it to provide the reliable and efficient service that its grain shippers had been receiving prior to the recent service disruptions and are entitled to.

Grain transportation is a vital component of BNSF's business. BNSF welcomes the opportunity to share its views regarding the unique characteristics of grain transportation markets and to describe the actions that BNSF and its predecessors have taken in the post-Staggers era to promote the interests of the agricultural sector.

BNSF's Opening Comments are supported by verified statements of the following three witnesses:

- John H. Miller, BNSF's Group Vice President, Agricultural Products, explains that BNSF's grain shippers have not brought rate reasonableness challenges to BNSF's rates because BNSF's rates are effectively constrained. BNSF sets rates to promote the growth and profitability of the agricultural sector of the economy. Mr. Miller also explains that there are numerous forms of modal and geographic competition that keep BNSF's rates at reasonable levels and that BNSF's grain rates, as measured by R/VC ratios, are quite low.

- Dr. William W. Wilson, Professor of Agribusiness and Applied Economics at North Dakota State University, provides background information on the dynamic and complex grain markets. Professor Wilson explains that BNSF has been at the forefront of efforts by railroads post-Staggers to introduce innovative commercial arrangements and transportation programs that have revolutionized grain rail transportation to the benefit of

grain producers, shippers and handlers. Professor Wilson also describes the many competitive factors that constrain rail rates.

- Messrs. Benton Fisher and Kaustuv Chakrabarti of FTI Consulting present a summary of BNSF carload waybill sample data made available by the Board to parties in this proceeding showing BNSF's principal grain movements and the average R/VC ratios on those movements.[1]

II. Grain Transportation Markets and BNSF's Role in those Markets

A. Key Features of Grain Transportation Markets

Grain transportation markets are very different from coal and chemical markets where the Board has the most extensive rate case experience in recent years. An understanding of the complex dynamics and numerous participants in grain markets is critical to any assessment of rail rates for the transportation of grain. Decisions by participants in the grain supply chain about where, when and how to move grain, and the profits to be made on grain sales, turn on multiple considerations that vary over time. Rail rates, while important, are only one of many factors that drive commercial decisions in grain markets.

A key feature of grain markets is the volatility and seasonality of grain movements. The high degree of volatility and seasonality creates enormous challenges for railroads, producers and shippers. Demand for grain transportation usually peaks from September to January and then again in March, and it declines sharply in the other months. Even within this general annual cycle, however, it is difficult to predict precisely when and how high demand will peak and, as a result, it is particularly difficult to plan for grain shipments. *See* Wilson Statement at 4-10. Given the large swings in demand, it is not surprising that the predominant issue for grain

[1] BNSF is filing the FTI Statement under seal out of an abundance of caution to ensure compliance with the Board's rules governing disclosure of waybill data. While FTI's statement and analyses apply the Board's three-FSAC rule in aggregating data relating to shippers, FTI's statement focuses on movements of BNSF and therefore might be considered to be covered by the Board's restrictions on distribution of waybill data.

producers and shippers has traditionally been the availability of rail cars and rail capacity, not rates.

Another characteristic of grain markets is that there is a broad geographic dispersion of grain producing regions in the United States and many destinations for grain movements. Grain is grown on farms located throughout this country and is brought to a large number of rail-served elevators constructed throughout the nation from which the grain is then transported by rail to multiple destination markets. The broad scattering of geographic origins and destinations substantially increases the complexity of rail operations and planning for grain movements. Wilson Statement at 12-13. It also complicates railroads' efforts to achieve economies of density that reduce rail costs, although as discussed below, BNSF has expended substantial resources and efforts in developing groundbreaking transportation programs that allow it to achieve economies of density and to reduce costs for its grain shippers. These programs have been highly successful in expanding access for BNSF's shippers to global and domestic markets not only because they have reduced rail shipping costs but also because they have improved the efficiency and reliability of rail transportation.

The logistics supply chain for movements of grain is also unique. It involves multiple participants with different roles in the ultimate movement of grain from the farm to the consumer. Participants at each level of the supply chain have leverage over prices charged at other levels of the supply chain, including rail rates. Professor Wilson explains that the participants in the grain supply chain include producers spread out through the grain producing regions of the country; trucks that move grain from the farm to the first handlers; first handlers, such as a local elevator, that store grain before it is transported to a final or intermediate destination; line-haul transportation suppliers, including trucks, railroads and barges, that

transport grain from the first handler to an intermediate terminal or final destination; intermediate terminals that aggregate grain for further distribution to end-users; processors such as ethanol producers or flour mills, that process grain for domestic use; export terminals that transfer grain to overseas vessels; and grain traders that buy and sell grain in sophisticated but risky transactions. Wilson Statement at 13-16.

Professor Wilson explains that in recent years, firms at different levels of the supply chain have combined to improve the efficiency of the grain marketing network. Larger multi-plant firms now control many supply chain functions, including storage, handling, and processing. Wilson Statement at 16-19. Many of these vertically integrated firms have become highly concentrated and well positioned to discipline any potential exercise of market power by a railroad or other participant in the supply chain.

B. BNSF's Grain Movements

BNSF transports more grain than any other U.S. railroad. For geographic reasons, grain transportation has been a critical part of the rail network of BNSF and its predecessors. BNSF's rail lines traverse the fertile northern plains and the Midwest, serving a vast number of local elevator origins, end-users, processors, intermediate terminals and export facilities. Wheat, corn and soybeans are the principal grains transported by BNSF. Miller Statement at 2.

BNSF's grain transportation network serves both domestic and export markets, although most of BNSF's movements are to export destinations. Miller Statement at 3. As Professor Wilson explains, export grain markets have grown substantially in recent years and have become increasingly important to U.S. farmers and grain shippers. Foreign demand for U.S. grain, particularly from China, has grown dramatically in the last several years and is expected to continue growing. China imports 60 percent of the world trade in soybeans. *See* Wilson Statement at 10. While export markets offer profitable opportunities for U.S. farmers, there is

also substantial competition from other countries for the export grain business. Wilson Statement at 11-12. U.S. farmers need an efficient transportation network to be able to participate effectively in export grain markets.

Given its service territory and the configuration of its rail lines, the primary export facilities served by BNSF are in the Pacific Northwest ("PNW"). Wheat, corn and soybeans are the principal grains that BNSF transports for export from the PNW. In fact, the vast majority of all soybean movements on BNSF are for export through the PNW. A significant but somewhat smaller part of BNSF's export grain business involves the movement of wheat, soybeans and corn to Texas Gulf Coast export facilities. *See* Miller Statement at 3-4. The Verified Statement of Messrs. Fisher/Chakrabarti provides more detail about BNSF's export grain movements.

Export movements tend to be in dedicated shuttle grain trains, which are discussed in detail below. These high capacity trains are well suited to handle shipments destined for export, as export sales typically are for large quantities of grain and the grain moves overseas in large-capacity ocean vessels. The logistics of rail transportation of export grain are complex and challenging given the need for efficient and reliable service to meet the requirements of exporters, changes in demand and vigorous foreign competition. Professor Wilson explains that grain export markets are particularly volatile and responsive to shifts in global demand and supply. Moreover, non-rail infrastructure developments, such as increases in ocean vessel or port capacity and the expansion of the Panama Canal currently underway, can have a major impact on global grain supply chain patterns and the competitiveness of U.S. grain producing regions. Wilson Statement at 12. As discussed below, geographic competition is very strong in export grain transportation markets.

BNSF's domestic grain transportation is focused on movements to feedlots and processors. Domestic shipments of corn are typically transported to feedlots or ethanol production facilities, and wheat is generally transported to flour mills. Wilson Statement at 12, 38, 40; Miller Statement at 4. Many end-users and processing facilities are located throughout the grain growing regions. Therefore, domestic movements tend to be shorter-haul movements than export grain traffic and domestic grain also tends to move in smaller trains. The numerous domestic markets for grain transportation are generally characterized by robust competitive options. As discussed more fully below, competitive options are widespread and include railroads, trucks, barges and extensive geographic competition. Wilson Statement at 37-40; Miller Statement at 2-3.

III. BNSF's Development of More Efficient Grain Transportation Service and Implementation of Market-Based Commercial Programs in the Post-Staggers Era Have Fostered Significant Growth and Increased Profitability In the Agricultural Sector

A. BNSF's Grain Transportation Network Has Become More Efficient and Responsive to Shipper Needs in the Post-Staggers Era

The success of deregulation under the Staggers Act in improving the quality of freight rail transportation and reducing rail transportation costs has been widely recognized and discussed extensively in recent Board proceedings.[2] The benefits of deregulation have been particularly notable in the transportation of grain. Deregulation under Staggers gave railroads the opportunity and incentives to adopt innovative commercial programs for grain shipping and to make efficiency-enhancing investments. BNSF has been at the forefront of these developments. As a result of BNSF's efforts and investments to improve the grain transportation

[2] *See, e.g.*, Initial Comments of the Association of American Railroads, STB Docket No. EP 705, *Competition in the Railroad Industry*, filed April 12, 2011.

network, grain shippers now have better access to markets than they did before the Staggers Act and have expanded their businesses as a result.

Since the enactment of the Staggers Act in 1980, rail grain operations have become much more efficient. The switch from boxcars to covered hopper cars that carry a much higher volume of grain per car, which occurred during the 1970s, was a precursor of enhanced efficiency. During the 1980s, rail grain shipments transitioned from predominantly single-car movements, to multiple car movements in blocks of 26 cars and then 52 cars. In the mid-1990s, BNSF began to move grain shipments in shuttle trains, described below, that consist of more than 100 cars. The use of shuttle trains is now a major form of grain transportation on BNSF. Wilson Statement at 20, 23-26; Miller Statement at 12.

The increases in shipment size resulted in more efficient operations and lower costs per unit of traffic shipped. BNSF was able to pass through cost savings to grain shippers in the form of lower rates for larger movements.[3] Shuttle train rates are lower per car than multiple car rates and multiple car rates are lower per car than single-car rates. Miller Statement at 12. BNSF's lower rates for the more efficient shuttle trains have encouraged grain shippers to invest in the construction of new shuttle elevators that accommodate efficient shuttle trains. Since shuttle trains began to be operated by BNSF in 1996, 223 grain shuttle facilities have been built on BNSF's rail lines. Miller Statement at 5, 12. Shuttle elevators cost $25 million or more. The willingness of elevator owners to invest billions of dollars in facilities located on BNSF reflects the reality that lower rail rates and more reliable rail service resulting from BNSF's innovative programs, described below, have enabled grain shippers to get higher volumes of grain to market

[3] Overall rail rates for grain traffic have declined since the Staggers Act. As shown in the AAR Comments at 12, average U.S. rail revenue per ton-mile for grain was 30 percent lower on an inflation-adjusted basis in 2012 than in 1981.

more efficiently. The increased efficiency of grain transportation and the increased reliability of rail service have enhanced the competitiveness of U.S. grain producers in global export markets.

Professor Wilson explains that these improvements in grain transportation logistics have contributed to a dramatic increase in the profitability of the agricultural sector in the United States, particularly in recent years. Professor Wilson shows that net cash income from grain production for five states served by BNSF has increased substantially since the early 2000s. Wilson Statement at 32. Land values in states dominated by agriculture have grown. Professor Wilson notes that land values in North Dakota appreciated 15% per year for the past 11 years and land value for crop land in North Dakota increased by 42% between 2012 and 2013. *Id.* at 33-34. The profits of grain handlers in grain growing regions and in export markets have increased as well. *Id.* at 34.

The benefits of deregulation post-Staggers can be seen by contrasting the highly efficient U.S. grain transportation network with the transportation networks of the main competitors of the United States in global grain markets, where top-down government mandates and government funding of infrastructure still predominate. Professor Wilson explains that in Brazil there is a severe lack of investment in the transportation network due to the Brazilian government's failure to recognize the need for increased transportation infrastructure. Notwithstanding a very successful soybean crop in the 2013/2014 marketing season, Professor Wilson explains that Brazil had difficulty participating in export markets because of the inability to bring the product to export facilities. Wilson Statement at 35. Canada, another major competitor of the United States in global grain markets, also has recurring problems in moving grain to export facilities. Canada's regulatory limits on rail rates have discouraged investment in grain-related assets including transportation facilities and equipment. Regulation of car allocation has resulted in

inefficient car supply, excessive logistics costs and long waiting times. Wilson Statement at 36-37.

In the United States, grain shippers have responded to the improvements in rail service brought about by BNSF's innovations and investments by increasing their use of BNSF's rail network, particularly BNSF's northern tier rail lines that serve export facilities in the PNW. Professor Wilson shows that over the past several years, exports of corn and soybeans from the PNW have increased substantially. These grain products have historically been grown in areas close to the Mississippi River and its tributaries and therefore have relied heavily on barges for transportation to the U.S. Gulf Coast. By historically offering superior service, shuttle operations and cost effective rates, BNSF has been able to attract this business away from barges. Wilson Statement at 47-49.

While BNSF's rail service over the last decade generally and for grain traffic specifically has been very good and thereby encouraged grain shippers to increase their shipments on BNSF, BNSF is well aware that since the fall of 2013 its service has not met its own standards or the expectations of its shippers. The recent service issues resulted from an unexpected surge in traffic beginning in October 2013 as well as extremely severe winter weather in BNSF's service territory and that of connecting carriers. However, as explained by Mr. Miller, BNSF has taken many short-term actions to restore service to satisfactory levels in addition to implementation of its $5 billion capital investment plan to increase capacity. Many of those efforts are focused on the northern corridor where most BNSF grain originations occur and many grain products and processor sites are located. Miller Statement at 5-8. As reported in BNSF's last biweekly report to the Board Commissioners, BNSF has seen a sizeable reduction in the number of agricultural past dues in the last few weeks, but velocity continues to be slow along the Northern tier, where

BNSF has experienced flooding and deep frost thawing out of the ground creating track instability and resulting in localized service disruptions. Despite these recent challenges, BNSF is committed to resolving its service issues. The specific measures that BNSF is taking to address the current backlog of unfilled grain car orders will be outlined in BNSF's initial weekly report in response to the Board's Order of June 20, 2014 in STB Docket No. Ex Parte 724 (Sub-No. 2), *United States Rail Service Issues—Grain*, which will be filed on June 27, 2014.

B. BNSF's Groundbreaking Market-Based Commercial Programs Have Benefited Grain Growers and Shippers

Historically, the most difficult and contentious issues in grain transportation markets have been in the areas of availability of car supply and timely service. Concerns in these areas have resulted from two fundamental characteristics of grain markets – the volatility and seasonality of grain shipments and the dispersed origins and destinations of grain movements. It is not feasible or economically reasonable to maintain a car fleet capable of meeting the highest level of seasonal demand, which would leave equipment sitting idle for much of the year. Moreover, the need to supply cars to grain origin points dispersed throughout broad growing regions made it difficult historically to achieve economies of density that would reduce the costs incurred by a railroad to ship a given quantity of grain.

Deregulation under the Staggers Act gave BNSF the commercial freedom to explore innovative, market-based programs to address these traditional challenges in grain transportation. Two innovative programs developed by BNSF have been particularly successful in producing lower transportation costs, greater equipment availability and improved service planning.

The first program, which is focused on car availability and allocation, is the COTs – Certificates of Transportation – program. Grain cars were historically allocated on a first-come, first-served basis. Given the uncertainty over future demand levels and the recurring shortage of

cars at periods of peak demand, grain shippers often requested more cars than necessary to ensure that they had equipment when they needed it. If demand turned out not to be as large as expected, the shipper simply canceled its car orders. The result was a persistent imbalance between car supply and demand and a resulting shortage of cars where and when they were needed. In addition, the ad hoc ordering of cars and cancellation of car orders made it impossible to establish a rational plan for car allocation. *See* Wilson Statement at 22.

In 1988, BNSF's predecessor introduced the COTs program, which allows a shipper to bid for the guaranteed placement of a railcar in a future time period. The bidding process for acquiring a COT encourages grain shippers to order cars based on an assessment of future demand and need for equipment and gives shippers greater assurance that cars will be available when needed. The bidding process allows cars to be allocated more efficiently based on demand and also provides BNSF with information on expected future equipment needs to better plan for service during periods of high demand. Wilson Statement at 22-23; Miller Statement at 11. The COTs program was challenged by a group of shippers who were concerned that the program might reduce the availability of cars for small shippers. The ICC rejected the challenge[4] and the concerns that led to the challenge have been shown to be unfounded. The COTs program has been very successful and it led to the adoption of similar programs by other railroads.[5]

Following the success of the COTs program, BNSF introduced shuttle trains. Shuttle trains are dedicated train sets that cycle continuously among grain origins and destinations. To be eligible to ship under BNSF's shuttle tariffs, origin and destination elevators must be certified

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[4] *Nat'l Grain & Feed Ass'n v. Burlington Northern R.R. Co.*, 8 I.C.C.2d 421 (1992) (hereinafter "*NGFA*").

[5] For example, Union Pacific's Grain Car Allocation System includes a car supply vouchers program, which auctions car vouchers for future shipping periods. Union Pacific R.R., *GCAS Additional Description*, https://www.uprr.com/customers/ag-prod/gcas/addl.shtml.

by BNSF to ensure that they are able to provide the efficient loading and unloading that are essential elements of the shuttle program. BNSF's tariffs provide for incentive payments to shippers and receivers to encourage efficient loading and unloading of shuttle trains. These incentive payments, combined with favorable line-haul rates for shuttle shipments, compared to rates for smaller lot sizes, create the favorable economics that have led to the previously mentioned surge in construction of shuttle facilities. Miller Statement at 12; Wilson Statement at 23-25.

In order to participate in a shuttle offering, a shipper from an eligible elevator must obtain a shuttle certificate from BNSF that identifies a future time period for the shuttle movement to occur. Wilson Statement at 26. Shuttle certificates can be purchased in a weekly BNSF auction. As with the COTs described above, there is an active secondary market for the purchase and sale of shuttle certificates. The secondary market operates independent of BNSF and BNSF does not share in any revenue from certificate sales on the secondary market. Professor Wilson explains that the secondary market for COTs and shuttle certificates provides the important function of balancing supply and demand for grain transportation by providing incentives and disincentives to move grain during off-peak and peak demand periods respectively. When demand declines, COTs and shuttle certificates can be purchased at a reduced price on the secondary market, thereby inducing shipments that would not otherwise occur. Conversely, during periods of high demand, the higher cost of COTs and shuttle certificates reduces the demand for transportation. Wilson Statement at 26-29.

The COTs and shuttle programs have led to significant improvements in the allocation of grain cars and the efficiency of grain transportation. As Professor Wilson explains, these programs have given grain shippers the ability to manage risk more effectively by locking in

elements of shipping costs for future time periods. Moreover, the purchase of COTs and shuttle certificates provides BNSF with important market information about expected demand that allows BNSF to plan its service and equipment allocation far more efficiently. Wilson Statement at 29-31.

C. BNSF's Collaboration With the Agricultural Community Has Benefitted Grain Growers and Shippers

BNSF's relationship with its grain shippers goes far beyond that of a simple supplier of transportation services. BNSF works closely with its grain shippers to help them find markets for their products and to promote growth of the agricultural sector. The success of BNSF and its shippers depends on collaboration in finding market opportunities and taking advantage of those opportunities. Given the dynamic nature of the grain markets, BNSF must be proactive and must work closely with its grain shippers to monitor market developments and to adopt prices and transportation practices that allow shippers to respond to market changes. As Mr. Miller explains at page 8 of his statement, BNSF is well aware that its success depends on the success of its grain shippers in complex and dynamic grain markets.

Throughout the post-Staggers period, BNSF has worked collaboratively with the agricultural community to promote the common interests of grain producers, handlers and transporters in a strong, efficient grain transportation network. As Mr. Miller explains at pages 8-9 of his statement, BNSF is in frequent contact with a number of grain producer and shipper groups that represent grain growers along BNSF's rail system, including, for example, the National Grain and Feed Association, National Grain Producer Council, North Dakota Grain Producer Council, Montana Grain Producer Council, and Transportation, Elevator & Grain Merchants Association. BNSF also communicates regularly with advisory boards of other agricultural groups, including the National Association of Wheat Growers and the National

Association of Corn Growers. In 2008, BNSF developed an Agricultural Rail Business Council (includes about 20 producer representatives) that BNSF's leadership meets with twice a year. In 2004, BNSF launched an Ombudsman program to provide agricultural producers and communities with a direct point of contact.

As a result of this ongoing close communication, BNSF has developed good working relationships with the agricultural community. The Board heard from grain producers and shippers at the April 2014 Ex Parte 724 hearing on rail service issues that BNSF has established very good lines of communications with the agricultural community.[6]

Mr. Miller provides recent examples of the benefits to BNSF's grain shippers that have resulted from this close communication and cooperation between BNSF and its shippers. For example, as explained by Mr. Miller, in 2010, BNSF succeeded in growing its customers' rail shipments of multiple types of wheat to the Texas Gulf for export. Barges typically transport the wheat to New Orleans and BNSF's rail customers were located too far from the barges to ship on them. In an effort to provide its customers with access to this export market, BNSF reduced its rail rate on Soft Red Winter (SRW) wheat transported from Illinois to the Texas Gulf so those customers could compete with barge transportation to New Orleans. This resulted in substantial new shipments of SRW wheat by BNSF customers in Illinois and substantial new shipments of Hard Red Winter (HRW) wheat by BNSF customers in Oklahoma and Kansas to the Texas Gulf where the HRW from Oklahoma/Kansas and the SRW wheat from Illinois were blended for export. *See* Miller Statement at 9-10.

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[6] *See, e.g.*, Statement of the National Grain and Feed Association at 8, STB Docket No. EP 724, *Public Hearing on Rail Service Issues*, April 10, 2014; Statement of South Dakota Wheat Growers at 3, *Public Hearing on Rail Service Issues*, April 10, 2014.

As another example, in 2012-2013 BNSF succeeded in developing a new market for its customers' corn shipments following a drought. As explained by Mr. Miller, in the Spring of 2012, record corn acres were planted and record corn exports were expected so BNSF ramped up its grain fleet to meet anticipated demand. Traditionally, most BNSF corn shipments moved to the PNW for export. However, in the summer of 2012, there was a severe drought in prime corn production areas (Illinois, Indiana, Nebraska, Iowa and South Dakota) causing U.S. corn prices to rise dramatically and making US corn uncompetitive in the world market. The drought did not affect corn production on BNSF's northern corridor (North Dakota, Minnesota and northern South Dakota) and that region had record corn crops. Since the traditional PNW export market was not available for the corn on the northern tier given the high corn prices, BNSF had ongoing dialogue with its northern tier corn customers to identify alternate markets. Working with its customers, BNSF identified new domestic markets for the corn and implemented rail rates to allow the corn from the northern corridor to move to Illinois, Iowa and South Dakota. *See* Miller Statement at 10-11.

