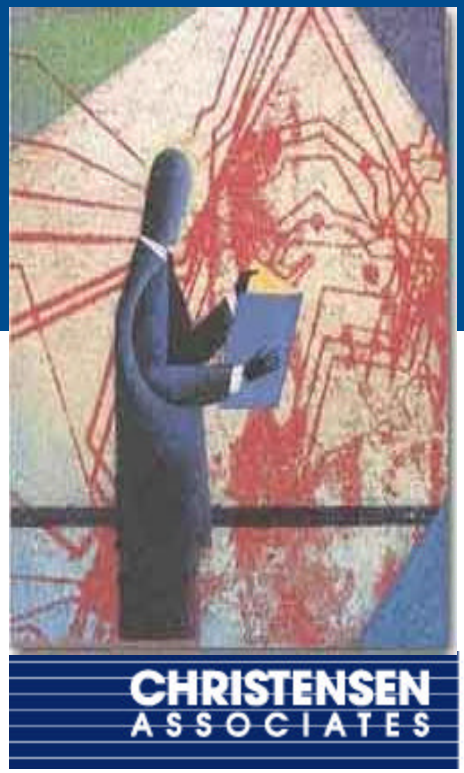


A Review of Distribution Margin Normalization

Dan Hansen
Christensen Associates Energy Consulting

April 18, 2005

Agenda

- Background
- Theoretical effects of DMN
- Evidence of actual DMN effects
- Consideration of other rate structures/alternatives
- Summary
- Recommendations

Overview

- Distribution Margin Normalization (DMN) approved in 2002 (Order 02-634), including
  - Public Purposes Funding
  - Service quality measures and penalties
  - Requirement for an independent review by March 31, 2005 to assist in determination of whether to extend DMN beyond September 30, 2005
- Christensen Associates Energy Consulting (CAEC) was retained to conduct the review

DMN Calculations

- Two components of DMN
  - Elasticity adjustment
  - Deferral component
- Elasticity adjustment accounts for the expected revenue effects of price changes (*e.g.*, when prices increase, customers are expected to use less natural gas)
- Deferral component accounts for 90% of the revenue effects from other (non-weather) causes

Factors Affecting DMN: Assumptions

- The following assumptions affect DMN revenue adjustments:
  - Price response (e_d)
  - Weather response (b)
  - Normal weather (HDD^N)
  - Baseline therms per customer (QPC^B)

Factors Affecting DMN: Measured Variables

- The following variables affect DMN revenue adjustments:
  - Actual weather (HDD^{A})
  - Sendout therms ($Q^{A,S}$)
  - Metered (billed) therms ($Q^{A,M}$)
  - Number of customers (C)
  - Tariff prices (P^{B}, P)
  - Tariff margin (M)

Elasticity Adjustment

$$\text{Elasticity Adj. Rev.} = (M' - M) * Q^{A,M}$$

$$M' = M * QPC^{B} / QPC^{B,P} + \Sigma_i M_i * QPC^{B}_i / QPC^{B,P}$$

$$QPC^{B,P} = QPC^{B} * [(P/P^{B} - 1) * e_d + 1]$$

Deferral Component

$$\text{Deferral} = 90\% * [(QPC^{B,P} * C) - Q^{WN}] * M'$$

$$Q^{WN} = Q^{A,S} + C * b * (HDD^{N} - HDD^{A})$$

Expected Risk Effects

Risk Source	DMN Component	Theoretical Risk Effect	
		NW Natural	Customers
Weather	None	n/a	n/a
Natural gas prices	Elasticity	Reduced	Increased
Economic conditions	Deferral	Reduced	Increased
Other factors	Deferral	Reduced	Reduced

Expected Risk Effects (2)

- Weather risk is not addressed by DMN (WARM does)
- Natural gas price risk is shifted from NW Natural to its customers
  - However, Staff proposed an elasticity adjustment (see footnote 5, Order 02-634), so there seems to be agreement that this shift is appropriate

Expected Risk Effects (3)

- Evidence indicates that economic risk is not a concern in NW Natural's Oregon service territory
  - Residential & commercial use per customer is not affected by economic conditions (the unemployment rate)
  - Natural gas prices and weather explain the majority of the variation in use per customer from 1993 through 2004

Expected Risk Effects (4)

- Other risks (*i.e.*, fluctuations in use per customer that cannot be attributed to weather, gas prices, or economic conditions) are likely reduced for both NW Natural and its customers
  - Reduced variability in bills increases certainty for both parties

Expected Incentive Effects

- Reduce NW Natural's disincentive to promote conservation
  - Less incentive to promote load growth, more accepting of conservation
- New customer connections
  - NW Natural can gain from deferrals if new connections customers use less than baseline amount

Expected Incentive Effects (2)

- Other incentives of concern
  - Uncollectible accounts: unaffected by DMN
  - Customer service: increased revenue certainty may lead to reduction in quality of customer service (however, NW Natural still competes on fuel choice, so effect seems unlikely)

Possibilities for Gaming DMN

- For each customer class, four parameters must be set
  1. Price elasticity of demand (e_d)
  2. Normal weather definition (HDD^N)
  3. Weather sensitivity parameter (b)
  4. Baseline use per customer (QPC^B)
- Examined whether parameters can be "gamed" to the advantage of NW Natural or its customers

Gaming the Price Elasticity

- Would not be able to game e_d if 90% factor were removed from deferral component
- Table shows effect of setting elasticity too high or too low (*e.g.*, if you expect prices to rise, customers benefit if e_d is too low and NW Natural benefits if e_d is too high)

	Price Increase	**Price Decrease**
e_d **too low**	Surcharge too low	Refund too low
e_d **too high**	Surcharge too high	Refund too high

Gaming the Definition of Normal Weather

- Evaluating only DMN, the effects of HDD^N deviating from its true value are:
  - HDD^N too low = surcharges to customers
  - HDD^N too high = refunds to customers

- However, 90% of this incentive is canceled out if DMN is combined with WARM
  - WARM has the opposite HDD^N gaming incentives
  - Gaming incentive would completely cancel out if 90% factor were removed from deferral component

Gaming the Weather Sensitivity Parameter

- Incentive to game b is more complicated to study, as it depends on whether HDD^N is above or below HDD^A
- As with HDD^N, incentive is offset by WARM, and would be eliminated by WARM if 90% factor were removed from deferral component

	$HDD^A < HDD^N$	$HDD^A > HDD^N$
b **too low**	Surcharges	Refunds
b **too high**	Refunds	Surcharges

Gaming Baseline Use per Customer

- Baseline use per customer and the margin are jointly determined
- Without DMN, utility wants low QPC^B and customers want high QPC^B
- If 90% factor is eliminated, there is no incentive to game QPC^B
- With 90% factor, utility benefits with low QPC^B and customers benefit with high QPC^B

Evidence of DMN Effects: Outline

- Revenue effects
  - Historical
  - Simulated
- Sources of revenue adjustments
- NW Natural marketing efforts
- Residential HEF program performance
- Organizational and compensation effects
- Service quality

Historical DMN Revenue Effects

Table 4-1: Revenue Effects of DMN Mechanism: October 2002 through September 2004

Time Period	Customer Class	Elasticity Effect ($000)	Deferral ($000)	Total ($000)
Oct. 2002 to Sep. 2003	Residential	7,665	3,093	10,758
	Commercial	2,529	1,573	4,102
	Total	10,194	4,666	14,860
Oct. 2003 to Sep. 2004	Residential	940	-788	152
	Commercial	335	91	426
	Total	1,275	-697	578

Notes: positive values indicate surcharges to customers and negative values indicate refunds to customers.

Simulated DMN Revenue Effects

- Simulated DMN revenue flows using 1993 through 2004 annual NW Natural data
- Goal: sufficient detail to be meaningful, enough abstraction to be feasible
- Used 2000 as the base year
  - Each year evaluated with reference to 2000 (as opposed to previous year)
  - Allows for prices to be both lower and higher than base levels

