

Testimony of the Concerned Shipper Associations

The American Chemistry Council

The Fertilizer Institute

The Chlorine Institute

The National Industrial Transportation League

Submitted to the Surface Transportation Board

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Caves EXHIBIT 1

Ramsey pricing principles

- Economic efficiency \leftrightarrow Marginal cost pricing ($P = MC$)
- Economies of Scale (high fixed costs) $\rightarrow MC < AC$
 - Marginal cost pricing not feasible
- Profit maximizing solution \rightarrow Set P as high as possible above MC
 - Economically inefficient
- Ramsey Pricing Principles:
 - Set $P > MC$, but only by enough to cover all relevant costs (fixed, variable, investment returns)
 - Constrained optimization: Move P as close to MC as possible without violating the revenue adequacy constraint
 - Any rate adjustment closing gap between P and MC is economically efficient, even if the full Ramsey optimum is not achieved

Union Pacific Net Revenue Adequacy -- 2009 to 2014 Business Cycle (\$ in 000)

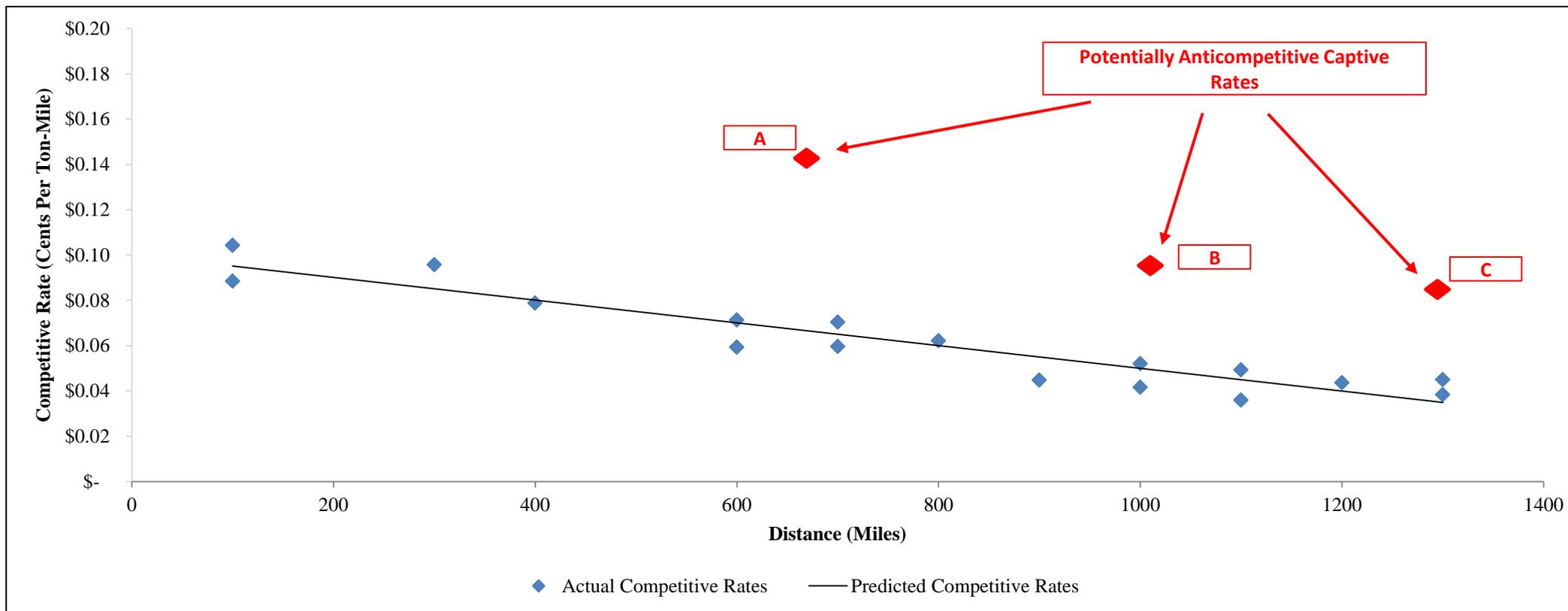
<u>Year</u>		<u>Cost of Capital</u>	<u>Tax Adjusted (shortfall)/surplus</u>	<u>Present Value of Tax Adjusted (shortfall)/surplus</u>
(1)		(2)	(3)	(4)
1.	2009	10.43%	-\$767,046	-\$1,259,671
2.	2010	11.03%	219,718	333,908
3.	2011	11.57%	682,782	948,254
4.	2012	11.12%	1,638,241	2,022,844
5.	2013	11.32%	2,027,153	2,256,626
6.	2014	10.65%	3,336,358	3,336,358
7.	Total	xxx	\$7,137,206	\$7,638,319
8.	Average	xxx	xxx	\$1,273,053

