# BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO 

In the Matter of the Application of The East Ohio Gas Company dba Dominion East Ohio for Authority to Increase Rates for its Gas Distribution Service.

In the Matter of the Application of The East Ohio Gas Company doa Dominion East Ohio for Approval of an Alternative Rate Plan for its Gas Distribution Service. Gas Company da Dominion East Ohio for

In the Matter of the Application of The East Ohio Gas Company doa Dominion East Ohio for Approval of Tariffs to Recover Certain Costs Associated with a Pipeline Infrastructure Replacement Program Through an Automatic
Adjustment Clause, and for Certain Accounting Treatment.

In the Matter of the Application of The East Ohio Gas Company da Dominion East Ohio for Approval of Tariffs to Recover Certain Costs Associated with Automated Meter Reading and for Certain Accounting Treatment.
Treatment.
:

Case No. 06-1453-GA-UNC

REFILED TESTIMONY
OF
STEPHEN R. CHANEY
Utilities Department
Capital Recovery \& Financial analysis Division
Public Utilities Commission of Ohio

## Staff Exhibit

$\qquad$
August 1, 2008
This is to certify that the tmeses appearing are an accurate and complete reproduction of a cense file document delivered in the regular course of business, Technician Dan_ De Processed _8/4/2008

1. Q. Please state your name and business address?
A. My name is Stephen R. Chaney. My business address is 180 East Broad Street, Columbus, Ohio 43215.
2. Q. Who are you employed by?
A. I am employed by the Public Utilities Commission of Ohio (PUCO).
3. Q. What is your current position with the PUCO?
A. I am employed as a Utilities Specialist in the Capital Recovery and Financial Analysis Division of the Utilities Department.
4. Q. Would you briefly state your educational and occupational background?
A. I have received a Bachelor of Science Degree in Civil Engineering from Purdue University in December, 1978, and a Master's Degree in City and Regional Planning from Ohio State University in December, 1981. I have been employed by the Public Utilities Commission of Ohio since January, 1982. I have presented testimony supporting the Staff's rate of return recommendations in several rate proceedings before the Commission, including Cincinnati Bell Telephone Company's alternative regulation case, 96-899-TP-ALT.
5. Q. What are your responsibilities in this proceeding?
A. The purpose of my testimony is to address objections to the rate-of-return on rate base (ROR) analysis included in the Staff Report docketed in this proceeding on May 23, 2008, and to update that analysis to better reflect changed conditions since that time.
6. Q. What changes to your analysis have you made on testimony?
A. The Staff made changes that resulted in a different capital structure, a different cost of debt, and a different cost of capital. The Staff has adopted a capital structure of $\mathbf{4 7 . 6 7 \%}$ long term debt to $52.33 \%$. National Fuel Gas is dropped from the comparable group, as Value Line increased beta from .85 to 1.00 , which violated my selection criterion concerning Value Line beta. Treasury yields, stock prices, dividends and analysts' growth rates are updated to reflect their most recent values. In the Staff Report, yields, prices and dividends fall within the period of February 22, 2007 to February 21, 2008. On testimony, this period becomes July 26, 2007 to July 25,2008 . Due to a merger, Reuters no longer has a website with analysts' estimated growth rates, and is, therefore, removed from my DCF cost estimation. Compared to the Staff Report recommendation, these changes increase the equity cost by 3 to 4 basis points, and increase the overall rate of return range by 5 to 6 basis points.
7. Q. Have you adjusted your recommendation, on testimony, to take into account the revenue stabilizing effect of straight-fixed-variable rate design or decoupling, and the Pipeline Infrastructure Replacement Program (PIR)?
A. Yes. I have made a reduction in cost of equity of 25 basis points, after the issuance adjustment. Compared to the Staff Report recommendation, these changes decrease the equity cost by 21 to 22 basis points, and decrease the overall rate of return range by 7 basis points.
8. Q. What is Staff's updated return on rate base recommendation for the Companies?
A. Staff's adjusted ROR recommendation is shown below:
Long Term Debt Capitalization $47.67 \%$