Figure 4-2: Simulated Residential DMN Revenue Adjustments: 1993 to 2004

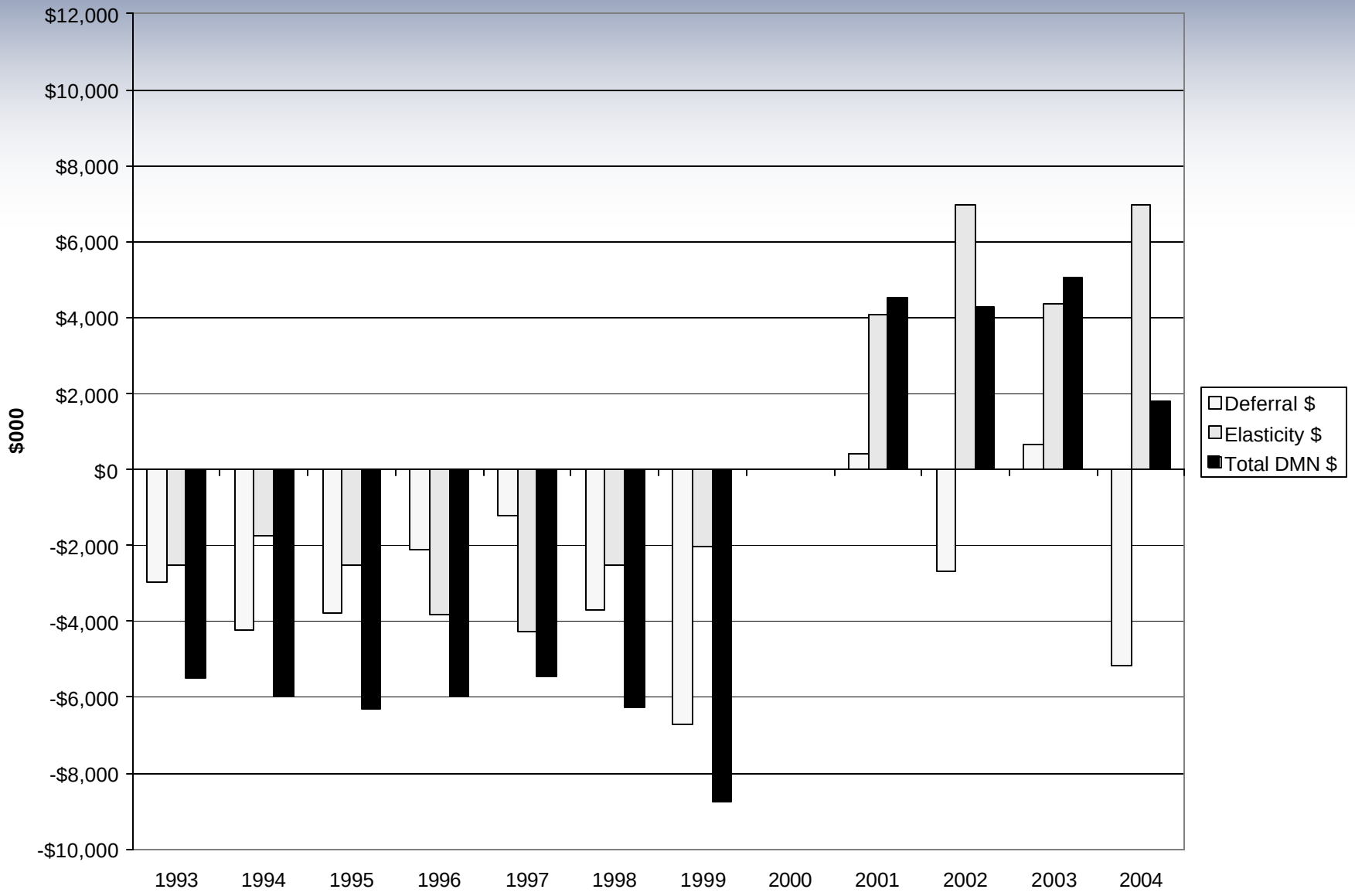


Figure 4-3: Simulated Commercial DMN Revenue Adjustments: 1993 to 2004

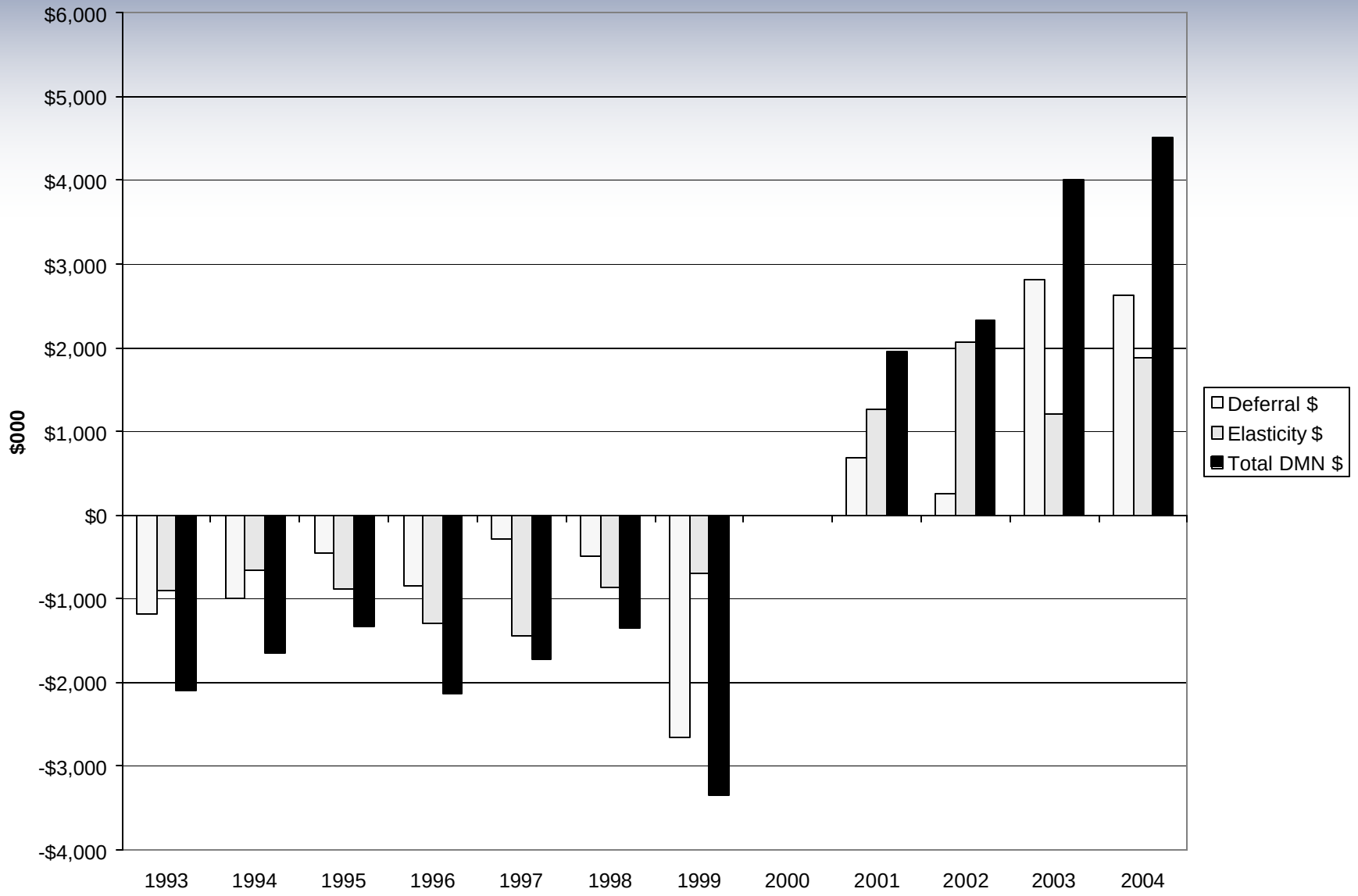


Figure 4-6: Commercial Price-Adjusted Baseline and Weather-Normalized Use per Customer: 1993 to 2004

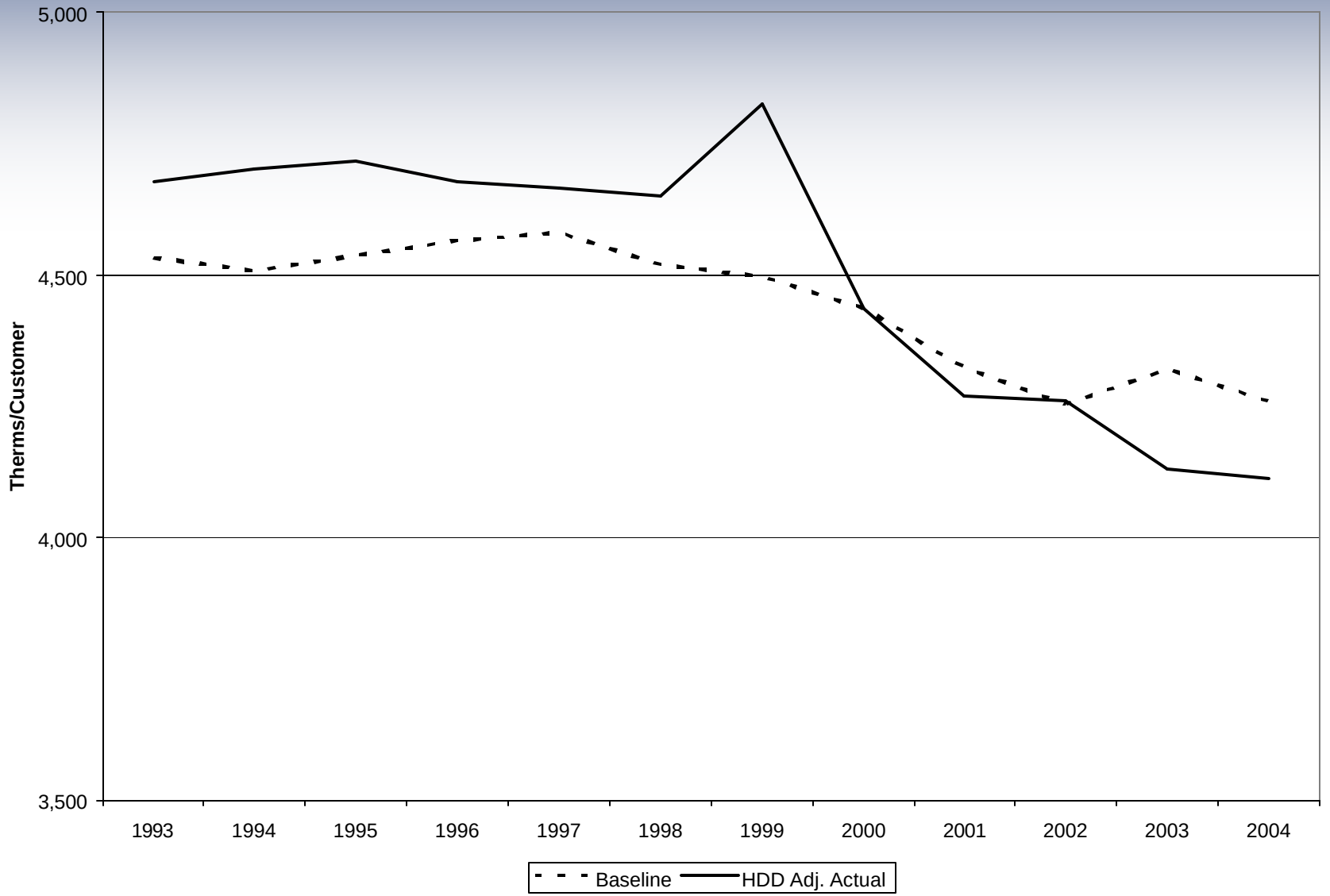
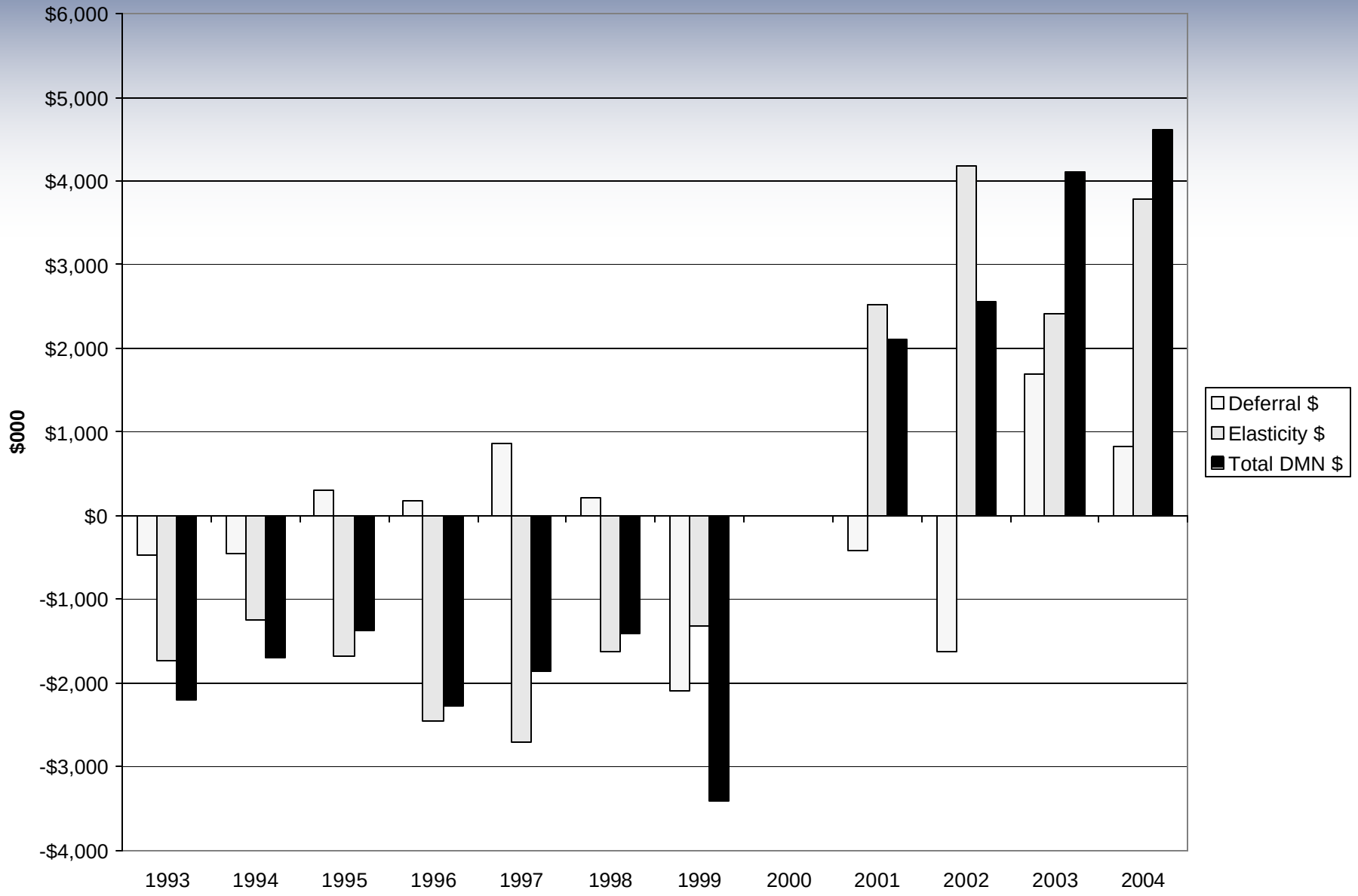


