

**Dual Market Considerations:**  
***Rail Rates and Mechanisms in the US and  
Differences to Canada***

To: US of Saskatchewan seminar  
*Operating Successfully in a New Grain Marketing Environment*

Saskatoon  
Dec 12 2011

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# Topics

- Evolution in the US
  - Shuttle system and efficiencies
  - Car markets
  - Fsc
  - Performance
    - Margins
    - Rail car placement
    - Growth in exports
  - Comparison of rates/shipping costs and practices

# Related References:

- Forward Shipping Options for Grain by Rail: A Strategic Risk Analysis *Journal of Agricultural and Resource Economics*. July 1998, 23:526-544.
- Railroad Pricing and Deregulation, *Transportation Research Forum XXVI(1):105-109*, 1985.
- Railcar Auctions for Grain Shipments: A Strategic Analysis. *Journal of Agricultural & Food Industrial Organization* Vol. 3, No. 2 (Article 3):1-27, 2005.
- 
- Deregulation, Rate Incentives, and Efficiency in Railroad Shipping of Agricultural Commodities. *Review of Transportation Economics*, Vol. 6, pp. 1-24, 2001.
- 
- Logistical Strategies and Risks in Canadian Grain Marketing, *Canadian Journal of Agricultural Economics*, 48(2000):141-160, July 2000.
- *Grain Pricing and Transportation: Dynamics and Changes in Markets*, forthcoming (2012) *\_Agribusiness: An International Journal*,

# Major Innovations in U.S. Grain Rail Logistics

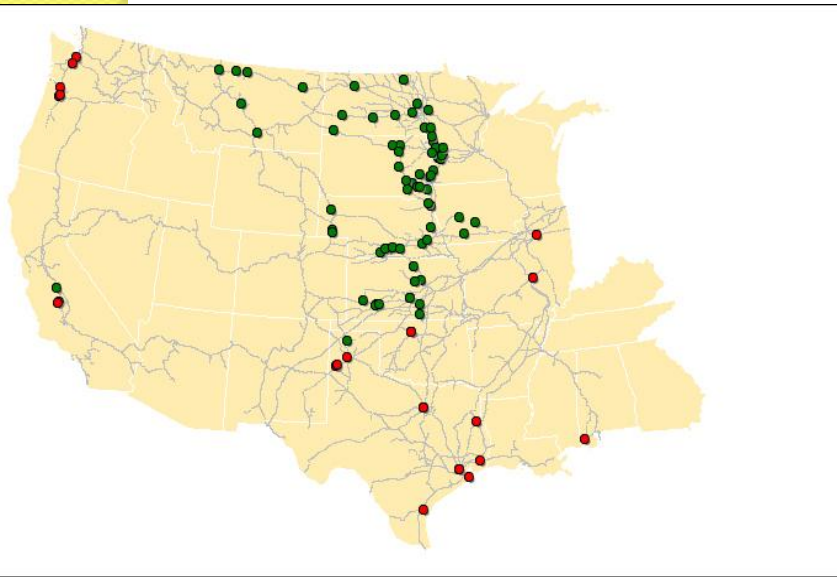
- **Box-car to covered hopper cars (new investment);**
  - to jumbo CH cars
- **Short-line RR's**
- **Rail Deregulations:** Pricing flexibility, innovations
- **Multi-car shipments:** 1, 26, 52, etc
- **Demurrage:** Increase in demurrage charges and scope to encourage better utilization of equipment
- **Forward shipping (guaranteed) instruments**
  - **COTS:** Development of forward guaranteed shipments by rail: tradable, penalties for non-performance, or late; forward, etc.
  - *Shuttle trains:* 110+ cars with incentives
  - *Secondary car markets*
    - Forward, transparent and provide risk mitigation alternative

## Economics and Adoption of Shuttle Trains

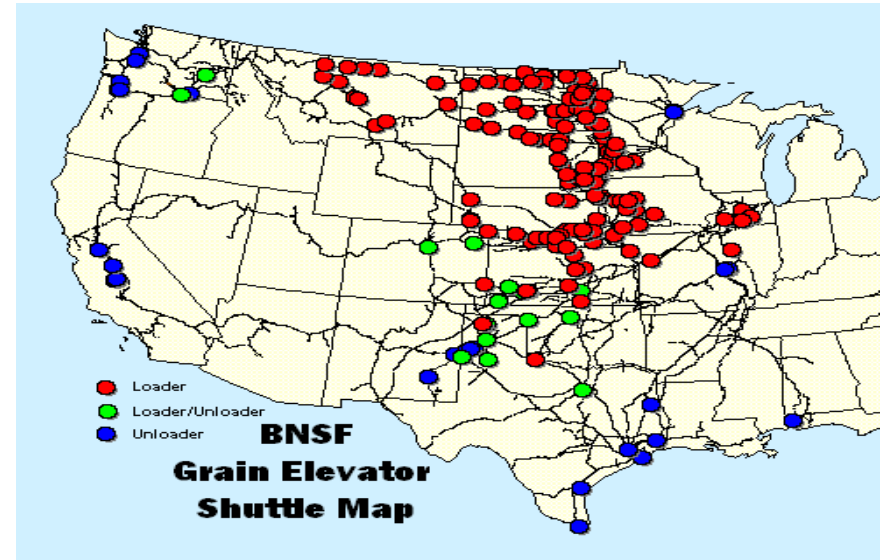
Evolution from Single Car Shipments		
Configuration	Introduced	Volume (mt) per transaction
Single cars	1900s	90
26 cars	Late 1980s	2335
52	Early 1990s	4670
100/110-Shuttles	Mid-1990s early 2000s	9879

# BNSF Shuttle

2000



Current



	<u>2000</u>	<u>2009</u>	<u>Change</u>	
• Origins	77	163	+112%	
• US Destinations	33	71	+115%	
Minnesota Origins	15	25	+ 67%	
Minnesota Destinations	0	1		
Mexican Shuttle Destinations	8	29	+262%	
<b>Total Shuttle Stations</b>	<b>118</b>	<b>263</b>	<b>+123%</b>	

# Shuttle Technology

## Alton ND

BNSF #2448 10/07



## Kalama

BNSF #1492 11/98



# Elements (early) of Shuttle Mechanisms

<i>Shuttle Element</i>	<i>Details</i>	<i>\$/Car Rebate/savings</i>	<i>\$/mt</i>
<b>Shuttle definition</b>	110 car train of dedicated capacity equipment, locomotive and crew; origins and destinations must be approved and conform to engineering requirements;		
<b>Tariff Rate Differential</b>	Selected by route; some only allow shuttles		
<b>Loading Incentive</b>	Load 110 cars in 15 hours; 1 origin elevator	100	\$1.11
<b>Unload Incentive</b>	Unload 110 cars in 15 hours at 1 destination elevator	100	1.11
<b>Reload Incentive</b>	38 hours to unload and reload Shuttle	200	2.22
<b>Total potential incentives</b>		400	\$4.44
<b>Penalties</b>	Subject to schedule of penalties to RR (\$200/c) for underperformance and to shippers if fail to meet terms of shipment		
<b>Pricing</b>	All Shuttles allocated by auction mechanisms; different durations from 6 months to 1 and 2 years		

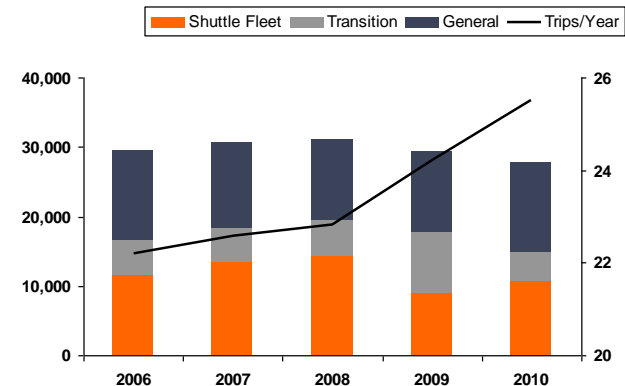
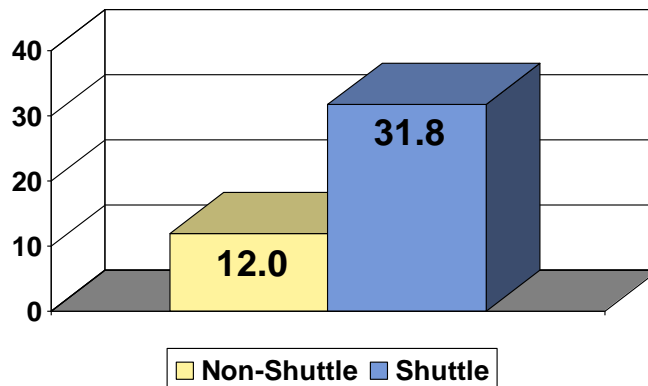
## BNSF Shuttle (current) Program Details

Program	Payment		Unload Requirement	Comment	Source/reference
	\$/car	c/b			
<i>OEP-Origin Efficiency Program</i>					BNSF 4022 13500
	50	1.3	21 hours	Incentives to load faster	
	100	2.6	15 hours		
	150	3.9	10 hours		
DEP—Destination Efficiency Program	100	2.6	15 Hours		BNSF 4022 13501
Reload Incentive	200	5.3	38 hours to unload/reload shuttle		BNSF 4022 13502

# Car Cycles Per year

- Shuttles are nearly 3 times as efficient at non-shuttles
- Shuttle efficiency approaching that of competing rail products (e.g. coal, etc)
- Costs decline ~30%
- Efficiency improves ROI and encourages investment in grain shipping
- Barges and other modes have not achieved comparable efficiency gains
- Velocity Continues To Increase Grain Car Capacity--(18% increase in capacity 2006 to 2010)

Average Car Cycles Per Year



# Most Recent: Gavilon at New Rockford, ND



Harrold Grain, S.D. Building a new elevator that can handle 140-car shuttle train-circle track.