Common Equity Capitalization 52.33\%
Cost of Debt 6.50\%

Return on Equity Range
9.64\%-10.66\%

Return on Rate Base Range
8.14\% - 8.68\%
9. Q. How is your testimony organized?
A. I will address the other parties' objections to the Staff Report by ROR topic, and then discuss Staff's position. Objections to the Staff's ROR were submitted by Dominion East Ohio (the Company or the Applicant), by The Office of the Ohio Consumers' Counsel (OCC), by the Ohio Partners For Affordable Energy (OPAE), and by Neighborhood Environmental Coalition, The Empowerment Center of Greater Cleveland, Cleveland Housing Network, and the Consumers For Fair Utility Rates (NEC).
10. Q. What objections were submitted relating to the explicit reduction of return on equity to compensate for rate structures or tariff provisions that tend to stabilize revenue?
A. The Company's Objection No. 23 states: "DEO objects to Staff's suggestion that decoupling or similar measures may reduce the type of risk that affects the cost of capital to the Company, without discussion or analysis demonstrating that systematic or non-diversifiable risk is in fact reduced."

OCC's Objection 6, relating to a, "Rate of Return Adjustment for Alternative Regulation" states:

The OCC objects to the Staff Report's failure to make an adjustment to reduce the recommended rate for common equity in recognition of the reduced risks that the Company will face with respect to revenues and cost recovery if the Commission approves any of the risk-reducing mechanisms proposed by the Company. Although the Staff Report acknowledged that these mechanisms would reduce the risk faced by the Company, the Staff failed to make any corresponding reductions to the rate of return to reflect these reduced risks.

OPAE Objection V. states:

OPAE objects to the Staff Report recommendation that the rate of return be set in the range of $8.22 \%$ to $8.75 \%$ because it provides an excessive return when compared to the risk faced by DEO, and other factors. Staff acknowledges the need to adjust rate of return to recognize the reduction in risk of earning the revenue requirement because of decoupling or the Staff's modified straight fixed variable rate, and the proposed

> PIR. The Standard Service Offer bidding process also eliminates the risk of refunds under traditional gas cost recovery audits. Unfortunately, the Staff Report fails to quantify the level of reduction of the rate of return as a result of the reduced risk. The comparable companies utilized by Staff do not, in large part, have decoupling or a modified straight fixed variable rate, or a PIR. The Staff Report errs in not reducing the rate of return sufficiently to reflect the minimal risk faced by the Company for purposes of a return on its investment.
11. Q. What is Staff's position on the explicit reduction of return on equity to compensate for revenue stabilization?
A. Staff has made a 25 basis point reduction to the return on equity as there is relatively low exposure of Staff's comparable group companies to the kind of risk-reducing mechanisms proposed by the Company. Of the twelve states in which the four comparable group companies have operating companies, three are listed by the American Gas Association as having natural gas revenue decoupling. Those three states, Maryland, North Carolina, and New Jersey impact AGL Resources, Piedmont Natural Gas, and South Jersey Industries, but not Atmos Energy Corporation. South Jersey Industries is in New Jersey only. Piedmont is in North Carolina with decoupling, and South Carolina and Tennessee without it. AGL Resources is in Maryland and New Jersey with decoupling and Florida, Georgia and Tennessee without it.

Three out four of the companies are exposed to decoupling. But this occurs in only three of the twelve states. Only South Jersey Industries is entirely exposed, as it operates only in New Jersey. Atmos has no exposure. AGL and Piedmont are partially exposed.

OCC witness Woolridge supports a 50 basis point adjustment for decoupling and the pipeline infrastructure replacement program. Given the partial exposure of the Staff's comparable group, Staff believes that a 25 basis point adjustment is appropriate.

Given the degree of revenue stabilization that would derive from decoupling, and the 191 basis point difference between the Applicant's $6.50 \%$ cost of debt and the Staff's $8.41 \%$ recommended rate of return midpoint, a 25 basis point adjustment seems conservative.
12. Q. Dominion East Ohio has an objection supporting an explicit adjustment in rate of return due to market value, Objection No. 22, which reads:

DEO objects to Staff's failure to consider differences in market value capital structures at which ROE estimates are made. Staff should have used an adjustment that recognizes differences in financial risk based on comparable companies' market value capital structures rather than their book value capital structures.