D. High Levels of Capital Investment by BNSF Are Critical to Meet Current and Prospective Needs of Agricultural Shippers

BNSF has made major capital investments in its rail infrastructure. As explained by Mr. Miller, from 2004 to 2013, BNSF's annual capital investments ranged between $2.6 billion and $3.8 billion per year. In 2014, BNSF's capital investment plan is at an all-time high of $5 billion. Substantial investments have been made in BNSF's grain transportation network. For example, Mr. Miller explains that between 1998 and 2013, BNSF purchased 18,000 new rail cars for its shuttle fleet, at a cost of $1.095 billion. Its recent capacity expansion plans include an additional 900 cars at a cost of $75 million, for a total of 18,900 cars at a cost of $1.17 billion since 1998. *See* Miller Statement at 5-7.

Recently, much of BNSF's capital investment is being concentrated on BNSF's northern corridor where the majority of BNSF's grain traffic moves. For example, about $600 million of the 2014 capital budget is for terminal and line-capacity expansion projects, much of which will be spent in the northern corridor. In addition, BNSF has a 2014 plan to hire 5,000 new people, many of whom will be dedicated to work on the northern corridor. *See* Miller Statement at 6.

As grain growers and handlers pointed out at the April hearing in Ex Parte 724, current service challenges in the Upper Midwest and elsewhere underscore the need for continuing investment to expand capacity on BNSF's grain transportation network.[7] As demonstrated by its 2014 capital investment plan, BNSF is committed to making large scale investments in the grain network.

IV. BNSF Does Not Exercise Market Power Over the Transportation of Grain

A. BNSF Faces Effective Competition In Most Grain Transportation Markets

In most grain producing areas that are served by BNSF, BNSF faces strong competition from other modes of transportation, namely trucks, barges and other railroads. The role of trucks in constraining rail rates is critical. Grain producers must use trucks in the first instance to move grain from the farm to a purchaser, whether the purchaser is a local elevator or a local end-user. Once the farmer loads the grain into a truck, the farmer may have numerous alternative destinations or points of sale that can be reached by truck. The availability of these options effectively constrains rail rates.

For example, if a railroad attempts to charge high rates for rail transportation of grain from a rail-served elevator, the farmer may be able to sell the grain to a local end-user, such as

[7] *See, e.g.*, Statement of the National Grain and Feed Association at 7-8, STB Docket No. EP 724, *Public Hearing on Rail Service Issues*, April 10, 2014; Statement of South Dakota Wheat Growers at 3, STB Docket No. EP 724, *Public Hearing on Rail Service Issues*, April 10, 2014; Statement of South Dakota Farmers Union at 4, STB Docket No. EP 724, *Public Hearing on Rail Service Issues*, April 10, 2014.

an ethanol plant in the case of corn, a flour mill in the case of wheat, or a soybean crusher in the case of soybeans, and avoid the use of rail transportation altogether. End-users are located throughout grain producing regions in the Midwest. Alternatively, the farmer could sell the grain to an elevator located on the lines of a competing railroad and truck the grain to the competing railroad elevator directly from the farm. In many grain producing regions of the country, elevators located on competing railroads are within easy truck distance of one another. A railroad will know that if it seeks to charge too high a rate for transportation from an elevator served by the railroad, a shipper may divert the grain traffic to a competing railroad.

Barges also provide effective competition that constrains rail rates. An extensive network of barges serves the Mississippi River and its tributaries. Moreover, major export facilities are located on the U.S. Gulf Coast at the base of the Mississippi River network. Export facilities on the Gulf Coast are important rail-served destinations as well. Barge transportation to these destinations is an effective alternative to rail transportation if railroads attempt to charge unreasonably high rates to rail-served export facilities. Much of the grain producing area of the United States is located within a relatively short distance from the Mississippi River system and therefore has access to barge alternatives.

In addition to modal competition described above, geographic competition is strong in grain transportation markets. While the Board decided in 1998 to eliminate consideration of product and geographic competition in market dominance proceedings, these competitive forces are highly effective in constraining rail rates for grain transportation. Mr. Miller and Professor Wilson describe a number of common scenarios in grain transportation markets where geographic competition effectively protects grain shippers from any exercise of market power by rail carriers. *See* Wilson Statement at 39-41; Miller Statement at 13-14.

For example, BNSF's rates for movements of grain to an export terminal are constrained by the rates that are charged by other railroads providing transportation to the same export terminal from other origins. BNSF's rates for transportation of soybeans to the PNW from North Dakota, for example, are constrained by UP's rates for transportation of soybeans to the PNW from Nebraska. For export destinations served by barges, rail rates for transportation of grain from areas far from the Mississippi River barge network are also constrained by the rates charged by barges from origins near the river network. Non-competitive rates by BNSF to the export destination could prevent the traffic from moving on BNSF or could shift the traffic to other destination markets.

Similarly, BNSF's rates for transportation to a particular destination are constrained by the rates that competing railroads and barges charge for transportation to different destinations. For example, BNSF transports a substantial volume of corn and soybeans to the PNW. Corn and soybeans are usually grown in regions near the Mississippi River system and therefore have easy access to barge transportation for movement to Gulf Coast export terminals. BNSF must charge competitive rates for movements to the PNW to attract the traffic away from barge competitors. Professor Wilson explains that BNSF has in fact increased its movements of corn and soybeans to the PNW by competing vigorously to attract such traffic away from barges. Wilson Statement at 47-49.

Other forms of geographic competition are also effective in constraining rail rates. Professor Wilson describes the highly competitive global market for grain sales. China has become a major purchaser of grains from the United States and other countries that compete with the United States for export grain sales. China accounts for 60 percent of the world trade in soybeans. *See* Wilson Statement at 10. When China purchases grain, it is able to choose from

numerous suppliers, including countries like Canada and Brazil, and from numerous export terminals in each supplier country. Thus, Chinese purchasers will compare the price of grain from U.S. Gulf Coast export terminals with the price of grain from PNW export terminals as well as the price of grain from numerous export terminals located in other countries. A railroad providing transportation to a particular export facility must carefully monitor export grain prices from different locations and set rail rates that will enable the railroad's shippers to compete in these competitive global markets. Wilson Statement at 40-41.

B. The ICC and Other Agencies Have Recognized that Grain Transportation Markets Are Highly Competitive

The Board has not had occasion to issue decisions relating to competition in the market for transportation of grain, but the ICC looked at competition in grain markets on a number of occasions and concluded that competition is widespread and effective in constraining rail rates. The ICC carried out a detailed examination of competition in grain markets in connection with its review of the COTs program, discussed above. In that proceeding, the shippers challenging the COTs program argued that BNSF's predecessor BN had monopoly power over virtually all of its grain movements. The ICC rejected the claim out of hand:

> The evidence and argument that BN has widespread and substantial monopoly power over grain movements is unpersuasive. Our experience in monitoring grain markets over recent years has shown that, although there are market dominant shipments (footnote omitted), a large proportion of grain shipments take place in an effectively competitive market.

NGFA, 8 I.C.C.2d at 453.

The ICC recognized in the *NGFA* decision that geographic competition was particularly strong and effective in grain transportation markets. Noting that there is "fierce competition in the world marketplace," the ICC concluded that "it is likely that some world markets effectively constrain the actions of U.S. participants, and where they do, they constrain all U.S.

participants." *Id.* at 454. The ICC explained that "it may well be that all parties are essentially price takers, with rates determined by competitive market forces." *Id.* As an illustration of the strength of geographic competition, the ICC gave the example of BN's movements of corn to the PNW. The ICC explained that "BN and the PNW gained a significant share of corn exports at the expense of exports via the Gulf Coast. Since the traffic was won by beating competition and can be lost again to alternative barge and rail movements to the Gulf Coast, it is unlikely that BN has market dominance over COT (or non-COT) shipments in the most used COT corridor." *Id.*

Other ICC decisions reached the same conclusion that grain transportation markets are competitive. In *Grain Car Supply—Conference of Interested Parties*, Ex Parte No. 490, 7 I.C.C.2d 694 (1991), the ICC reported its findings on various issues relating to the adequacy of rail car supply for grain movements, including its conclusion that "for both railroads and shippers, the market drives their decision-making process. Both grain markets and transportation markets are for the most part competitive." 7 I.C.C.2d at 723. In *LO Shippers Action Committee v ICC*, 857 F.2d 802 (D.C. Cir. 1988), the D.C. Circuit upheld the ICC's dismissal of a complaint challenging railroads' rail car allowances, noting among other factors that the ICC had concluded that the rail cars at issue "are used primarily for grain shipments, a highly competitive market." 857 F.2d at 805.

The USDA and DOT recently carried out a broad study of rural transportation issues in grain markets and reached the same conclusion as the ICC that grain transportation markets are largely competitive.[8] The USDA/DOT study noted that a survey of agricultural shippers in the Midwest found that "most of the agricultural shippers surveyed have a range of alternatives, both in terms of the means of transportation and in terms of the end markets for their products."

[8] U.S. Dep't of Agriculture, Agricultural Marketing Service, *Study of Rural Transportation Issues* (April 2010) (hereinafter "USDA/DOT Study").

USDA/DOT Study at 390. A subsequent 2013 study by the USDA's Agricultural Marketing Service similarly concluded that "[b]arges, railroads and trucks often compete head-to-head to supply transportation for grains," noting that this competition, as well as the coordination of different transportation modes, "provides grain shippers with a highly efficient, low-cost system of transportation."[9]

The USDA/DOT Study went one step further and noted that even in areas where there is no direct modal competition, shippers do not appear to pay higher rail rates than in areas with direct modal competition. The study explained that "[t]his may be due to individual railroads being more sensitive to shippers' needs or could be due to greater engagement by governments at the state level." USDA/DOT Study at 231. BNSF's witness Mr. Miller confirms the USDA/DOT's suggestion that even in areas where modal alternatives are not available, BNSF voluntarily limits rate levels to accommodate shippers' needs to participate in grain markets that are highly competitive. *See* Miller Statement at 14-15.

C. Leverage Exercised by Other Supply Chain Participants Effectively Constrains BNSF's Pricing of Grain Transportation

The structure of the grain supply chain also limits the ability of railroads to exercise market power. Professor Wilson explains that the grain supply chain contains numerous participants -- ranging from grain producers, local, intermediate and terminal elevators, local and line-haul transportation providers, grain processors and end-users, export terminals and grain traders -- performing different functions. The only firms in this complex supply chain whose rates are subject to regulation are railroads. Wilson Statement at 16.

Professor Wilson explains that traditionally, a large number of transactions among firms at different levels of the supply chain were needed to move grain from the farm to destination

[9] U.S. Dept. of Agriculture, Agricultural Marketing Service, *Transportation of U.S. Grains: A Modal Share Analysis* at 1 (May 2013).

markets. However, over the past several years there has been a growing vertical integration of the supply chain, with firms at different levels of the supply chain combining to reduce the number of transactions and to make the supply chain more efficient. During the same time period, there has also been an increase in market concentration at different levels of the supply chain. Professor Wilson shows that the market share of the top six firms in the grain supply chain has increased substantially since 1985. Wilson Statement at 16-19.

As grain firms that manage the marketing and shipment of grain grow larger and diversify into other areas of the supply chain, they are able to use their own market power to constrain rail rates. Professor Wilson explains that a grain handler that is able to move grain from different regions served by different railroads or by other transportation modes can leverage the availability of competition in areas where numerous options exist to obtain competitive rates in other areas where transportation options may be more limited. Wilson Statement at 42. Indeed, in light of the increasing market power of other firms in the grain supply chain, there is no reason to believe that a reduction in rail rates through regulatory action would translate into an increase in profits for grain producers. Grain handlers with market power could simply take advantage of artificially reduced rail rates to improve their own profits.

Professor Wilson also explains that rail rates are constrained by shippers' ability to determine *when* they will sell grain in addition to *where* the grain is sold. The growth in storage facilities and the development of active futures markets for the sale of grain make it possible for grain producers and shippers to respond to high transportation rates by holding grain back for sale in the future. Railroads' pricing must account for this impact that price levels will have on the decision by a grain producer or shipper whether to store or to ship grain. Wilson Statement at 20.

V. The Fact that Grain Shippers Have Not Elected to Use the Board's Rate Reasonableness Procedures Does Not Mean that Alternative Standards or Different Procedures Are Needed

A. In Recent Years The Board Has Tried to Make Rate Reasonableness Remedies More Accessible to Shippers

Shipper lawyers and consultants have suggested in the past that the cost and complexity of rate reasonableness litigation has discouraged them from bringing rate reasonableness challenges. The Board has gone out of its way over the past two decades to respond to those concerns and to make rate cases more accessible for a broad array of shippers, to simplify procedures, and to provide shippers with multiple approaches to challenge rates. In light of the many changes that the Board has made to make its rate reasonableness procedures more accessible, it would not be reasonable to conclude that the lack of grain rate challenges is due to problems with the Board's rate reasonableness remedies.[10]

In 1998, the Board simplified its process for assessing market dominance by limiting its analysis to what it termed "direct" competition from other railroads and modes of transportation and excluding consideration of product and geographic competition. *Market Dominance Determinations – Product and Geographic Competition*, 3 S.T.B. 937 (1998).[11] The Board acknowledged that product and geographic competition was widespread in railroad markets, but

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[10] In a decision served on June 20, 2014, one commissioner referred to an existing knowledge that grain shippers do not "have a viable means to challenge a rate" without a reference or context for such a conclusion. *See Sunbelt Chlor Alkali Partnership v. Norfolk Southern Railway Company*, STB Docket No. 42130 *slip op.* at 32 (served June 20, 2014). Whether grain shippers have a viable means to challenge a rate is an issue to be addressed in this proceeding, and various parties will present evidence for the Board to consider. As BNSF has explained in these opening comments, if grain rates are not unreasonably high, as BNSF believes, there is no basis for grain shippers to bring rate reasonableness cases.

[11] The Board recently declined to reconsider its position that it will not consider product and geographic competition in assessing market dominance. *Petition of the Association of American Railroads to Institute a Rulemaking Proceeding to Reintroduce Indirect Competition as a Factor Considered in Market Dominance Determinations for Coal Transported to Utility Generation Facilities*, STB Docket No. EP 717 (served Mar. 19, 2013) ("*Indirect Competition Petition*").

it concluded that the prospect of extensive litigation over indirect forms of competition might discourage rate reasonableness litigation and it therefore excluded indirect forms of competition from market dominance proceedings. In fact, a substantial increase in rate reasonableness litigation in areas other than grain transportation followed the Board's *Market Dominance* decision.

In *Simplified Standards for Rail Rate Cases*, STB Ex Parte No. 646 (Sub-No. 1) (served Sept. 5, 2007), the Board adopted two new methodologies for evaluating rates in cases that might not justify a full stand-alone cost presentation: Simplified-SAC and Three Benchmark. While the Board initially imposed relief caps on these methodologies because they were less accurate than Full-SAC, the Board subsequently eliminated the relief cap if a shipper opts to bring a Simplified-SAC case and quadrupled the relief cap for Three Benchmark cases to $4 million from $1 million. *Rate Regulation Reforms*, STB Docket Ex Parte No. 715 (served July 18, 2013).[12] The simplified standards offer meaningful relief where rates are unreasonable through procedures and standards that are not overly complex or burdensome to use.

Nor is there reason to believe that the cost of rate reasonableness litigation is the reason there has been no recent grain rate litigation. One of the Board's stated objectives in the design of simplified rate reasonableness standards was to reduce the litigation costs for shippers. Both the Simplified SAC and Three Benchmark methodologies impose much of the litigation burden onto the railroad defendant. Simplified-SAC and Three Benchmark cases should not be costly to complainants with legitimate claims. Indeed, it is telling that the State of North Dakota has

[12] This case was recently remanded to the STB by the D.C. Circuit on this point. *CSX Transp., Inc. v. STB*, No. 13-1230 (D.C. Cir. June 20, 2014).

appropriated a total of $4,795,000 in six appropriations from 2003 to 2013 for rate litigation but no rate reasonableness cases have been brought.[13]

There is no reason why the Board's existing, refined remedies should be considered inadequate for grain shippers who believe they are being charged unreasonably high rates. Larger shippers can avail themselves of the most accurate method of obtaining relief by bringing a Full-SAC case. Shippers with smaller volumes can avail themselves of either the Simplified-SAC or Three Benchmark cases.

B. Grain Shippers Have Not Pursued Rate Litigation Against BNSF Because Their Rates Are Effectively Constrained

The absence of rate cases brought by grain shippers does not imply a problem with the Board's rate regulation procedures. Rather, the absence of cases indicates that shippers are not being charged unreasonable rates. Shippers whose rates are reasonable have no reason to bring rate cases.

Mr. Miller explains that BNSF's rates are low when measured on an R/VC basis. *See* Miller Statement at 16. Messrs. Fisher/Chakrabarti confirm that BNSF's grain shipments have low R/VC ratios based on their analysis of the 2010-2012 waybill data. Low rated traffic is not likely to result in rate reasonableness litigation. Rates that yield R/VC ratios below 180 cannot be challenged because they are below the Board's jurisdictional threshold. As to rates that exceed a 180 percent R/VC ratio by a relatively small margin, shippers have little to gain by bringing rate cases. Many of the higher R/VC movements are shuttle train movements which actually have lower rates on a per car basis than smaller sized movements. *See* Miller Statement

[13] II. Bill No. 1008 (N.D. 2013) (enacted); S. Bill No. 2008 (N.D. 2011) (enacted); H. Bill No. 1008 (N.D. 2009) (enacted); S. Bill No. 2008 (N.D. 2007) (enacted); H. Bill No. 1008 (N.D. 2005) (enacted); S. Bill No. 2008 (N.D. 2003) (enacted).

at 16.[14] Moreover, the waybill data overstate the actual R/VC ratio of shuttle movements. As Mr. Miller explains, the R/VC ratios on BNSF's shuttle train movements in the Board's waybill data are overstated because they do not reflect the substantial loading and unloading incentive payments that are paid to shippers and receivers on many shuttle train movements. Miller Statement at 16. Moreover, as the Board has recognized in its pending review of the Uniform Rail Costing System ("URCS") in Ex Parte No. 431 (Sub-No. 4), the Board's URCS costing methodology may tend to overstate R/VC ratios on certain categories of traffic.

In addition to the obvious fact that shippers with low rates are not likely to bring rate litigation, the Board itself has acknowledged that shippers are not likely to bring rate reasonableness challenges when their rates are constrained by effective competition, including geographic competition. In *Indirect Competition Petition*, the Board dismissed concerns by railroads that the exclusion of that geographic competition from market dominance proceedings might lead to rate litigation over rates that are in fact constrained by effective competition, noting that shippers are not likely to bring rate reasonableness cases to challenge rates that are constrained by geographic competition: "any hardship [for railroads] would not be substantial because shippers that have effective indirect alternatives would be unlikely to pursue a rate challenge, and because a rate level constrained by effective indirect competition would be found to be reasonable." *Indirect Competition Petition* at 2. Given the pervasive and effective modal and geographic competition in grain transportation markets described by Mr. Miller and Professor Wilson, the Board's own observation that shippers do not bring rate reasonableness cases where rates are constrained by competitive forces provides the most plausible explanation for the lack of rate reasonableness cases in grain markets – grain transportation rates are broadly

[14] As the FTI Statement shows, the R/VC ratios also are affected by length of haul.

constrained by effective competition and therefore there is no basis for bringing rate reasonableness challenges.

Mr. Miller explains that there may be some areas where competitive constraints on rail rates are less effective, or may be perceived as less effective. In these areas, BNSF has been careful to set rates at levels that will allow its customers to effectively participate in grain markets and with recognition of the availability of rate reasonableness remedies and the standards that the Board applies in assessing the reasonableness of rates. BNSF tries to maintain a positive relationship with its shippers and avoid litigation over rates. Miller Statement at 14-15.

To that end, BNSF has worked with Montana grain producers to develop a collaborative alternative dispute resolution ("ADR") program to resolve rate disputes in that state. Specifically, BNSF, the Montana Grain Growers Association ("MGGA") and the Montana Farm Bureau Federation ("MFBF") developed the Montana ADR program and launched it in early 2009. The Montana ADR program creates a mechanism to address rate issues with the Montana farmer community in a fair and expeditious manner. It is available to all members of MGGA and MFBF shipping wheat or barley in Montana if their commodity is being shipped more than 250-miles, originates from a BNSF-served elevator, and is transported to a BNSF-served destination. The ADR program has a two-tier structure of mediation followed by arbitration. Under the arbitration rules, the panel has authority to review the level of BNSF's rates on qualifying moves and require a reduction to the rates in the form of reparations and lower rates for up to a year. *See* Miller Statement at 15.

The arbitration proceedings are expedited (parties agree to use their best efforts to complete arbitration within 120 days of its initiation) and low in cost (discovery is limited, each

arbitrator in the pool of arbitrators is paid a $5000 annual retainer which is split between BNSF and the grain producer organizations and an arbitrator is paid $200 per day on specific arbitration disputes). Two arbitrations have been initiated under the Montana ADR program and those arbitrations were settled by the parties without the need for a decision by the arbitrators. The fact that Montana grain producers have used the efficient and low cost ADR program sparingly indicates that there is not a widespread need for grain rate relief. *See* Miller Statement at 15.

VI. Conclusion

The lack of grain rate litigation is not symptomatic of a flaw in regulatory procedures. Rather, it reflects the fact that there is not a problem with grain rates that the Board needs to address. BNSF has worked hard to improve grain transportation service and to ensure that its customers have access to grain markets. Notwithstanding the recent service problems on BNSF's network, the improvement in grain transportation that has resulted through collaboration between BNSF and its customers and the flexibility to adopt market-based transportation programs is a very clear demonstration of the benefits of deregulation under Staggers.

Respectfully Submitted,

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June 26, 2014

Verified Statement of John H. Miller

BEFORE THE SURFACE TRANSPORTATION BOARD

STB Ex Parte No. 665 (Sub-No. 1)

RAIL TRANSPORTATION OF GRAIN, RATE REGULATION REVIEW

VERIFIED STATEMENT OF JOHN H. MILLER

I. Introduction

I am John H. Miller, Group Vice President, Agricultural Products at BNSF Railway Company ("BNSF"). I joined BNSF in March 2008 as Assistant Vice President, Agricultural Products. I worked in the Industrial Products Sales Group from November 2011 through January 2014 as Assistant Vice President and then as Vice President. I assumed my current position as Group Vice President, Agricultural Products in February 2014.