# Shuttle Construction at UFC 2011



# Shuttle Use is Now Dominant

- **For one of major grain hauling railroads**
  - 50-60% of volume is in shuttles (and DET's.)
  - Varies between domestic and export
  - Currently using 95 shuttles (nearly 1 mmt) and expected to increase to 105-108 in future
- **Exports and Shuttles**
  - PNW is nearly exclusively Shuttles
  - Gulf: 85% shuttles (and due in part to parts of Texas not having adequate shuttle infrastructure)
  - Mexico: 95% Shuttles with a few 27 car units

# Rail Pricing Details

- Rail shipping costs are comprised of 3 items
  - Tariff rates
  - Premiums/discounts for Shuttles and Cots
  - Fuel Service Charges

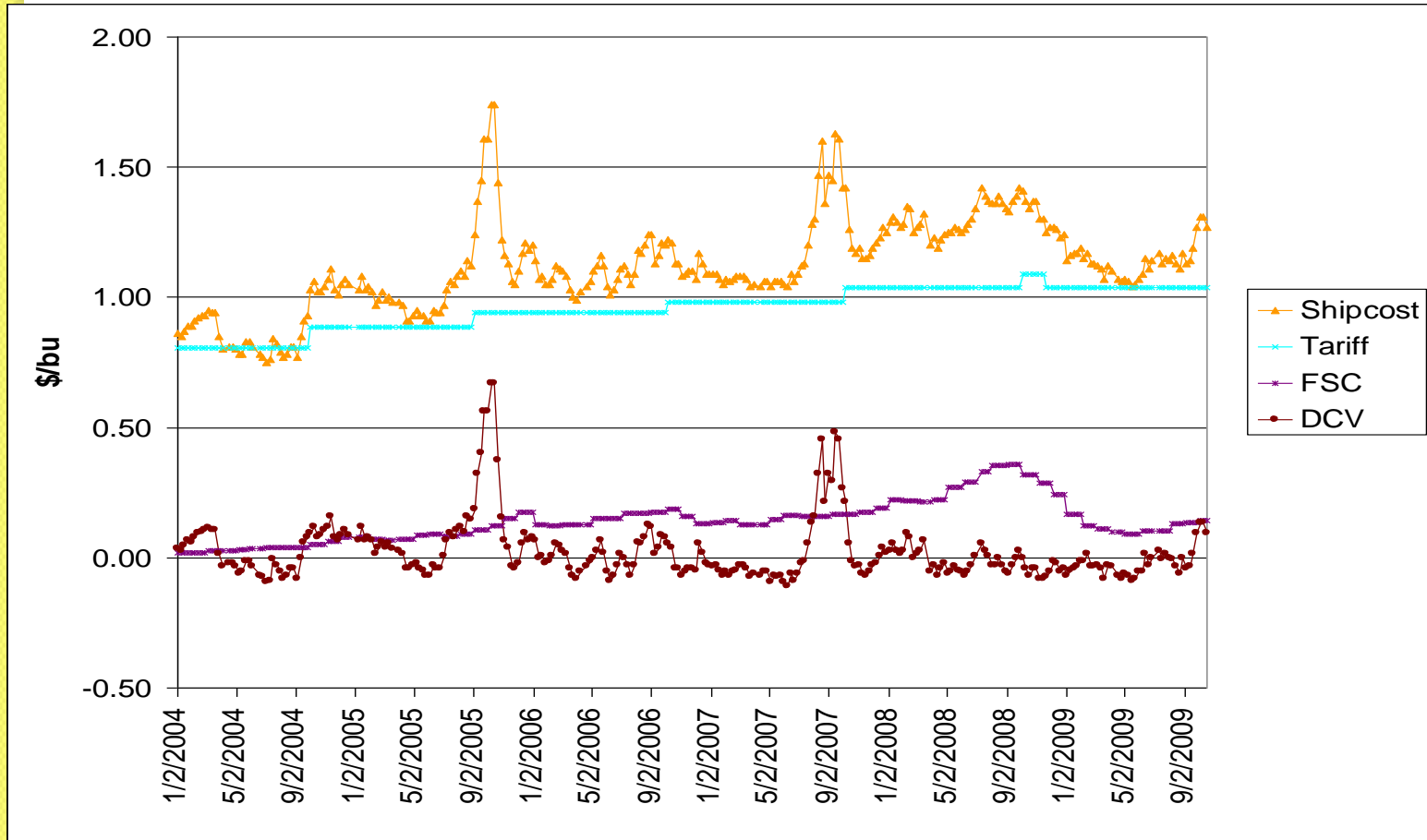
# Rail Rate Differentials

- Recent history
  - 1,3-5, 26, 52, 110
- Refined (BNSF) sample rate in \$/car

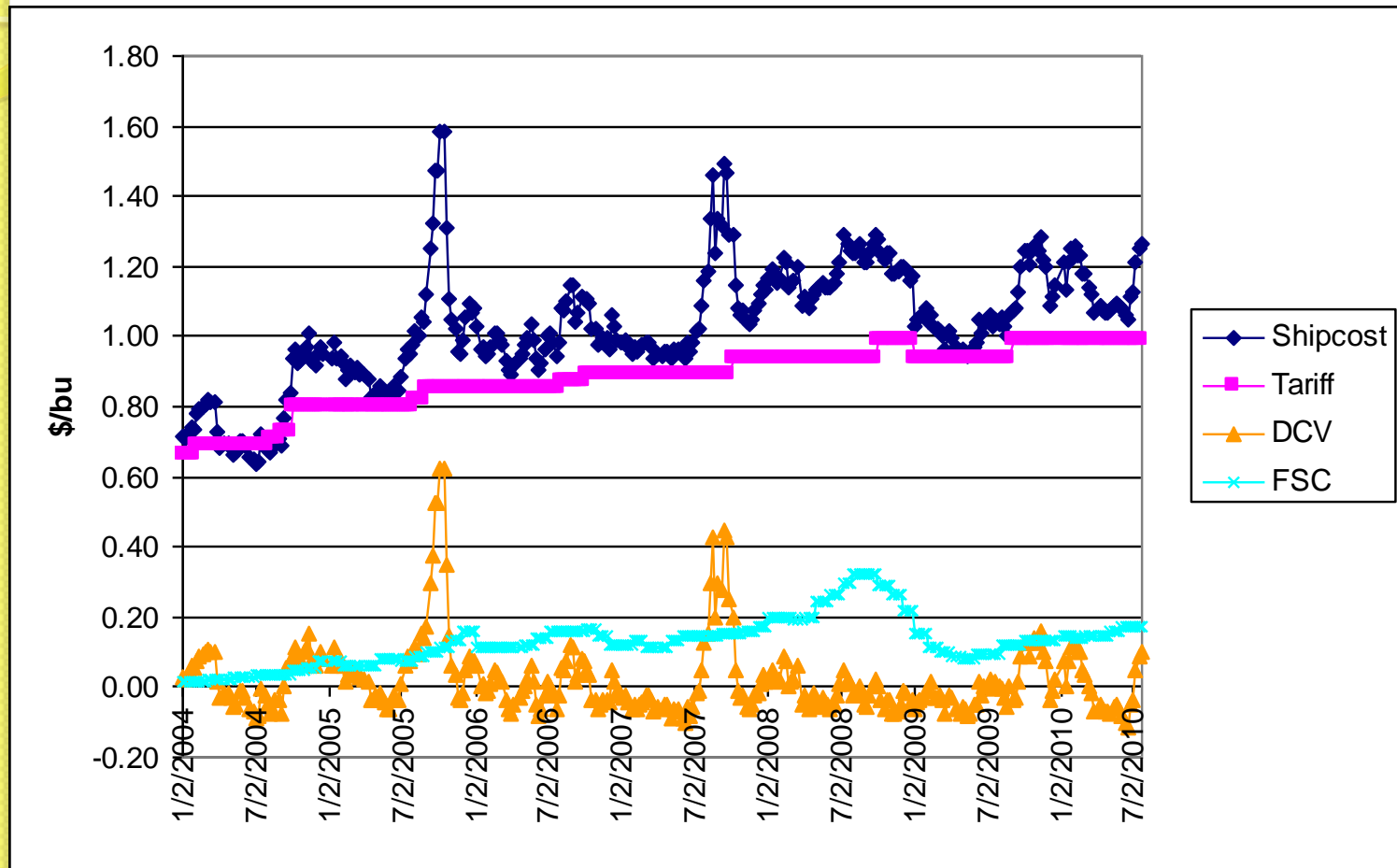
Cars	\$/car Tariff	c/b
1-23	5879	157
24-47	5825	155
DETs	Eastbound: comparable to shuttle	
Shuttles	4801	128
Cars: Hi-cap; low-cap		

- **Evolution:** Likely will be evolving toward Singles (general merchandise), and shuttles

# Soybean: Total Shipping Cost, Rail Tariff, Daily Car Value and Fuel Service Charge



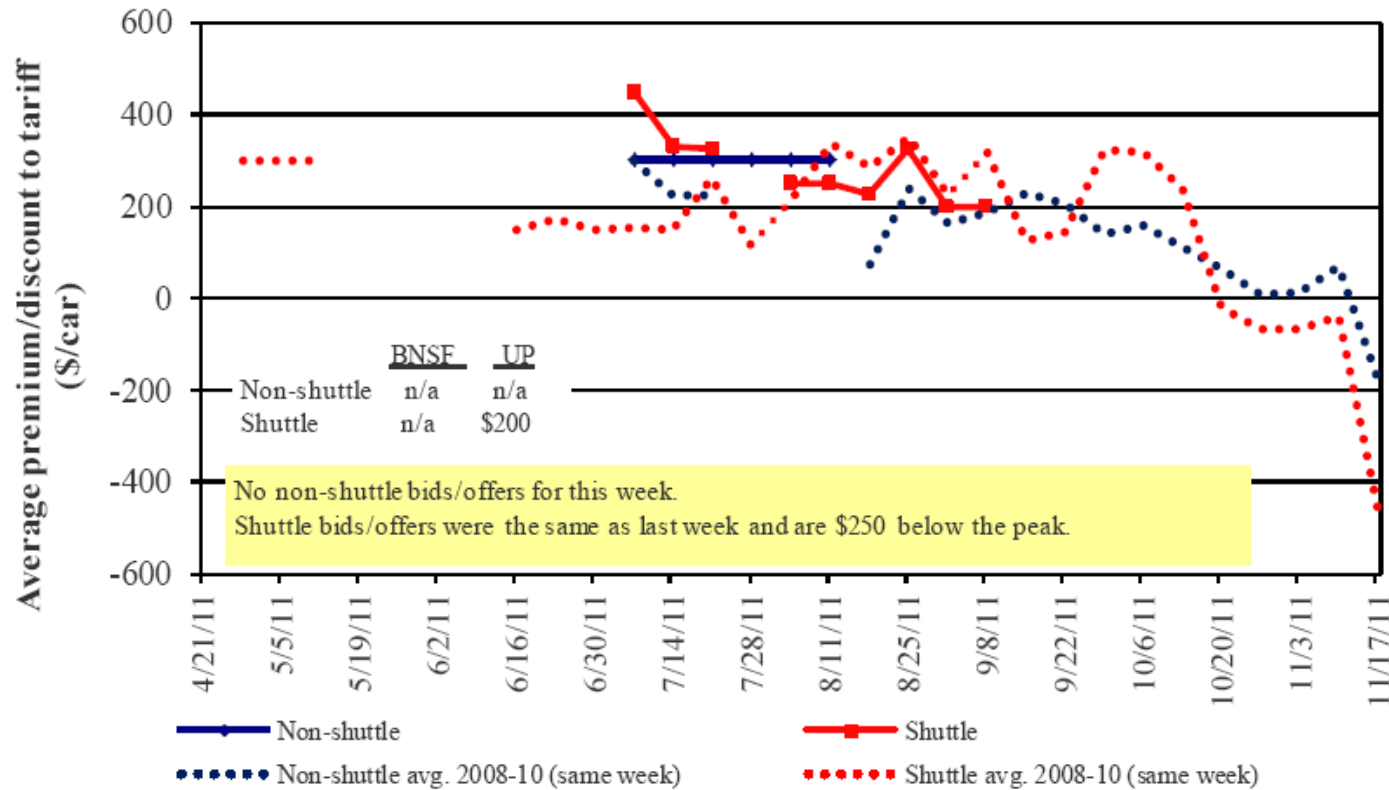
# Corn: *Total shipping cost, Tariff, Daily Car Value and Fuel Service Charge*



# Secondary Market, Nov 2011

Figure 6

Bids/Offers for Railcars to be Delivered in November 2011, Secondary Market



Non-shuttle bids include unit-train and single-car bids. n/a = not available.