Figure 4-8: Simulated Commercial DMN Revenue Adjustments Using Calibrated Price Elasticity: 1993 to 2004



Sources of DMN Revenue Adjustments

- Staff interested in share of DMN revenue adjustments that can be attributed to:
  - Conservation
  - Price elasticity effects
  - Economic activity
- Not straightforward to do this, *e.g.*, if prices rise and the unemployment rate go up at the same time, it's not obvious which caused usage to decrease

Sources of DMN Revenue Adjustments (2)

- Performed econometric analysis to be able to infer sources of revenue adjustments
- Used 1993 to 2004 annual data from NW Natural's Oregon service territory
  - Heating degree days
  - Price
  - Unemployment rate
  - Cumulative HEF adoptions
  - Time trend (to account for changes in building codes, appliance stock, etc.)

Table 4-2: OLS Estimates of Residential Usage per Customer from 1993-2004

Variable	All Variables	No Time Trend	Only HDD, Price
	(1)	(2)	(3)
HDD	0.166** (0.040)	0.152** (0.033)	0.161** (0.028)
Price	-173.0 (108.8)	-151.4 (99.3)	-224.4** (34.0)
Unemployment Rate	-4.392 (12.386)	1.759 (7.700)	n/a
HEF Adoptions	0.0011 (0.0036)	-0.0011 (0.0013)	n/a
Time trend	-6.226 (9.539)	n/a	n/a
Constant	475.3** (107.0)	449.1** (95.0)	472.0** (83.9)
R-squared	0.921	0.915	0.907

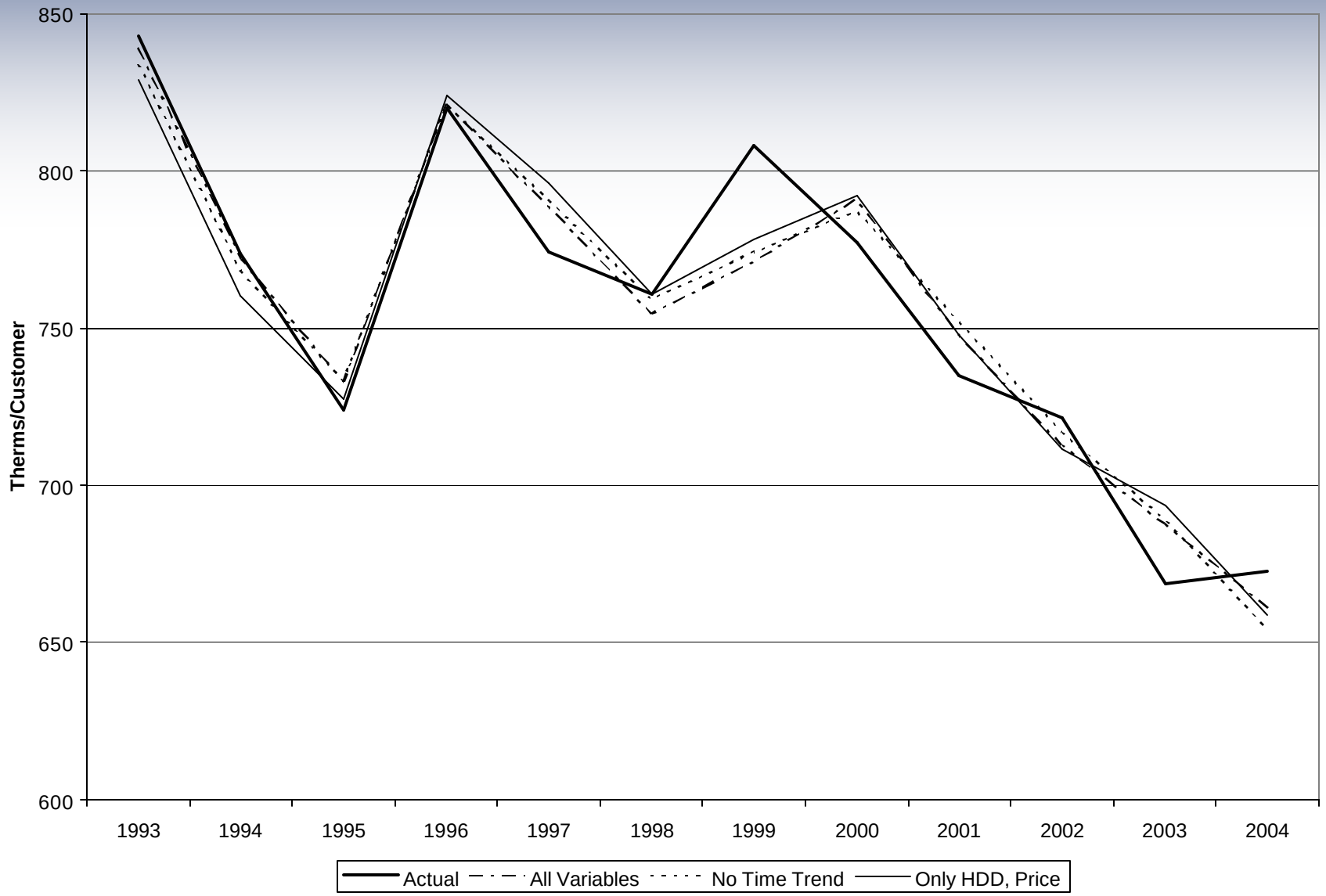
Notes: The number of observations = 12. The dependent variable is residential use per customer in therms. Standard errors are in parentheses. ** denotes that the variable is statistically significant at the 5 percent level.
* denotes that the variable is statistically significant at the 10 percent level.

Table 4-3: OLS Estimates of Commercial Use per Customer from 1993-2004

Variable	All Variables	No Time Trend	Only HDD, Price
	(1)	(2)	(3)
HDD	0.983** (0.180)	1.004** (0.177)	0.979** (0.169)
Price	-939.3* (476.5)	-1,299.7** (271.5)	-1,431.1** (202.2)
Unemployment Rate	-36.39 (41.82)	-30.71 (40.99)	n/a
Time trend	-17.78 (19.23)	n/a	n/a
Constant	2,970.1** (482.3)	2,997.1** (477.1)	2,954.1** (461.9)
R-squared	0.927	0.918	0.912

Notes: The number of observations = 12. The dependent variable is residential use per customer in therms.
Standard errors are in parentheses. ** denotes that the variable is statistically significant at the 5 percent level.
* denotes that the variable is statistically significant at the 10 percent level.