Caves EXHIBIT 2

Yardstick/Benchmark Method

– Predict competitive rate, given shipment characteristics:

$$Actual_Rate_i = \beta_0 + \beta_1 Distance_i + \varepsilon_i$$

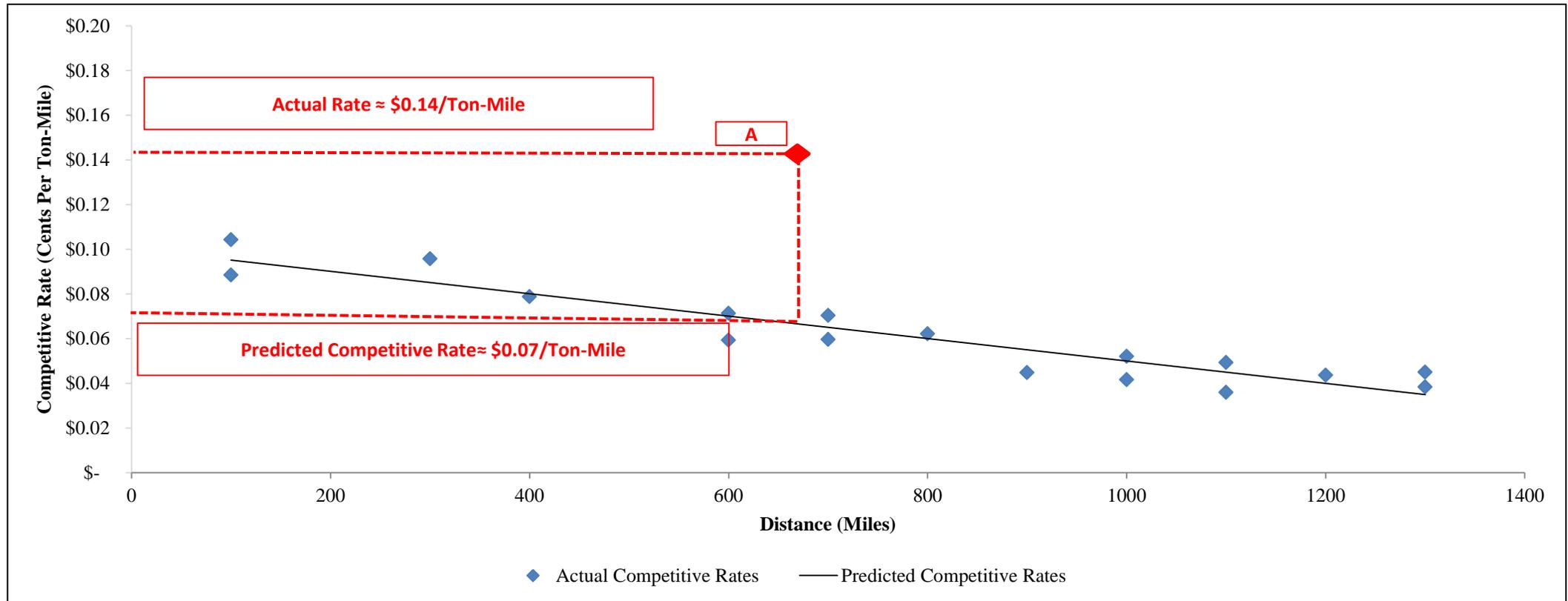


Caves EXHIBIT 2

Yardstick/Benchmark Method

- Compare actual captive rates to predicted competitive rates:

$$\text{Predicted_Rate}_A = \beta_0 + \beta_1 \text{Distance}_A$$

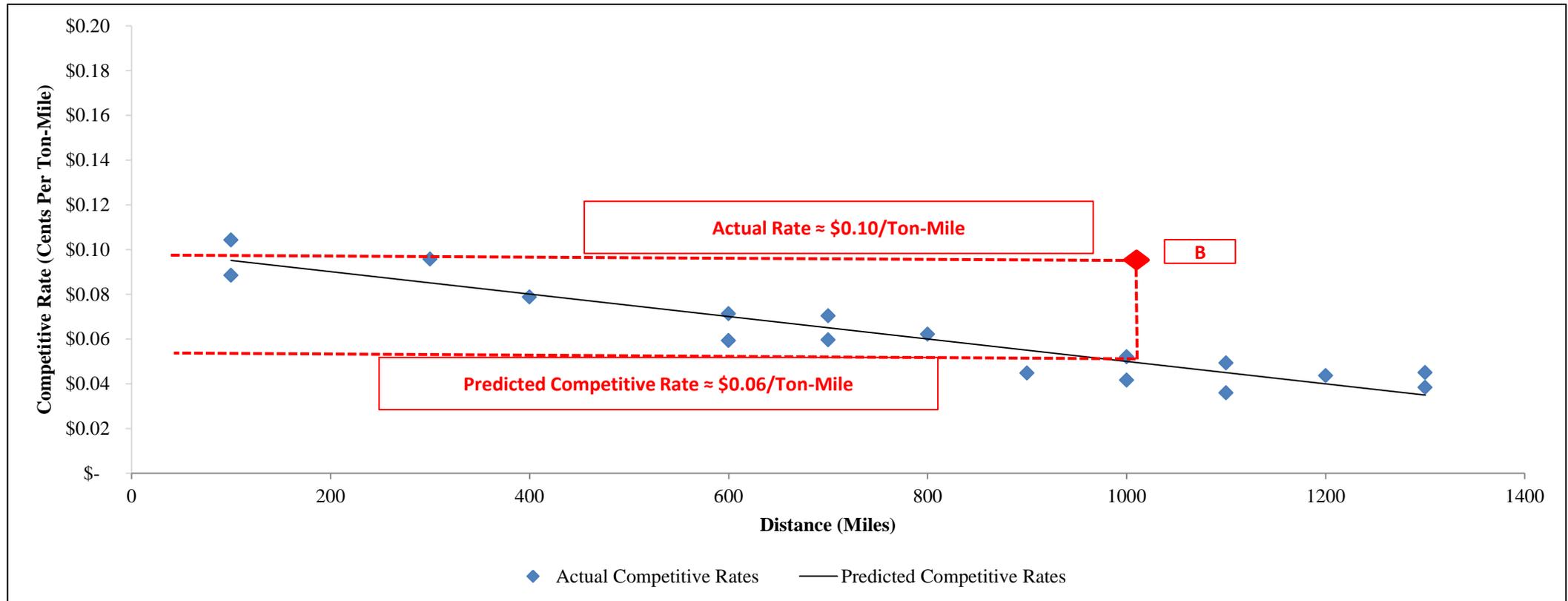


Caves EXHIBIT 2

Yardstick/Benchmark Method

- Compare actual captive rates to predicted competitive rates :