Source: Transportation & Marketing Programs/AMS/USDA



GRAIN MARKETING  
COVERED HOPPER EQUIPMENT OFFERS

Date: 07 Nov 2011

**Railcar Placements:**

**BNSF:** Placing cars on time to about on time to 7 days late depending upon location.

**UPRR:** Placing cars on time to about 5 days late depending upon location.

**CPRS:** Placing cars on time to 14 days late depending upon location.

**Fuel Surcharge Rates**

	Sep	Oct	Nov	Dec	Jan-12
Mileage Based	\$0.36	\$0.35	\$0.34	\$0.33	
Mileage Based	\$0.37	\$0.36	\$0.35	\$0.34	
Mileage Based	FH Nov \$0.310	LH Nov \$0.330	FH Dec	LH Dec	FH Jan

**General Comments:**

Quiet to start the week. A number of return trips are for sale at higher than MP offers, but all are trains that will be weekend/next week at earliest. So no one is currently willing to bid for any of them at a value higher than MP since MP is what they will be anyway. It then just becomes the hope that a particular train will be "perfect" for what someone may need for logistics and pay a premium to get that timing. That, so far, isn't happening.

BNSF Offers:	Return Trips**	Nov			Dec			Jan 12			Feb			Mar			Apr			May			Jun			Jul					
		FP	MP	LP	FP	MP	LP	FP	MP	LP	FP	MP	LP	FP	MP	LP	FP	MP	LP	FP	MP	LP	FP	MP	LP	FP	MP	LP			
COT Small Units				(25)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25	25	
Shuttles	Call	(350)	(450)		(300)	(350)	(375)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(300)	(300)	(300)	(400)	(400)	(400)	(400)	(400)	(400)	(400)	(300)	(300)	(300)	(200)	(200)	(200)

UP Offers:	Return Trips**	Nov		Dec		Jan 12		Feb		Mar		Apr		May		Jun		Jul		
		MP	LH	FH	LH	FH	LH	FH	LH	FH	LH	FH	LH	FH	LH	FH	LH	FH	LH	
G'teed Freight			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25
Shuttles	Call	(400)	(500)	(400)	(400)	(200)	(200)	(200)	(200)	(300)	(300)	(400)	(400)	(400)	(400)	(300)	(300)	(200)	(200)	

CPRS Offers:	Dec	Jan 12	Feb	Mar	Apr	May	Jun	Jul	Aug
Eastbound Units	0	0	0	0	0	0	0	25	25
Unrest. Units (non-DP)	Call	Call	Call	Call	Call	Call	Call	Call	Call

\*\*\*\*PLEASE CALL FOR BNSF AND UP SINGLE VALUES AS THESE MAY FLUCTUATE INDEPENDENTLY FROM SMALL UNIT VALUES.

\*\*Timing should be confirmed regarding all Shuttle Return Trips.

Above BNSF and UP shuttle offers are "No Mobile, Clinton or Mexico" as destinations without confirming prior with seller. We will make every reasonable effort to accommodate these destinations. However, please confirm these destinations ahead of time.

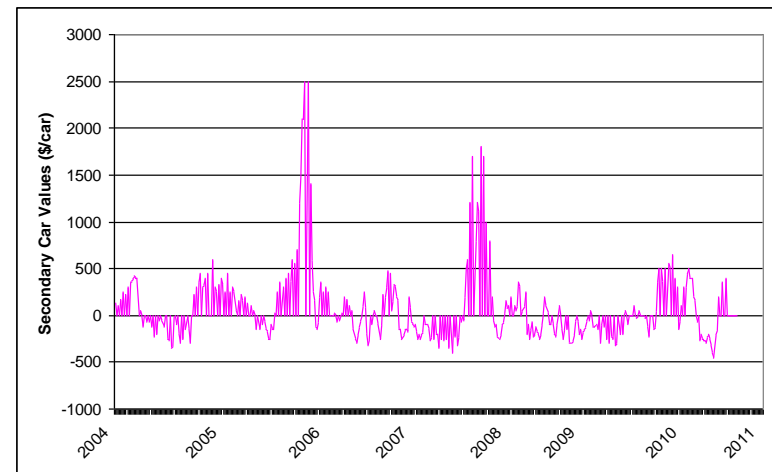
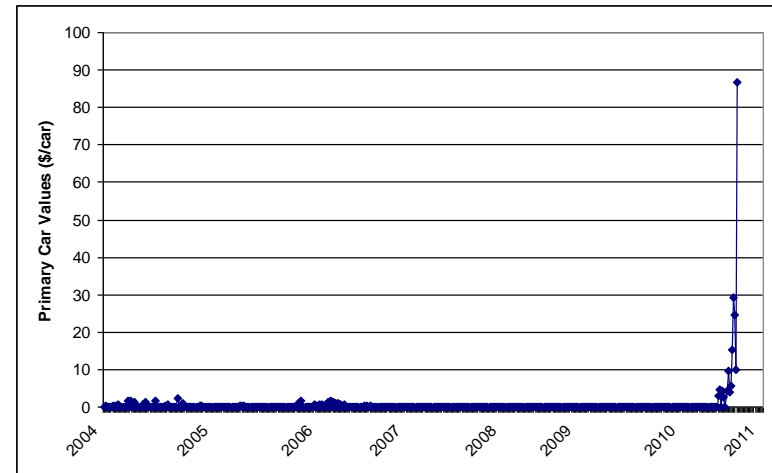
All above offers are for the respective individual time periods. For other terms or packaged shuttle trip offers, please call for current values.

The above information is subject to change at anytime. For updated/current information, please call David Pope or Chris Holz at 800-851-6597.

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# Rail Car Markets

- Panels:
  - Top: Primary auctions
  - Bottom: Secondary car values (DCV)
- Critical:
  - Vast majority (>90%) of primary car auctions are at nil premium
- Secondary market changes are
  - On average=nil
  - More risky
  - Reward original certificate holder for accruing the obligations of the instrument—
- Shippers
  - have ability to take coverage multiple months forward which mitigates risk
  - Without coverage absorb the risk of car value changes; and, seek to pass on all or portion to growers



# Fuel Service Charges

- Concept
  - Change in fuel costs are added to rail shipping (tariff) costs
- Calculation
  - Each RR does calculation slightly different
  - Monthly FSC factor
  - Derive distances
  - Determine FSC for each month and movement
- Comment:
  - FSC type concepts are now being added to many industry impacted by ingredient inflation.
  - Similar to an implicit basis contract
  - Rubber, airlines etc.

# Grain Pricing I:

	Basis derivation	Implications
	Define: B=basis, c=cash, f=futures, T=tariff rail rate;M=margin; d1,d2 are 2 different destinations, FSC is fuel service charge; Car is car premium	
1	$B_o = C_o - F$	Conventional: Basis is constant; highly predictable;
2	$B_o = B_d - M - T - F$	Little more complex
3	$B_o = \text{MAX}[(B_{d1} - T_1), [(B_{d2} - T_2), [(B_{d3} - T_3)]] - M - F$	Multi-markets: makes basis at origin more dependent on basis and shipping costs to multiple markets. More volatility in basis!
4	$B_o = B_d - [R_t - \text{FSC} - \text{Car}] - M - F$	Numerous rail mechanisms makes greater uncertainty in some elements of shipping costs; for those shippers not covered, values have greater volatility (risk)
5	$B_{o,t+n} = B_{d,t+n} - [R_{t+n} - \text{FSC}_{t+n} - \text{Car}_{t+n}]^* - (M + \text{RP}) - F_{t+n}$	Forward transaction results in volatility in basis values resulting from un-covered shippers having to infer expectations of relevant values; including an implicit risk premium in margins

# Grain Pricing (See XLS)

## Concept

- Deduct all relevant costs from terminal market basis, to arrive at local basis (FOB station)
- For each month forward
- Relevant costs are:

- Rail tariff
- FSC—derived as monthly fsc\*distance
- Car premiums
- OEP

- Compare FOB station basis, for sales to each destination market; Choose MAX

## Mechanics—example

- See July and derivation for PNW
- Derivation of freight

- Tariff=3520
- FSC=637
- Rail car premium=-275
- OEP=-100
- Total: 3782/car / 3650 (b/car)
- Total: 1.036\$/b
- PNW basis=+48
- Local basis: +48-103.6=-55.6c/b\

## Interpretation

- Values are FOB (loaded in rail car) at station
- Price to farmer
- Choose destination that MAX  $\pi$
- Deduct origin handling costs or margin (e.g., 25c/b)
- MAX (-55.6, -60.2, -64.6, -162)=-55.6 (PNW)
- Deduct handling margin 25
- Price to grower: -80.6
- Compare across months
  - See Del PNW and compare April to Oct
  - April is best month to sell/deliver and ship

	Drayton, ND									
	surcharge									
	Apr	May	Jun	July	Aug	Sep	Oct	Mileage	0	0.33
Freight rate/car	3520	3520	3520	3520	3520	3520	3670	3670	3670	3670
Surcharge	0.0%	0.0%	0.0%	18.1%	18.1%	18.5%	18.6%	#####	0.0%	13.6%
Surcharge/car	0	0	0	637	637	652	682	#####	0	500
Cost of freight	-175	200	-200	-275	250	250	75	0	0	NB
OEP	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100
	3245	3620	3220	3782	4307	4322	4327	#####	3570	#####
\$/bushel	.889	.992	.882	1.036	1.180	1.184	1.186	#####	.978	#####
<b>Del PNW Prem</b>	.60	.50	.52	.48	.64	.58	.55			NB
Spread to Jan								.000	.000	.000
<b>FOB station</b>	-289	-492	-362	-556	-540	-604	-636	#####	#####	#####

	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan
Frght rate to Duluth	1470	1470	1470	1400	1400	1400	1500	1500	1500	1500
Surcharge	#####	#####	#####	10.7%	10.7%	10.9%	10.7%	#####	0.0%	7.8%
Surcharge/car	#####	#####	#####	150	150	153	160	#####	0	117
<b>Del Duluth</b>	-.35	-.35	-.35	-.28	-.35	-.35	-.23			NB
<b>FOB station</b>	#####	#####	#####	-602	-816	-817	-678	#####	#####	#####