Figure 4-12: Actual versus Predicted Residential Use per Customer



Conclusions from Econometric Analysis

- Weather and price were the two major drivers of changes in use per customer
  - Each accounts for about 50% of the change in use per customer from 1993 to 2004
- Economic conditions do not systematically affect use per customer
  - No evidence of shift of economic risk from NW Natural to customers
  - Economic activity does not account for a significant share of DMN revenue adjustments
- HEF program did not affect aggregate residential use per customer
  - Conservation does not account for a significant share of DMN revenue adjustments

DMN Effects on NW Natural Marketing Efforts

- DMN reduces NW Natural's disincentive to promote conservation
- Examine data to see whether the change in incentives resulted in a change in behavior
  - Consumer Information budget
  - Print and radio advertisements

Consumer Information Budget

Year	Category A	Category B	Category C
2000	25%	1%	74%
2001	54%	1%	45%
2002	68%	10%	22%
2003	73%	6%	21%
2004	60%	23%	17%

Category A: Energy efficiency, conservation, and service information (including rate or account information)
Category B: Safety communication and advertising
Category C: Promotional advertising and communications to non-customers, or image advertising

Consumer Information Budget (2)

- Shift away from Category C and toward Category A
- Consistent with incentives provided by DMN
- Also consistent with UG-132 Commission ruling regarding allowed recovery of image advertising expenses (Category C)

Print and Radio Advertisements

- We reviewed each print and radio advertisement from 2000 to 2004
- Placed each in one of seven categories:
  - HEF program: directly discusses rebates and incentives associated with the residential high-efficiency furnace program
  - Energy tips: describes ways that customers can save money by reducing usage
  - Direct use conservation: makes the case that direct use of natural gas is an act of conservation
  - Safety: warnings about digging or what to do when you smell gas
  - Load growth: includes promotions for fireplaces, furnace conversions (primarily from oil), and water heater conversions
  - Image: includes general messages (e.g., Black History Month), and messages that provide general support for the use of gas (e.g., clean, efficient, less costly)
  - Payment options, other regulatory: includes information about payment options, UNITY, and regulatory notices of changes in rates

Print and Radio Advertisements (2)

Category	2000	2001	2002	2003	2004
HEF Program	1	10	10	7	4
Energy tips	0	0	0	0	3
Direct use conservation	1	4	5	7	2
Safety	1	3	4	10	11
Load growth	8	2	3	3	1
Image	3	10	9	5	5
Payment options, other regulatory	0	1	2	1	5

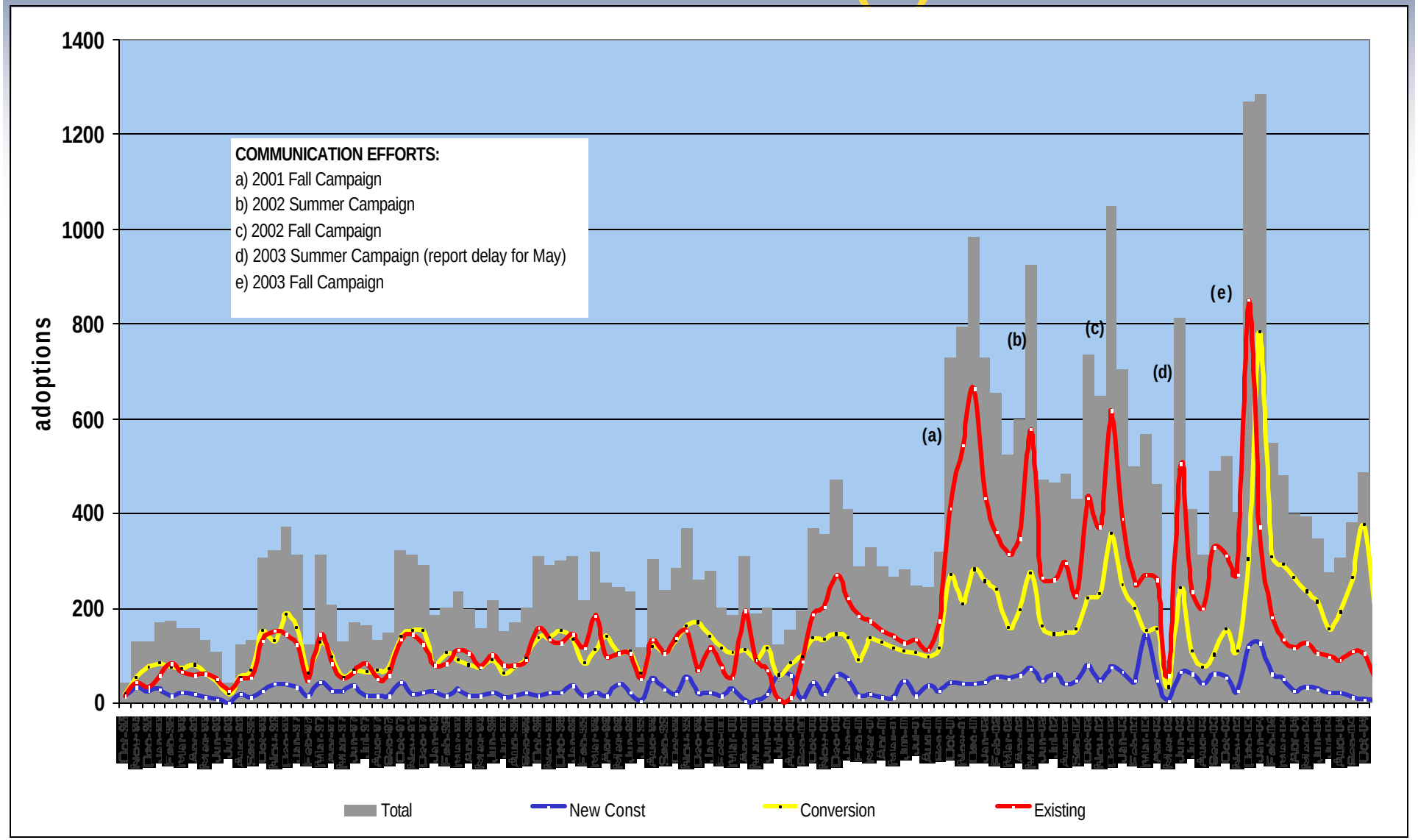
Print and Radio Advertisements (3)

- Table does not indicate intensity of advertising for each message
- Provides some further evidence of a shift toward promoting conservation
- However, shift begins in 2001, *before* DMN was approved
  - NW Natural claims it decided to behave *as though* they had DMN
  - Shift may also reflect response to UG-132

Residential HEF Program Performance

- High-efficiency furnace (HEF) program began in 1995
- NW Natural revised its approach in October 2001
  - Coordinate more closely with HVAC distributors
  - Packaged various incentives
  - New communication efforts

Residential HEF Program Performance (2)



Residential HEF Program Performance (3)

- Interviewed two HVAC distributors
  - Mike Dawson, Gensco
  - Glen Bellshaw, Airefco
- Reported the following statistics
  - Percentage increase in HEF sales between 2000 and 2001 in OR more that twice as high as in Seattle/Tacoma, Eastern Washington, Montana/Idaho
  - Share of HEF furnace sales in 2003/2004 in Oregon 3.75 times higher than in Washington
  - Oregon has highest HEF share of furnace sales in the nation

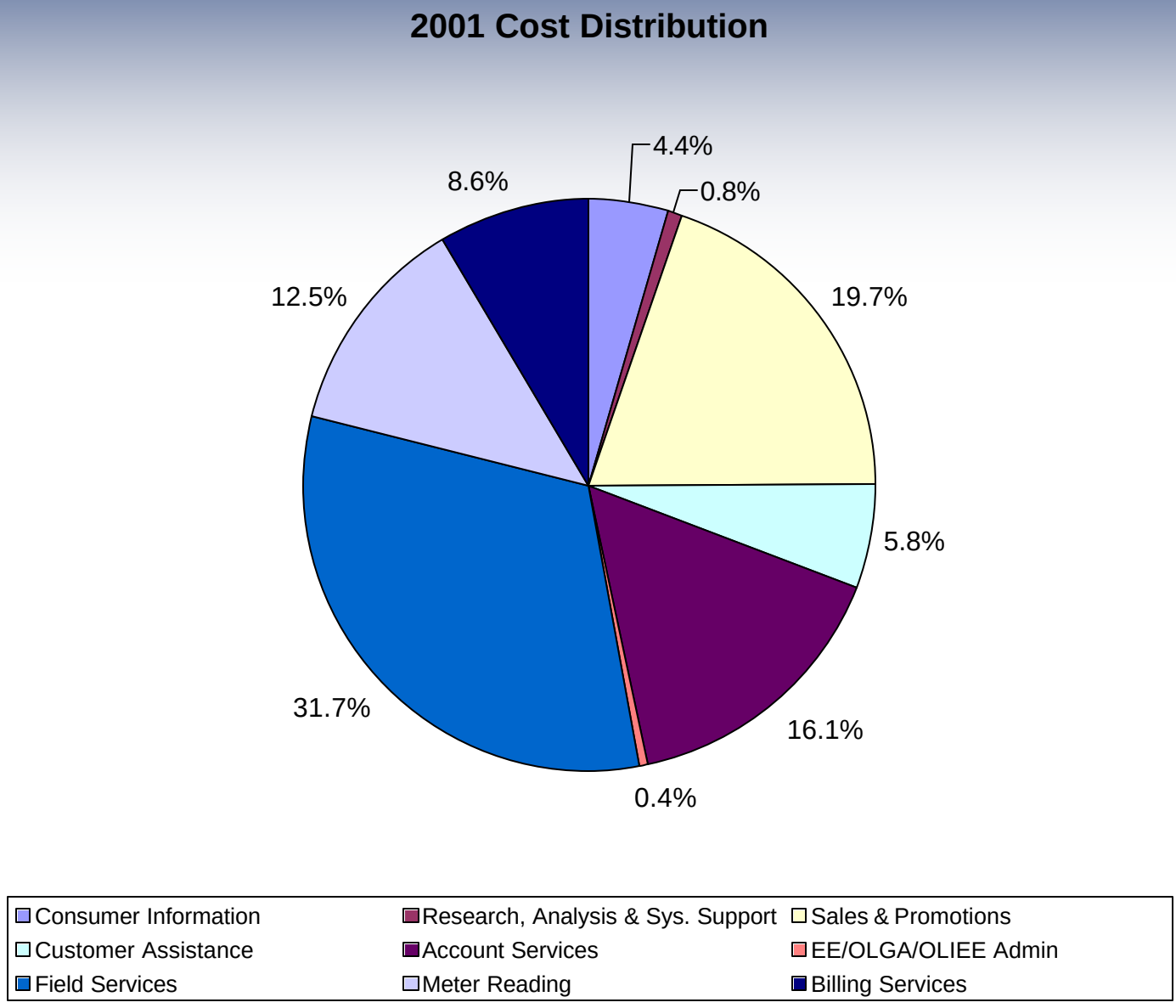
Residential HEF Program Performance (4)