I have worked in the grain industry for most of my career. Prior to joining BNSF, I spent 25 years working for various companies that shipped grain. From 1983 to 1997, I was employed by the Continental Grain Company (CGC) and assumed roles with increasing responsibility until I became Vice President, North American Wheat for CGC. From 1997 to 2004, I was employed by Bartlett Grain Company, first as Executive Vice President, Merchandising with responsibility for all company grain trading and then as President of Bartlett Grain, LLC. From 2004 to March 2008, I was the Senior Group Manager at the Scoular Company where I had responsibilities for the company's grain-in-a-box Non-Vessel Operating Common Carrier (NVOCC) group.

The purpose of my verified statement is to provide the Board with background information about BNSF's transportation of grain and BNSF's important role in agriculture markets. I understand that the Board has initiated this proceeding in part to investigate why regulatory complaints about rail rates for grain transportation are rare. I explain that it is not

surprising that our grain customers have not challenged the reasonableness of our grain rates at the Board. BNSF works with our customers to advance our mutual interests in ensuring that grain producers and shippers have access to competitive global and domestic grain markets. We communicate frequently with our grain customers and have created innovative programs and pricing that have benefitted the grain customers as well as BNSF. Moreover, BNSF's grain prices are effectively constrained by strong and effective competition in most regions served by BNSF and our rates are low when measured based on our variable costs. I begin my statement with a discussion of the importance of grain transportation to BNSF's business.

II. General Description of BNSF Grain Traffic

For geographic reasons, grain has been a significant industry served by the rail network of BNSF and its predecessors. BNSF's rail lines traverse the fertile northern plains and the Corn Belt, serving a vast number of elevator origins as well as end users, including domestic processors, terminals and export facilities. The primary grain products transported by BNSF are wheat, corn and soybeans. BNSF transports smaller amounts of other grains, including barley, milo, beans and oats. BNSF grain shipments are made in single cars, multiple cars, unit trains or shuttle trains. Unit trains and shuttle trains have the largest number of cars and most large BNSF grain shipments are in shuttle trains.[1]

A. Export Grain Shipments vs. Domestic Grain Shipments

BNSF transports grain destined for export markets as well as domestic markets. The domestic grain shipments differ from export grain shipments in several ways. For example, BNSF's domestic grain shipments tend to be shorter haul movements than its export grain

[1] While BNSF grain shuttle trains and BNSF grain unit trains may contain the same number of cars, they differ from one another in various ways. For example, shuttle trains, unlike unit trains, require the shipper to meet specific terms, e.g. the loading and unloading facilities for shuttle trains must be approved by BNSF, be capable of loading and unloading a shuttle trains within 15 hours and have an efficient track configuration. A shuttle train, unlike a unit train, is eligible for BNSF incentive payments described below.

shipments. Moreover, BNSF's domestic grain shipments are more likely to be lower volume and in smaller-sized shipments than our export grain shipments. About half of the BNSF domestic grain shipments are in shuttle trains whereas the vast majority of BNSF export grain shipments are made in shuttle trains. Export movements tend to be in larger train sizes because export sales are generally large in volume and ocean vessels have large capacity.

Most BNSF domestic grain shipments and export grain shipments have strong competitive alternatives, including, as I describe below, modal competition from other railroads, barges, and trucks, as well as geographic competition. Truck competition is particularly strong in domestic grain markets due to the relatively shorter length of haul on many domestic movements. Most of our export grain movements face competition from other transportation modes, and geographic competition is particularly strong in export grain markets. I discuss these diverse forms of competition further below.

B. Major Lanes for BNSF Grain Shipments

Most of the grain transported by BNSF in recent years has been for export markets. The export grain markets are growing faster than domestic markets and offer attractive opportunities for increased sales by U.S. growers. Given our service territory and the configuration of BNSF's rail lines, the primary export facilities served by BNSF are in the PNW. We also move grain from more southerly grain producing regions to Texas Gulf Coast ports.

Wheat, corn, and soybeans are the principal grain commodities transported by BNSF for export. Most wheat transported by BNSF for export moves from the Upper Plains and western states to port facilities in the PNW. We also transport a significant amount of wheat for export from the Corn Belt and southern states to export facilities in the Texas Gulf. Most corn transported by BNSF for export moves from the Upper Plains to the PNW. The vast majority of soybeans transported by BNSF are exported. Most soybean export shipments move on BNSF

from the Upper Plains to the PNW. Smaller volumes of exported soybeans are transported by BNSF from the Corn Belt to the Texas Gulf ports.

As to our domestic movements, we transport a significant amount of grain, primarily wheat and corn, for domestic use. While our export destinations tend to be concentrated in a discrete number of large export facilities, BNSF delivers its domestic grain shipments to a large number of domestic destinations, such as feedlots, ethanol plants and flour mills, that are widely dispersed. Most domestic wheat movements on BNSF are destined for flour mills from growing regions in the Upper Plains and the primary destinations of this wheat are facilities in Illinois and Missouri. Most domestic corn movements are transported by BNSF to feed lots, ethanol processors and high fructose corn syrup processors. The major lanes over which we transport corn for domestic use are from the Corn Belt to Texas interior locations and from the Corn Belt to California.

BNSF's witnesses Messrs. Benton Fisher and Kaustuv Chakrabarti of FTI Consulting Inc. are providing more detail about BNSF's grain movements from waybill data that has been made available by the Board to the parties in this proceeding.

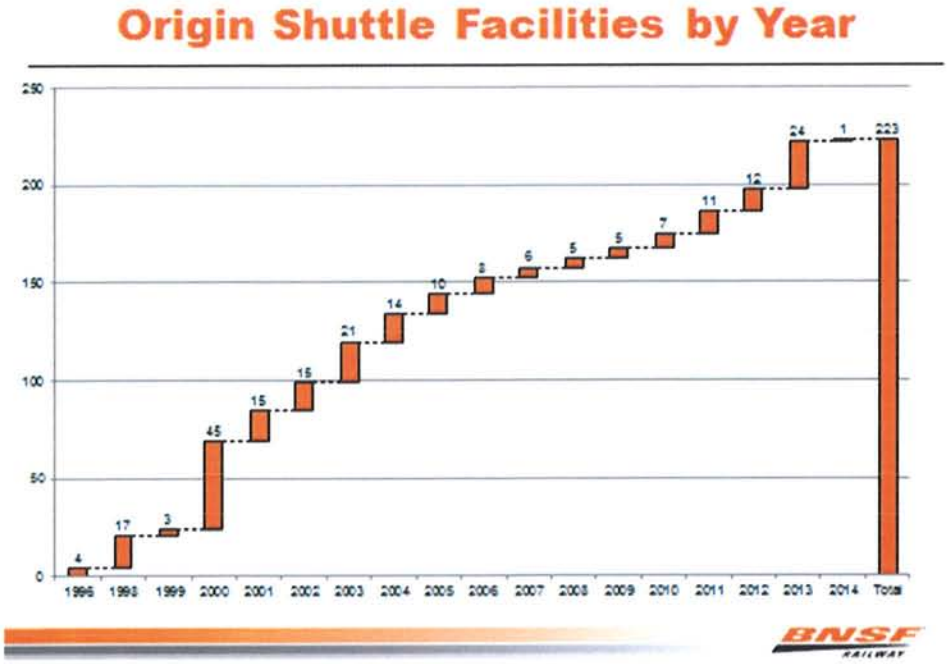
III. Grain Transportation Is An Important Part Of BNSF's Business

The geography of BNSF's rail lines makes grain transportation an important part of BNSF's transportation business. BNSF transports more grain than any other railroad in the United States and our commitment to grain transportation is unparalleled. One of BNSF's four principal marketing units is devoted solely to the transportation of agricultural products. Our commitment to grain transportation is reflected in the increasing trust that our customers have placed in our ability to meet their needs.

Since 1996 when the first grain shuttle facility was located on BNSF's rail network, BNSF has led the rail industry in creating an efficient, low cost rail transportation network for

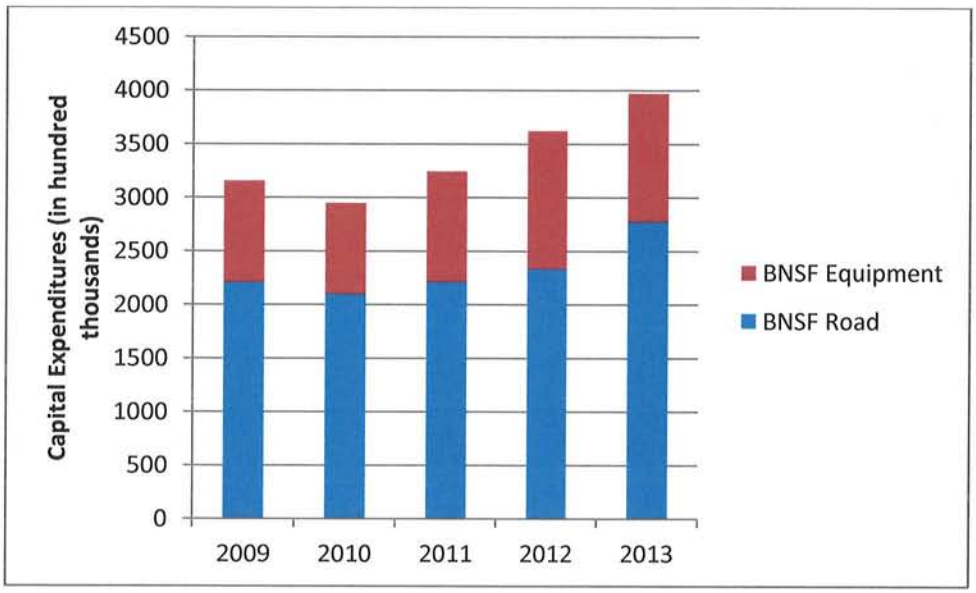
grain shipments. And the grain shippers have responded to BNSF's commitment by moving production of grain further north (particularly corn and soybeans) and by building many large, efficient grain elevators on BNSF, recognizing that BNSF is a strong and valuable link in the grain supply chain. Between 1996 and 2014, grain shippers have constructed 223 origin shuttle facilities on BNSF. Figure 1 below shows the number of origin shuttle facilities constructed on BNSF's network each year.

Figure 1



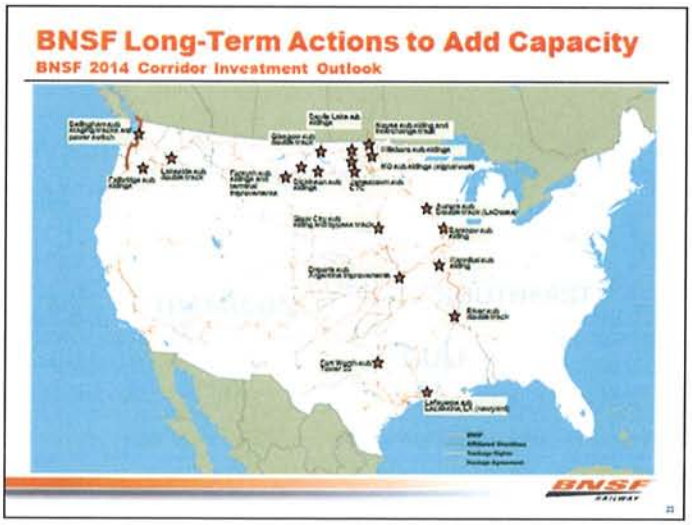
BNSF's commitment to grain transportation is reflected in its major investment of capital in rail infrastructure. For years, BNSF has made enormous capital expenditures on its system-wide rail infrastructure. From 2004 to 2013, BNSF's annual capital investments ranged between $2.6 billion and $3.8 billion per year. In 2014, BNSF's capital investment plan is at an all-time high of $5 billion. Figure 2 below charts BNSF's capital expenditures on road and equipment from 2009 through 2013.

Figure 2



BNSF's more recent capital investment has concentrated on the northern corridor where the majority of BNSF's grain traffic moves and many grain products and processor sites are located. BNSF has a 2014 plan to hire 5,000 new people, many of whom will be dedicated to work on the northern corridor. About $600 million of the 2014 capital budget is for terminal and line-capacity expansion projects, many of which will be in the northern corridor as shown in Figure 3 below.

Figure 3



Moreover, between 1998 and 2013, BNSF acquired 18,000 new rail cars for its grain shuttle fleet, at a cost of $1.095 billion. Under BNSF's current 2014 capital investment plan, 900 additional cars will be acquired for grain shipments at a cost of $75 million. In total, since 1998 BNSF has acquired 18,900 cars for grain shuttle trains at an investment of $1.17 billion.

The current service problems that were the subject of a recent hearing at the Surface Transportation Board ("STB" or "Board") underscore the need for continuing investment to expand capacity. While our service over the last decade generally and for grain traffic specifically has been very good, we realize that beginning in the fall of 2013 our recent service has not met our standards or our customers' expectations.

The recent service issues resulted from volume growth impacts that included a surge in grain traffic beginning in October of 2013 with customers requesting to start shipments on short notice, following the worst winter weather seen across the Upper Midwest in decades. To improve service, we have undertaken many short-term actions in addition to implementing our 2014 $5 billion capital investment plan. For example, we hired and trained 377 new Train, Yard and Engine ("TYE") employees in the northern corridor from January through May 2014 and plan to hire more than 1,000 new TYE employees for this region by the end of this year. We have been bringing in managers across the network to improve fluidity and have added more than 200 locomotives to the network since the beginning of 2014. We also have temporarily assigned field supervisors from across the system to key locations to assist in streamlining communication, coordinating train flows, and managing critical resources.

While our service shows signs of improvement, our recovery continues to be slow and uneven. In the northern region, our dwell time has declined significantly but our train speed has remained essentially the same since the first week in February 2014 (the baseline period against

which we have been measuring). We are transporting large volumes of agricultural commodities, and there has been a sizeable reduction in the number of agricultural past due cars since the February baseline period. We are committed to resolving our service issues and restoring the reliable and efficient service that our grain shippers had been receiving prior to the recent service disruptions.

IV. BNSF Works With Our Grain Customers to Make Sure They Are Able to Compete in Global and Domestic Markets

We price our grain transportation services based on the market. The markets for grain transportation are complex and dynamic. Since most of our grain traffic moves under tariff rather than under contract, this gives us flexibility to price our grain transportation to meet the ever changing grain markets and to allow our grain shippers to respond to market changes.

We work closely with our grain shippers to assist them in monitoring and finding markets for their commodities, and to promote the growth of the agricultural sector. We are aware that our success in the grain transportation market depends on the success of our grain shippers in the complex and dynamic grain markets.

We are in regular, close communication with many grain producer and handler organizations to better understand their issues and markets and, as a result, we have developed good working relationships with them. For example, we are in frequent contact with a number of grain producer groups that represent grain producers along BNSF's rail system, including the National Grain and Feed Association, National Grain Producer Council, North Dakota Grain Producer Council, Montana Grain Producer Council, and Transportation, Elevator & Grain Merchants Association. We also communicate on a regular basis with the advisory boards of other agricultural groups, such as the National Association of Wheat Growers and the National Association of Corn Growers.

In 2008, BNSF developed an Agricultural Rail Business Council which is an advisory council of approximately 20 producer organization officials and representatives who meet formally with BNSF's leadership twice a year and communicate periodically as issues arise. This council provides a valuable platform for sharing insights and feedback with our agricultural marketing team throughout the year. BNSF also holds an annual BNSF Ag Summit that provides the Agricultural community direct engagement with BNSF senior leadership. Approximately 150 Ag Summit attendees represent a broad range of agricultural interests including officials of major grain companies, regional cooperatives, individual elevator operators and producer organization representatives. In addition, the BNSF Ombudsman program was launched in 2004 as a means to provide a more effective and direct point of contact for producers, communities and other agricultural stakeholders. The program was first instituted in the State of North Dakota and has since expanded to provide that direct point of contact for virtually the entire BNSF system.

We work collaboratively with the agricultural community to promote the common interests of grain producers, handlers and transporters in a strong, efficient grain transportation network. We work directly with our customers to identify opportunities to expand grain shipments and to respond to market changes, many of which are unexpected. Sometimes traditional markets for grains are not available for various reasons such as a drought or flood so grain growers and handlers must consider non-traditional markets. We work with them to facilitate access to those markets.

For example, in 2010 we saw an opportunity to grow our customers' rail shipments of wheat to the Texas Gulf for export. Our idea was to create opportunities for our customers to compete for sales of wheat shipped on Gulf port vessels that load multiple types of wheat on the

same vessel. The vessels traditionally loaded in New Orleans, and the wheat was transported to them by barges moving down the Mississippi River. Barges could supply all classes of wheat to New Orleans facilities at prices lower than BNSF's prices for movements to the Texas Gulf. The market required that Texas Gulf exporters be able to buy all classes of wheat at the same price as their competition in New Orleans. Our rail customers were located too far from barge facilities to ship their wheat on the barges. In an effort to provide our customers with access to this Gulf export market, we dramatically lowered our rail prices on Soft Red Winter (SRW) wheat transported from Illinois to Texas so those customers could compete with the barge transportation. The new rail rates from Illinois produced a low return relative to other business on the railroad but generated new business. The innovative Illinois rail rates resulted in substantial new shipments of Illinois SRW wheat to the Texas Gulf. The change also generated at least as many shipments of Hard Red Winter (HRW) wheat from traditional origins in Oklahoma and Kansas at existing rate levels that were combined with the SRW wheat shipments from Illinois on the Texas Gulf port vessels. Farmers, rail shippers, export grain companies, and BNSF all benefited from this creative market-based approach to pricing that expanded grain movements on our railroad.

As another example, in 2012-2013 BNSF succeeded in developing a new market for its customers' corn shipments following a drought. In the Spring of 2012, record corn acres were planted and record corn exports were expected so we ramped up our grain fleet to meet anticipated demand. Traditionally, most BNSF corn shipments moved to the PNW for export. However, in the summer of 2012, there was a severe drought in prime corn production areas (Illinois, Indiana, Nebraska, Iowa and South Dakota) causing U.S. corn prices to sky rocket and making U.S. corn uncompetitive in the world market. The drought did not affect corn production

on BNSF's northern corridor (North Dakota, Minnesota and northern South Dakota) and that region had record corn crops. Since the traditional PNW export market was not available for the northern tier corn, BNSF had ongoing dialogue with its northern tier corn customers to try to discover alternate markets. Working with its customers, BNSF identified new domestic markets for the corn and implemented rail rates that allowed the corn from the northern corridor to move to Illinois, Iowa and South Dakota.

BNSF has also developed innovative commercial programs that have vastly improved the efficiency and reliability of our service which are increasingly important to our grain customers. Two programs in particular have been highly successful.

Certificates of Transport ("COTS") Program: Grain cars were historically allocated on a first-come first-served basis. Due to volatility in the grain markets and recurring shortage of rail cars at periods of peak demand, grain shippers often requested more cars than were necessary to be certain they had sufficient equipment when needed and then cancelled car orders if it turned out they did not need all cars ordered. This led to persistent grain car shortages. To address this issue, BNSF initiated the COTS program in 1988. Under this program, shippers bid for the guaranteed placement of railcars in a future time period by offering to pay a price set at the time of the bid. Car reservations are awarded to the highest bidder. The bidding process encourages grain shippers to order cars based on an assessment of future demand and need for equipment. The COTS program has been very successful. It has provided grain shippers with a reliable car supply that allows them to better plan their logistics and reduce their demurrage, interest and late shipment penalties. It also benefits BNSF by allowing the railroad to better plan for grain shipments.

Shuttle Trains: Grain shipments were historically made in single-car lots rather than in dedicated grain trains. Over time, BNSF encouraged increasingly more efficient grain shipments by incentivizing shippers to load grain in larger blocks of cars – first 26-car blocks, then 52-car blocks and ultimately in shuttle trains often consisting of 110 or more cars. BNSF initiated its shuttle train program in 1996, with the opening of a shuttle elevator in Nebraska. With shuttle trains, BNSF was able for the first time to transport an entire dedicated trainload of 110 cars or more, intact, from origin to destination. To be eligible to ship under BNSF's shuttle tariffs, origin and destination elevators must be certified by BNSF to ensure that they are able to provide efficient loading and unloading. BNSF's shuttle tariffs also provide for incentives payments to qualifying shuttle shippers and receivers, including origin efficiency payments (a per car payment for loading the shuttle within a specified period of time), destination efficiency payments (a per car payment for unloading the shuttle within a specified period of time) and shuttle reload incentive payments (a per car payment for unloading and reloading shuttle within a specified time).

Shipments of grain in larger and larger blocks of cars has led to more efficient operations and lower rail rates per car as shipment size increased. Shipments in 26-car blocks had lower rates per car than shipments in single cars, and shipments in shuttle trains had lower rates per car than 26-car shipments or single-car shipments. BNSF's lower rates for efficient shuttle trains combined with the incentive payments have encouraged grain shippers to construct shuttle elevators that can accommodate the shuttle trains. As I mentioned above, there are now 223 origin shuttle facilities located on BNSF. With each shuttle elevator costing as much or more than $25 million to construct, grain elevator owners have invested billions of dollars to build facilities on BNSF.

V. Regardless of the STB's Rate Reasonableness Standards and Procedures, Our Grain Shippers Have Not Pursued Rate Litigation Against Us Because Their Rates Are Effectively Constrained

A. Most of BNSF's Grain Rates Are Constrained By Competition

Pricing on the vast majority of our grain movements is constrained by effective competitive alternatives available to our shippers. Those competitive alternatives include both modal and geographic competition.

1. Modal Competition

Trucks and Truck/Rail: Many BNSF grain movements face competition from trucks or a combination of trucks and railroads. Grain must move by truck to an elevator. Farmers in many grain producing regions can choose to truck their grain to elevators located on multiple railroads subjecting BNSF to strong rail competition for those movements. Farmers in some grain producing regions are also located within a reasonable distance from grain processing plants producing truck competition for those movements.

Barge: Some BNSF grain movements face direct competition from barges. Barges provide high-capacity, low cost transportation from producing regions near major waterways. Major barge terminals are located at St. Louis and other cities near the Mississippi and Missouri rivers. Farmers in grain producing regions within a reasonable distance from ports on those rivers can truck their grain to those ports for barge transportation to intermediate or final destinations on the river system, including export facilities at the base of the river system.