	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan
Freight rate/car	1470	1470	3350	3500	3500	3500	3500	3500	3500	3500
Surcharge	#####	#####	14.5%	20.0%	20.0%	20.5%	21.5%	#####	0.0%	15.7%
Surcharge/car	#####	#####	484	701	701	718	752	#####	0	551
<b>Del Texas Gulf</b>	.45	-.35	.40	.43	.53	.49	.38			NB
<b>FOB station</b>	#####	-.350	-.596	-.646	-.690	-.734	-.778	#####	#####	#####

	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan
Freight rate/car	1470	1470	3350	3320	3320	3320	3470	3870	3870	3870
Surcharge	#####	#####	14.5%	14.5%	16.5%	17.0%	18.0%	%	0.0%	13.0%
Surcharge/car	#####	#####	484	481	548	564	625	#####	0	503
<b>Del Center Gulf</b>	.45	-.35	.40	.43	.50	.55	.59			NB
<b>FOB station</b>	#####	-.350	#####	-1620	-1712	-1671	-1690	#####	#####	#####

1987

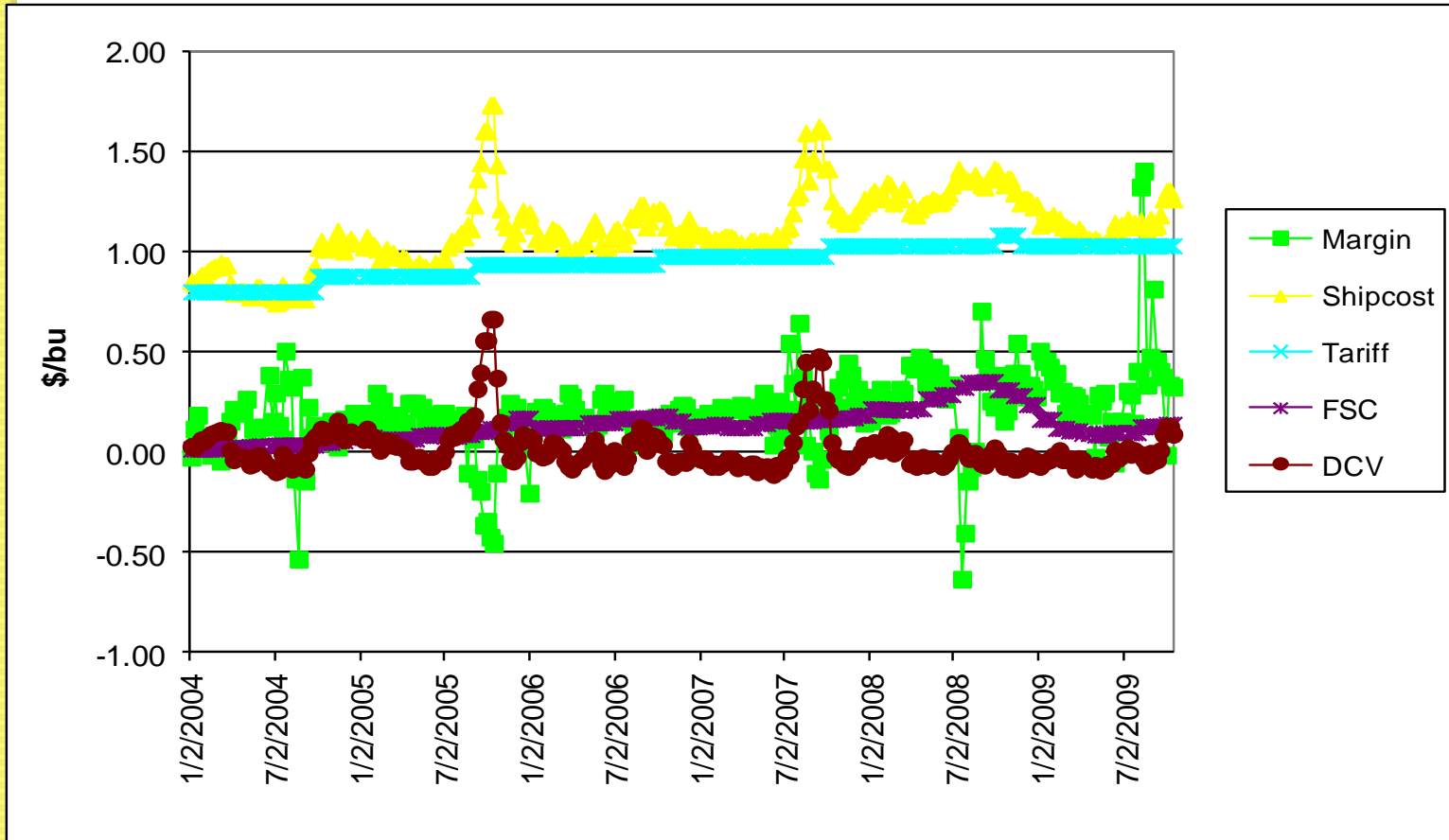
Miles to:

Seattle	1516
Duluth	356
Houston	1670
Ama	1987

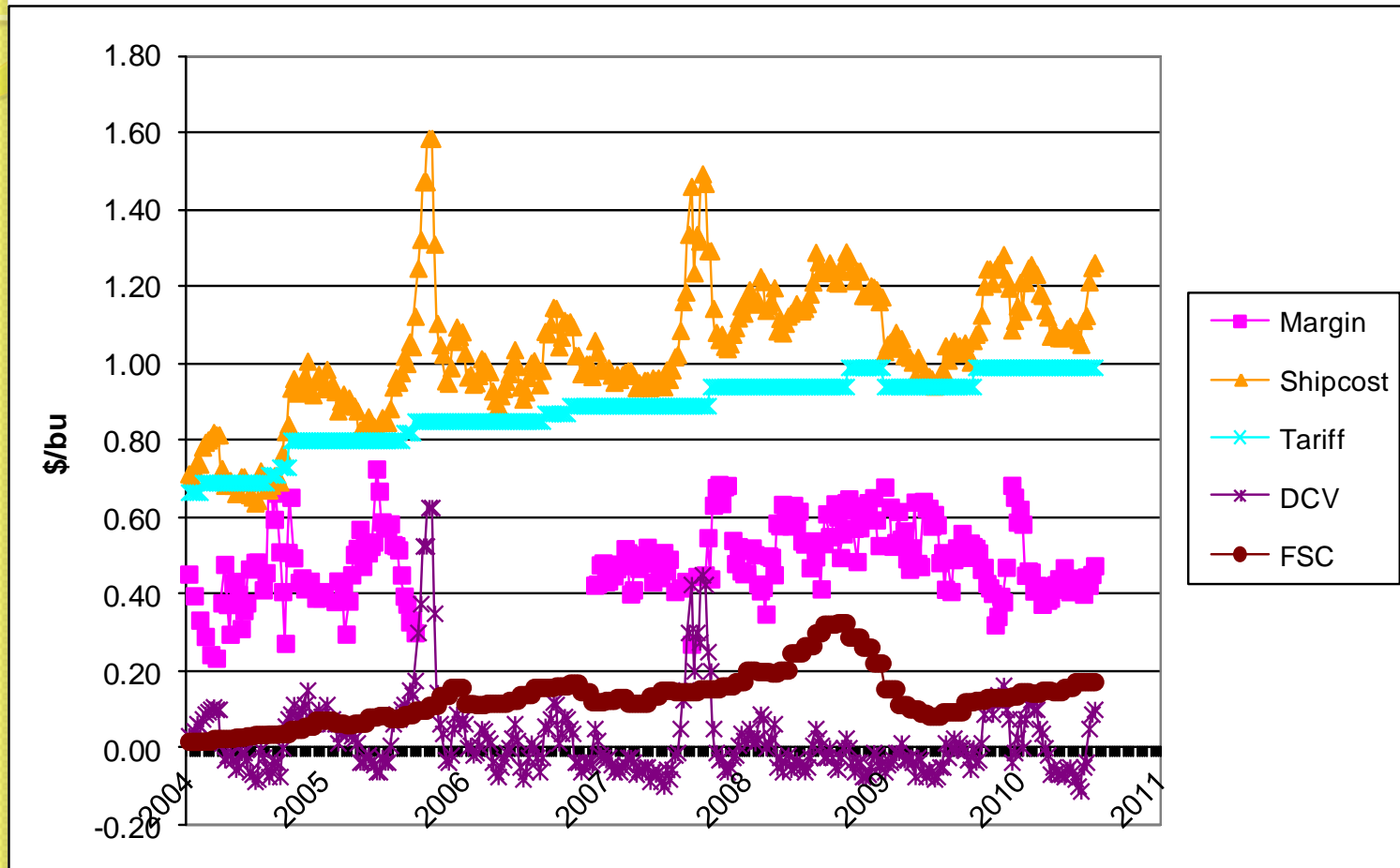
# Performance

- Margins
- Car placement
- Growth in exports

# Soybean: Comparison of Spread, Margin and Elements of Shipping Cost



# Corn: Comparison of Spread, Margin and Elements of Shipping Cost



# Soybean: *Changes 2004 to 2009*

- Basis:
  - Greater negative change in origin basis, vs, destination basis
  - Illustrates: incidence of changes are shared by producers and consumers
- Shipping/handling:
  - Rail tariff increase < barge increase
  - Margin increase > transport increase
- Farm ratio: unchanged

	2004	2009	Change	Percent Change
Origin Basis	-0.08	-0.26	-0.18	228%
Dest. Basis	0.60	0.83	0.23	37%
Rail Tariff	0.82	1.02	0.20	24%
DCV	0.03	-0.02	-0.04	-167%
FSC	0.04	0.14	0.10	237%
Barge Shipcost	0.28	0.40	0.12	41%
Spread	0.69	1.09	0.40	58%
Margin	0.18	0.26	0.08	47%
Farm Ratio	0.91	0.90	-0.01	-1%