$$\text{Predicted_Rate}_B = \beta_0 + \beta_1 \text{Distance}_B$$

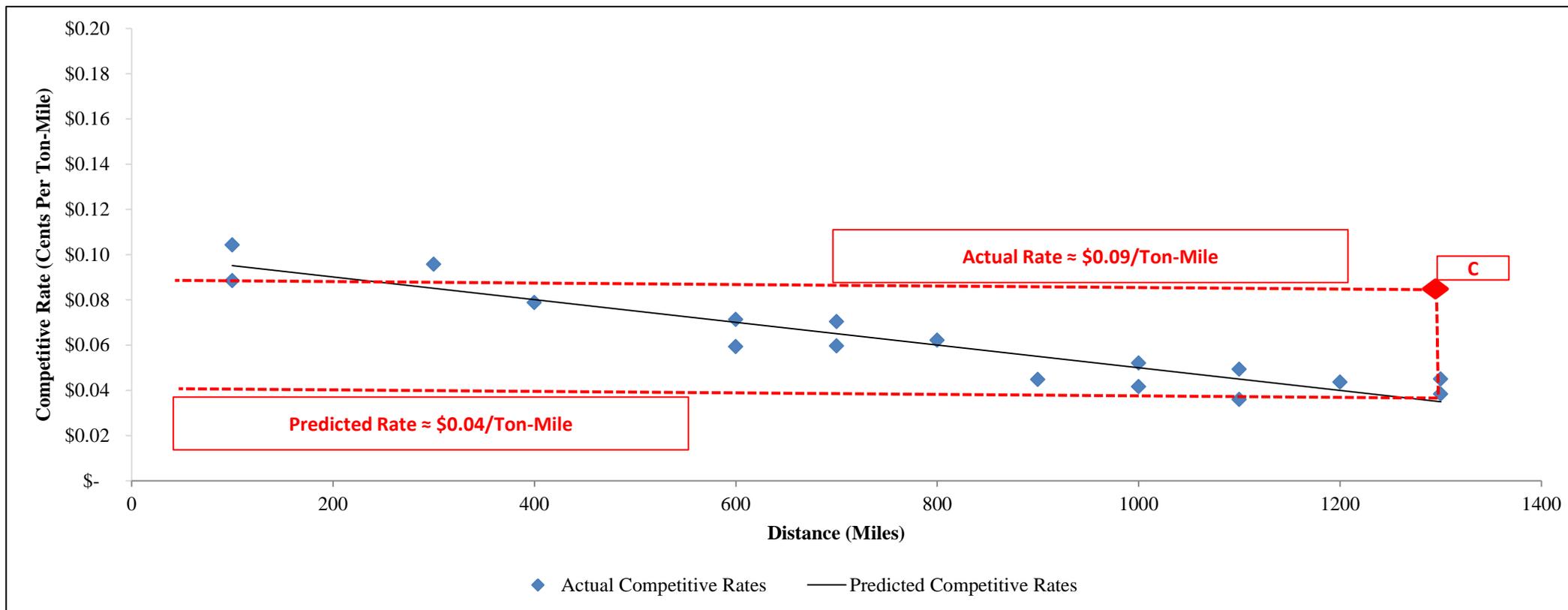


Caves EXHIBIT 2

Yardstick/Benchmark Method

- Compare actual captive rates to predicted competitive rates :

$$\text{Predicted_Rate}_C = \beta_0 + \beta_1 \text{Distance}_C$$



Caves EXHIBIT 2

Yardstick/Benchmark Method

- $R = (\text{Actual_Rate})/(\text{Predicted_Rate})$
 - $R_A \approx \$0.14/\$0.07 \approx 2$
 - $R_B \approx \$0.10/\$0.06 \approx 1.67$
 - $R_C \approx \$0.09/\$0.04 \approx 2.25$
- R_{MAX} = “Allowable Differential”
 - $R_{MAX} = 1.6 \rightarrow$ All rates reduced
 - $R_{MAX} = 1.9 \rightarrow$ Only 2/3 reduced
 - $R_{MAX} = 2.1 \rightarrow$ Only 1/3 reduced
- R_{MAX} calibrated to protect revenue adequacy

Rebate Reduction Approach Based On Price-Cost Margins For UP Based on 2009 to 2014 Business Cycle

1. UP 2014 Revenues (000s)	\$23,876,553
2. Average Surplus (000s)	1,273,053
3. Potentially Captive Excess Return Share	90%
4. Surplus Available to Potentially Captive Shippers	1,145,748
5. UP Required Revenues (000s)	\$22,730,805
6. Margin Adjustment Factor	95.1%