2. Geographic Competition

BNSF is also constrained by widespread geographic competition. Several types of geographic competition exist. BNSF's rates for movements of grain from a particular origin (*e.g.*, soybeans from North Dakota) to a particular destination (*e.g.*, PNW export facilities) are constrained by the rates charged by other transportation suppliers to move grain from different

origins (*e.g.*, soybeans from Nebraska) to the same destination. Another example of geographic competition is when grain from a common origin can be shipped to different destination markets on different transportation suppliers. For example, corn shippers from Lincoln, Nebraska have the option to move corn on other carriers to non-BNSF served markets as well as the option to move corn on BNSF. This competition constrains BNSF's rates. BNSF must set competitive rates if it wants to attract the business.

Other forms of geographic competition are related specifically to export markets. BNSF must set its price for the movement of grain to a particular export facility based on alternatives available to shippers at other export facilities. For example, corn from the Upper Plains transported to the PNW must be able to compete with corn from the Corn Belt transported to New Orleans. BNSF must set its transportation rates to ensure that its PNW shippers will be able to meet competition in the highly competitive export markets. Moreover, grain grown in the United States competes with grain grown in other countries for export markets. BNSF must set rates that will allow U.S. shippers to meet foreign competition.

B. BNSF Voluntarily Constrains Its Grain Rates

While most of BNSF's grain movements face effective modal and geographic competition, there are some regions in the United States where BNSF faces less modal or geographic competition. However, even in these areas we do not set our grain rates in a vacuum. Our rate setting involves a considerable amount of back and forth with participants in the grain market, including shippers, producers and in an environment involving considerable scrutiny of rate setting by state government officials. In regions where BNSF faces less competition, we are careful to set rates that allow grain shippers to participate effectively in the grain market, and we set rates with the recognition that the grain shippers have rate reasonableness standards and

remedies available to them at the STB. BNSF has tried to maintain a positive relationship with its grain shippers and to set rates that will not lead to litigation.

In addition to our voluntary efforts to constrain grain rates in areas where BNSF faces less competition, we have tried other means to avoid disruptive and costly rate litigation. For example, BNSF established an alternative dispute resolution ("ADR") mechanism with Montana grain producer organizations -- Montana Grain Growers Association ("MGGA") and the Montana Farm Bureau Federation ("MFBF") -- to resolve grain rate disputes. Launched in early 2009, the program establishes a mechanism to address rail rate issues with the Montana farmer community in a fair and expeditious manner. It is available to all members of MGGA and MFBF that ship wheat or barley in Montana if the grain movement at issue is transported a distance of more than 250-miles, originates from a BNSF-served elevator, and is transported to a BNSF-served destination. The ADR program has a two-tier structure of mediation followed by arbitration.

Under the arbitration rules, the panel has authority to review the level of BNSF's rates on qualifying moves and require a reduction to the rates in the form of reparations and lower rates for up to a year. The arbitration proceedings are expedited (parties agree to use their best efforts to complete arbitration within 120 days of its initiation) and low in cost (discovery is limited, each arbitrator in pool of arbitrators is paid a $5000 annual retainer which is split between BNSF and the grain producer organizations and an arbitrator is paid $200 per day on specific arbitration disputes). Two arbitrations have been initiated under the Montana ADR program and those arbitrations were settled by the parties without the need for a decision by the arbitrators. The fact that Montana grain producers have used the efficient and low cost ADR program sparingly indicates that there is not a widespread need for grain rate relief.

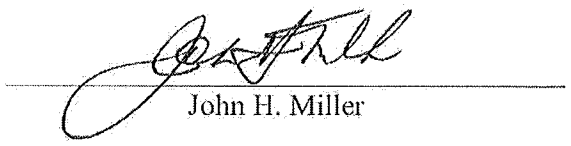
C. BNSF's Grain Rates Are Low

Given the strong and pervasive competition that BNSF faces for most of its traffic and the extensive efforts that BNSF has taken to establish a collaborative relationship with its grain shippers, it is not surprising that grain shippers have not brought rate reasonableness cases at the STB. In addition, rate reasonableness cases would only be expected where rate levels are high, but BNSF's grain rates are low when measured on a revenue-to-variable cost ("R/VC") basis. Low rates would not be expected to result in rate reasonableness litigation. Indeed, much of BNSF's grain traffic moves at rates below the Board's 180% R/VC jurisdictional threshold or only slightly above it. There is no reason to expect rate reasonableness challenges to rates at these low levels.

BNSF grain shuttle movements in the carload waybill sample appear to have some of the higher R/VC ratios but this is somewhat misleading. First, the absolute rates per unit of traffic shipped, e.g. a carload, are actually lower on shuttle movements than on smaller lot shipments. The higher R/VC ratios on shuttle movements is attributable to the greater efficiency and lower cost per unit shipped. Second, the waybill data overstate the actual R/VCs for many of BNSF's shuttle movements because the waybill data do not reflect the substantial loading and unloading incentive payments that are paid to qualifying shuttle train movements.

I declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this Verified Statement.

Executed on June 24, 2014



John H. Miller

Verified Statement of William W. Wilson

Rail Transportation of Grain, Rate Regulation Review
Verified Statement of Dr. William W. Wilson
June 26, 2014
Docket No. EP 665 (Sub-No. 1)

I am Dr. William W. Wilson. I am a Professor of Agribusiness and Applied Economics at North Dakota State University, a position I have held since I received my Ph.D. in Agricultural Economics from the University of Manitoba in 1980. The focus of my research and teaching is risk and strategy as applied to agriculture and agribusiness with a particular focus on logistics, technology, procurement, international marketing and competition. I publish extensively in academic and professional journals and I regularly advise clients in a range of agriculture-related businesses in the United States, Canada, Russia, Mexico, Venezuela, Australia and France on matters relating to agriculture, agribusiness and agricultural economics. In 1995 I was recognized as one of the top ten Agricultural Economists and recently was recognized as one of the top 1% of agricultural economists by RePEc (Research Papers in Economics). I served as a Board member of the Minneapolis Grain Exchange for 12 years and served on the Federal Grain Inspection Service Advisory Board. A detailed copy of my vitae is attached as Exhibit 1 to this statement.

I have been asked by BNSF Railway Company to provide the Board with background information on grain markets that are dynamic and complex. In many ways, grain markets are different from markets where the Board has its most extensive experience. In preparing this statement, I draw upon the extensive research and writing

that I have done over the past two decades on issues involving grain markets and pricing.[1] I make the following points.

First, I describe the basic characteristics of grain markets. I describe the volatility and seasonality of grain shipments, the large number of different participants in grain markets and the different roles played by participants at different levels of the grain supply chain, including railroads and other transportation suppliers, the growing importance of export markets and the numerous options that grain producers have in marketing grain. Rail transportation of grain is the only link in this complex grain supply chain that is subject to rate regulation.

Second, I describe the enormous benefits that deregulation of rail transportation since the Staggers Act has had in grain markets. Deregulation encouraged innovation and investment that resulted in dramatic improvements in the efficiency of rail transportation of grain. BNSF has been a leader in the introduction of new commercial mechanisms involving car allocation programs and efficient high-volume shuttle trains that have expanded marketing options for grain producers and have allowed U.S. grain producers to take advantage of growing demand for U.S. products in export markets. Deregulation has promoted extensive investment in grain shipping capacity and infrastructure by BNSF and its shippers and there continue to be high levels of

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[1] The materials I draw upon include a recent paper that provided an extensive quantitative analysis of factors impacting grain pricing. *See* Wilson and Dahl (2010) which is a broad research report, and Wilson and Dahl (2011) which is a professionally refereed article. In addition, the following articles address related features of grain markets that are addressed in this statement: Wilson and Dahl (2005) on rail car auctions; varying models and analysis of logistics strategies in grain were analyzed by Wilson, Priewe and Dahl (1998), Wilson and Dahl (2000) and Wilson, Carlson and Dahl (2004). Finally, Wilson and Wilson (2001) analyzed impacts of rail deregulation on rail pricing, efficiency gains and the distribution of these gains. A selected list of my publications is set out in the vitae contained in Exhibit 1.

investment in capacity. The improvements in rail service brought about by the innovation and investment unleashed by deregulation have benefited participants in the grain supply chain, as seen by the rising profits of many sectors of U.S. grain markets, including grain producers.

Third, I describe the numerous and pervasive constraints that exist on the rates that railroads can charge for the transportation of grain. Regulation of grain rail rates has not been necessary because market forces effectively constrain rate levels. Rail rates are widely constrained by intramodal and intermodal forms of competition. Competition from other rail carriers, trucks and barges is pervasive and effective. In addition, geographic (or inter-market) competition in grain markets is particularly strong and effective in constraining the rates that railroads can charge. I describe other constraints on rail rates that prevent the exercise of market power.

Finally, I explain that I am unaware of any evidence of an exercise of market power by BNSF in grain markets. I explain that grain marketing has become substantially more profitable over the past several years, with the increasing margins being captured by other participants in the grain supply chain, not railroads. I also show that increases in rail rates for the transportation of grain have been less than the rate increases in other forms of transportation (trucks and barges). I also describe recent developments in grain markets that illustrate the willingness of producers and shippers to rely on BNSF's ability to provide efficient service at reasonable rates.

I. Background on Grain Markets

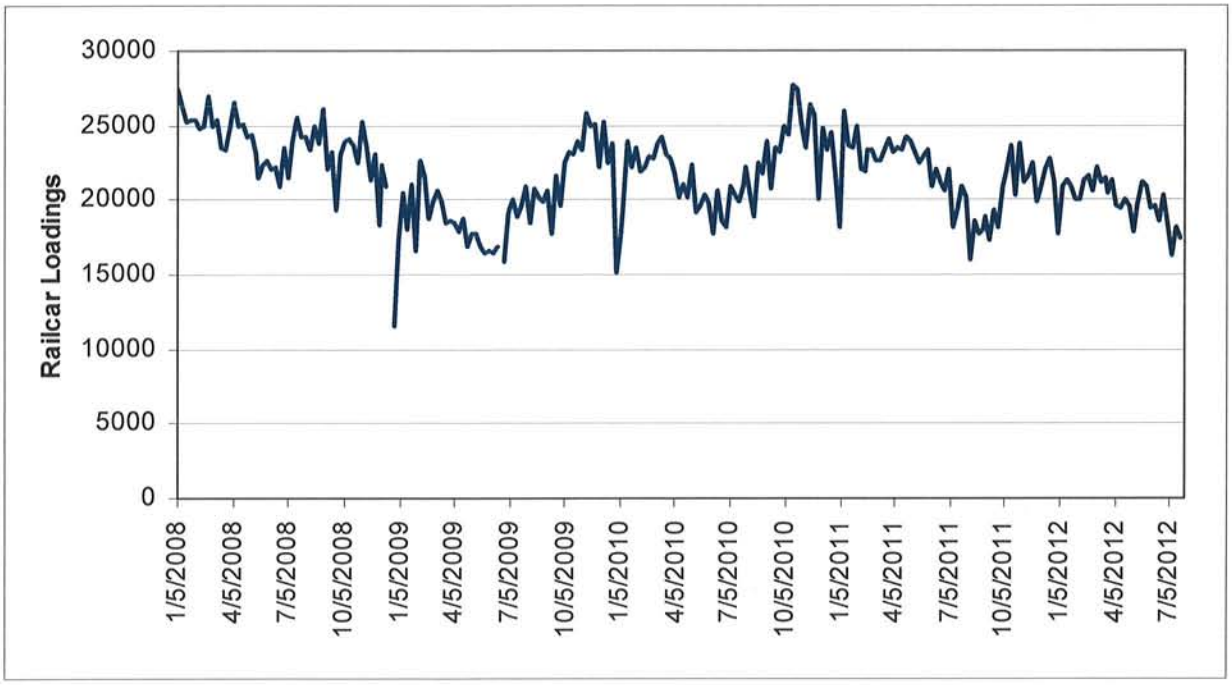
The Board has not had a major regulatory proceeding in the recent past that has required a detailed examination of grain market dynamics. These markets are very

different from coal and chemical markets where the Board has the most extensive recent experience. There are several important features of grain markets, including volatility, seasonality and strong international competition, which distinguish them from other rail transportation markets. Any examination of the role of rail rates in grain markets must recognize the complex dynamics of grain markets. The transportation rate is only one of numerous factors that affect decisions about how and when grain will move from producing regions to their ultimate destination markets. The most important characteristics of grain markets for purposes of this proceeding are discussed below.

Volatility and Seasonality of Grain Shipments

The most significant characteristic of grain markets is the substantial volatility and seasonal variation in shipments of grain. Figure 1 shows the variability of U.S. rail car grain loadings over the period 2008-2012.

Figure 1

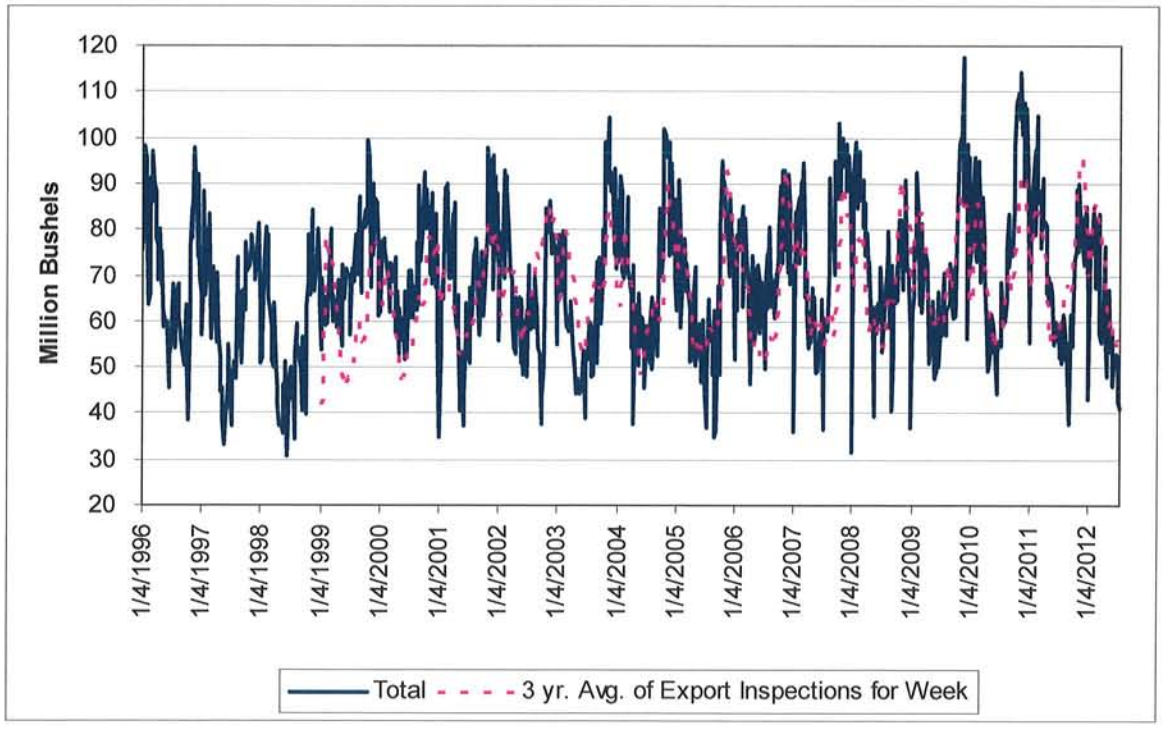


Source: USDA, Agricultural Marketing Service ("AMS"), Grain Transportation Report.

In contrast to the movement of other commodities, which tend to move more smoothly from month-to-month, grain movements are extremely seasonal. Demand tends to peak from September to January, and again in March, and declines sharply in the other months. However, even within this generally recurring cycle, it is extremely difficult to predict just when or how high demand will peak, as illustrated by the recent experience with service problems in grain markets, which I discuss below.

Volatility in grain shipments has increased in recent years as grain producers increasingly take advantage of export market opportunities. The growing importance of export markets for U.S. grain producers is discussed further below. Export demand is particularly volatile. Figure 2 below shows the dramatic changes over time in U.S. grain exports.

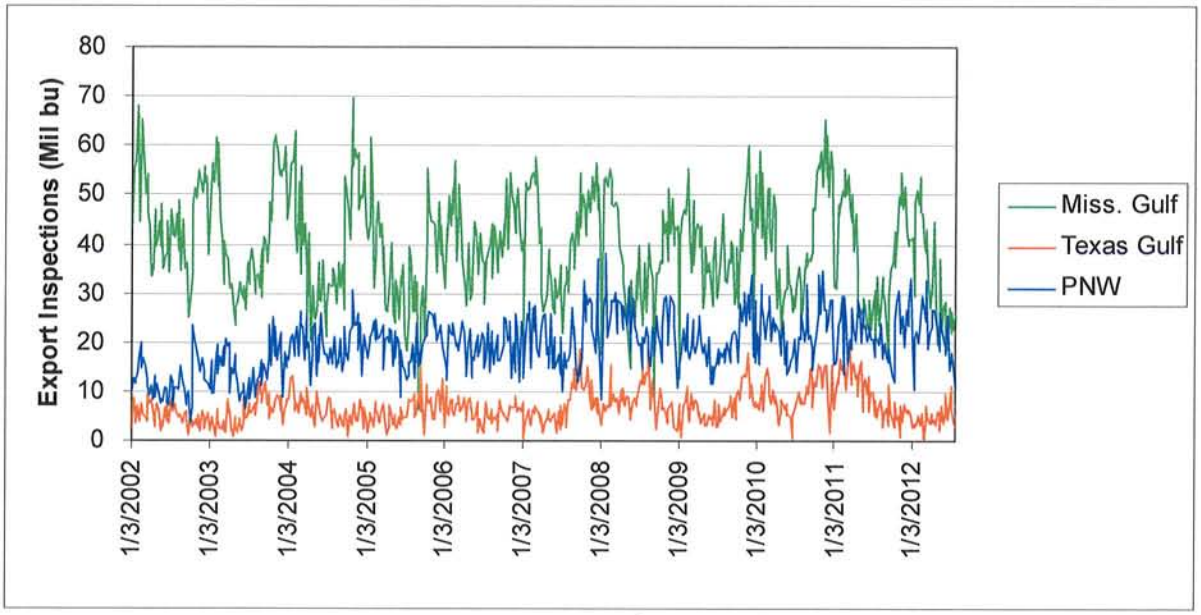
Figure 2



Source: USDA-AMS, Grain Transportation Report Data (2014).

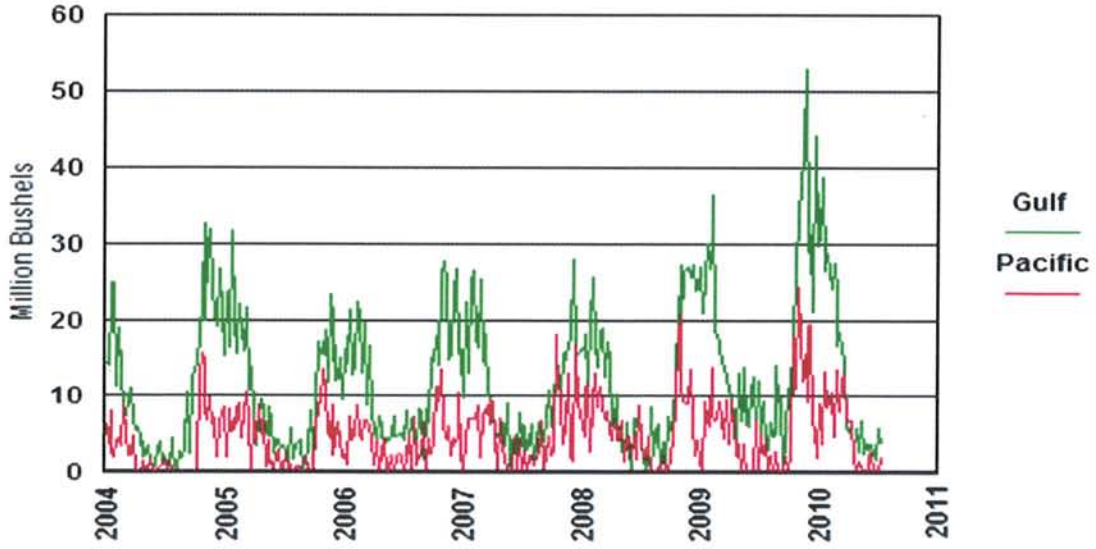
Figure 3 shows the volatility of U.S. grain exports through the three principal export regions and Figure 4 shows the volatility of soybean exports at U.S. Gulf and Pacific Northwest ("PNW") ports.

Figure 3



Source: USDA-AMS, Grain Transportation Report Data (2014).

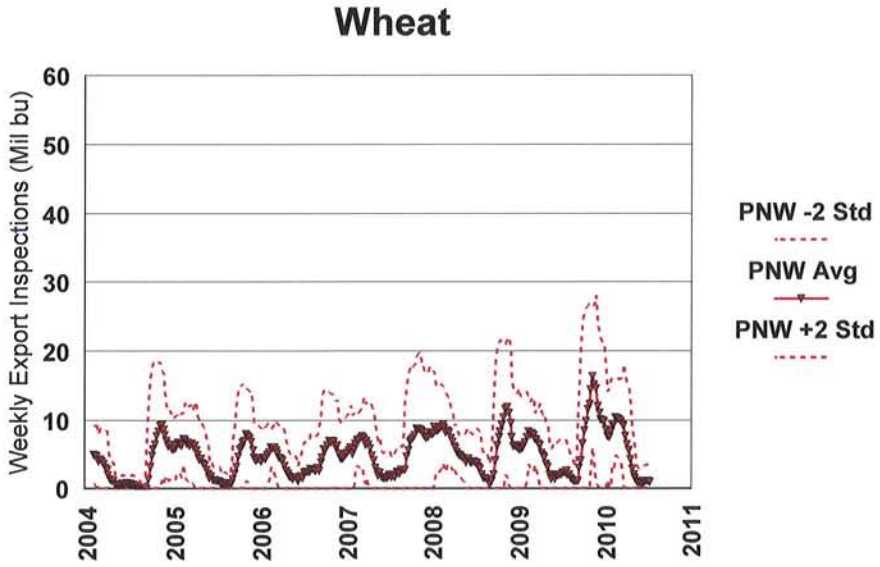
Figure 4



Source: USDA-AMS, Grain Transportation Report Data (2014).