# Corn: *Changes 2004 to 2010*

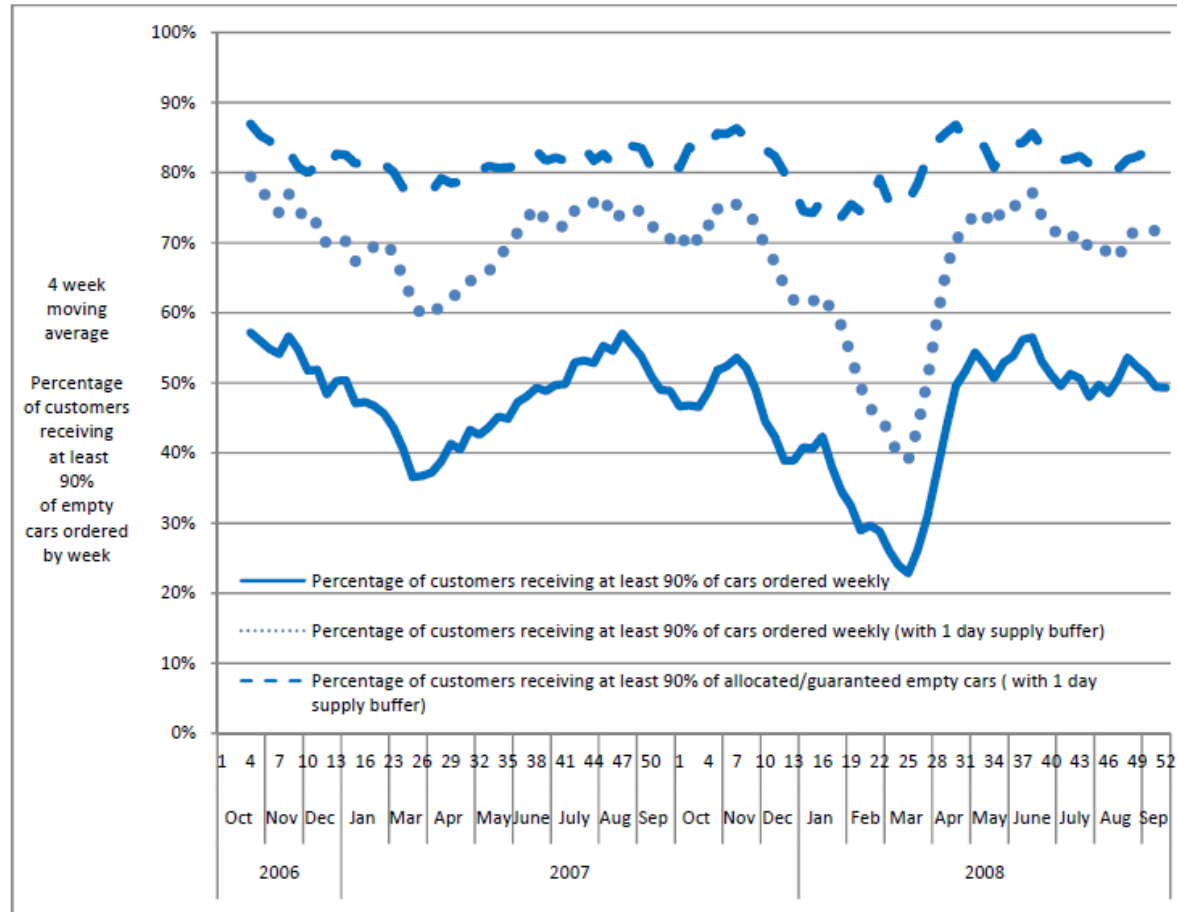
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- Shipping/handling:
  - Rail tariff increase < barge increase
  - Margin increase > transport increase
- Farm ratio: unchanged

	2004	2010	Change	Change
Origin Basis	-0.15	-0.32	-0.17	108%
Destination Basis <sup>2</sup>	0.61	0.70	0.09	15%
Rail Tariff	0.66	0.84	0.18	27%
Rail Car Value	0.03	-0.01	-0.04	-140%
Rail FSC	0.03	0.16	0.13	500%
Barge Cost	0.25	0.34	0.08	33%
Margin	0.28	0.23	-0.05	-17%
Spread	0.76	1.02	0.26	34%
Farm Ratio	0.76	0.77	0.01	1%

# Car order performance: CN

Source: Quorum

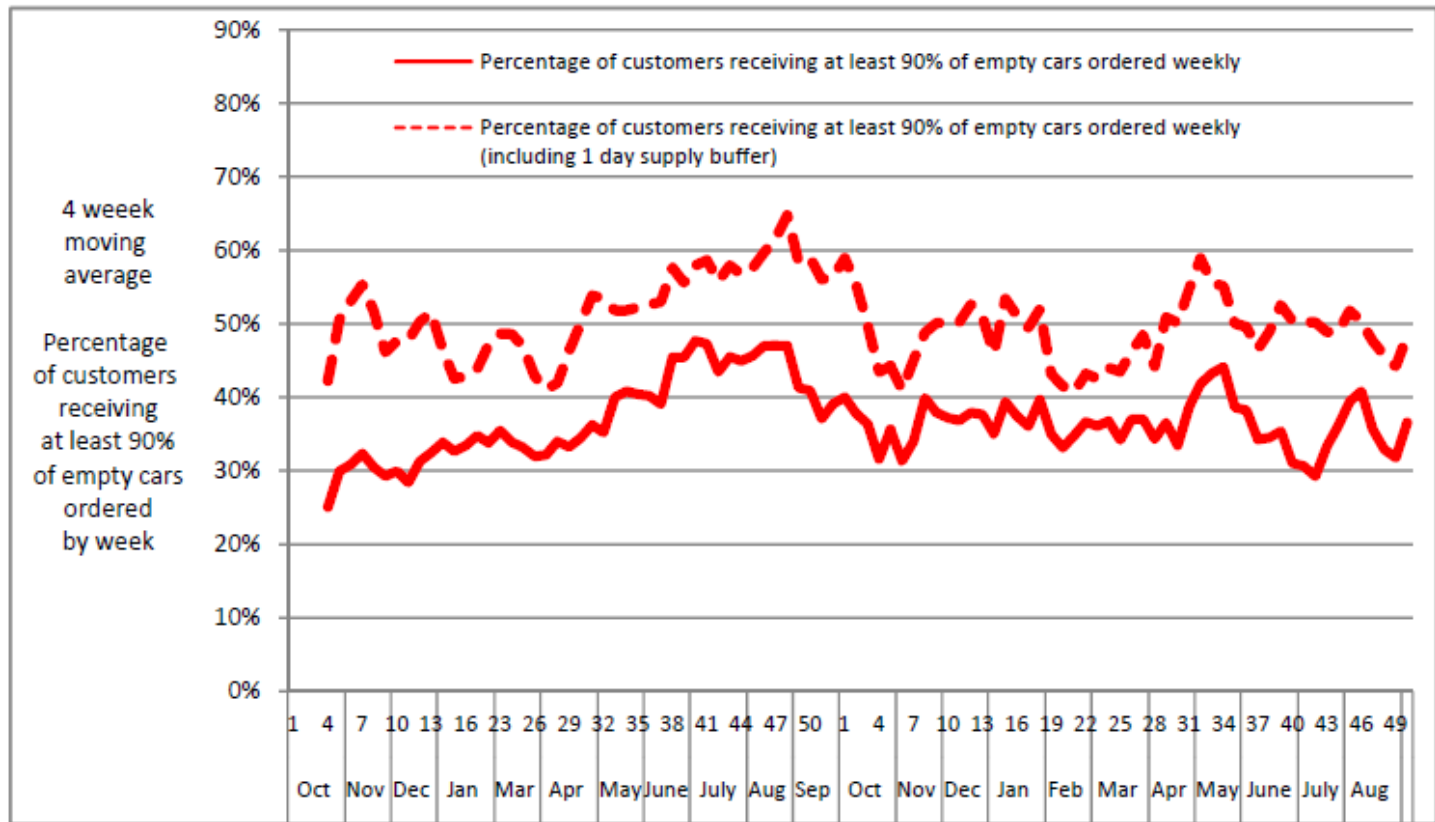
Figure 29 CN weekly car order performance – time series



# Car order performance: CP

## Source: Quorum

Figure 33 CP weekly car order performance – time series



# Rail PNW Market Share: Rail Shipments to PNW as Percent of Total Gulf & PNW Exports

## Comparison:

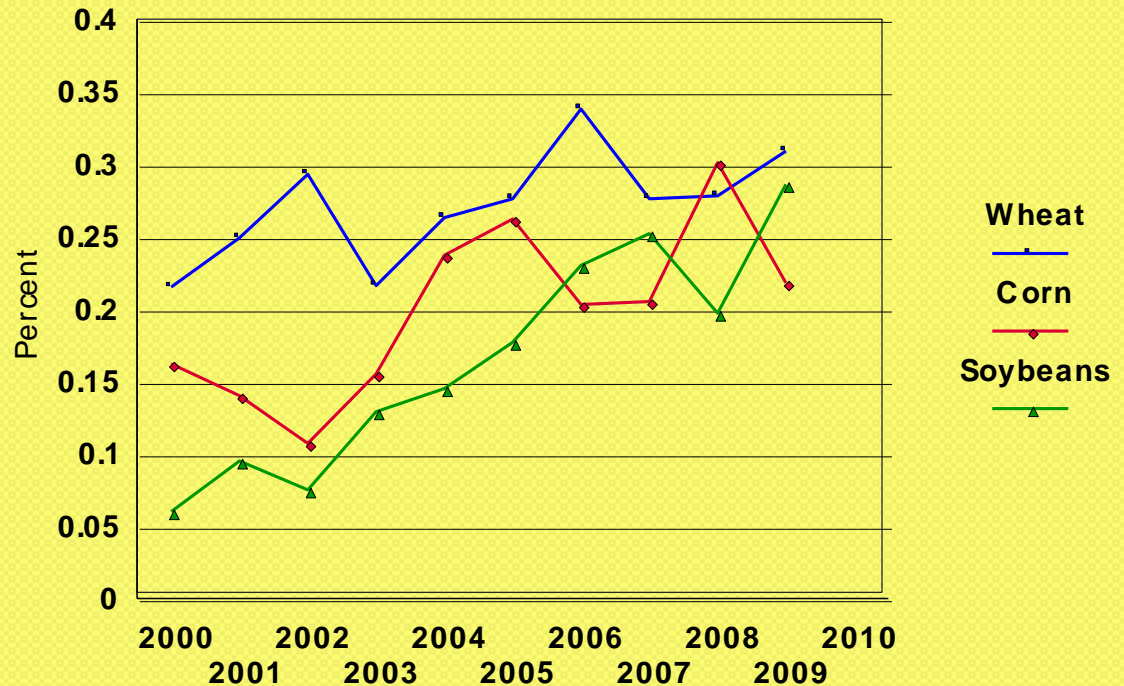
- Market shares derived for rail shipments to PNW as a percent of total US Gulf (LA Gulf and Texas Gulf) and PNW exports