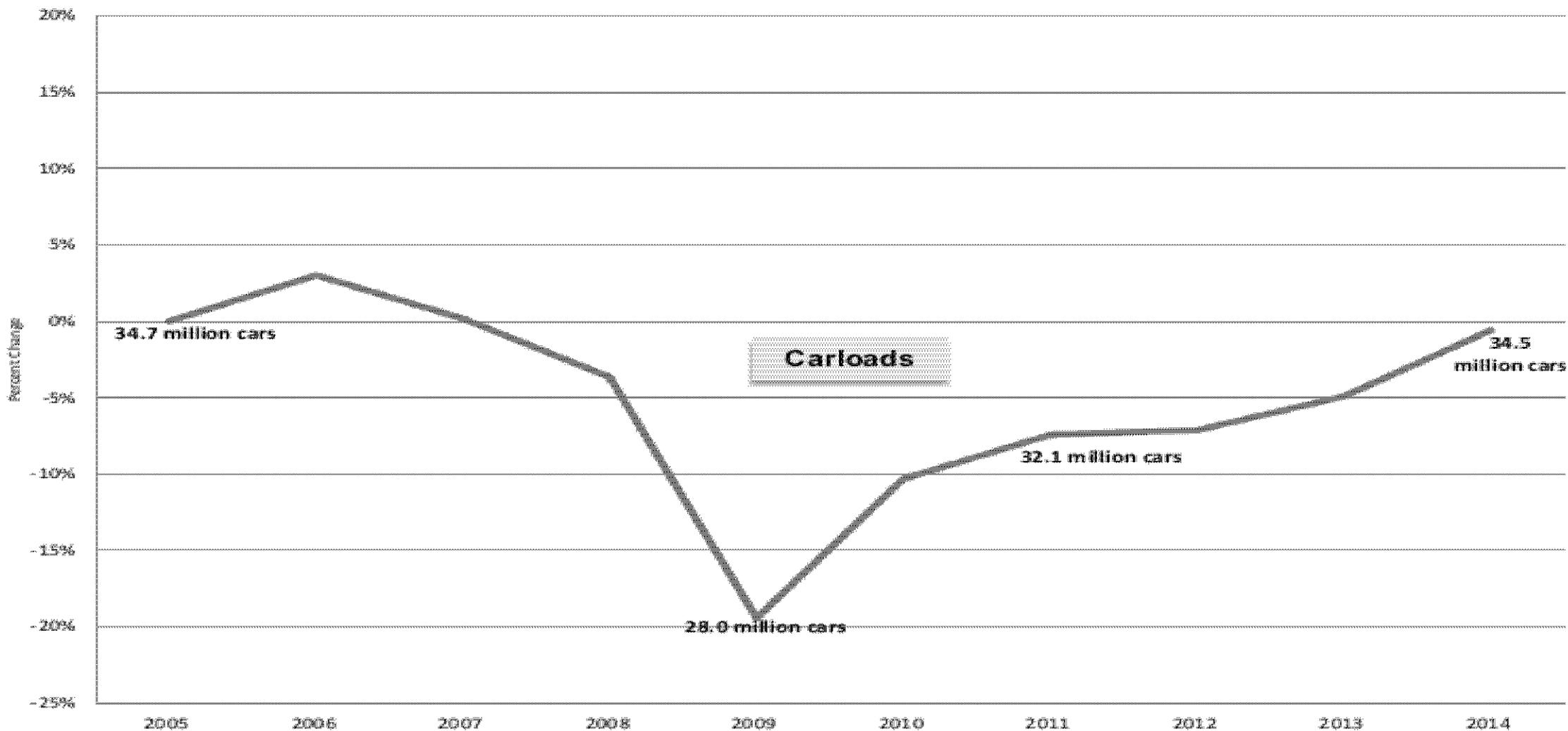
Shipper (1)	Base						Adjusted				Actual Adjustments
	Rates (2)	Costs (3)	Tons (000s) (4)	Total Revenue (000s) (5)	R/VC Ratio (6)	Elasticity Margin (7)	Elasticity Margin (8)	Rates (9)	R/VC Ratio (10)	Total Revenue (000s) (11)	Revenue Reduction (12)
	7. A	\$7.00	\$3.00	1,000,000	\$7,000,000	233.3%	57.143%	54.349%	\$6.57	219.1%	\$6,571,562
8. B	\$11.00	\$5.00	500,000	\$5,500,000	220.0%	54.545%	51.878%	\$10.39	207.8%	\$5,195,167	\$0
9. C	\$10.00	\$4.00	500,000	\$5,000,000	250.0%	60.000%	57.066%	\$9.32	232.9%	\$4,658,334	\$0
10. D	\$8.50	\$4.50	200,000	\$1,700,000	188.9%	47.059%	44.758%	\$8.15	181.0%	\$1,629,189	\$0
11. E	\$8.00	\$6.00	100,000	\$800,000	133.3%	25.000%	25.000%	\$8.00	133.3%	\$800,000	\$0
12. F	\$8.00	\$7.00	100,000	\$800,000	114.3%	12.500%	12.500%	\$8.00	114.3%	\$800,000	\$0
13. G	\$3.23	\$7.00	952,888	\$3,076,553	46.1%	-116.808%	-116.808%	\$3.23	46.1%	\$3,076,553	\$0
14. Total		xxx	3,352,888	\$23,876,553	xxx	xxx	xxx	xxx	xxx	\$22,730,805	xxx

Rebate Reduction Approach Based On Maximum Markup Methodology For UP Based on 2009 to 2014 Business Cycle

1. UP 2014 Revenues (000s)	\$23,876,553
2. Average Surplus (000s)	1,273,053
3. Potentially Captive Excess Return Share	90%
4. Surplus Available to Potentially Captive Shippers	1,145,748
5. UP Required Revenues (000s)	\$22,730,805
6. MMM R/VC Ratio	218.1%