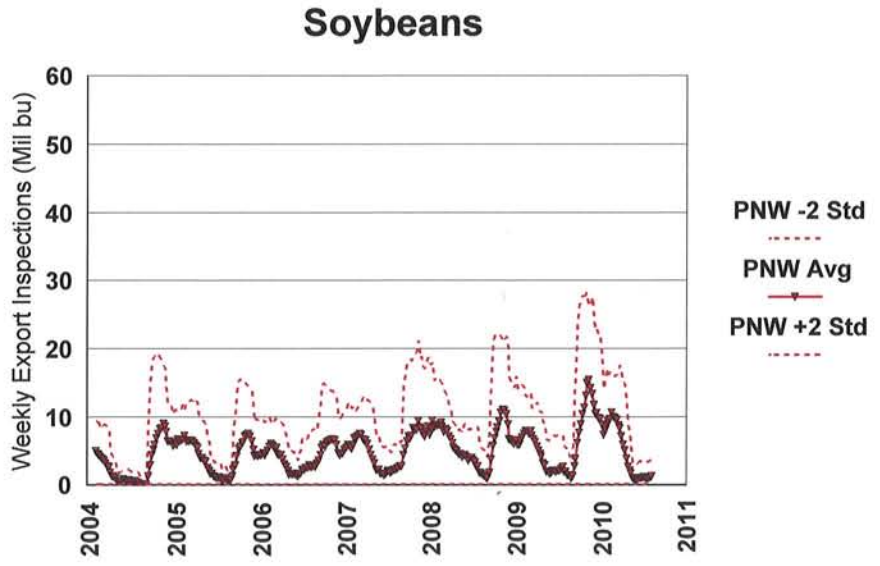
Moreover, the variability of grain exports has been increasing over time. Figures 5 and 6 show that the difference between high and low volume shipment periods for wheat and soybeans has been increasing significantly over the past several years.

Figure 5



Source: USDA-AMS, National Grain Reports.

Figure 6



Source: USDA-AMS, National Grain Reports.

The volatility of grain shipments has important implications for rail operations, capacity planning and management and pricing. Pricing and service innovations can help smooth out grain movements, and railroads need to have the flexibility to adopt innovative pricing and service plans. Moreover, the large swings in demand make the availability of capacity during periods of peak demand the critical issue in grain markets. It is not surprising that the predominant issue for grain producers and grain handlers in rail transportation markets has traditionally been the availability of rail cars for movement and rail capacity, not rates. Indeed, the recent service problems that BNSF has experienced have been compounded by the volatility and unpredictability of grain markets. Those problems confirm that the most important issue for grain market participants is the need for adequate capacity for grain shippers.

As the Board is aware, recent service problems on BNSF's northern tier resulted from unexpectedly severe winter weather, growth in shipping demand as the economy improves, increased crude oil production (particularly in North Dakota) as demand for U.S. crude oil increases, and a severe underestimate by the grain industry of grain demand. This last factor has not been discussed as extensively as the first two factors, but it was a very important contributor to the service problems. Preliminary August 2013 grain yield estimates provided by the Department of Agriculture turned out to be substantially understated. Between the time of those August 2013 estimates and the final estimates made at the end of the crop cycle (September for wheat and December for soybeans and corn), corn, soybean and hard red spring ("HRS") wheat yield estimates increased by 2 to 3 percent; total supplies of corn, soybean and HRS wheat increased by 2, 3 and 7 percent respectively; estimates of corn exports increased by 43

percent and estimates of soybean and HRS wheat exports increased by 14 and 4 percent respectively.[2] By historical standards, these were very large changes in expected demand and they had a huge impact on logistical planning. The cumulative impact of these changes was that the grain industry analysts had underestimated demand for shipments by the equivalent of about 256,704 carloads of grain,[3] or about 2,334 trains.

The inability to predict the significant increases in demand, exacerbated by the weather and other increases in rail shipping demand, affected all participants in the complex grain supply chain. Grain shippers did not sufficiently anticipate the need for future rail shipments until demand began to pick up. Capacity planning by the railroads was inhibited by their underestimates of shipping demand. All market participants have been adversely affected by the inefficiencies that resulted from the volatility of the grain market beginning in the fall of 2013.

The important point to be taken from this recent experience is that the availability of rail capacity to meet constantly changing demand for grain shipments is the central concern of shippers, railroads and other participants in the grain supply chain. The STB should avoid taking any actions relating to rail rates that might discourage capacity investment or that might distort market signals that are used to allocate capacity in an efficient manner. All participants in grain markets benefit from the efficient allocation of capacity, and the STB should be careful not to impose constraints that would undermine

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[2] Derived from monthly supply/demand and crop production and export estimates by USDA, National Agricultural Statistics Service.

[3] These were derived using the change in USDA's total demand estimates for each crop between August 2013 to March 2014. These were then converted to carloads at 3750 bushels/car.

the efforts of railroads to provide efficient transportation options to grain shippers in highly volatile grain markets.

Growing Importance of Export Markets

As I noted above, the export sector has become increasingly important to U.S. farmers, and it is expected to grow further. U.S. farmers and grain handlers have always been dependent on global markets, but the importance of this segment has escalated in recent years. The availability of efficient rail transportation to reach the ports where export grain is loaded onto ocean vessels is becoming increasingly important to U.S. grain producers and shippers participating in these global markets. Domestic shipments are still important, but they tend to focus on different end uses (including corn shipped to ethanol production facilities) and tend to be shorter haul movements. The movement toward export markets has also produced shifting crop volumes (particularly corn and soybeans) and changes in where different crops are produced.

Foreign demand for U.S. crops has been driven in recent years by China. China imports about 60 percent of the world trade in soybeans. China also accounts for a growing share of the global corn market, and the demand for corn is expected to increase. Indeed, USDA has indicated that due to a growing differential in yield growth rates (with China lagging the United States); corn imports by China will grow to 22 million metric tons by 2023/24.[4] I explain below that the extensive capacity investments

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[4] U.S. Dep't of Agriculture, Interagency Agricultural Projections Committee, *USDA Agricultural Projections to 2023* at 20 (2014). Another observer has explained:

> Until 2009 China was self-sufficient in corn, however the country's dietary shift will cause China to surpass Japan, South Korea, and

made by BNSF and BNSF's innovations in pricing and service offerings have made it possible for U.S. farmers, particularly in the northern United States, to take advantage of these growing global markets. An efficient rail network is critical to the success of U.S. farmers.

The growing importance of global markets also means that U.S. farmers face strong competition from grain producers in other countries. Virtually all grain and oilseed shipments are subject to intense international competition. The major competitors for wheat include Canada, Australia, Argentina and Ukraine, in addition to other periodic exporters. Soybean exports from the United States have to compete with exports from Brazil, which has now emerged to be the largest soybean exporter in the world, as well as Argentina and Ukraine. U.S. corn exports have to compete with corn from Ukraine, Argentina and Brazil, which have increased corn production and exports substantially in recent years, as well as with other feed grains and feed wheat from

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> Mexico to become the world's top corn importer by 2021. In 2014 China is expected to import 2% of its consumption[,] with imports increasing to 7.2% of consumption by 2024 according to the U.S. Department of Agriculture. Meat consumption in China has increased 27% since 2001 as U.S. consumption fell by 5% over the same time period, and China's meat consumption is expected to continue to increase at this same rate over the next ten years. Meat production in China is expected to increase 30% to 90 million tons by 2024 with three kilograms of corn needed to produce each kilogram of meat. This increase in corn demand from China will account for 40% of the increase in global trade in corn over the next 10 years. China will surpass South Korea as a corn importer by 2018 and will surpass Japan by 2021.

China to Surpass Japan as Top Corn Buyer, Global AgInvesting (May 2, 2014), http://www.globalaginvesting.com/news/NewsListDetail?contentid=4161 (citing *China to Surpass Japan as Top Corn Buyer: Chart of Day*, Bloomberg (Apr. 28, 2014), http://www.bloomberg.com/news/2014-04-28/china-to-surpass-japan-as-top-corn-buyer-chart-of-day.html).

many countries. I explain later how this strong foreign competition for U.S. grain products constrains rail rates.

In addition to the importance of rail, the global supply chain for grain and the competitiveness of U.S. grain producers is also affected by non-rail infrastructure developments such as increases in ocean vessel and port capacity and the expansion of the Panama Canal that is currently underway. As global markets change, U.S. producers must be able to adapt quickly to the changing logistical market conditions. Changes in ocean shipping patterns, deeper ports and the use of larger ships all point to a greater demand for an efficient supply chain in which reliable rail transportation is essential.

Geographic Dispersion of Grain Origins and Destinations

Another important characteristic of grain markets is the broad geographic dispersion of grain producing origins and the numerous destinations for grain movements. Grain is grown on a vast number of plots throughout the United States and brought to a large number of rail-served elevators that are also scattered across the country for movement by rail to destination markets. In North Dakota alone there are at least 350 rail origins. Nationwide, shipment destinations include numerous export port facilities (there are 51 export elevator locations[5]) and a very large number of domestic markets (e.g., 168 flour mills, 211 ethanol plants, 19 soybean and oilseed crushing plants, and, numerous feed lots[6]).

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[5] *See* USDA Federal Grain Inspection Service, *Directory of Export Elevators at Port Locations* (Nov. 6, 2012), http://www.gipsa.usda.gov/publications/fgis/dir/exp_elevator_directory.pdf.

[6] I derived this data from recent industry directories of each of the relevant industries.

The broad dispersion of geographic origins and destinations adds substantially to the complexity of rail operations and planning. It also adds to the cost of rail service, since the dispersion of origins and destinations makes it difficult to achieve economies of density. Historically, grain gathering operations serving numerous origins over low density rail lines in carload lots or short trains were very costly. I discuss below BNSF's successful efforts to improve the efficiency of grain transportation through more efficient and higher volume loading sites and longer trains. The dramatic improvements in efficiency and quality of rail transportation service that has resulted from BNSF's efforts to achieve economies of density has been an important factor in expanding U.S. grain producers' ability to take advantage of growing global grain markets.

Large Number of Links in the Grain Supply Chain

The grain supply chain contains numerous participants performing different functions. Traditionally, these functions were performed by different firms at different points in the supply chain, thereby requiring a large number of transactions to ensure the movement of grain from origin to destination. I describe briefly below the most important players in this supply chain:

- Producers: Grain is produced by a large number of growers dispersed across the country. The growers typically have a limited amount of storage capacity on their farms and therefore need to move grain from the farm to destination or storage soon after it is harvested.
- Trucks: From the farm, grain must be trucked to a rail-served elevator, a barge terminal or the destination market. I discuss below why the need to move grain from the farm by truck in the first instance is a major

constraint on the rates that railroads can charge. Farmers often have several competitive alternatives located within truck range. Many farmers own or have access to semi-trailer trucks and the range of their truck shipments can be up to 250 miles.[7]

- First Handlers: The first handler, traditionally a local elevator, provides storage and shipping services, in addition to distributing inputs like fertilizers to growers. Historically, these local elevators were single plant firms, with some structured as farmer-owned cooperatives. As discussed below, the first handlers are increasingly being vertically integrated into larger firms that control many of the functions in the supply chain.
- Line Haul Transportation Providers: From the local elevator, grain moves either to intermediate terminals or to the destination market on rail, barge and truck. Over time, intermediate terminals have become less important, (see below) and more movements go directly to destination markets. As discussed further below, barges are a major supplier of grain transportation since navigable rivers and barge terminals are within relatively easy reach of a large portion of the grain producing region in the United States. Trucks are very strong competitors to railroads and barges for transporting grain to destination markets over relatively short distances.
- Intermediate Terminals: Traditionally, sales were made from first handlers to intermediate elevators that aggregated grain from various

[7] 250 miles is the distance that typically can be traveled round-trip with a return in a single day. Costs increase substantially with trips beyond that distance.

origins for further distribution to grain destination markets. This spawned development of intermediate grain marketing centers in numerous cities including Minneapolis, Chicago, and Kansas City, among others. Sales were made to processors or exporters from the intermediate terminals and transportation to the ultimate destination was arranged. With the increase in efficient, large-scale rail movements, these intermediate markets have become less important in their traditional function, and now a growing share of grain shipments go directly from origin elevators to destination markets.

- Processors: In the past there were numerous independent processing firms, mostly comprised of a single plant. Processors would typically make their grain purchases from the intermediate terminal elevators. As discussed below, processors have increasingly become part of multi-plant firms that are vertically integrated, including handling, storage, processing and other functions in the grain supply chain.
- Export Terminals: For grain sales to overseas buyers, grain would move to export terminals for storage and transfer to ocean vessels. As I noted above, there are 51 export elevator locations in 15 states.
- Traders and Exporters: The grain industry traditionally supported a large industry of trading firms that owned no assets but simply bought and sold commodities to profit from price differentials. Traders often arranged for transportation and occasionally provided financing support for grain transactions. Traders operating as exporters would either buy grain at the

origin elevator or as delivered to the port, and arrange for the loading of vessels and the international shipment of the grain to foreign markets.

The large number of participants in the supply chain is important as it is often assumed there is a 1:1 relationship between changes in rail rates and changes in grain prices to growers (*i.e.*, that reduced rail rates result in an increase in price received by growers in a 1:1 relationship). This would be true only in cases of perfect knowledge, no risk factors and a highly competitive grain handing sector. But in a complex supply chain such as that described above, changes in costs for one function in the supply chain could, depending on the circumstances, be absorbed at other functions of the supply chain without a significant impact on the producers themselves. If grain handlers, elevators, traders or other participants in the supply chain have market power at their level of the supply chain, those firms, whose prices are not regulated, could take advantage of reductions in rail rates to improve their own profits. The only firms whose rates or prices are regulated in this supply chain are the railroads. As discussed below, there has been a steady increase in concentration at different levels of the supply chain, creating the possibility that market power exists in those other levels of the supply chain. It would therefore not be appropriate to assume that reductions in rail rates would pass through to grain producers in a one-to-one relationship.

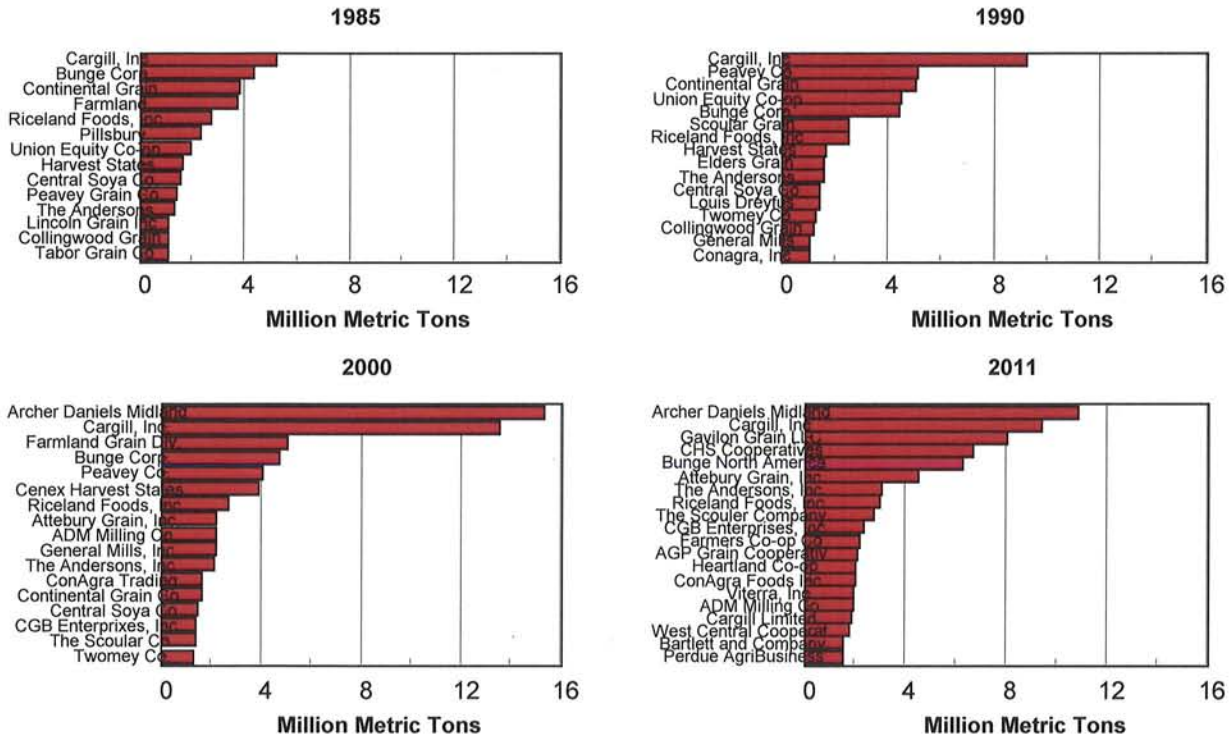
Growing Concentration and Vertical Integration in the Supply Chain

The traditional supply chain in grain markets described above involved numerous transactions at different levels – e.g., farm to first handler, origin to intermediate elevator, and transportation suppliers at different points in the movement of grain to the destination market. This fragmented set of players and transactions was inefficient and

added substantial costs to the process of getting grain to destination markets. With the large number of players dispersed through the supply chain, it was difficult to plan ahead and difficult to coordinate the various functions in the supply chain. Rail car distribution was not efficient. In some cases, rail cars and barges were used for storage. With limited storage, it was difficult to make forward planning of sales for delivery in the future.

The grain supply chain has changed substantially over the past few years. A growing share of the market in grain sales is concentrated in a small number of firms, and those firms have a growing presence at multiple levels of the supply chain. Neither ADM nor Gavilon, two of the most powerful companies in the grain market today, were significant participants in the industry in the 1980s. ADM is now the largest flour milling firm, soybean crusher and ethanol manufacturer in the United States. Figure 7 below shows the substantial dynamism in the market from 1985 to 2011 with changes in the identity of the participants and their changing market shares.

Figure 7



Source: Grain & Milling Annual (multiple years).

Figure 7 shows that since 1985, there has been substantial growth in the largest firms as measured by grain storage capacity (sales data are not readily available), with an increasing percentage of the market concentrated among the top six firms. ADM became the largest firm in the market through numerous acquisitions. Other combinations, most of which have been the subject of Department of Justice ("DOJ") antitrust investigations, have produced increasing concentration among handlers and processors. Cargill's acquisition of Continental Grain in 1996 was the subject of a DOJ investigation which required divestitures. Cargill and Cenex Harvest States (CHS) merged their flour mills to form a single firm, Horizon Milling. The proposed formation of Ardent Milling, a firm that will be the largest milling firm in the country through a merger of the flour mills of Cargill, ConAgra and CHS, was the subject of a DOJ investigation

which recently was settled with required divestitures in markets that would otherwise be too concentrated.

The increased concentration of commercial activity in grain markets in a handful of firms has also been accompanied by increased vertical integration in the supply chain. Processing firms have become more concentrated and at the same time have expanded to include extensive networks for grain origination. Export firms have expanded to include grain originations. Increases in storage capacity at local elevators have reduced the importance of intermediate terminals, allowing for more direct shipments from origin to destination markets. The result of these developments is an increasingly efficient supply chain that is dominated by large and diverse firms with a presence at most levels of the supply chain. These large firms have the size and leverage to prevent any attempt by railroads to exercise market power. I discuss this further in a later section of this statement.

Increasing Complexity of Grain Pricing

In the traditional grain pricing model, the local price for grain paid to the grain producer would be determined simply by deducting the rail tariff for delivery of the grain to the grain terminal (an intermediate or destination terminal or processing facility) from the pre-determined terminal price for the grain. Over time, however, several elements have been added to this simple pricing model which complicate grain pricing but also provide grain producers with numerous options for marketing their grain.

The first additional element involves the destination markets. Grain shippers frequently evaluate selling to multiple destination markets. Each destination market typically involves a different offering price for the grain and a different transportation

cost. The grain shipper or producer can determine the most attractive local price by comparing the net price it would receive at the different destination markets.

The second complicating element involves the timing of the sale. Historically, grain sales were made for very nearby time periods, and typically with wide windows for delivery. In contrast, today the temporal scope of grain trading has evolved so that grain trades are often made for periods much further into the future ("forward" shipping periods), typically with much narrower windows for delivery. The expansion of these forward trading markets was made possible by improvements in rail service and reliability and by the expansion of local storage capacity so that grain can be stored while waiting to be transported at the appropriate future time period. As a result of this expansion of forward selling options, grain producers and shippers are not limited to selling in spot markets when the grain is harvested, but rather have numerous additional selling options.

Third, rail pricing mechanisms have evolved to provide grain shippers with more ways to manage risk. Fuel surcharges have been established to create a separate mechanism for railroads to recover fuel costs in volatile fuel markets. With the introduction of fuel surcharges, some grain shippers have adopted hedging strategies for managing the risk of future changes in fuel surcharges. More important, I discuss below the development of car ordering and shuttle train programs, led by BNSF. The ability to purchase COT certificates and arrange for shuttle movements for specified shipping periods has given shippers greater control over the delivery of the grain. COT certificates and shuttle trains also provide mechanisms for managing the risk of car shortages during periods of high demand.

II. Innovation and Investment by BNSF since the Staggers Act Have Been Critical to the Success of U.S. Grain Shippers.

Deregulation under the Staggers Act provided railroads with the opportunity to implement innovative, efficiency enhancing programs and practices. In the grain sector, BNSF has been at the forefront of those innovations, which have produced substantial benefits for grain producers and others in the grain supply chain.

Grain shipping is fundamentally different today as compared to the period before the Staggers Act. Since 1980, boxcars have been replaced with high volume covered hopper cars. Train sizes have increased. The feeder system of low density rail lines serving local communities was preserved in large measure through the post-Staggers creation of numerous short-line railroads while the Class I railroads have been able to focus on improving the efficiency of grain movements on higher density trunk lines. New demurrage policies were implemented to improve the efficiency of railcar utilization.[8]

In addition, innovative commercial practices initially instituted by BNSF have resulted in vast improvements in the efficiency of the grain supply chain. Rail service and capacity utilization have improved substantially. The increased efficiency and lower costs of rail transportation have allowed grain producers to take advantage of growing export market opportunities to the benefit of all participants in the grain market. Two commercial innovations by BNSF's predecessors have been particularly important – the

[8] For further discussion of these issues see Wilson, W. and Dahl, B. (2010). "Grain pricing and transportation: Dynamics and changes in markets (Agribusiness and Applied Economics Report 674). Fargo: North Dakota State University, Fargo, Department of Agribusiness and Applied Economics; and Wilson, W., and B. Dahl (2011). "Grain Pricing and Transportation: Dynamics and Changes in Markets, Agribusiness, Vol. 27(4), 420-34 (2011).

development of rail car ordering programs and shuttle train operations – and I discuss those two innovations further below.