- Improvements in program began in 2001, *before* DMN was approved
  - Again, NW Natural reports that it decided to behave *as though* they had DMN in 2001
- Despite large increases in adoptions, cumulative therm reductions through 2004 equal about 1% of 2004 residential usage

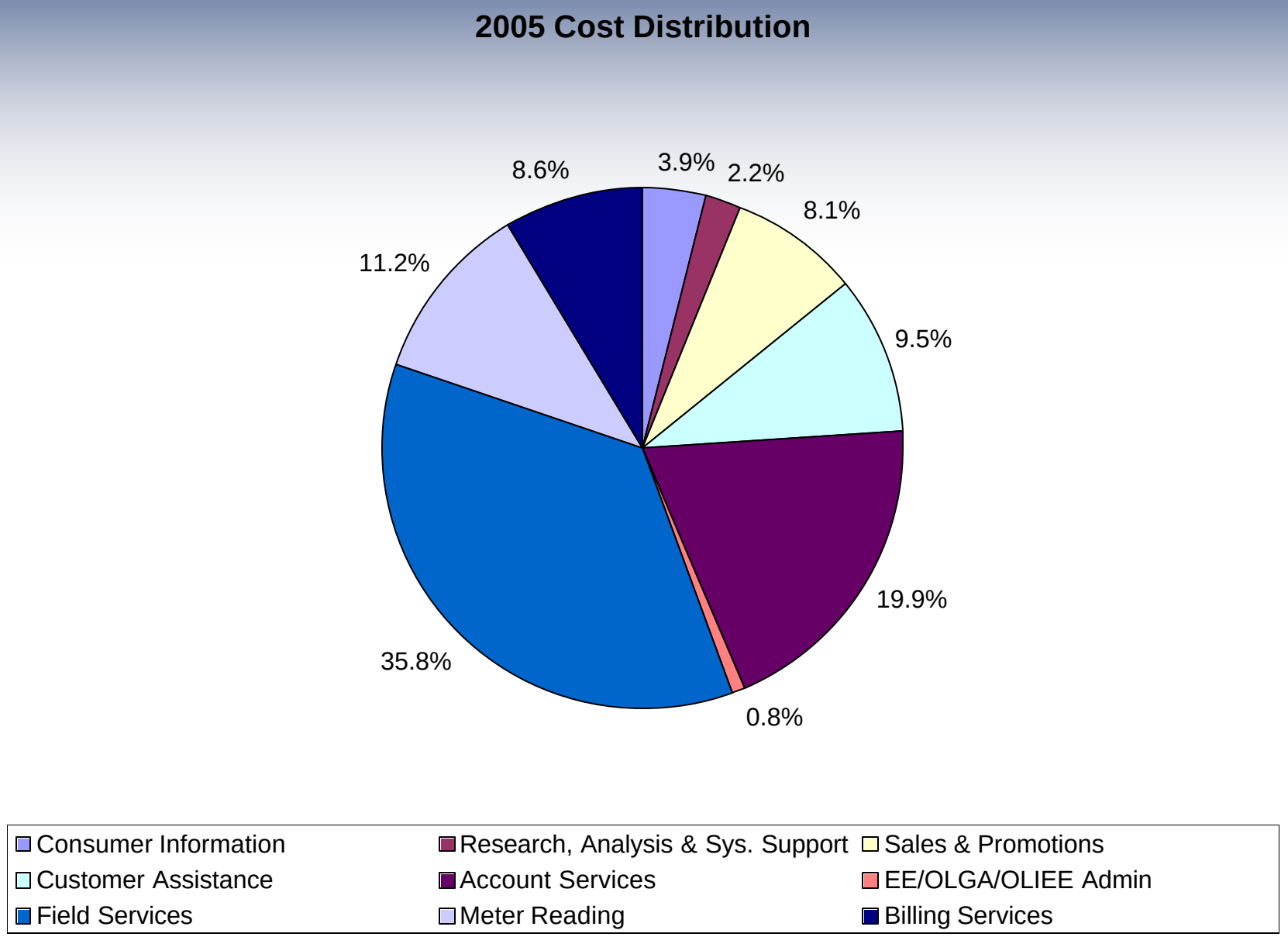
Organizational and Compensation Effects

- Compare 2001 to 2005 distribution of NW Natural costs across areas
- Changes in compensation policies

Distribution of NW Natural Costs: 2001



Distribution of NW Natural Costs: 2005



Distribution of NW Natural Costs

- 11.6 percentage point reduction in Sales & Promotions budget
- Combined 11.6 percentage point increase in budgets for:
  - Customer assistance
  - Field services
  - Account services
- These changes are reflected in FTE tables in full report
- Grant Yoshihara believes that DMN may account for about 50% of the shift from sales & promotions toward customer assistance and customer account services

Compensation Practices

- Current compensation practices:
  - All employees eligible for a bonus that is based in part on customer satisfaction surveys
  - Individual goals and measures include
    - Customer satisfaction
    - Relationship with Energy Trust of Oregon
    - Measures of program success (*e.g.*, HEF program)
- Discontinued use of commissions for Consumer Services conversion representatives in 2004

Customer Service Quality

- We examined three types of data relating to service quality and customer satisfaction:
  - Customer complaints
  - NW Natural surveys
  - J.D. Power surveys
  - Call center performance

Customer Complaints

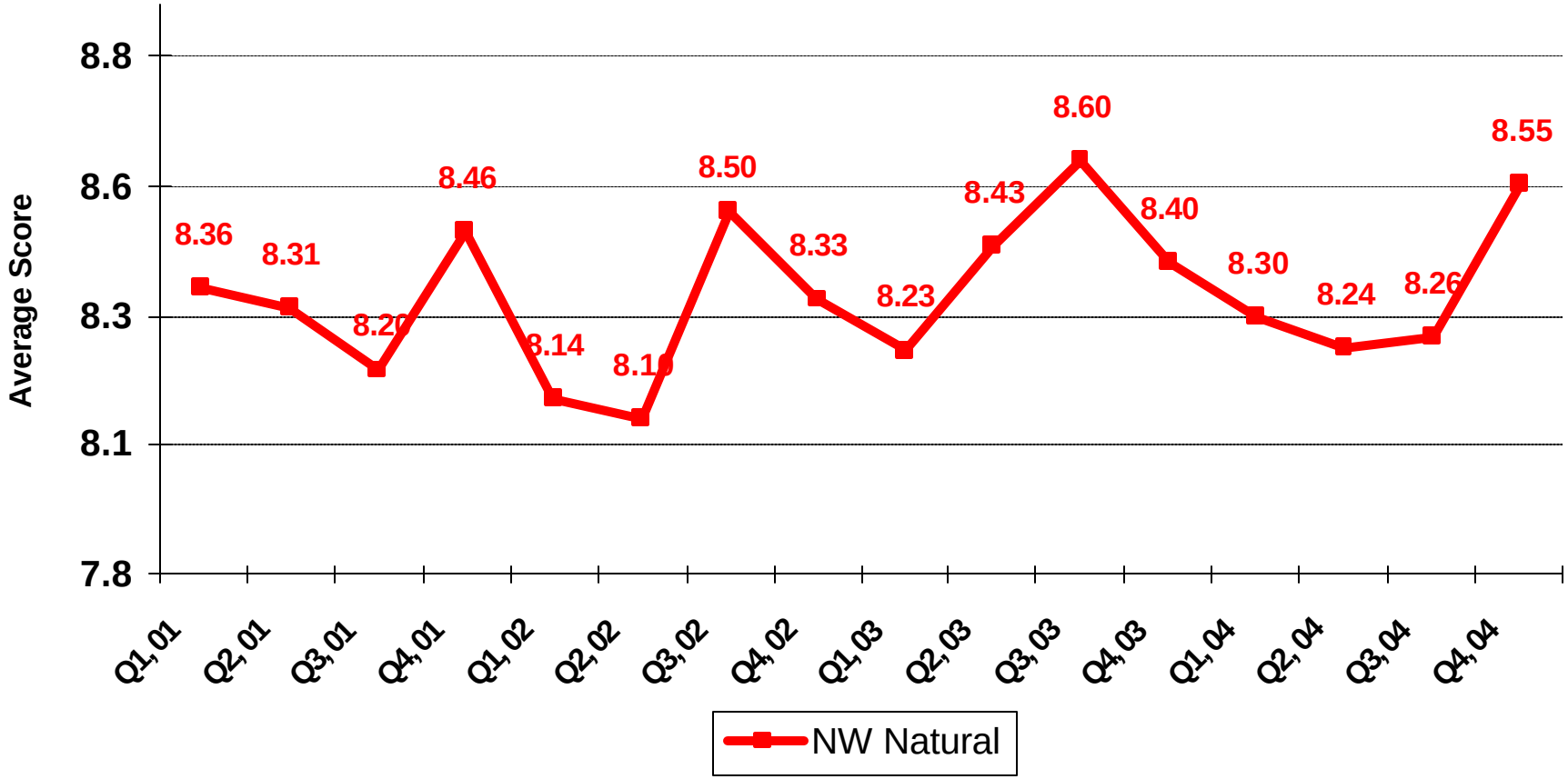
- Obtained customer complaints to OPUC associated with UG-143 (from Deborah Garcia)
- Twenty-six complaints registered between September 2002 and January 2003
- Tone of complaints similar – question the appropriateness and/or legality of Public Purposes Funding
- No complaints with respect to DMN specifically (perhaps not surprising)

NW Natural Customer Service Ratings

- Report 2001 through 2004 results for three questions: “How well does your gas utility perform on…
  1. Having skilled and knowledgeable employees?”
  2. Providing dependable service?”
  3. Providing timely customer service?”