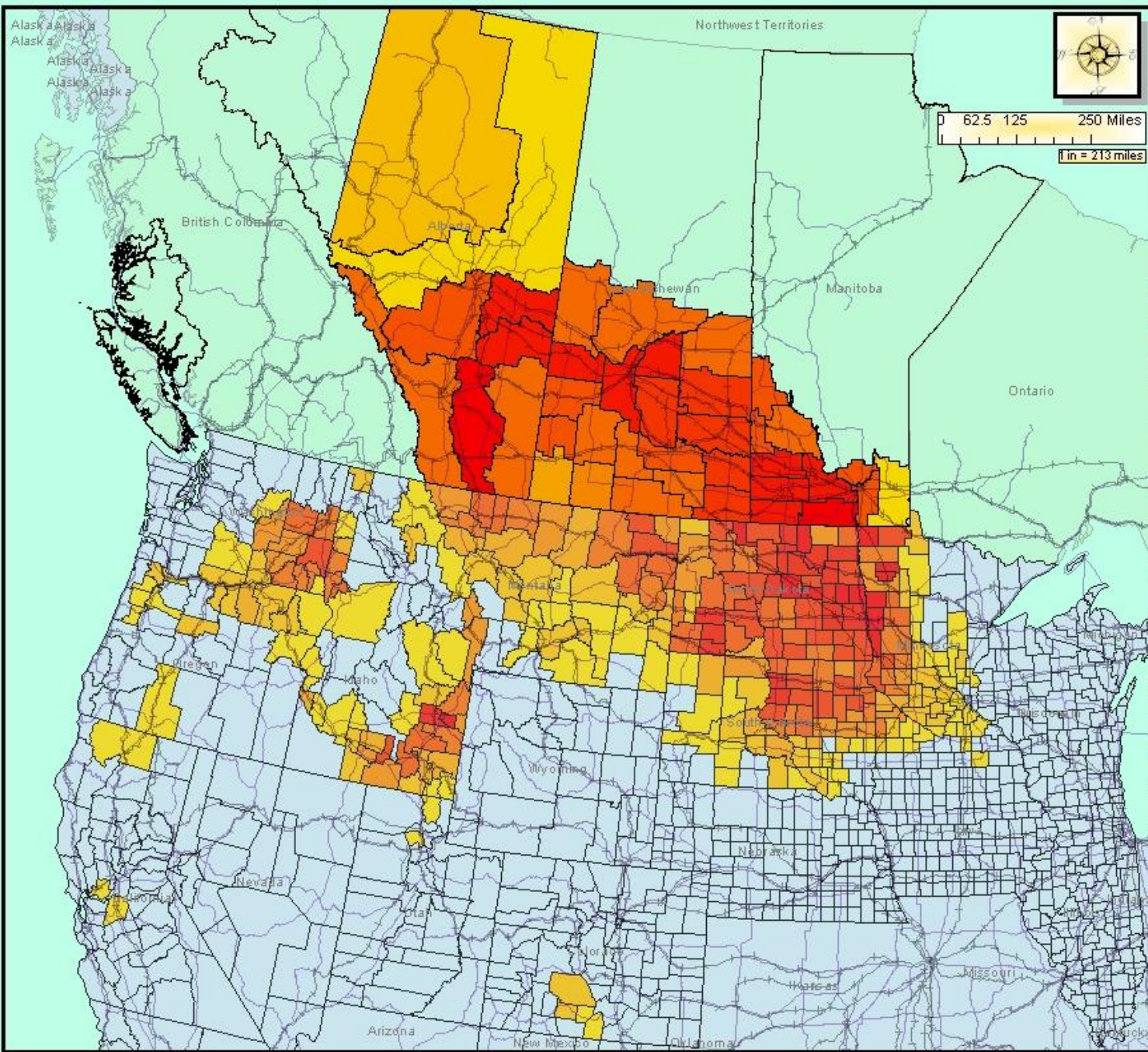
## Exports:

USGulf declined from 70-60 mmt  
PNW increased from 20-35 mmt



**Major Point:** The rail market share has increased for all three grains

- Corn:** Increased from about 15% of exports, to 25-30% of exports
- Soybean:** Increased from about 5% of exports, to nearly 30% of exports
- Wheat:** Increased from about 22% of exports to 30% of exports

























### Legend



-  Railroad
-  Roads

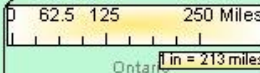
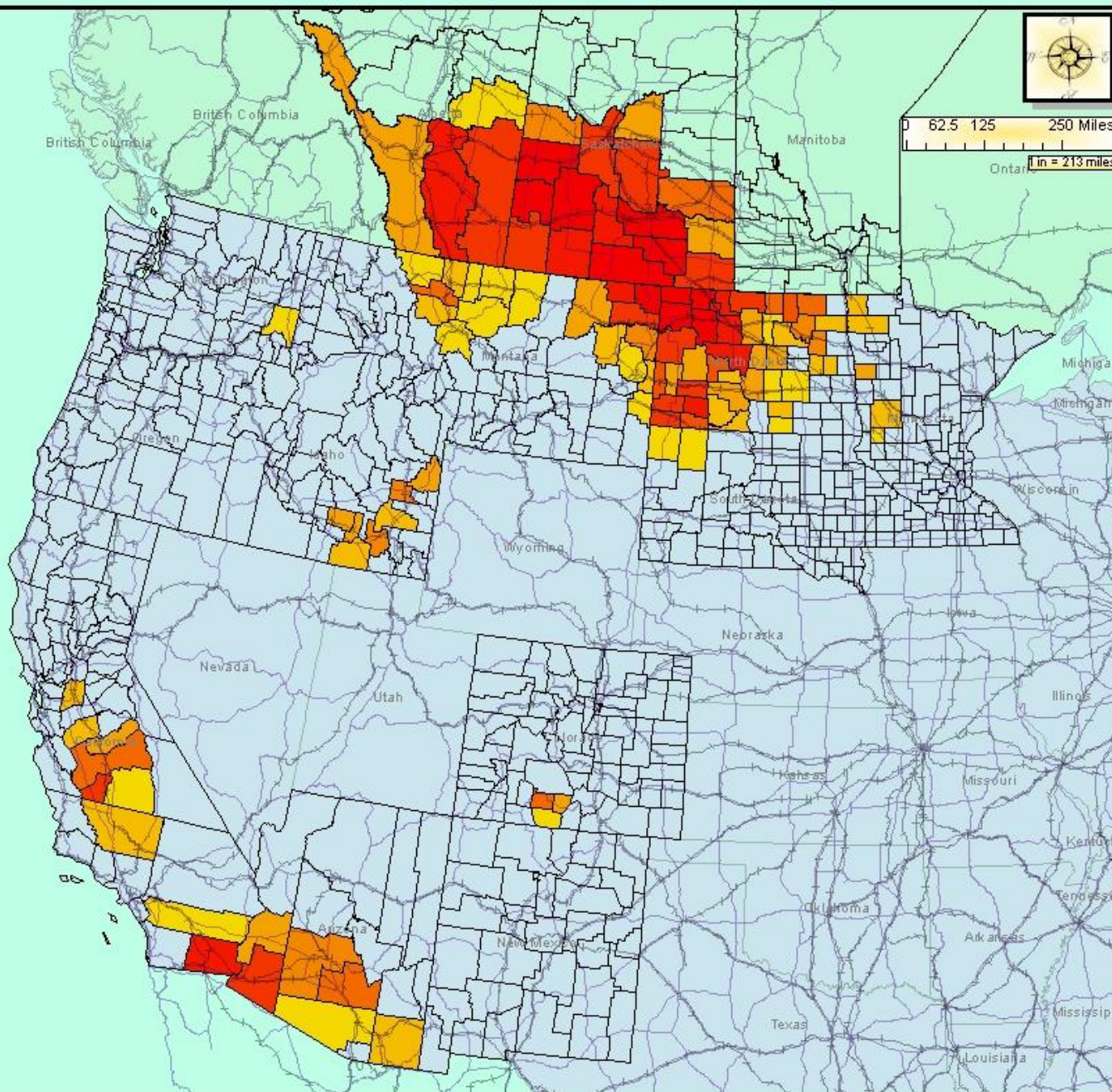
### Spring Wheat Canada (06 - 10) Density

-  0.00 - 0.09
-  0.10 - 0.32
-  0.33 - 0.63
-  0.64 - 1.01
-  1.02 - 1.58
-  1.59 - 2.50
-  2.51 - 3.63
-  3.64 - 4.98
-  4.99 - 7.24
-  7.25 - 12.13



### Spring Wheat USA (06 - 10) Density

-  0.00 - 0.09
-  0.10 - 0.32
-  0.33 - 0.63
-  0.64 - 1.01
-  1.02 - 1.58
-  1.59 - 2.50
-  2.51 - 3.63
-  3.64 - 4.98
-  4.99 - 7.24
-  7.25 - 12.13

-  Canada\_Provinces
-  US\_States






**Legend**

-  Railroad
-  Roads








**Durum Wheat Canada (06 - 10)**



**Density**

-  0.000000 - 0.018977
-  0.018978 - 0.062934
-  0.062935 - 0.117629
-  0.117630 - 0.206134
-  0.206135 - 0.368790
-  0.368791 - 0.531070
-  0.531071 - 0.839099
-  0.839100 - 1.491189
-  1.491190 - 2.744755
-  2.744756 - 8.980194

**Durum Wheat USA (06 - 10)**

**Density**

-  0.000000 - 0.018977
-  0.018978 - 0.062934
-  0.062935 - 0.117629
-  0.117630 - 0.206134
-  0.206135 - 0.368790
-  0.368791 - 0.531070
-  0.531071 - 0.839099
-  0.839100 - 1.491189
-  1.491190 - 2.744755
-  2.744756 - 8.980194

-  Canada\_Provinces
-  US\_States

## Comparison of Handling Costs: Wheat

Element of Cost	North Dakota/ Montana	Canadian Prairies
	US c/bu	US c/bu
Country Elev.	30	42
Export Elev.	20	26
Other Canadian Costs		
Cleaning		14
<b>Total handle/Elevations</b>	<b>50</b>	<b>82</b>

Canadian Source: Canada Grain Commission,  
Licensed Primary Elevator Tariffs, 2011-2012  
Licensed Terminal Elevator Tariffs, 2011-2012

<http://www.grainscanada.gc.ca/statistics-statistiques/tariff-tarif/letm-mtsa-eng.htm>

## Rail and Rate comparison: *Major Differences*

- Canada
  - Regulated rates for exports (non-US) from Pr. Provinces to/through Vcwr and Tbay
    - Subject to maximum rates, based on formula on a mileage basis, and revised/updated annually.
  - Deregulated (similar to SRA) for
    - Domestic and for shipments to US mills
    - Subj to FSC
- US
  - No distinction on domestic vs exports

## Grains: Definition to be eligible for regulated tariff rates in Canada: CTA section 147

<http://laws-lois.justice.gc.ca/eng/acts/C-10.4/page-48.html#h-721> of

- “grain” means
- (a) any grain or crop included in Schedule II that is grown in the Western Division, or any product of it included in Schedule II that is processed in the Western Division,
  - or
- (b) any grain or crop included in Schedule II that is grown outside Canada and imported into Canada, or any product of any grain or crop included in Schedule II that is itself included in Schedule II and is processed outside Canada and imported into Canada;
- “maximum rate scale” [Repealed, 2000, c. 16, s. 9]
- “movement”
- « *mouvement du grain* »
- “movement”, in respect of grain, means the carriage of grain by a prescribed railway company over a railway line from a point on any line west of Thunder Bay or Armstrong, Ontario, to
- (a) Thunder Bay or Armstrong, Ontario, or
- (b) Churchill, Manitoba, or a port in British Columbia for export, but does not include the carriage of grain...to a port in British Columbia for export to the United States for consumption in that country;