Car Ordering Programs

Prior to the Staggers Act, rail cars for grain were allocated primarily on a first-come-first-served basis. Penalties for cancelling grain car orders were not generally enforced which led to over-ordering and inhibited railroads' planning. Shippers would order more cars than needed in order to ensure the availability of cars, and then cancel the unnecessary excess cars prior to shipment. The impact of this allocation system was persistent shortages of cars where and when they were needed; limited ability for shippers to rationalize the temporal shipping decisions; no assurance that the shippers with greatest demand received cars; and persistent 'phantom orders' and cancellations. The system was highly inefficient.

In 1988, BNSF's predecessor BN introduced the COTs (Certificates of Transportation) program.[9] The COTs program allows shippers to bid for the guaranteed placement of railcars by offering to pay the offer price at the time of the bid. The program involves forward shipping windows, i.e., shippers bid for the availability of rail cars for specified future shipping periods. Guarantees are made by BNSF for car

[9] The COTs program was challenged and the decisions in that case provide further documentation of the program. The primary ICC COTs decision is *National Grain and Feed Association v. Burlington Northern Railroad Company*, 8 I.C.C.2d 421 (1992). The ICC found that the COTs program was not an unreasonable practice and was consistent with BN's common carrier obligations. The ICC decision was appealed to the Eighth Circuit. *See National Grain and Feed Association v. United States*, 5 F.3d 306 (1993). The Eighth Circuit upheld the ICC's finding that the COTs were a special form of common carriage service (as opposed to contracts), but it said that the ICC failed to investigate sufficiently whether BN's compliance with its COTs obligations would unreasonably interfere with its ability to meet its common carrier obligations on the non-COTs traffic. My understanding is that the case settled on remand to the ICC without any further rulings by the ICC.

placement within the specified shipping windows. In addition, the COTs are tradable, leading to the creation of a secondary market for COTs and grain cars.[10] Following BN's introduction of COTs, other railroads adopted their own car guarantee programs.

COTs can be purchased for single cars or for unit trains. These COTs can be acquired either through a weekly auction in the primary market or in secondary markets.[11] They give shippers the ability to plan for future transportation needs and also provide BNSF with important information that can be used to plan future grain movements and anticipate changes in demand.

Shuttle Trains

A few years after introducing COTs, BNSF initiated a program of shuttle trains. BNSF's shuttle program has been one of the most successful, efficiency-enhancing programs in U.S. rail history, and indeed in the grain marketing industry. Other railroads have adopted similar programs with their own features, but the BNSF program has been the most successful and transparent program.

Shuttle trains are dedicated train sets that cycle continuously among grain origins and destinations. Rates for shuttle movements are lower on a per car basis than rates on smaller blocks of cars. In addition, BNSF pays loaders and unloaders "incentive" payments to reduce loading and unloading times. The current incentive payments are $100 and $150/car for loading in 15 and 10 hours respectively. Thus, an elevator

[10] For further discussion of these mechanisms see Wilson, W. and Dahl, B. (2010). "Grain pricing and transportation: Dynamics and changes in markets" (Agribusiness and Applied Economics Report 674); and Wilson, W., and B. Dahl. (2005) "Railcar Auctions for Grain Shipments: A Strategic Analysis," *Journal of Agricultural & Food Industrial Organization*: 3(2), article 3, *available at* http://www.bepress.com/jafio/vol3/iss2/art3.

[11] BNSF also has a tariff mechanism for shippers seeking cars outside of the COTs program and the shuttle program discussed below.

conforming to the shuttle requirements and loading a 110 car train in a 10 hour period would receive a payment of $16,500/train. A receiving elevator receives a similar incentive of $100/car for unloading in 15 hours. There is also a $200/car incentive payment for reloading for transportation back to the origin point.

To be eligible for shuttle service, origin and destination elevators must be certified to conform to the engineering requirements of BNSF.[12] Normally, a Greenfield investment is needed. The costs to construct these shuttle facilities, including the necessary track, are now in the range of $25 to $35 million. Notwithstanding these costs, the benefits of shuttle train operations have brought about substantial investment in domestic and export shuttle elevators. Shippers have invested billions of dollars in shuttle facilities at origins, export facilities and now at domestic processing locations to exploit the tremendous efficiency benefits that shuttle service provides. Figures 8 and 9 below illustrate the growth in shuttle elevators on the BNSF system from 2000 to 2009.[13]

[12] Details of BNSF's shuttle programs are provided in BNSF Tariff 4022, Items 13500, 13501, 13502 and 13600.

[13] These maps were previously available on the BNSF website.

Figure 8

BNSF Shuttle Locations (2000)

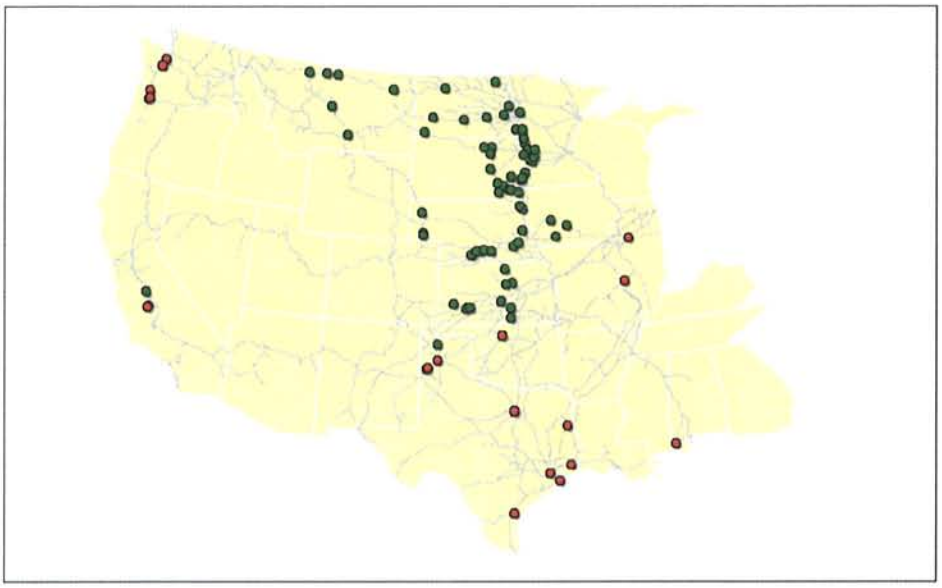
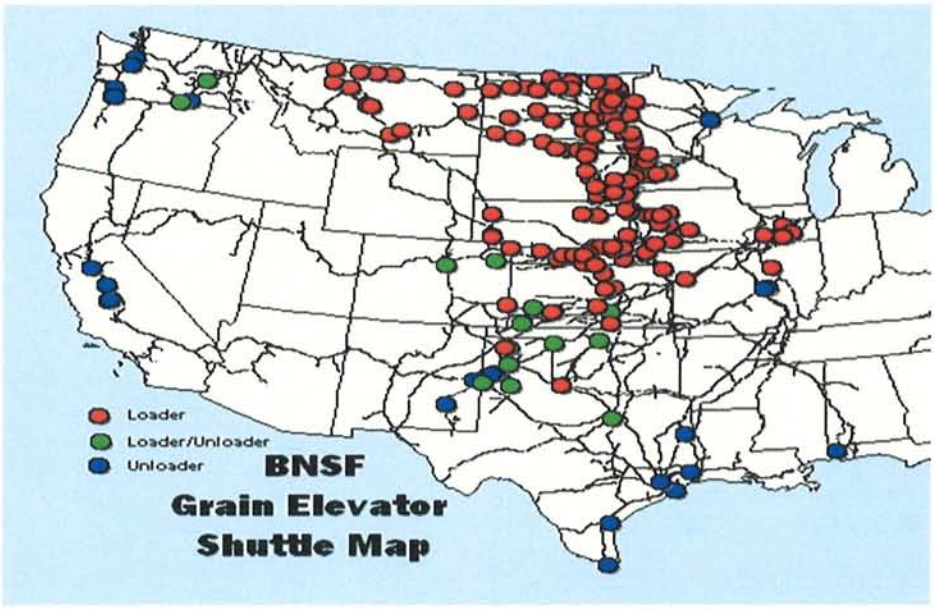


Figure 9

BNSF Shuttle Locations (2009)



The efficiency of shuttle operations has improved over time. The earliest shuttle facilities were built to load 8 cars per hour but more recent facilities can load up to 29 cars per hour. Export elevators have also invested to improve unloading capabilities.

Indeed, investments in export facilities in the Pacific Northwest ("PNW") to accommodate shuttles produced the first Greenfield expansion in the export sector since the early 1980s. Within a couple of years, competing export facilities in the PNW nearly doubled their unloading capacity, providing further benefits for U.S. grain shippers seeking to participate in global grain markets.

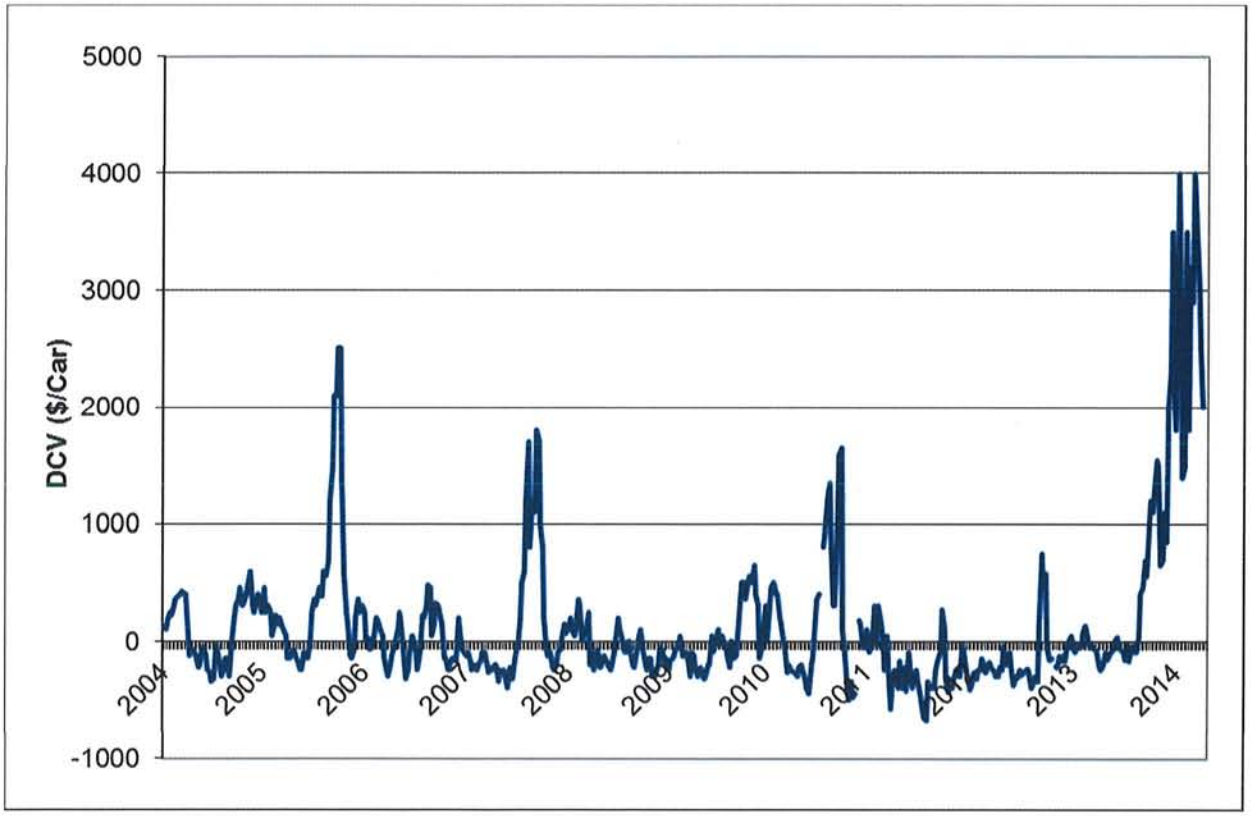
In addition to meeting an eligibility requirement to participate in the shuttle program, a shuttle elevator must obtain a shuttle certificate (sometimes referred to as a shuttle COT) that identifies a future time period for the shuttle movements to occur. BNSF has a weekly auction for the purchase of these shuttle certificates. Most certificates are acquired in this primary auction by large multi-unit companies that have separate business units for trading freight. The remainder involves bids submitted by smaller firms. In the vast majority of cases (>90%), the shuttle certificates are sold at the offer price, i.e., the certificate is acquired without paying a premium over the offering price.

Like the COTs I described previously, the shuttle certificates can be traded and there is a robust secondary market for them. The secondary market for these certificates operates independent of BNSF. BNSF receives only the purchase price in the primary auction and it does not profit from the sale of the certificates on the secondary market. The secondary market is driven in large part by trading companies that have business units for managing rail freight. These trading units buy and sell COTS and shuttle certificates for varying future periods, and similar instruments from other railroads. These are used to satisfy their internal shipping needs and they trade the certificates that they do not need. In addition, cash brokers are major players in the

secondary car market. One well known brokerage firm is Trade West Brokerage Co, located in Hillsborough, Oregon. Through the brokerage firm mechanism, secondary market participants make offers to sell, or to buy, different combinations of rail cars and shuttle trains for different periods forward. Information about the value of these trades is seen as reflecting the 'market' for rail freight for different periods forward.

The secondary market prices for shuttle certificates vary significantly over time, as seen in Figure 10 below.

Figure 10



Source: TradeWest Brokerage Co.

On average, the value of the shuttle certificates on the secondary market is positive (about $54/car over the depicted time period), indicating that there is a slight reward to the original certificate holder. However, there are also many time periods

during which the secondary market value of the certificate is negative. In periods where the value is negative, the original holder of the certificate does not want to move freight and sells the certificate at a discount. The result is that a shipper purchasing the certificate pays the shuttle rail tariff rate but also gets a payment from the original certificate holder. But there are also times when demand for rail shipping increases the value of the certificate over the original price. There have been 4 notable periods of shorter-term spikes: late 2005, late 2007, 2010 (concurrent with Russian grain embargo); and a spike in late 2013 into 2014. During these periods of high demand, the original holder of the certificate is able to sell the certificate for a premium.

It is important to recognize that from the shipper's perspective, the total cost of transportation, which includes BNSF's tariff rate plus the additional costs paid by the shipper on the secondary market for the certificate, will have increased during these periods of high demand for cars. But the higher transportation costs for the shipper during these periods of high demand due to the purchase of rail cars on the secondary market is not a function of the rates charged by the railroad and not a source of income to the railroad.

The secondary market for COTs and shuttle certificates performs the important function of smoothing out grain shipments and efficiently allocating transportation based on supply and demand. When demand for grain declines, the secondary market, which will offer a discount to purchasers of a COT or shuttle certificate, has the effect of reducing the effective transportation costs thereby inducing shipments that would not otherwise occur. Conversely, when grain demand increases, the higher cost of transportation under the COT or shuttle certificate tends to reduce shipping volume.

The secondary market therefore effectively regulates the inter-temporal demand for shipments by providing incentives and disincentives for moving grain during off-peak and peak demand periods respectively. This is an important function for allocating shipments across seasons. In this way, BNSF's introduction of COTs and the shuttle train program has made the transportation of grain far more efficient and responsive to market forces.

BNSF's Capacity Investments in the Grain Network

Over the past several years, BNSF has consistently made extensive capital expenditures in its rail infrastructure. I understand that from 2004 to 2013, BNSF's annual capital investments ranged between $2.6 billion and $3.8 billion per year. BNSF's capital budget for 2014 is $5 billion. Substantial investments have been made specifically in rail cars for BNSF's shuttle service. According to BNSF's Group Vice President, Agricultural Products, Mr. John Miller, who is submitting a statement in this proceeding, BNSF will have spent $1.17 billion since 1998 on rail cars for its grain shuttle fleet including amounts for equipment in its current capacity expansion plan. BNSF has also provided to the Board information in connection with the recent service problems showing that BNSF is devoting considerable new investment to its northern lines that support grain transportation, including investments in terminal and line-capacity extension projects, new equipment and expansion of its labor force.

Impact of BNSF's Innovations and Investments

The innovations and investments discussed above have had dramatic impacts on the U.S. grain marketing system. BNSF's innovative commercial practices and improved service have given shippers the ability to commit to shipping during specified

forward time periods, thereby expanding their shipping options. BNSF's innovations have also given shippers the ability to lock in elements of shipping costs with some assuredness, allowing market participants to manage the supply chain more efficiently. Market participants are better able to manage risk that is pervasive in grain markets and to respond far more effectively to changes in demand.

The benefits to grain producers and shippers can be seen by contrasting historical shipping mechanisms to those in place today. In the past, using traditional shipping mechanisms, a grain handler seeking to sell grain for delivery say 6 months forward would be exposed to immense risks. Specifically, the handler would be at risk of rail tariff increases, particularly due to increases in fuel cost, and the handler also would have uncertainty as to the timing of receiving rail cars. As noted previously, historically cars were allocated on a first-come-first-served basis and guaranteed windows or car placement did not exist. The risks facing grain traders under such a marketing system resulted in a market with trades having relatively short (nearly spot) lead times. Not only did grain producers and shippers lose the opportunity to take advantage of future changes in demand, but railroads also would have very little knowledge of future demands for shipping, making it difficult to create service plans that would efficiently allocate capacity.

Trading and shipping in the current marketing system are much different. Now, shippers make sales for multiple and distant deferred shipping periods, and information about the future shipping periods chosen by shippers is conveyed to railroads which helps them better plan their operations. In addition, mechanisms exist to at least partly reduce risks of changes in shipping costs. And if circumstances change, shippers have

the ability to trade their obligations, which mitigates their risks of taking forward positions. Grain producers and shippers therefore have vastly expanded marketing options. For railroads, uncertainty as to future demand is reduced and the forward shipping arrangements purchased by shippers with incentives for efficient loading/unloading allows for better utilization of equipment and increased efficiency.

The use of shuttles improves car equipment utilization and thereby lowers costs. BNSF's shuttles are substantially more efficient than non-shuttles. With these efficiency improvements, costs have gone down and the reduced costs have been passed through to grain shippers in the form of lower rates.

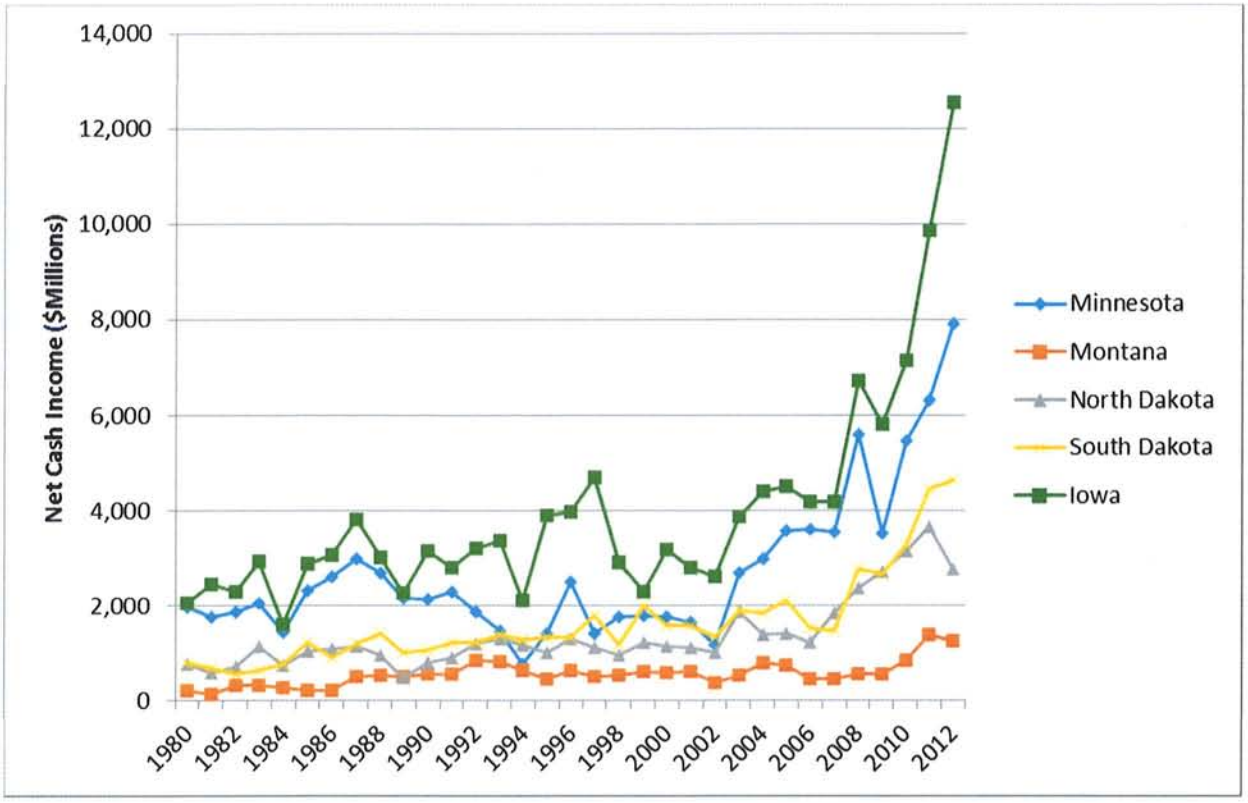
Increasing Profitability of All Grain Market Segments

The profitability of the agricultural sector of the U.S. economy has improved substantially over the past decade, with particularly dramatic improvements over the past few years. Macro-agricultural factors are responsible for much of the improvement in profits. Demand growth worldwide is exceeding growth in grain production, even with increased use of fertilizers, advances in genetic modification technology and other technological changes. However, the ability to take advantage of this growing worldwide demand is highly dependent on the efficiency of the grain marketing supply chain and in particular on the ability of U.S. railroads to get grain to export markets efficiently. In the United States, grain is generally produced in areas that are far from export facilities, thus putting a premium on the efficiency of the transportation network.

BNSF's innovations and investment in rail infrastructure have contributed to the profitability of the agricultural sector of the U.S. economy, as seen in several different

measures. Set out below is a chart showing the increases in net cash income from grain production for five states served by BNSF.