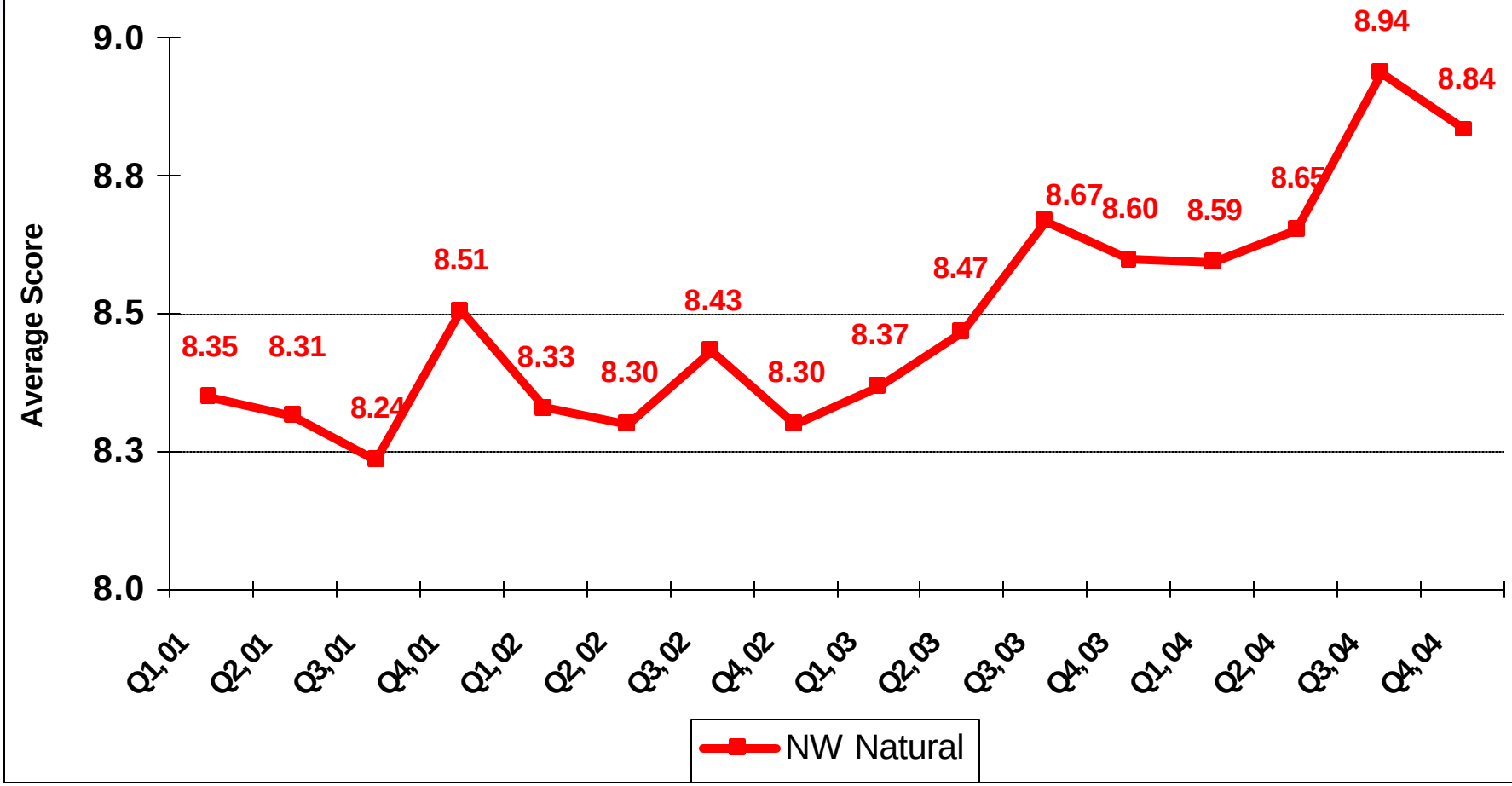
Having Skilled & Knowledgeable Employees

NW Natural vs. Electric, Quarterly, 2001 thru December, 2004



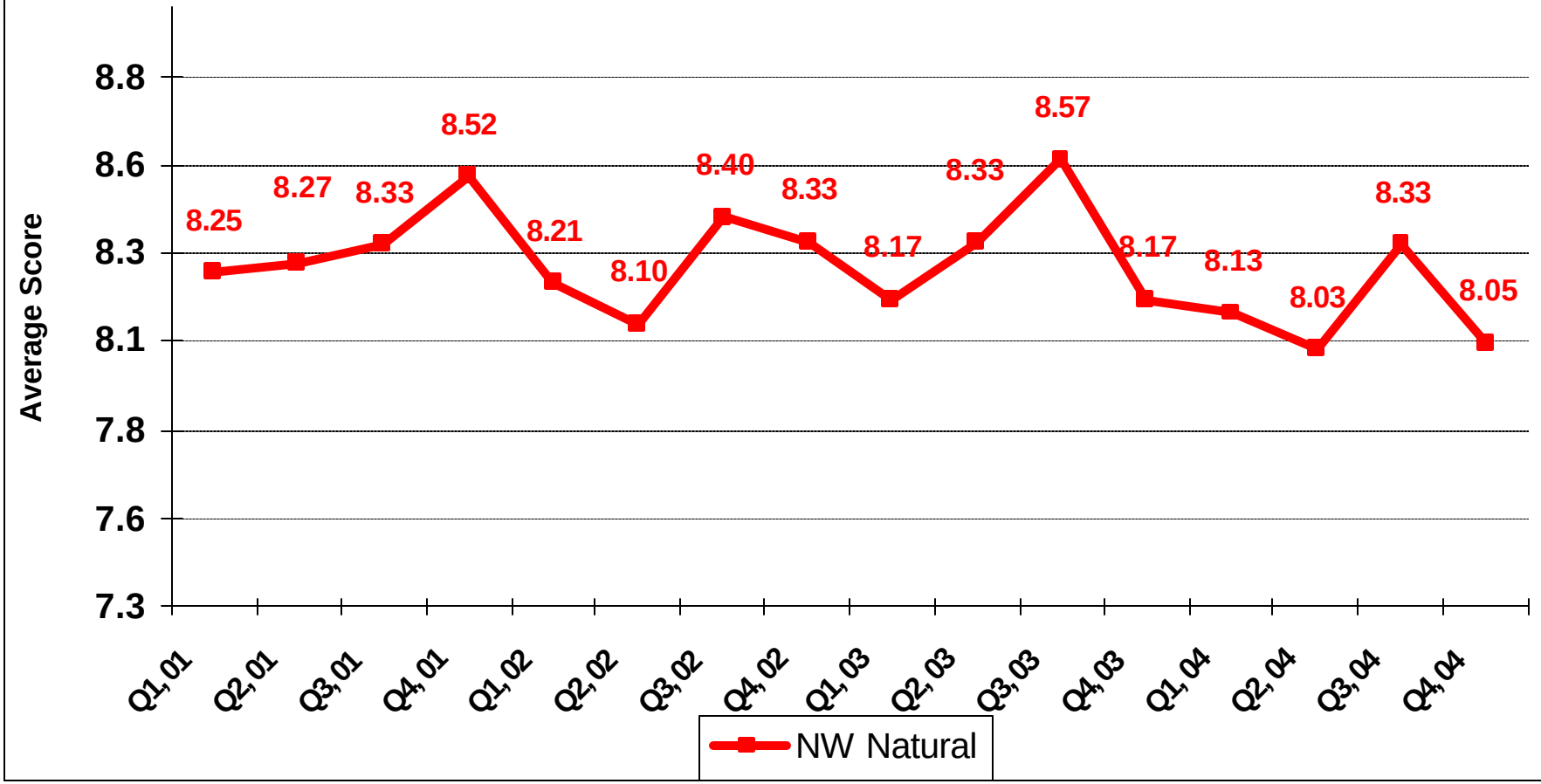
Providing Dependable Service

NW Natural vs. Electric, Quarterly, 2001 thru December, 2004



Providing Timely Customer Service

NW Natural vs. Electric, Quarterly, 2001 thru December, 2004



J.D. Power Survey Data

- How would you rate the ability of your natural gas utility to help you reduce your monthly bill? Scale is from one (unacceptable) to ten (outstanding).
  - NW Natural 26th out of 55 in 2003, 14th out of 55 in 2004
- How familiar are you with education or rebate programs from your local natural gas utility to help you with ways to use less gas? Scale is from one (not at all familiar) to ten (very familiar).
  - NW Natural 6th out of 55 in 2003 and 2004

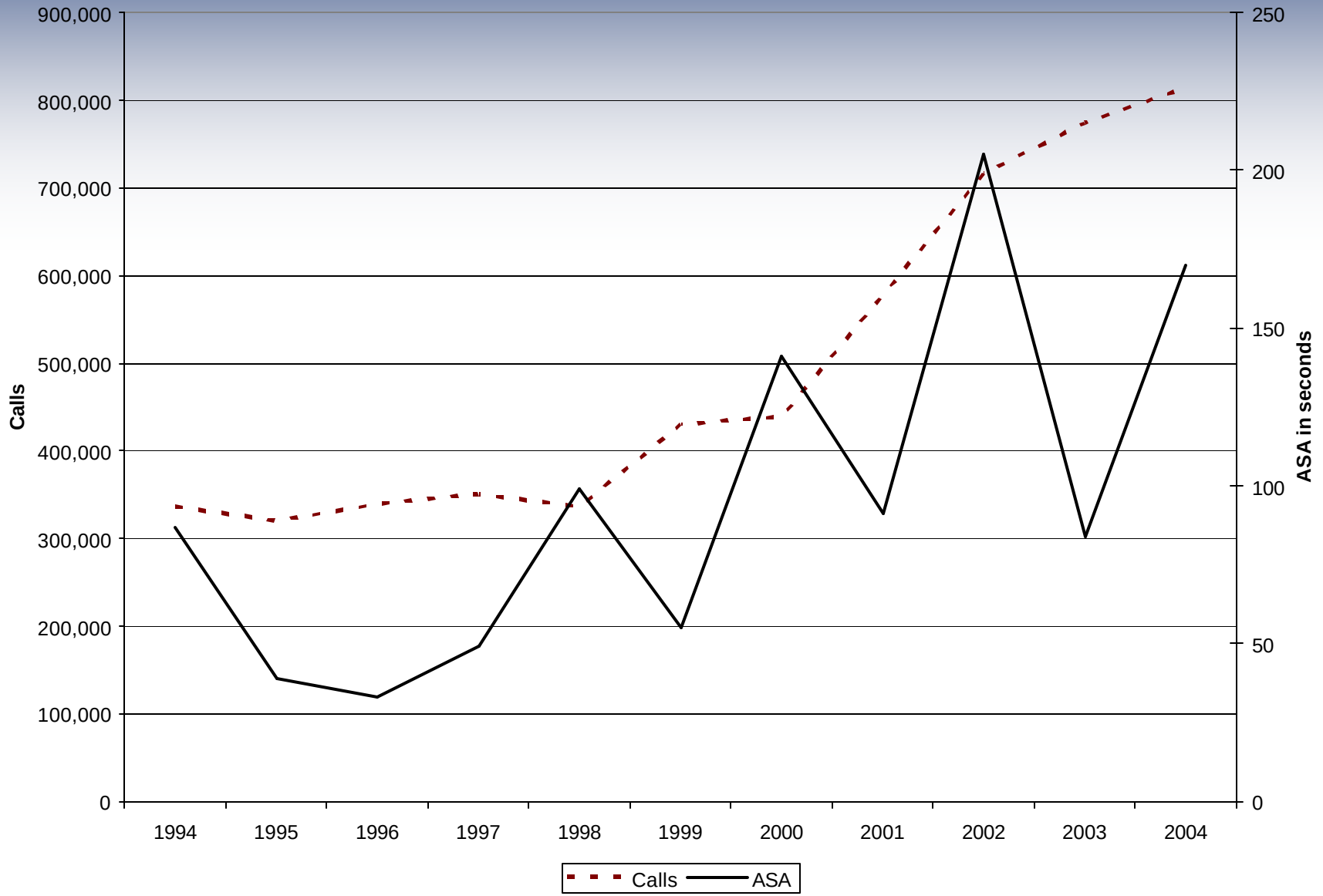
J.D. Power Survey Data (2)