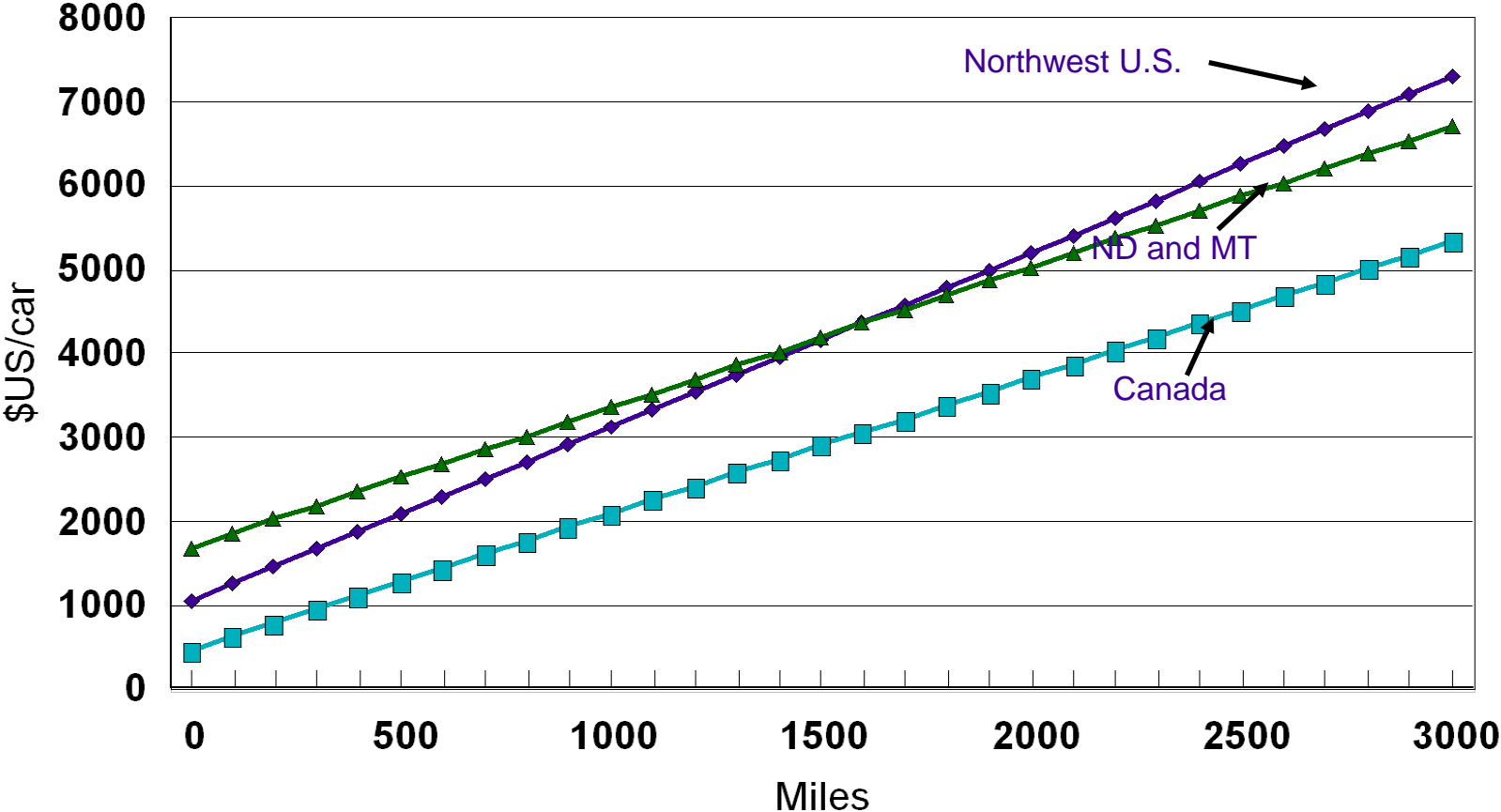
# More clarity

- Regulated rates:
  - Prescribed w/Max rev/ton mile
  - Rev cap and formulae driven
  - By CTA and indexed for inflation
- Allows
  - US ...amendment following WTO challenged...2004

# Comparison of Canada and US Rail Regulatory Systems

Feature	Canada	United States
<b><i>Car allocation</i></b>	Industry committees provide high level allocation	Allocated by individual railroads
<b><i>RR rates</i></b>	Statutory rates in distance related cost based formulae	Market rates; substantial differentiation and incentives to improve efficiency, allocation and inter-seasonal shipments
<b><i>Rate Cap</i></b>	Set in statute	Not applicable except if captive shipper
<b><i>Captive Shippers</i></b>	All prairies treated as captive	Regulatory test based on Rev/vs... ratios and tests for market dominance
<b><i>Car Ownership</i></b>	Governments primarily	Railroads and shippers who lease to railroads
<b><i>Penalties/ incentives</i></b>	Pooled through CWB and/or grain companies	Accrued to shipper. The SRA allows to publish premium rates for premium service which is the clause to pursue differentiated services
<b><i>Shipper</i></b>	Not clear, but primarily the CWB	Originator or receiver

# 2000-2001 Rate Structure for US and Canadian Rail Rates (Wheat)

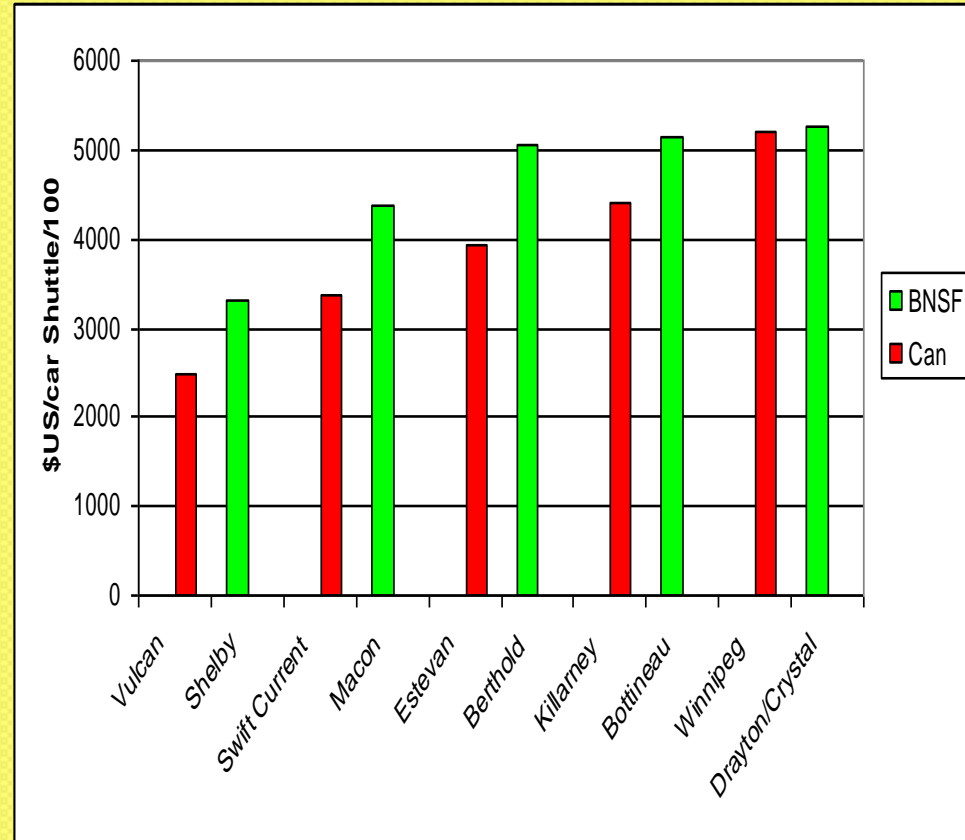
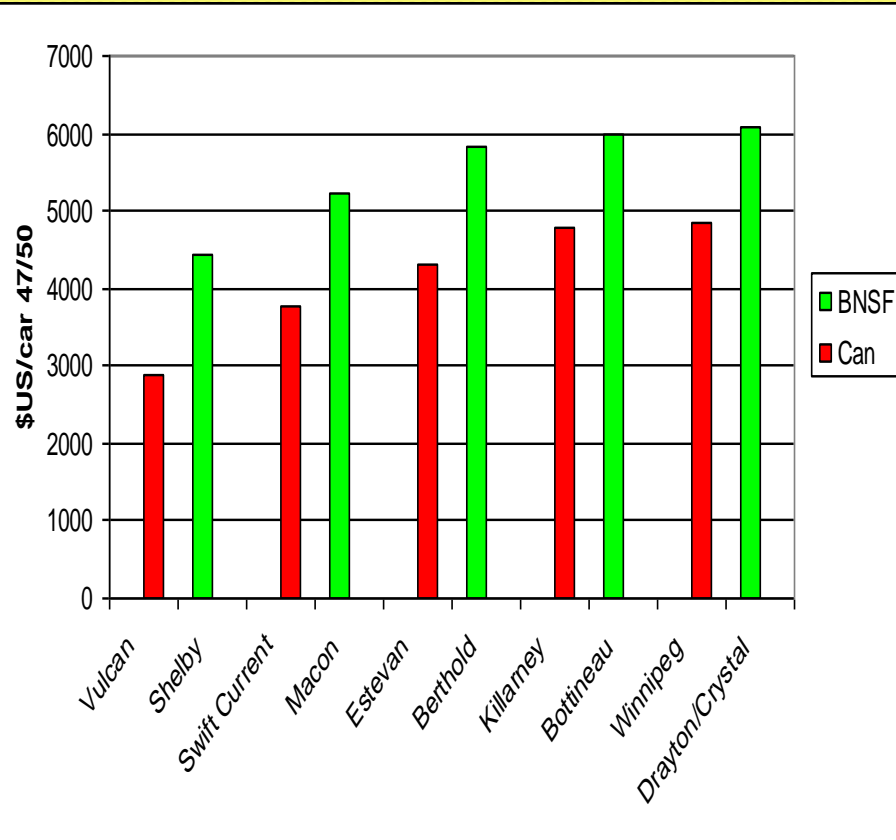


## But, over time

- US rates have declined
  - Selected rate reductions
  - Shuttles/DETs
  - Larger cars
- Canada rates have increased
  - Formula driven rates (rev cap)
  - Exchange rate (Regulated rates are in C\$/mt)
  - Non-regulated rates are greater