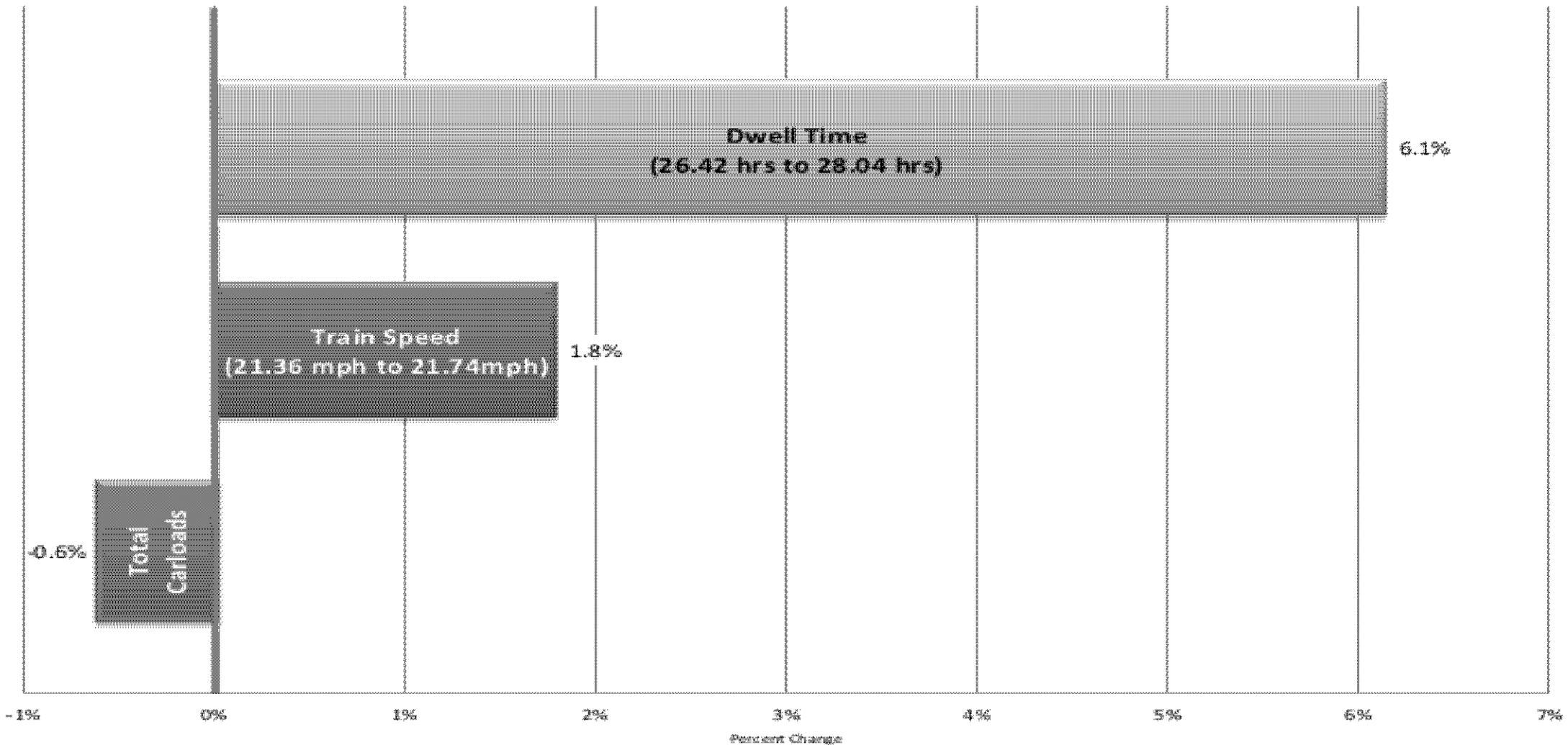
		Base				Adjusted				Actual Adjustments
Shipper		Rates	Costs	Tons (000s)	Total Revenue (000s)	R/VC Ratio	R/VC Ratio	Rates	Total Revenue (000s)	Total Revenue
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
7.	A	\$7.00	\$3.00	1,000,000	\$7,000,000	233.3%	218.1%	\$6.54	\$6,541,701	\$687,449
8.	B	\$11.00	\$5.00	500,000	\$5,500,000	220.0%	218.1%	\$10.90	\$5,451,417	\$0
9.	C	\$10.00	\$4.00	500,000	\$5,000,000	250.0%	218.1%	\$8.72	\$4,361,134	\$0
10.	D	\$8.50	\$4.50	200,000	\$1,700,000	188.9%	188.9%	\$8.50	\$1,700,000	\$0
11.	E	\$8.00	\$6.00	100,000	\$800,000	133.3%	133.3%	\$8.00	\$800,000	\$0
12.	F	\$8.00	\$7.00	100,000	\$800,000	114.3%	114.3%	\$8.00	\$800,000	\$0
13.	G	\$3.23	\$7.00	952,888	\$3,076,553	46.1%	46.1%	\$3.23	\$3,076,553	\$0
14.	Total		xxx	3,352,888	\$23,876,553	xxx	xxx	xxx	\$22,730,805	xxx

The Four Major Railroads Consistently Carried Fewer Carloads Between 2005 and 2014



Source: Railroads' annual SEC filings for BNSF, CSX, NS and UP.