- The Overall Customer Satisfaction Index includes the following factors:
  - Price and value
  - Company image
  - Field service
  - Customer service
  - Billing and payment
- NW Natural ranked 10th out of 55 in 2003 and 9th out of 55 in 2004

J.D. Power Survey Data (3)

- The Customer Service Index includes the following factors:
  - Courteous and friendly employees
  - Answering questions first time final
  - Length of time to answer questions/resolve problem
  - Promptness in speaking to CSR
  - Employees having sufficient knowledge
- NW Natural ranked 4th out of 55 in 2003 and 5th out of 55 in 2004

Call Center Performance: 1994-2004



Customer Service Quality Summary

- Customer satisfaction and service quality do not appear to have deteriorated with DMN
- Internal surveys reveal mixed evidence, but improvement in “providing dependable service” is the most notable change
- J.D. Power ratings high and improving
- Call center performance follows volumes, with recent improvement in ASA (likely due to increase in call center personnel)

Financial Effects

- Commission Staff interested in potential financial effects of DMN
- We do not attempt to explain changes in financial indicators – changes may have been caused by DMN, but many other possibilities exist
- Areas we examined:
  - Lines of credit
  - Bond ratings and issuances
  - Stock offerings
  - NW Natural stock price versus index of comparable utilities
  - Reports to ratings agencies

Financial Effects: Lines of Credit

Date	Total Amount of Credit Lines ($ millions)	Basis Point Fees
10/1998 to 9/1999	$100	8.18
10/1999 to 9/2000	$120	8.38
10/2000 to 9/2001	$120	7.50
10/2001 to 9/2002	$150	8.40
10/2002 to 9/2003	$150	10.63
10/2003 to 9/2004	$150	9.50

- Moved to overlapping 2-year lines of credit in 10/2002
- DMN may have reduced the size of the credit lines that NW Natural secured

Financial Effects: Bond Issuances and Ratings

- Standard and Poor's bond rating increased from A to A+ in 2004
- DMN may have helped improve NW Natural's business risk score to 1 (lowest risk on a scale of 1 to 10)
- Better business risk score improves bond rating, lowers bond interest rates, reduces share of equity that NW Natural must maintain

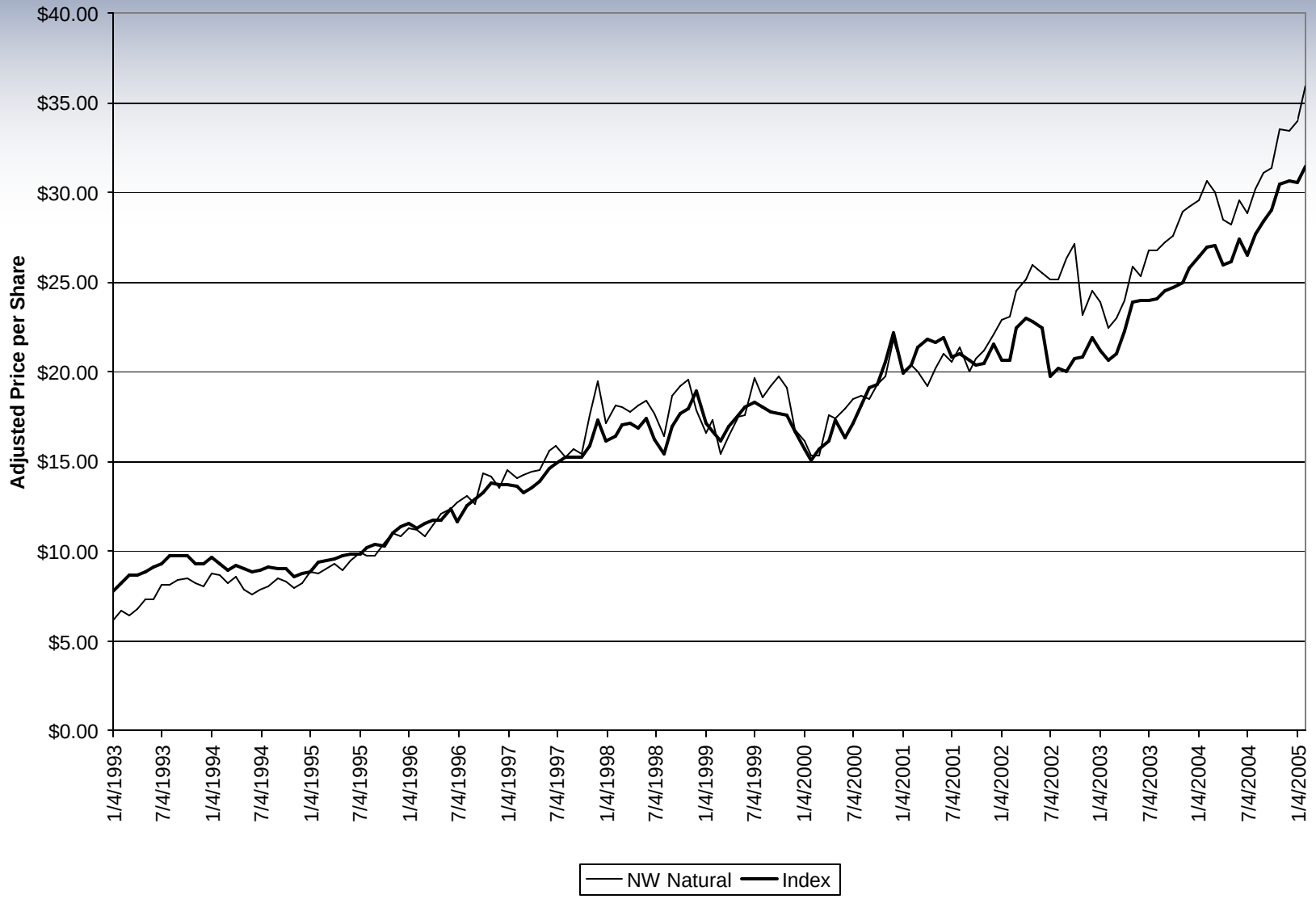
Financial Effects: Stock Offerings

Year	Common Stock Issued	Common Stock Repurchased	Preferred Stock Retired
1993	$5,720	$0	$11,177
1994	$5,847	$0	$1,091
1995	$39,569	$0	$1,163
1996	$5,690	$0	$1,091
1997	$6,465	$0	$1,320
1998	$52,384	$0	$930
1999	$5,356	$0	$935
2000	$4,826	$2,441	$814
2001	$5,157	$5,792	$750
2002	$6,872	$0	$25,750
2003	$8,349	$0	$8,428
2004	$48,153	$0	$0

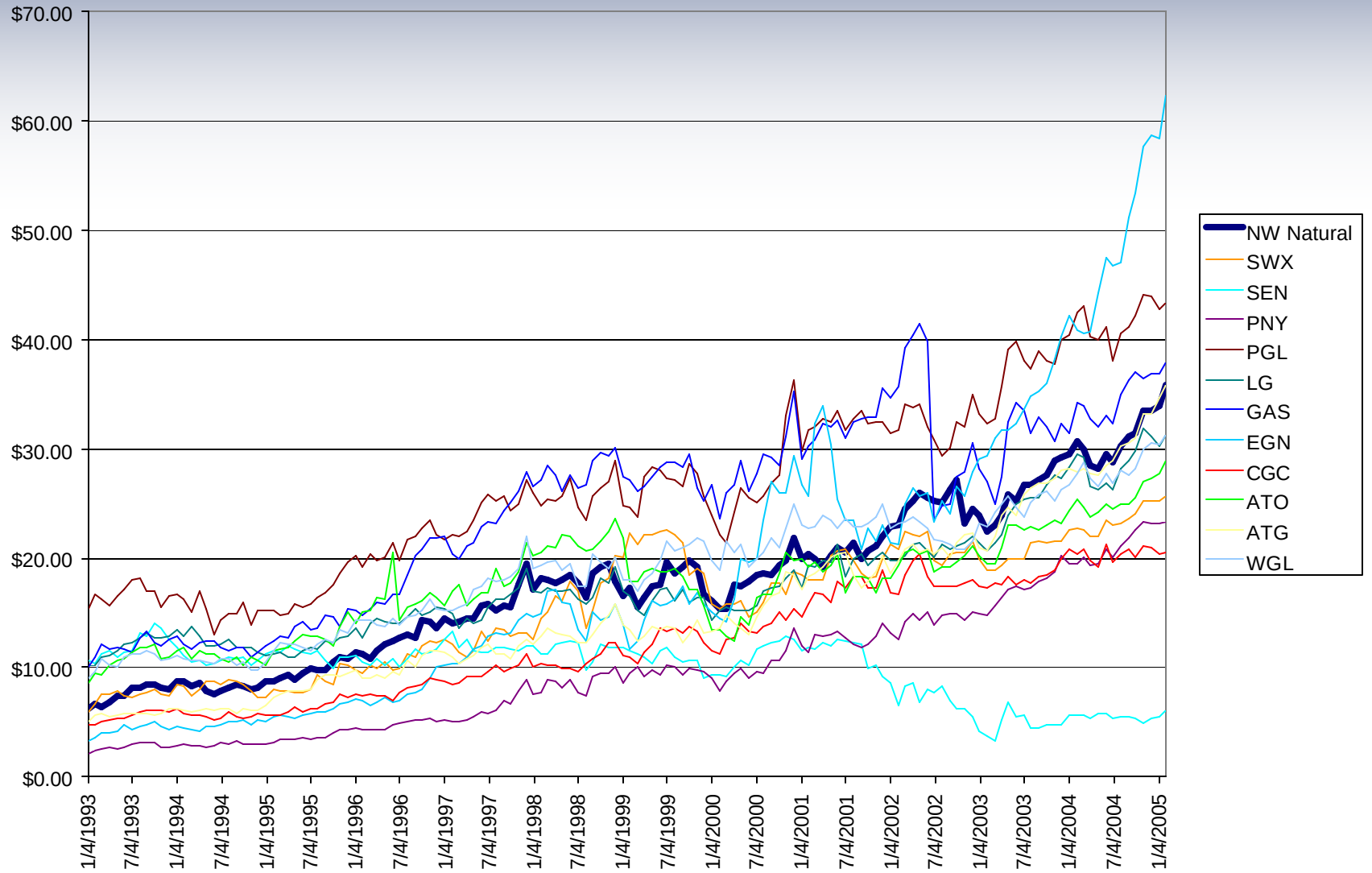
Financial Effects: NW Natural Stock Price versus Index