Figure 11

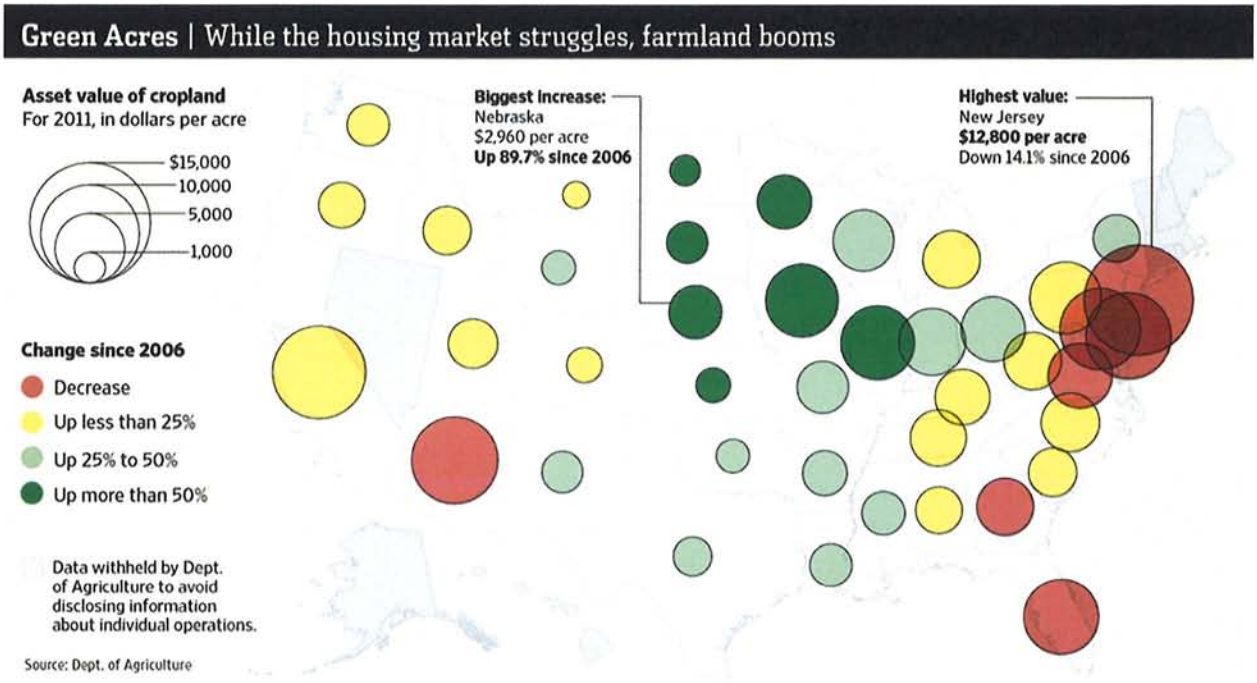


Source: USDA, Economic Research Service, Farm Income and Wealth Statistics Data (2014).

The chart shows a relatively flat trend in grain receipts until about 2000, when receipts began to improve. The largest improvements have occurred since 2007.

Another measure of the profitability of the agricultural sector is land values. As grain receipts improve, the value of farmland has increased. As shown in the chart below that was prepared by the USDA, much of the Midwest saw an increase in farmland value exceeding 50% from 2006 to 2010.

Figure 12



From 1997 to 2010, average growth rates in agricultural land values were 6.5% per year for the entire United States, 6.8% per year for North Dakota and 7.9% per year for Illinois.[14] Between 2009-2012, land values increased in North Dakota by 100%; and in Minnesota by 81%.[15] A study done by the North Dakota State University Extension farm management specialists found that land values in North Dakota appreciated 15% per

[14] I developed these data for presentation at the 2013 Northwest Farm Managers annual meeting in Fargo, February 6, 2013.

[15] North Dakota Chapter of Am. Soc. of Farm Mgrs and Rural Appraisers, *2012 Land Value Survey as of 12/31/2012* (2013), http://farmprogress.com/mdfm/Faress1/author/198/2012/6/dk0204Ta.pdf.

year for the past 11 years and land values for crop land increased in North Dakota by 42% between 2012 and 2013, although declining somewhat between 2013 and 2014.[16]

Grain handling returns have also improved. Evidence of the margins earned at country elevators is difficult to find in the public record. My personal experience and communications with grain handlers and producers indicate that gross margins in country handling were traditionally in the area of 10-12c/b (cents-per-bushel) and have increased to about 25c/b, 30c/b and 35c/b respectively for corn, soybean and wheat in North Dakota. Gross margins in export handling have increased similarly. Traditionally, gross margins have been around 3c/b, but they are now more typically in the 10-20c/b range. In some recent periods, gross margins for PNW soybeans have been as high as 100c/b.[17]

Foreign Market Contrasts

The current strength of the U.S. grain marketing supply chain can also be seen by contrasting the efficiency and profitability of the U.S. grain marketing supply chain with that of the main competitors of the United States in global grain markets. A large portion of the destination price of grain in global markets involves logistics costs, which include the cost to bring grain to export facilities. Moreover, the capacity and efficiency of the grain supply chain are critical in being able to take advantage of export market opportunities. In large part due to the improved efficiency of rail transportation and the

[16] News Release, NDSU Extension Service, North Dakota State University, N.D. Land Values Cool (Apr. 15, 2014), http://www.ag.ndsu.edu/news/newsreleases/2014/april-14-2014/n-d-land-values-cool.

[17] Wilson, W. and Dahl, B. (2010). "Grain pricing and transportation: Dynamics and changes in markets (Agribusiness and Applied Economics Report 674). Fargo: North Dakota State University, Fargo, Department of Agribusiness and Applied Economics.

growing integration of rail transportation and other elements of the supply chain, the United States has been able to compete effectively in global markets.

Brazil is a major competitor of the United States in markets for soybeans and corn. Brazil faces serious logistical challenges. There is a severe lack of investment in the Brazilian supply chain. Unlike the United States, where investment is provided largely by private firms, Brazil depends on investment by the government, and the Brazilian government has been slow to recognize the need for massive infrastructure investments. Brazil also lacks effective coordination among the participants in the supply chain. In the recent 2013/14 marketing season, Brazil had a large soybean crop but had major problems moving the product to export markets, with long lines of trucks waiting to load ships, high demurrage costs and ultimately reduced prices for the soybeans.

The contrast between the high costs of the logistics system in Brazil and the efficient, low-cost supply chain in the United States is stark, as described in the following excerpt from a publication of O'Neil Commodity Consulting:

> [A] Brazilian farmer in Mato Grosso had to pay an average of $100.41 per metric ton to ship his soybeans and corn to export markets. Another Brazilian farmer in neighboring Groias state paid $54.03 per metric ton to ship soybeans to the nearest port. By contrast, over the same time frame, it cost U.S. Midwestern farmers only $16.57-$18.88 per metric ton to ship to New Orleans by barge and $45.35 per metric ton to ship from Iowa to the PNW. This is a substantial advantage for U.S. farmers. Whereas Brazilian soybean producers primarily move soybeans by truck, U.S. shippers enjoy the advantage of shipping in barge movements of 55,000 bushel (1,496 metric tons) and rail shuttle trains of 100-110 cars of 100 metric tons each or 10,000-11,000 metric tons per train.[18]

[18] O'Neil Commodity Consulting, *Transportation and the Farmer's Bottom Line* 4 (June 2010).

Canada is a major competitor of the United States in global wheat markets. Canada has also experienced serious logistical problems, largely as a result of the heavy-handed regulatory system that has discouraged innovation and investment in the supply chain and interfered with market signals that are important to the efficient allocation of capacity. For political reasons that are beyond the scope of my testimony, Canada has consistently applied special regulations to rail transportation of grain for export, including revenue caps and mandated car allocation schemes. Revenue caps discouraged investment in grain-related assets. As in Brazil, there is a serious lack of investment in the grain marketing system, particularly rail cars and rail infrastructure. In addition, cars have been allocated according to a highly complex set of rules and protocols using first-come-first-served mechanisms and historical averages, with preference given to small shipments (so-called "producer cars"). As a result, Canadian grain transportation is characterized by excessive logistical costs including demurrage and long waiting times for rail service.

The inefficiency and inflexibility of the Canadian logistics system is reflected in the serious problems faced by Canadian grain producers and shippers in the current market. Beginning in the fall of 2013, Canada experienced many of the same problems that have caused service problems in the United States grain transportation markets. However, the highly regulated system in Canada has inhibited a response to the service crisis by the Canadian railroads, in sharp contrast to the response of BNSF to the problems in the United States where BNSF has responded with initiatives to buy rail cars, lease additional locomotives, and add capacity and labor. Indeed, while Canadian regulators continue to cap revenues that can be earned by Canadian railroads on the

transportation of grain at levels below rates charged in the United States, there has been a dramatic increase in grain crossing the border from Canada into the United States for movement over U.S. rail lines, particularly BNSF.

III. Competitive Pressures Impacting Rail Rates For Grain Transportation

In its notice initiating this proceeding, the STB suggested that it was interested in exploring the question of why there have not been rate reasonableness cases involving grain rates for many years. As I have discussed above, the issues in grain markets have traditionally turned around availability of capacity and service levels, not rates. Moreover, as I have explained, the increasing efficiency of the supply chain, largely through innovation by BNSF and other railroads and improved service, have allowed grain producers and shippers to participate in growing export markets, to the benefit of all participants in the grain supply chain. A truly collaborative effort involving railroads and others in the supply chain has increased the profitability of the agricultural sector of the economy across the board.

In addition, there are several important sources of competition that effectively discipline rail pricing. I discuss below the most significant market constraints on rail rates.

Competition from other Transportation Suppliers

Trucks, barges and other railroads provide direct competitive constraints on rail rates. I start with a discussion of the role that trucks play in grain transportation markets, because of their importance in grain transportation. As I noted previously, virtually all transportation of grain begins with a truck that moves the grain to the point of first sale, either a rail-served elevator, a barge elevator, an end-user, or the ultimate

destination. Farmers increasingly own or have access to semi-trailer trucks and the range of their truck shipments can be up to 250 miles. This use of trucks for the "first mile" of transportation gives most farmers in the United States competitive alternatives that constrain rates that can be charged by transportation providers.

First, many farmers have the option of moving grain directly by truck, bypassing rail or barge transportation altogether, to grain processors that are located within the effective range of the trucks. Flour mills are located in regions where wheat is grown. Ethanol plants are located in corn-producing regions. Soybean crushers are often located near soybean production areas. The option of selling grain to local processors and trucking the grain from the farm directly to the ultimate destination, instead of selling into more distant destination markets that are served only by rail or barge, gives farmers an alternative to rail transportation if rail rates increase to unacceptable levels.

Second, a large amount of grain is grown in the United States within a relatively short distance of the Mississippi River or a navigable tributary of the Mississippi. For movements of grain to export terminals located on the U.S. Gulf Coast, barge transportation is a particularly strong competitor to railroads.

Third, most rail-served elevators are served by a single railroad. However, in many grain growing regions of the United States, the lines of competing railroads come within relatively short distances of one another and rail-served elevators located on competing rail lines are within an easy truck distance of the farm. Since the farmer uses trucks to move grain from the farm, it is possible for grain producers in these areas to choose between elevators located on competing railroads. The ability to choose among

elevators on competing railroads is an obvious and highly effective constraint on the rates that can be charged for rail transportation.

Geographic or Intermarket Competition

I understand that the STB has specific rules limiting the types of competitive forces that it will consider in determining qualitative market dominance in rate reasonableness cases. For example, the Board has determined that it will consider only intramodal and intermodal competition to determine market dominance, which it defines as modal competition for transportation between specific origins and destinations. While the STB does not consider other forms of competition in determining market dominance, those other forms of competition are very important factors in grain transportation markets and they cannot be ignored in evaluating the constraints on rail rates for transportation of grain.

Take for example a grain shipper seeking to move grain to an export market from Lincoln, NB. The shipper has the option of shipping the grain on UP to the Gulf Coast or on BNSF to the PNW. Export facilities in the Gulf and the PNW know that these competitive choices exist and they compete vigorously for the business. The railroads also know that grain shippers have such a choice and they price their service to meet competition. While UP's rates in the above example are for service to a different destination than the PNW, those rates clearly constrain the rates that BNSF can charge for its competing PNW service.

The example described above relates to inter-port competition. A similar form of competition is inter-regional competition, or competition involving sales and shipments from different growing regions to the same destination or port. For example, BNSF has

to compete for the transportation of soybeans grown in North Dakota going to export markets in the PNW with soybeans grown in Nebraska that move to the PNW on UP. As another example, take corn grown in two different regions, one of which is close to the Mississippi River, that moves to the Gulf Coast for export. There are substantial corn exports from the Gulf Coast, and Gulf Coast export facilities that are served extensively by barges and railroads. Corn is also processed at numerous processing plants (including ethanol plants) located throughout the corn growing regions. A farmer located near the Mississippi River will be able to sell to elevators served by barge or railroad for movement to the Gulf Coast. The corn grower that is located farther from barge terminals may not realistically be able to sell to barge-served elevators. However, the farmer might have the option of selling to local end-users as well as the option of selling to rail-served elevators. The railroad serving the elevators near the corn producer will be constrained as to the amount it can charge to move grain to the port by the transportation charges that are paid by other shippers that do have barge options. The railroad will need to establish a competitive rate if it wants to handle the traffic.

There is also intense competition from foreign grain producing countries that limits the prices that can be charged for grain in global markets that are becoming increasingly important to U.S. farmers. When China purchases grain, for example, it is able to choose from numerous supplies, including grain available at U.S. Gulf ports, grain available at PNW ports, and grain available from several different foreign suppliers. Ocean freight to China will of course differ based on the location of the export port facilities, but the Chinese purchaser is able to assess the various sources

based on the delivered cost. In pricing rail rates for grain movements to a particular port facility, a railroad must consider the competing alternatives and price the transportation so that the grain moving to the port can compete in the foreign market. Excessive rail rates could price U.S. grain supplies out of the market, a result that no participant in the grain supply chain desires. The strong international competition for grain imposes effective constraints on rail rates.

Inter-Temporal Factors

Inter-temporal competition is not often considered as a discipline on modal pricing. However, in the case of grains, it has an important impact. Specifically, the shipment of grain has to compete with the storage of grain. If at any time shipping rates are perceived as too high, growers or shippers can store the grain. This is particularly important in allocating inter-seasonal shipments.

Grain growers and shippers are increasingly able to choose *when* they will sell, as well as *where* the grain will move, and forward sales are increasingly being used. The extensive growth in storage facilities in the recent past has facilitated the development of these forward shipping options. At any point in time, storage is an alternative to shipping. To determine when to sell, growers and elevators look carefully at all of the elements that will determine net prices, including expected future changes in demand, fuel costs, car costs, and rail tariffs, among the numerous other factors determining the net price a grower or elevator will receive. Increases in the net price the grower or elevator can expect in a future time period will encourage storage, while declining net prices will encourage shipping in the near term. Railroad pricing must

account for the impact that transportation prices will have on the grower's or elevator's decision to store or ship grain.

Constraints Imposed By Large, Vertically Integrated Purchasers

Finally, an important limiting factor over any potential exercise of market power by railroads is the countervailing power of grain shippers that has resulted from the increasing concentration and vertical integration among grain handlers. As grain handling firms and grain traders grow larger and diversify into more areas of the grain supply chain, they are able to bring their considerable market power to constrain the rates that railroads charge for transportation from a particular origin or region. A grain handler that is able to move grain from different regions served by different railroads or by other transportation modes can leverage the availability of competition in areas where numerous options exist to obtain competitive rates in other areas where transportation options may be more limited. Indeed, as grain handlers and trading firms expand internationally, they are also able to leverage their ownership or access to foreign grain supplies to influence rail pricing of U.S. grain supplies.

IV. I Am Unaware Of Any Evidence of the Exercise of Rail Market Power in Grain Markets

Given the multitude of diverse sources of competitive constraints on railroads, it is not expected that railroads would be able to exercise market power, and I am not aware of any evidence of such an exercise of market power in grain transportation markets. I recently published a study of grain pricing and transportation costs, which focused on BNSF's rates.[19] One of the findings in that study was that the margins

[19] Wilson, W., and B. Dahl (2011). "Grain Pricing and Transportation: Dynamics and Changes in Markets, Agribusiness, Vol. 27(4), 420-34 (2011).

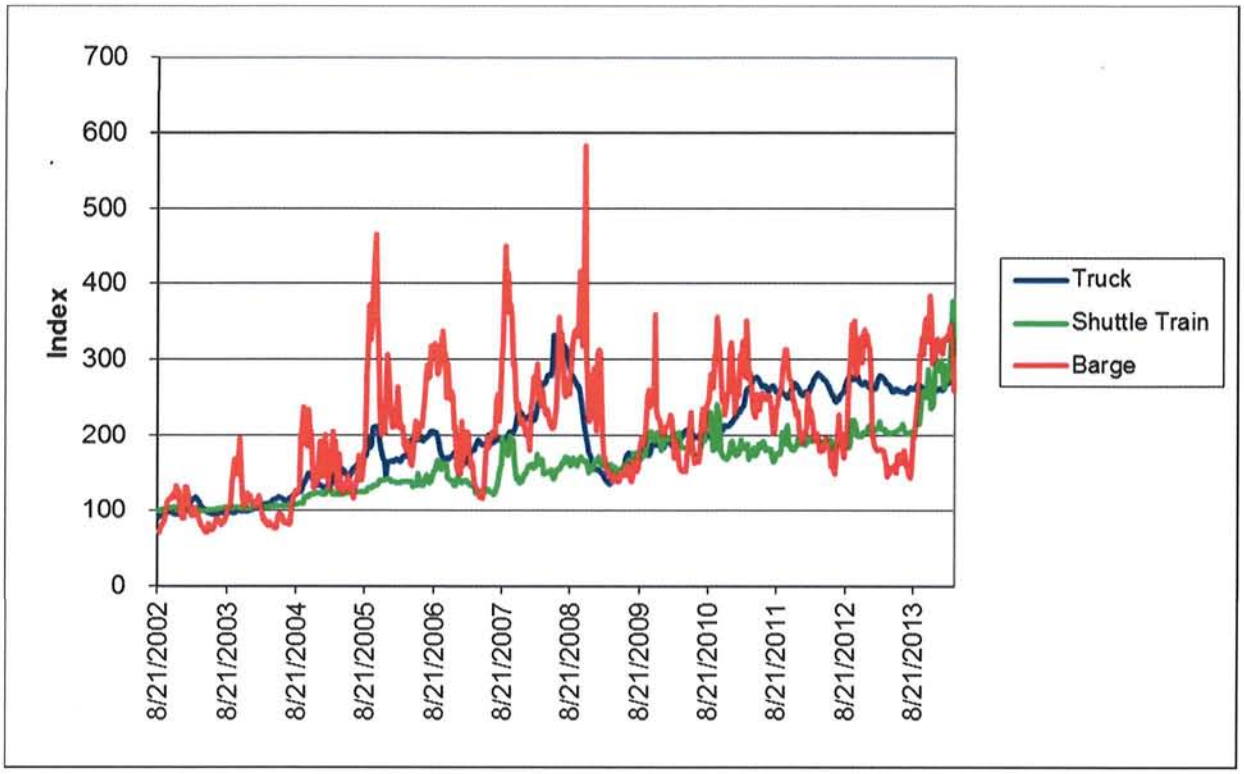
available to grain handlers increased substantially from 2004 to 2010. I previously described the increase in the overall profitability of grain markets in the last several years. As the profitability of grain markets increased over this time period, margins -- calculated as the net amount available at destination markets to producers, handlers and traders after deducting transportation costs -- have gone up substantially. The implied handling margin for soybeans went from $0.18/bushel to $0.26/bushel, an increase of 47%, and the implied margin for corn went from $0.15/bushel to $0.39/bushel, an increase of 164%. The conclusion to be drawn from this evidence is that railroads did not exercise market power to accrue the increasing margins available from grain trading to themselves. The improvements in grain markets have gone to other participants in the grain supply chain.

As further evidence suggesting the lack of any exercise of market power by railroads in grain markets, rail rates have generally tracked increases in the rates of other grain transportation modes. Indeed, setting aside car costs set in secondary markets that do not accrue to railroads, rail rates have actually increased at rates somewhat below the rate increases of trucks and barges.

While comprehensive data on truck and barge rates are not available, some data exist and are compiled by the USDA-AMS, which issues regular reports on modal shipping rates. Figure 13 below compares shipping rates of barges, trucks and shuttle trains from August 2002 through August 2013.

Wilson, W. and Dahl, B. (2010). "Grain pricing and transportation: Dynamics and changes in markets (Agribusiness and Applied Economics Report 674). Fargo: North Dakota State University, Fargo, Department of Agribusiness and Applied Economics.

Figure 13

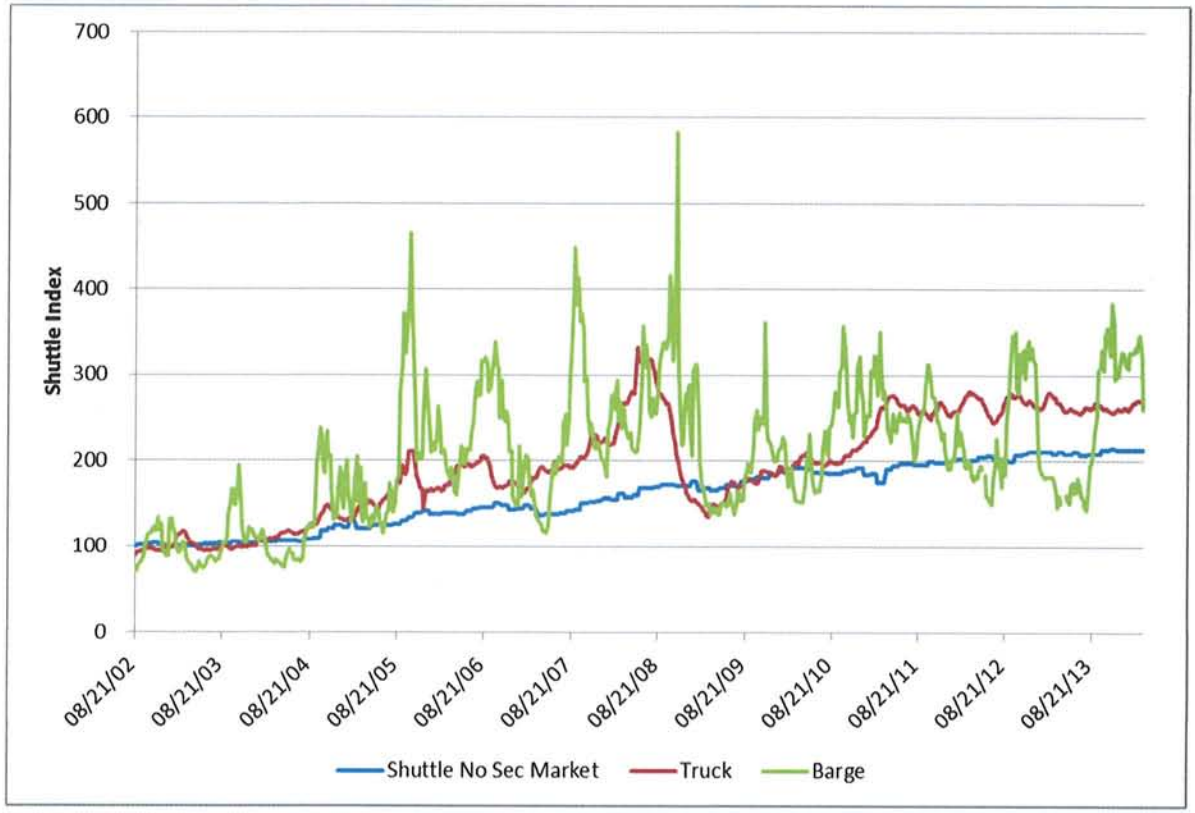


Source: USDA-AMS, Grain Transportation Report Data (2014).