Shipment: 47/50 cars

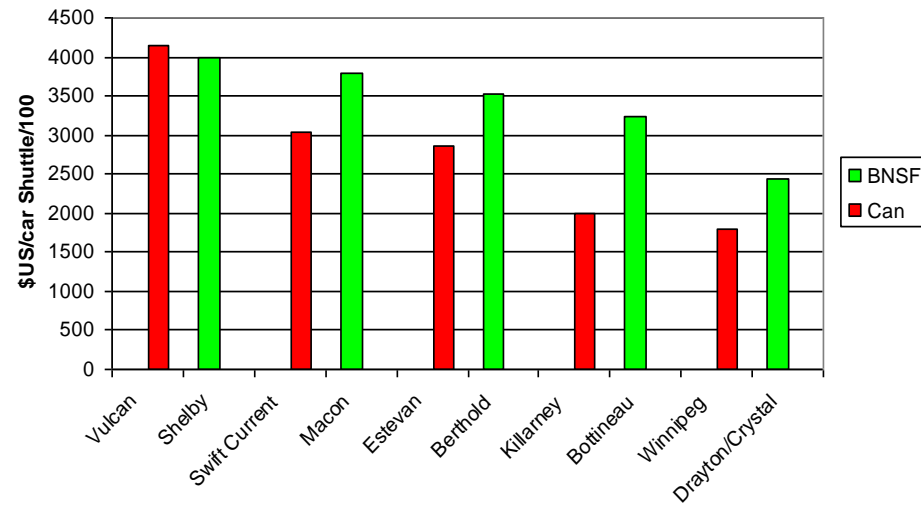
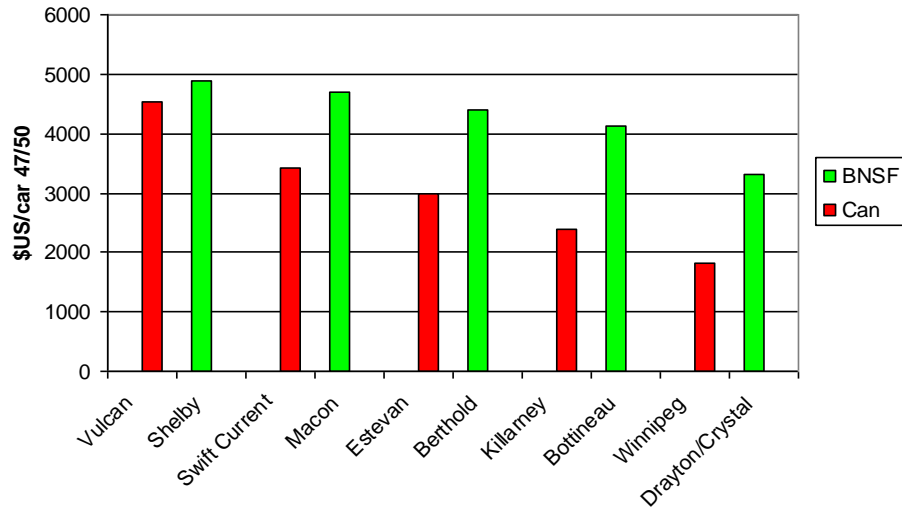
Shipment: Shuttle/100 cars



**Export Rates (Canada) and US--Comparable Geographically Located Stations to West Coast.**

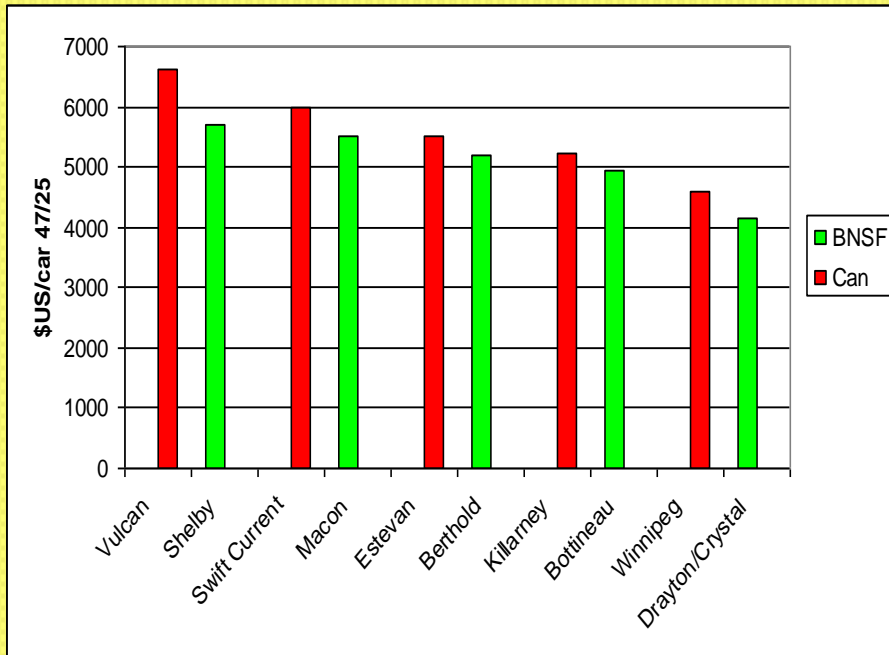
Shipment: 47/50 cars

Shipment: Shuttle/100 cars

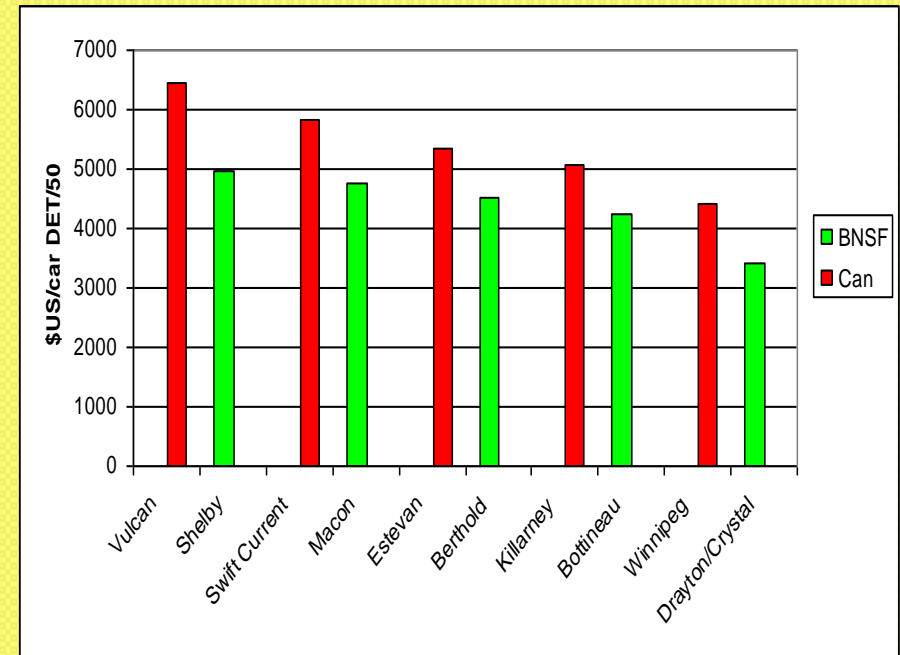


**Export Rates (Canada) and US--Comparable Geographically Located Stations to Duluth / Thunder Bay.**

## 47 and 25 Car



## DET/50 Car



**Domestic Rates (Canada) and US--Comparable Geographically Located Stations to Chicago and beyond.**

# Most likely: Cross-border flows

- Traditionally:
  - CWB movements which are 'regulated' (i.e., regulated rail rates for export via TBay and Vancouver) vs. non-regulated
    - are encouraged, due to regulation to border-cross at Tbay or East (Chicago)
    - Or, through Vancouver
  - Cross-border flows do occur, but, more limited and discouraged by
    - CWB pricing mechanism requiring handle by country elevators
- Future: More potential for interior cross-border flows
- Issues:
  - Handling: Fees in Canada > US and hence, encourage by-passing Canada handling (at current fees)
  - Car supply and efficiency: US has greater efficiency, and assurance of car supply;
  - Canada RR's would/should discourage shipments off-line (i.e. onto US carriers unless they have agreements)

## Other Rail-Related Mechanisms: *Discussion*

- Mechanisms for rail efficiency—rate differentials and mechanism design
- Car allocation
- Contracts and Transparency
- Forward pricing mechanisms
  - Mechanism for pricing (posted tariff, contract, bidding)
  - Car cancellations, transferability etc.
- Car ownership
- FOA

# Summary and Implications

- **Major changes in crops marketing** (most dramatic in many years)
  - Strong persistent growth in demand
  - Changes in spatial competition both within the United States as well as between countries
  - More volatility (but up and down) in spatial flows
- **US: Changes in grain marketing and shipping**
  - Many changes have been adopted over 20 years to respond to these changes
    - Has resulted in improved efficiency
    - Ability to respond to demands
    - Improved efficiency creating capacity with lesser capital outlays
    - Allocating greater share of costs to those shipping demanding peak capacity, or unplanned shipments
- **Changes in international competition**
  - All competing countries are confronting similar challenges
    - Likely 10+ years forward (resulting in advantage for US in interim)
  - Most are compounded lack of incentive for private investment, and/or antiquated regulatory/institutional mechanisms
  - But most are
    - Making substantial investments to expand capacity
    - Studying ways to improve efficiency (mechanisms non unlike those that have been adopted in the US) of grain shipping/handling industries

# Summary I

- **Massive changes w/in N. America**
  - But, a continuum toward greater decentralization of marketing world-wide
  - Fewer remaining STEs
- **Protections afforded by CWB to importers will be lessened substantially**
  - Deferred pricing (intra-year)
  - Credit
  - Quality over-runs
  - etc
- **Forward pricing/contract**
  - Will be less of an issue in sales
  - Pressures will emerge for more commercially acceptable 'pre-planting' contracts (in both countries)
  - Grower contracting: Cargill proposes to offer varying forms of pooling
  - Premiums/discounts in Canada will provide greater market incentives w.r.t. quality, timing, etc
- **Commodity exchanges:**
  - Major battles
  - MGEX gains vs others, but, depends on changes to specifications
  - Arbitrage between ICE origin and MGEX futures delivery will align prices in some complicated way

# Summary II

- **Cross-border flows:** *Very complicated*
  - Rail rates to US destinations: Favor US origins
  - Results are highly dependent on
    - Specific movements
    - Efficiencies charges in handling at country and export
    - Congestion/capacity in system: rail car capacity, allocation, and port distribution efficiencies
- **Competition**
  - Intensive
  - Accredited exporter regime: Unclear how this will be resolved, but, it is critical to non-asset owning companies (JTCs, Bunge, Gavilon, etc)
- **Ancillary functions:** Over time, likely to evolve to be very similar to those in the US



*Thank you..... Q&A*



# Comparison of Handling Costs: Canola

Element of Cost	North Dakota/ Montana	Canadian Prairies
	US c/cwt	US c/cwt
Country Elevation	60	68
Export Elevation		69
Other Canadian Costs		
Cleaning		36
Total handle/Elevations		173

Canadian Source: Canada Grain Commission,  
Licensed Primary Elevator Tariffs, 2011-2012  
Licensed Terminal Elevator Tariffs, 2011-2012

<http://www.grainscanada.gc.ca/statistics-statistiques/tariff-tarif/letm-mtsa-eng.htm>