What position does the Staff take on this objection?
13. A. Staff disagrees with this objection. No adjustment to the cost of equity estimate should be made for market value. Current market valued capital structures are inappropriate for rate of return estimation analysis where such rates of return are to be applied to rate base. Book value capital structures are entirely market determined and reflect the actual exposure to risk of the actual investors for which a particular company needs to provide compensation.
14. Q. What objections were submitted relating to the selection of a point in the rate of return range?
A. NEC Objection 7 states:

The Staff is recommending a rate of return of $8.72 \%$ with a range running from $8.22 \%$ to $8.75 \%$. The Citizens Coalition does not understand why a figure near the top of the range should be recommended rather than either a rate of return at the bottom of the range or one in the middle. The Citizens Coalition is opposed to any rate increases at this time, when food prices, gasoline prices, and other costs for necessities are skyrocketing. It is time for the Company, its executives, and the stockholders to do their share to control prices for necessities such as energy. The Citizens Coalition urges the Staff to adopt the bottom of the proposed range for a rate of return of $8.22 \%$ for this Company, which is still within the Staffs overall recommendation.
15. Q. What is the Staff's position regarding this objection?
A. The Staff did not recommend $8.72 \%$ in the Staff Report and is not recommending a specific point in the range on testimony. My testimony
concerns the cost of capital to the Applicant. My recommendation is the range from $8.14 \%$ to $8.68 \%$. The Staff does not argue for a point in the range. The Commission will entertain any such arguments as it may see fit.
16. Q. What objections were submitted relating to capital structure?
A. Office of Consumers' Counsel Objection 2 concerning, "Capital Structure and Debt Cost Rate" states:

The OCC objects to the Staff Report's use of a hypothetical capital structure which is the average book value capital structure of the five companies in the Staff's comparable group. This is not the capitalization used by the Company to attract and raise capital. This error in the selection of a capital structure is further exacerbated by the Staff's adoption of the Company's proposed long-term debt cost rate of 6.50 percent. There must be synchronization between the adopted capital structure and the cost of debt capital. By using the capital structure for the proxy companies and DEO's debt cost rate, the Staff's capital structure and debt cost rate are not synchronized."
17. Q. What is the Staff's position regarding the use of a hypothetical capital structure based on a comparable group?
A. The Staff's capital structure is reflective of the risk profile required for a natural gas distribution company. It is also consistent with the average capital structure of the comparable group companies used by Staff to estimate the cost of common equity. Given the current industry structure, any particular book consolidated capital structure may not reflect the risk associated with a regulated utility operating company. In this case, a
capital structure based on a comparable group of gas distribution companies makes more sense than the Applicant's parent consolidated capital structure which involves electric operations to a significant degree. In addition, given current industry financial practices, stand-alone capital structures for operating companies, in general, may not reflect the risk associated with a regulated utility operating company or the risk associated with the parent company.
18. Q. What objections were submitted concerning the selection of the Staff's comparable group?
A. Dominion East Ohio's Objection No. 14 states: "DEO objects to Staff's sample selection because it is unnecessarily restricted to companies with a beta of less than 0.85 ." Dominion East Ohio's Objection No. 15 states: "DEO objects to Staff's sample selection because it is unnecessarily restricted to companies with a Standard \& Poor's bond rating of A, A-, $\mathrm{BBB}+$, or BBB , omitting companies with a rating greater than A and companies rated BBB-, all of which are investment grade companies."

Office of Consumers' Counsel's Objection 1 states:
The OCC objects to the Staff Report's use of a group of only five companies in its group of "comparable utilities" that served as a basis of its capital structure and cost of capital analysis. Furthermore, this group of five companies includes National Fuel Gas Corporation ("NFG"), a company which is
considered to be an integrated natural gas company and not a natural gas distribution company.
19. Q. What is your response to these comparable group objections?
A. Concerning DEO's objections, Dominion's Value Line beta is .80 . In the Staff Report the comparables' VL betas were all clustered together at .85, which is higher than Dominion's. It makes no sense that the Applicant wants to go higher still. The Staff's bond rating criterion brackets tighter than simply allowing all investment grade rated companies. Thus, it actually functions as a selection criterion. There is nothing objectionable to the use of bond rating as a criterion for comparable group selection.