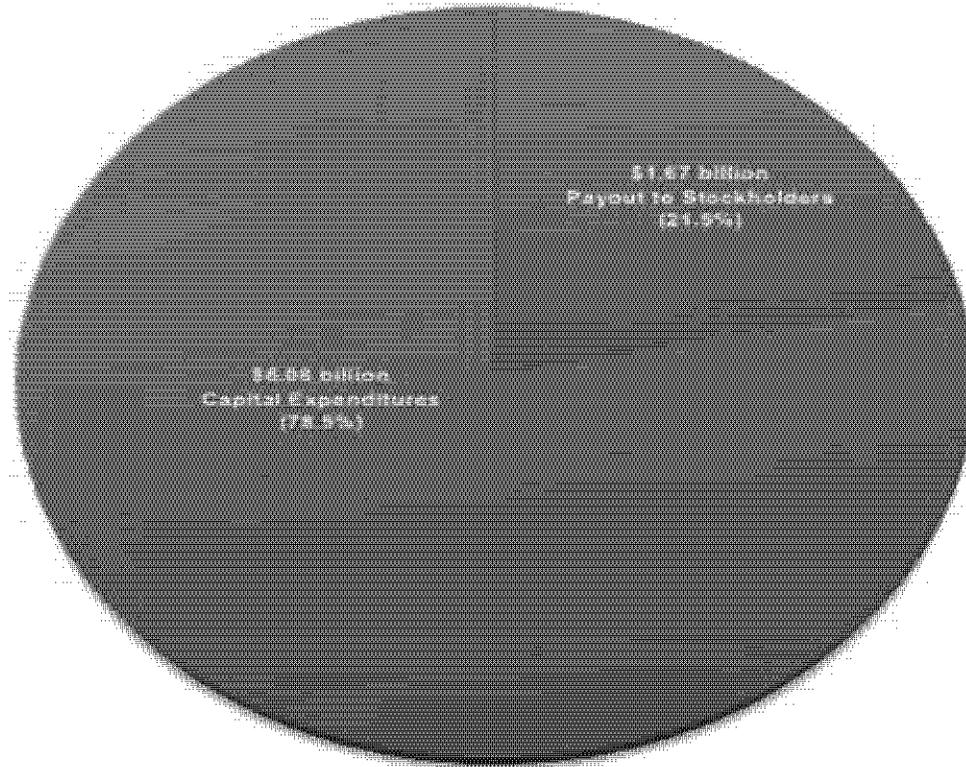
Operations on the Four Major Railroads Have Not Improved Between 2005 and 2014



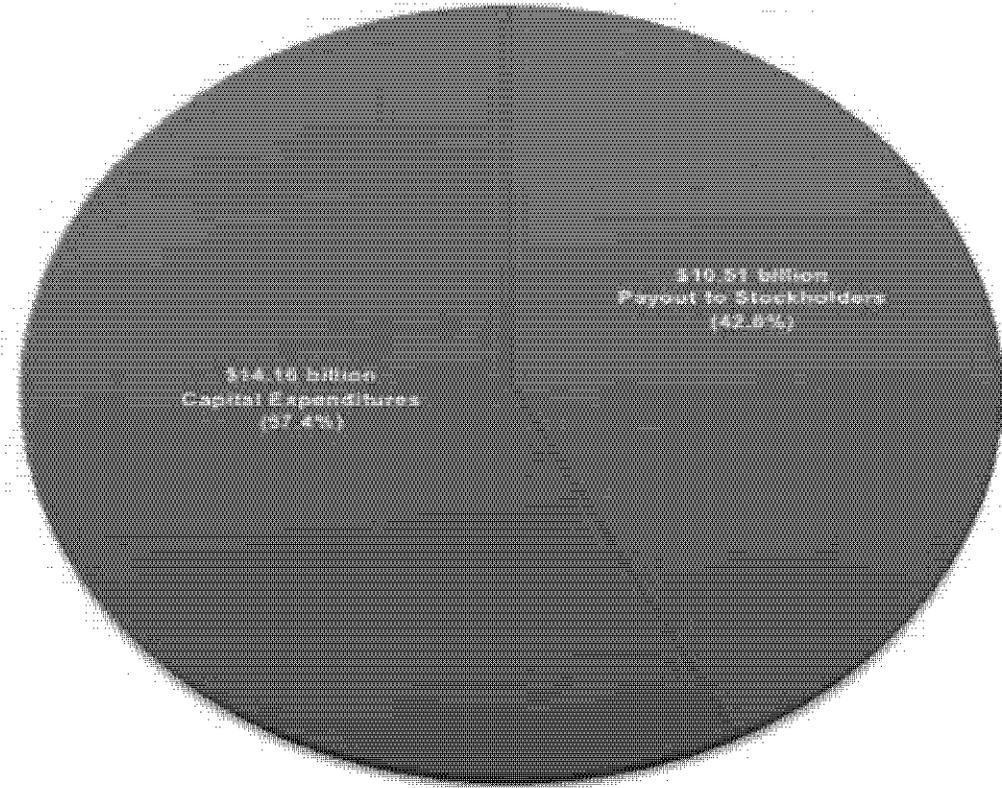
Source: Average Train Speed and Dwell Time are from the AAR's weekly Performance Measure filings for BNSF, CSXT, NS and UP. Carloads are from BNSF, CSXT, NS and UP annual SEC filings.