- Comparison group of utilities:
  1. AGL Resources (ATG)
  2. Atmos Energy (ATO)
  3. Cascade Natural Gas (CGC)
  4. Energen (EGN)
  5. Laclede Gas (LG)
  6. Nicor (GAS)
  7. NW Natural Gas (NWN)
  8. Peoples Energy (PGL)
  9. Piedmont Natural Gas (PNY)
  10. SEMCO Energy (SEN)
  11. Southwest Gas (SWX)
  12. WGL Holdings (WGL)

Financial Effects: NW Natural Stock Price versus Index (2)



Financial Effects: NW Natural Stock Price versus Index (3)



Financial Effects: Reports to Ratings Agencies

2003 Financial Highlights

- Earnings of $1.76 a share, vs. $1.62 a share in 2002
  - Oregon general rate case contributed $0.09 a share in additional revenues
  - Earnings of $0.17 a share from Gas Storage, vs. $0.14 in 2002
  - Earnings of $0.08 a share from Oregon decoupling mechanism, $0.05 a share from WARM, vs. $0.04 a share from decoupling in 2002
  - Earnings of $0.12 a share from gas commodity savings and off-system sales, vs. $0.28 in 2002
  - Electric generation market contributed no earnings in 2003, vs. $0.11 a share in 2002
  - Higher earnings for pension, health benefits and insurance reduced earnings in 2003 by $0.12 a share
  - Results in 2002 included charges equivalent to $0.33 a share for PGE transaction costs written off
- Cash from operations (before working capital changes) of $102 million, vs. $121 million in 2002
- Utility investments of $125 million, vs. $80 million in 2002
- Net increase in long-term debt of $35 million, vs. $49.5 million in 2002
- Net decrease in preferred and preference stock of $8 million, vs. decrease of $26 million in 2002

OLGA and OLIEE

- DMN Order included Public Purposes Funding, including
  - OLGA: low-income bill payment assistance
  - OLIEE: low-income weatherization assistance
- We received feedback from organizations that administer the programs regarding
  - The value that they place on the funding
  - Their experience in working with NW Natural
- OLIEE is being separately evaluated by Quantec

OLGA and OLIEE (2)

- For both programs, respondents reported a high value on funding
  - Increased the number of households that receive assistance
  - Ancillary benefits of OLIEE: inspections may reveal safety problems that might not have been found otherwise
- Respondents report mixed experiences working with NW Natural
  - About half report very positive experiences
  - Other half would like to see improvement in communication, coordination, and methods

Alternative Rate Mechanisms

- Several other methods (in addition to DMN) have been suggested to address conservation incentives and uncertainty of fixed cost recovery
  - Fixed/variable rate design
  - Full decoupling (revenue per customer decoupling, or RPCD)
  - Elasticity adjustment with lost revenue adjustment

Fixed/Variable Rate Design

- Fixed monthly charges recover fixed costs, volumetric rates recover variable costs
- Recovery of fixed costs through fixed charges:
  - Removes relationship between sales volumes and fixed cost recovery
  - Removes disincentive to promote conservation and energy efficiency

Fixed/Variable Rate Design: Objections

- *Equity concerns*: if natural gas consumption is correlated with income, high fixed charges adversely affects low income customers
- *Environmental concerns*: low volumetric price reduces incentive for customers to conserve (correct if price does not include environmental externalities of natural gas use)

Full Decoupling

- Adjustment = $M * C * (QPC^B - QPC^A)$
- Differs from DMN in several ways:
  - Consumption is not weather adjusted
  - Baseline use per customer is not adjusted for prices
  - 90% factor is not included
  - Weather-induced changes in revenues accumulate in a deferral account instead of affecting bills in the current month (as WARM does)
  - No need to define elasticities or normal weather

Full Decoupling: Advantages and Disadvantages

- Advantage: easier to understand than DMN
- Disadvantage: customer weather risk may be increased because weather-induced revenue adjustments go through deferrals
  - For example, if a mild winter is followed by a severe winter, surcharges increase bills that are already high

Elasticity Adjustment and Lost Revenue Adjustment

- In DMN Order, Staff proposed an alternative:
  - Replacing DMN with an elasticity adjustment
  - Keeping and/or enhancing lost revenue adjustments for energy efficiency programs
- Consider four aspects of this proposal:
  1. Replace DMN with elasticity adjustment
  2. Lost revenue adjustments
  3. Remove NW Natural from energy efficiency promotions
  4. Loss of Public Purposes Funding

Replacing DMN with Elasticity Adjustment

- Would mean loss of deferral component of DMN
- Deferral component does the following:
  - Reduces disincentive to promote energy efficiency
  - Corrects 90% of errors associated with use of incorrect price elasticity
  - When combined with WARM, corrects 90% of errors associated with use of incorrect normal weather definition
- Therefore, loss of deferral component will likely increase disputes regarding parameter values

Lost Revenue Adjustments

- Case-by-case compensation for lost margins due to specific energy efficiency programs
- Advantage: specifically targets margin recovery associated with energy efficiency programs
- Disadvantages:
  - Administratively burdensome
  - Addresses only programs that can be verified
  - Encourages programs that look good on paper, but don't deliver in practice
  - Utility is discouraged from backing general conservation efforts (changes in building codes, pleas for conservation)
  - Does not protect against margin loss from conservation that occurs outside of programs

Effect of Removing NW Natural from Promoting Conservation

- Proposal would place all responsibility for promotion of energy efficiency with the Energy Trust of Oregon
- Margie Harris, Executive Director of ETO believes that NW Natural has been effective in assisting ETO in its efforts
- ETO data on call center referrals and home energy savings routings reflect this success

Table 5-1: Share of Total Call Center Referrals by Source

Source	October 2004	November 2004	December 2004	January 2005
PGE	6	7	7	10
PacifiCorp	5	5	5	5
NW Natural	11	11	14	14
Other	78	77	74	71

Table 5-2: Share of Home Energy Savings Routings by Source

Source	October 2004	November 2004	December 2004	January 2005
PGE	8	10	9	13
PacifiCorp	6	6	7	7
NW Natural	16	16	21	19
Other	70	68	63	61

Effect of Removing Public Purposes Funding

- Public Purposes Funding was proposed in conjunction with DMN
- Removing deferral component of DMN may therefore endanger support for Public Purposes Funding
- Given agency comments with respect to the value of these funds, this would produce a significant reduction in their ability to provide services

Conclusions Regarding Rate Structures

- Full decoupling and DMN are the only structures that have all three of the following effects relative to standard rates:
  1. They reduce or eliminate the utility's disincentive to promote energy efficiency
  2. They maintain an added incentive for individual consumers to undertake conservation efforts, through retail prices that exceed market costs of energy
  3. They reduce utilities' variability of fixed-cost recovery

Conclusions Regarding Rate Structures (2)

- Cannot yet make conclusions regarding the relative merits of full decoupling versus DMN (plus WARM)
- Upcoming study of WARM issues should allow for a better comparison of the two alternatives

Summary

- DMN has functioned as intended, with the majority of revenue adjustments being caused by price changes
- DMN has reduced, but not eliminated, the relationship between NW Natural's sales and profits
- DMN has reduced, but not eliminated, NW Natural's disincentive to promote energy efficiency

Summary (2)

- Financial outcomes are consistent with a conclusion that DMN has reduced NW Natural's business risk (however, we did not perform a causal analysis)
- Price risk was shifted from NW Natural to customers (would also occur with a stand-alone elasticity adjustment)
- Unlikely that economic risk was shifted from NW Natural to customers

Summary (3)

- DMN did not adversely affect level of service quality
- DMN may have altered NW Natural's compensation practices and organizational structure
- NW Natural has not gamed DMN with respect to new customer connections
- DMN resulted in $14.9 million in surcharges in year 1 (10/02 – 9/03)
- DMN resulted in $578,000 in surcharges in year 2 (10/03 – 9/04)

Recommendations

- We recommend that some form of decoupling be retained
- Broad support for DMN/Public Purposes Funding, including:
  - NW Natural
  - Energy Trust of Oregon
  - HVAC distributors
  - CAP agencies
  - NRDC
  - Citizens' Utility Board

Recommendations (2)

Potential Modifications:

1. *Eliminate 90% factor*: this would remove incentives to game parameter values and completely remove the disincentive to promote energy efficiency
2. *Re-evaluate price elasticity values*: our analysis indicates that the currently assumed values may be too low (in absolute value)

Recommendations (3)

Potential Modifications (continued):

3. *Re-evaluate weather sensitivity parameter*: our analysis indicates that the current residential value may be too high
4. *Consider adopting full decoupling*: however, a decision regarding full decoupling (versus DMN plus WARM) should be deferred until a thorough examination of WARM effects has been completed