These data reflect the total rail shipping cost including the cost of shuttle certificates purchased on secondary markets. As I explained previously, railroads do not profit from those secondary market costs, so the more appropriate comparison to barge and truck shipping costs is the rail tariff without secondary market car costs. Figure 14 below shows the change in rail rates over time independent of the change in secondary market car costs as compared to barge and truck rates. It is clear that rail rates without secondary market costs have increased at a lower rate than other modal competitors. [20]

[20] To obtain rail rates without secondary market costs, we revised the formula to adjust the shuttle without secondary market values which changed formula from ((Average tariffs with fsc)+Sec Mkt Value)/base year shuttle value to:(Average tariffs with fsc)/base year shuttle value.

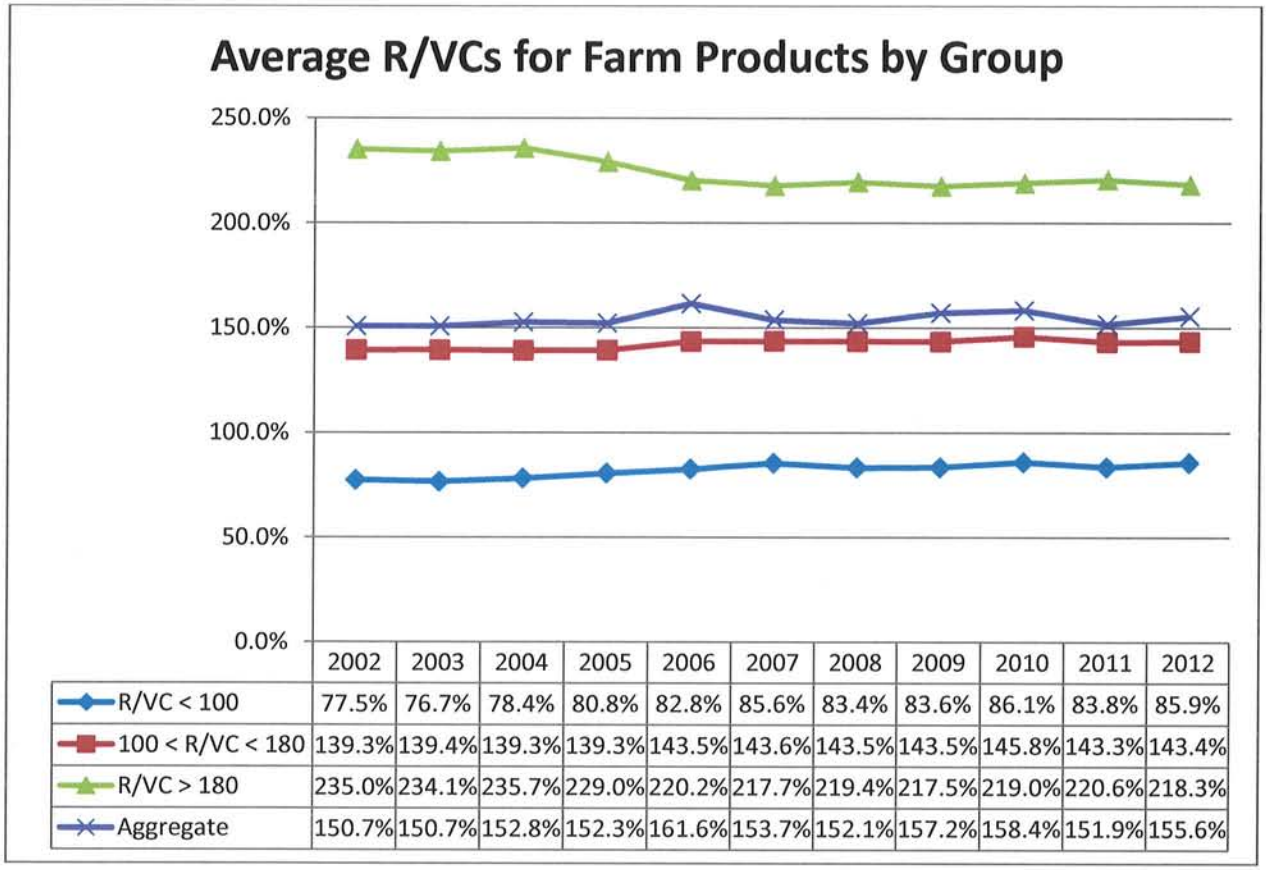
Figure 14



Source: USDA-AMS, Grain Transportation Report Data (2014).

I also looked at data published by the STB on rail rates to see whether there is any reason to believe that railroads have been exercising market power in grain markets. The STB publishes STB Commodity Revenue Stratification Reports. Figure 15 below plots the data for grain from those reports from 2002 through 2012.

Figure 15



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
R/VC < 100	77.5%	76.7%	78.4%	80.8%	82.8%	85.6%	83.4%	83.6%	86.1%	83.8%	85.9%
100 < R/VC < 180	139.3%	139.4%	139.3%	139.3%	143.5%	143.6%	143.5%	143.5%	145.8%	143.3%	143.4%
R/VC > 180	235.0%	234.1%	235.7%	229.0%	220.2%	217.7%	219.4%	217.5%	219.0%	220.6%	218.3%
Aggregate	150.7%	150.7%	152.8%	152.3%	161.6%	153.7%	152.1%	157.2%	158.4%	151.9%	155.6%

Source: STB Commodity Revenue Stratification Reports (2002-2012).

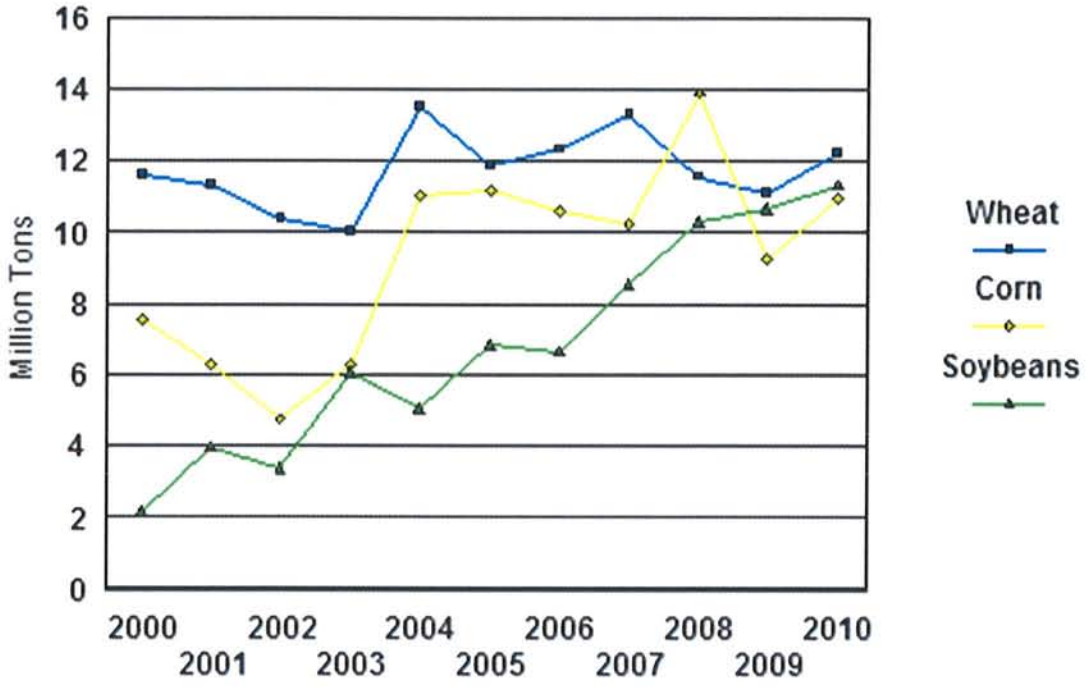
Figure 15 shows that R/VC ratios for grain transportation on average increased very slightly over the 2002-2012 time period. However, the increase was not attributable to any increased rates on traffic above the STB's jurisdictional threshold of 180% R/VC where railroads might have market power. In fact, the average R/VC ratio for the highest rated traffic declined slightly over this time period.

Finally, there are numerous examples in the real world of vigorous competition by railroads to attract grain traffic through attractive transportation rates and improved service. A noteworthy example that illustrates the intensity of intermodal and inter-market competition involves BNSF's expansion of grain traffic to the PNW ports, attracting business away from modal competitors like barges. Ports in the PNW have

traditionally exported about 20 million tons/year of grain. As BNSF's shuttle train operations became more established in the upper Midwest, PNW exports began to increase, reaching about 30 million tons in the 2003/2004 time period and increasing to the 35 million tons/year range by 2008-2010. As shown in Figure 16 below, the increases have occurred primarily in corn, increasing from 6 to 11 million tons and for soybean, increasing from 2 to nearly 12 million tons.

Figure 16

Rail shipments of grains to the PNW ports, 2000 to 2010



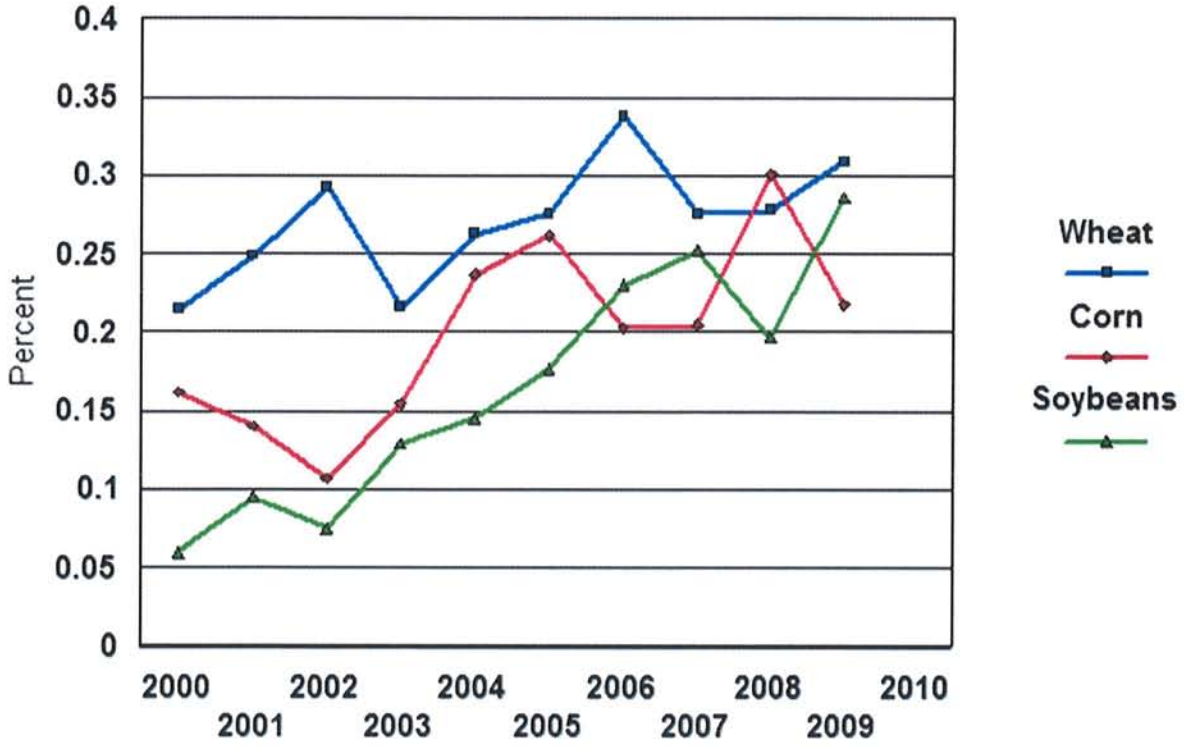
Source: USDA-AMS, Grain Transportation Report Data (2014).

Corn and soybeans have historically been grown in areas close to the Mississippi River and its tributaries, and these products have historically been shipped in large volumes by barge to the Gulf Coast. However, much of the increase in BNSF's shipments of these products to the PNW has come at the expense of barge shipments of these products to the Gulf Coast. I derived rail market shares for rail shipments of

corn, soybeans and wheat to the PNW as a percent of total US Gulf (LA Gulf and Texas Gulf) and PNW exports. The results, set out in Figure 17 below, show that the PNW rail market share has increased for all three grains. The corn rail market share increased from about 15% of total exports to 25-30% of exports; soybeans increased from about 5% of exports to nearly 30% of exports; and wheat increased from about 22% to 30% of exports.

Figure 17

PNW share of total rail exports

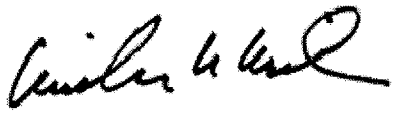


Source: USDA-AMS, Grain Transportation Report Data (2014).

In short, the PNW rail market share of all three products as a percentage of total exports increased since 2000, with the largest increases in corn and soybeans which are thought to be naturally tributary to the river system for shipment by barge. Instead, the railroads, primarily BNSF, through aggressive pricing, improvements in service and

expansion of efficient shuttle operations, have been able to increase rail shipments. This is not evidence of a railroad exercising market power but rather evidence of a highly competitive market. BNSF's rates for shuttle movements, which are significantly lower than non-shuttle rates on a per car basis, have allowed shippers to capture new export markets in the PNW, notwithstanding low barge rates for transportation to the Gulf Coast. Moreover, BNSF's expansion of traffic to the PNW shows that there is no evidence of the restriction of output which is associated with the exercise of market power.

I declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this Verified Statement.



June 26, 2014

William W. Wilson
Professor of Agribusiness and Applied Economics
North Dakota State University

Exhibit 1 to Verified Statement of William W. Wilson

Dr. William W. Wilson received his PhD in Agricultural Economics from the University of Manitoba in 1980. Since then he has been a Professor at North Dakota State University in Agribusiness and Applied Economics with periodic sabbaticals at Stanford University. Recently, he was named as a *University Distinguished Professor* at NDSU which is an honorary position, and a great achievement.

His focus is risk and strategy as applied to agriculture and agribusiness with a particular focus on procurement, transportation and logistics, international marketing and competition. He teaches classes in Commodity Trading, Risk and AgriBusiness Strategy and has taught his Risk Class at Purdue University; and is a visiting scholar at Melbourne University where he visits 2 times/year and advises PhD students in risk and agbiotechnology.

He routinely has projects and/or overseas clients and travels internationally 1 week per month. He led a project for the United States on privatization of the grain marketing system in Russia in the early 1990's. He currently has projects and/or clients in US, Canada, Mexico, Venezuela, China, Australia, and France. He regularly advises a number of large Agribusiness firms, several major railroads, and several major food and beverage companies and/or governments in other countries. He served as a Board member of the Minneapolis Grain Exchange for 12 years, on the FGIS Advisory Board, and currently serves as a Board member of several regional firms.

He regularly consults with major agribusiness firms on topics related to above and has worked extensively in the following industries: procurement strategy, railroads, barges, ocean shipping, elevators (shuttle development), and processed products (malting and beer, durum and pasta, wheat and bread), and agbiotechnology.

He was recognized as one of the top 10 Agricultural Economists in 1995 and more recently as *one of the top 1% of agricultural economists by RePEc (Research Papers in Economics).* Finally, he has students who are in senior positions in a number of the large agribusinesses including commodity companies, railroads and food and beverage companies.

Consulting/Vitae:

Recent: Burlington Northern Railroad, 1988-91, 1999-2000, 2005-2007,2010-current; AgroTerra (FSU Farm corp), 2009-current; Army Corps of Engineers/IWR, 2005-2007, 2009-2011; Busch Agricultural Resources (Anheuser-Busch), 1994/95, 2000-2008; Miller Milling Company, 1989-current; Tablex Mexico, 1996-current; Monsanto, 2001-2004, 2007; Panama Canal Authority, 2003, current; Polar CV (Venezuela), 1982-2002, 2007-current; North Dakota Mill and Elevator, 2009-current.

Past: Michael Foods, 2006; General Mills, 2005-2006; Molsa (El Salvador), 2005; Rich Products Company, August-December 2000; Canadian Pacific Railway, 1998; James Richardson International (Canada) 1996; Industry Canada, 1996; Canada Malting International, 1995/96; Farmland Industries, 1995; Alberta Wheat Pool, 1995; Canadian National Railway, 1993, 1994, 1996, 1998, 2000; International Multifoods, 1991; Agribusiness Associates, Inc., 1988; Central Bank for Cooperatives, 1986; Genesee Brewing Co., 1985; U.S. Wheat Associates, 1985.

Vitae Summary: Dr. William W. Wilson

Item	Number	
Grants (to 2009)	77	$11.2 million
Journal Articles (refereed)	112	5 under review
Books	1	
Book Chapters –not updated	17	
Miscellaneous Publications–not updated	223	
Presentations: –not updated		
International Professional Associations	118	
National Professional Associations	92	
Regional Professional Associations	35	
Industry and Commodity Firms	178	
Outreach/Service	37	
Northern Crops Institute Training Programs	111	
Other Presentations	18	

Selected Publications/papers related to transportation:

Wilson, W. and B. Dahl, 2011a. *Grain Pricing and Transportation: Dynamics and Changes in Markets* Agribusiness and Applied Economics Report No. 674 December 2010 and 2011, *Agribusiness*, Vol. 27(4): 420-434.

Wilson, W. and B. Dahl. 2011b. Grain Exports, Inter-port and Intermodal Competition: 2000-2010 Special report.

Wilson and Dahl, Grain Pricing and Transportation: Dynamics and Changes in Markets, Agribusiness and Applied Economics Report No. 674, and S-674, December 2010. Available at http://purl.umn.edu/98202 and http://purl.umn.edu/98204

Lei Fan, William W Wilson and Bruce, Dahl. "Impacts of Congestion and Port Expansion and on Spatial Competition for Container Imports into the United States" to the *Transportation and Research Part E: Logistics and Transportation Review.*

Lei Fan, William W Wilson, Bruce Dahl, "Impacts of new routes and ports on spatial competition for container imports into the United States." *Maritime Policy & Management.* June 9, 2010.

Camilo Sarmiento and William Wilson. "Spatial Competition on Ethanol Plant Location Decisions" to *Agribusiness: An International Journal.* Accepted Feb 1, 2012.

Wilson, W. and Lei Fan, 2012. Impacts of Congestion and Stochastic Variables on the Network for U.S. Container Imports, *Journal of Transport Economics and Policy*, Vol. 46(3): 381-398.

Wilson and Dahl, "Grain Pricing and Transportation: Dynamics and Changes in Markets" Agribusiness Journal, Vol. 27(4): 420-434 (2011).

W. Wilson, B. Dahl, S. Taylor. "Impacts of Lock Capacity Expansion on Delay Costs For Grain Shipped on the Mississippi River." *Journal of transport economics and policy*, JTEP 2229 45(1): Jan 2011. Accepted Feb 22, 2010.

Lei Fan, William W. Wilson, and Denver Tolliver, 2009. "Optimization Model for Global Container Supply Chain: Imports to United States." *Transportation Research Forum.*

Lei Fan, William W. Wilson, and Denver Tolliver, (2009) "Logistical Rivalries and Port Competition for Container Flows to U.S. Markets: Impacts of Changes in Canada's Logistics System and Expansion of the Panama Canal," *Marine Economics and Logistics. Maritime Economics & Logistics*, Vol. 11(4): 327-357.

Lei Fan, William W. Wilson, and Denver Tolliver, (2009) "Logistical Rivalries and Impacts of Canada's Logistics System on US Container Supply Chain," *Canadian Transport Review.* Pp. 280-294.

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Eric DeVuyst, William W Wilson, and Bruce Dahl. "Grain Shipments on the Mississippi River: Longer-Term Forecasting and Risks." *Logistics and Transportation Review*, Accepted Oct 22, Transportation Research Part E. Reference TRE 446.

Sarmiento, C., and W. Wilson. "Spatial Modeling in Technology Adoption Decisions: The Case of Shuttle Train Elevators" American *Journal of Agricultural Economics* 87(4):1034-1045, November 2005.

Wilson, W., W. Koo, R. Taylor, and B. Dahl. "Long-Term Forecasting of World Grain Trade and U.S. Gulf Exports." *Transportation Research Record: Journal of the Transportation Research Board*, No. 1909 (2005): 22-30.

Wilson, W., and Bruce L. Dahl. "Railcar Auctions for Grain Shipments: A Strategic Analysis." *Journal of Agricultural & Food Industrial Organization* Vol. 3, No. 2 (Article 3):1-27, 2005.

Wilson, William W., and Bruce L. Dahl. "Transparency and Bidding Competition in International Wheat Trade." *Canadian Journal of Agricultural Economics* 52 (2004): 89-105.

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Wilson, W., S. Priewe, and B. Dahl. "Forward Shipping Options for Grain by Rail: A Strategic Risk Analysis" *Journal of Agricultural and Resource Economics*. July 1998, 23: 526-544.

Verified Statement of Benton V. Fisher and Kaustuv Chakrabarti

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