The Four Major Railroads' Primary Use of Operating Profit has Changed

2005 CapEx and Payout to Stockholders = \$7.75 billion

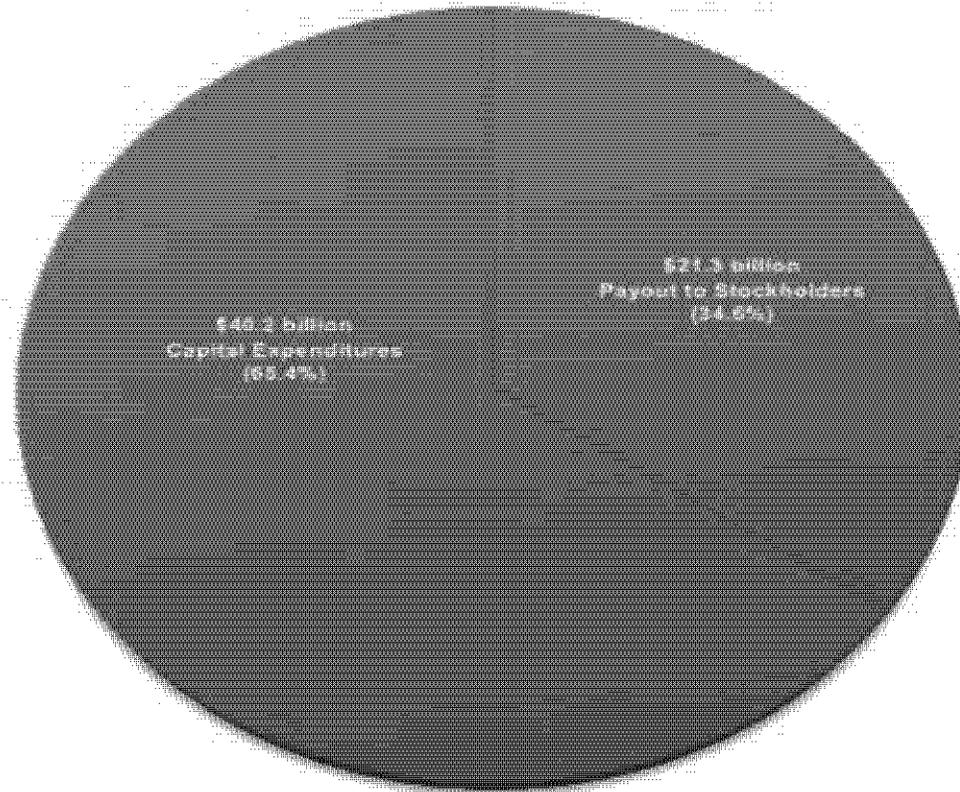


2014 CapEx and Payout to Stockholders = \$24.67 billion

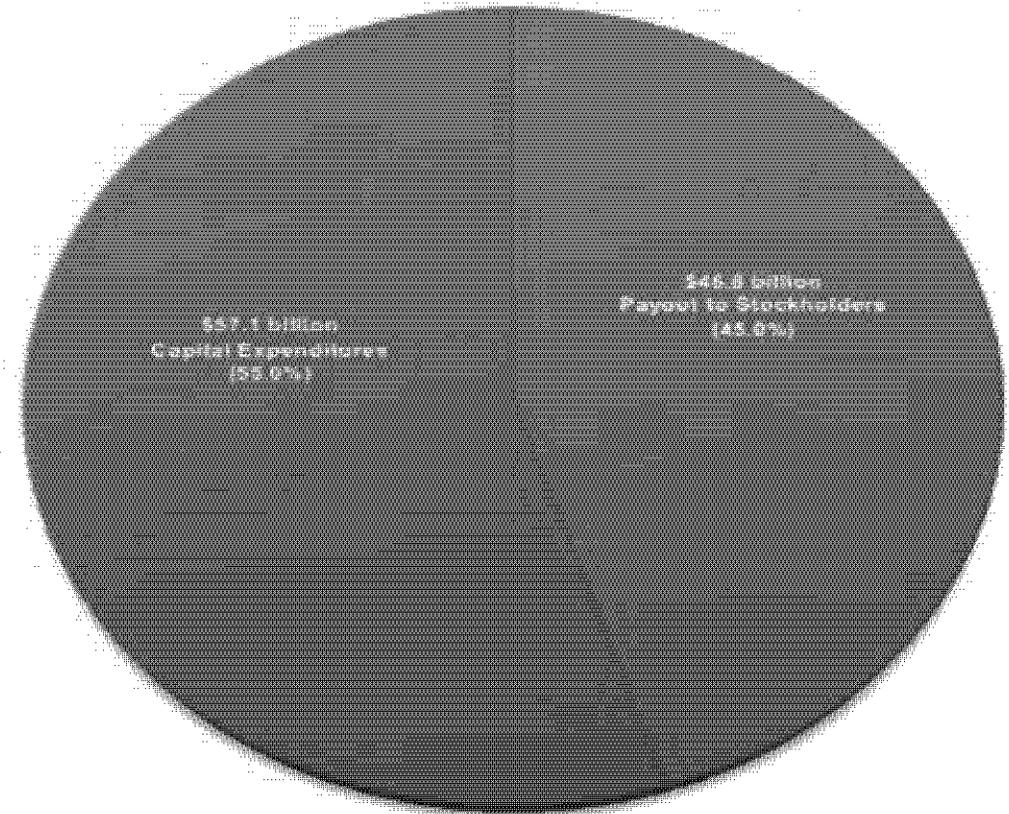


The Four Major Railroads' Primary Use of Operating Profit has Changed

2005-2009 CapEx and Payout to Stockholders = \$61.5 billion

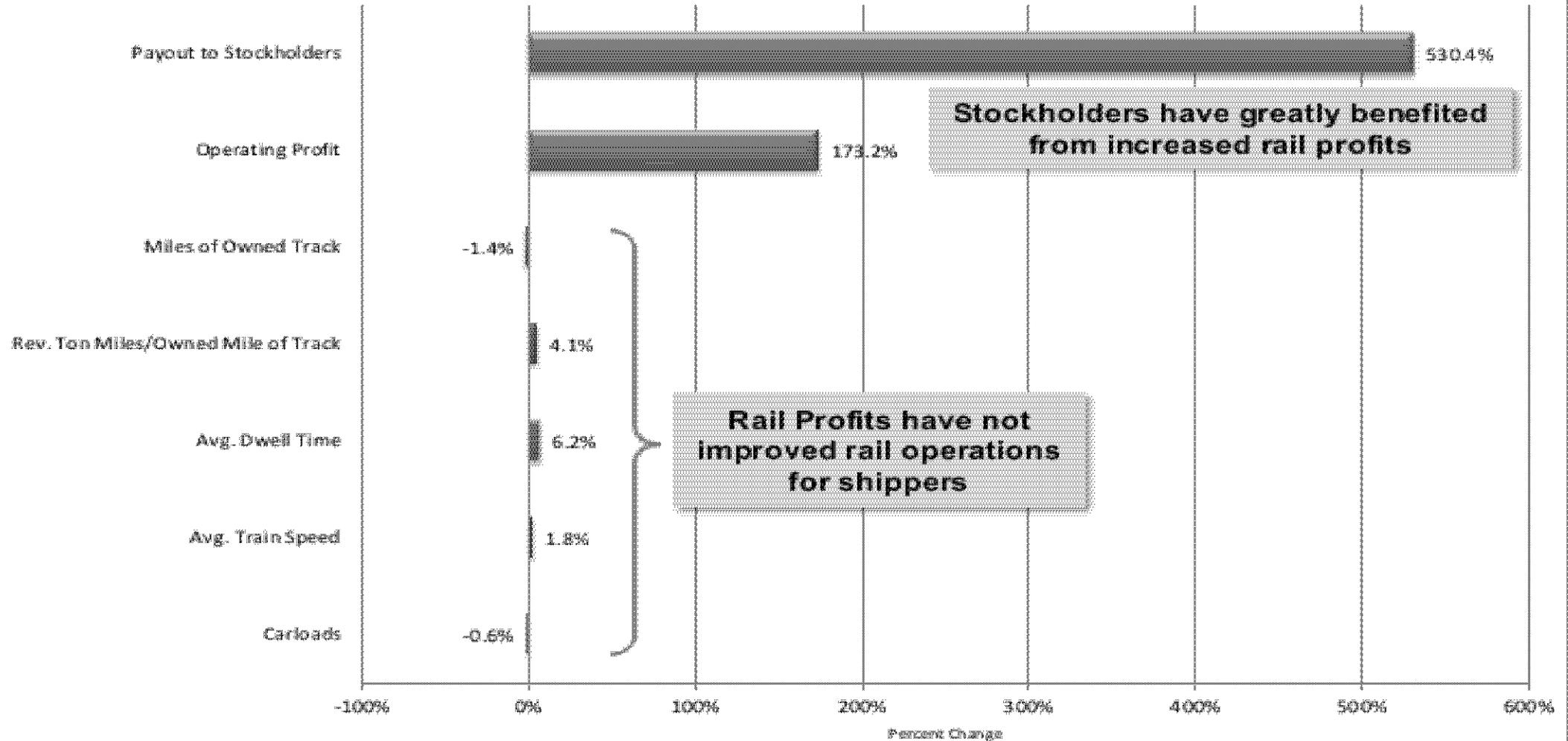


2010-2014 CapEx and Payout to Stockholders = \$103.9 billion



Capital Expenditures Have Not Increased Rail Capacity

Operational versus Commercial Changes of the Four Major Railroads Between 2005 and 2014



Source: Carloads, Operating Profit and Payout to Stockholders are from railroads' SEC filings. Train Speed and Dwell Time are from the railroads' weekly filings to the AAR. The percent change in Owned Miles of Track and Millions of Revenue Ton Miles Per Owned Mile of Track are between 2005 and 2013 as these are AAR values for all Class I railroads and are only available through 2013.

Summary of Big 4 US Railroads' Operational and Commercial Changes Between 2005 and 2014

Operational Changes	2005	2014	Difference	Percent Change
Carloads (000)	34,705	34,497	-208	-0.6%
Avg. Train Speed (mph)	21.4	21.7	0.4	1.8%
Avg. Dwell Time (hours)	26.42	28.04	1.62	6.1%
Miles of Owned Track *	164,291	161,980	-2,311	-1.4%
Millions of Rev. Ton Miles Per Owned Mile of Track *	10.33	10.75	0.42	4.1%

Commercial Changes	2005	2014	Difference	Percent Change	Total \$ 2005-2014
Operating Profit (millions)	\$8,401	\$22,954	\$14,553	173.2%	\$157,320
Payout to Stockholders (millions)	\$1,867	\$10,508	\$8,641	530.4%	\$69,152
Capital Expenditures (millions)	\$6,060	\$14,156	\$8,076	132.8%	\$88,995
Operating Revenue (millions)	\$43,569	\$71,520	\$27,951	64.2%	\$571,888
Average Revenue Per Car	\$1,255	\$2,073	\$818	65.1%	\$1,735
Average Stock Price	\$50	\$134	\$84	167.6%	\$75

All values are for the combination of BNSF, CSX, NS and UP except for miles of Track Owned and Ton Miles Per Owned Mile of Track which are AAR values published for all Class 1 railroads.

Commercial changes are taken from the BNSF, CSX, NS and UP annual reports (10K's) along with annual carloads. Annual Average Train Speed and Dwell Time are taken from the AAR's weekly Performance Measure Rings and an average is calculated for each year.

Average Stock Price is the average for the CSX, NS and UP.

* Values for Owned Miles of Track and Millions of Revenue Ton Miles Per Owned Mile of Track are for all Class 1 railroads and are only available from the AAR through 2013. These changes are, therefore, between 2005 and 2013.