Regarding OCC's objection, the risk level for the comparables is appropriate for distribution operations. Non-regulated enterprise permeates the electric utility industry, both as affiliates and as integrated operations. Overall, the comparable group reflects a degree of riskiness appropriate for Dominion East Ohio. National Fuel Gas is deleted from the group now as its beta now is equal to 1.00 .
20. Q. Dominion East Ohio's Objection No. 16, states: 'DEO objects to Staff's use, in its CAPM model, of an average of 10 -year and 30 -year bond yields for the risk-free rate over the last 12 months. This information is stale and
out of date and should have matched the term of the risk-free rate and the data used to estimate the MRP." How does the Staff respond?
A. Staff will not predict economic conditions for the rate period when formulating its CAPM recommendation. Staff believes that growth rates occur in a manner independent of the preceding growth rate. Staff believes the period in question is a reasonable tradeoff between stability and timeliness.
21. Q. Dominion East Ohio's Objection No. 17 states: "DEO objects to Staff failure to consider a short-term, risk-free rate version of its CAPM model." How does the Staff respond?
A. Staff's CAPM is based on long term Treasury yields. This suits the investment horizon consideration for equity investment and data availability considerations. Staff's CAPM is as conceptually valid as a cost of equity measure, and is internally consistent in its matching of datasets which are available.
22. Q. Dominion East Ohio's Objection No. 18 states: "DEO objects to Staff's failure to recognize and adjust for the well-known shortcomings of CAPM model by using the ECAPM model." How does Staff respond?
A. Use of Value Line betas, which vary less with risk, compensate for these shortcomings.
23. Q. Office of Consumers' Counsel's Objection 3 states:

> The OCC objects to the Staff Report's inappropriate risk premium of $6.5 \%$ in the CAPM. [Footnote omitted.] The risk premium stated in the Staff Report was based on the spread of the arithmetic mean of historical total returns between large stocks for large companies and long-term government bonds between 1926 and 2007 . This approach is subject to a myriad of empirical errors which make these historical returns poor measures of expected returns. The use of historical return to estimate an expected risk premium can be erroneous because (1) ex post returns are not the same as ex ante expectations, (2) market risk premiums can change over time, increasing when investors become more riskaverse, and decreasing when investors become less riskaverse, and (3) market conditions can change such that ex post historical returns are poor estimates of ex ante expectations. This approach is outdated, ignores twenty years of academic and professional research on the equity risk premium, and is out of touch with the real world of finance. The research and surveys of investment banks, consulting firms, and Chief Financial Officers, who use the equity risk premium concept every day in making financing, investment, and valuation decisions, indicates an equity risk premium in the 4 percent range is appropriate.

Is this objection valid?
A. No. Staff will not predict economic conditions for the rate period when formulating its CAPM recommendation. Staff believes that growth rates occur in a manner independent of the preceding growth rate. Short-term forecasts involve arbitrarily selective guesses as to which conditions that have occurred before will be prevalent in the near-term. Staff admits that it cannot predict the future and, thus incorporates parameters that reflect broad general conditions in its analysis.
24. Q. What objections were submitted concerning the Staff's DCF analysis?
A. Dominion East Ohio's Objection No. 19 states: "DEO objects to Staff's calculation, in its DCF model, of the dividend yield using prices and dividends over the past year. That is too long a period to use for the forward-looking DCF model." Dominion East Ohio's Objection No. 20 states: "DEO objects to Staff's use, in its growth estimates in its DCF model, of non-independent sources such that some analyst estimates were counted multiple times. Staff should have used independent sources of estimates." Dominion East Ohio's Objection No. 21 states: "DEO objects to Staff's failure to consider, in its DCF model, that DEO's dividends are paid quarterly. Staff should have used a quarterly version of the model."

Office of Consumers' Counsel's Objection 4 states:
The OCC objects to the Staff Report's use of a multistage DCF model which includes a growth rate that is a combination (1) the average of projected EPS growth from Wall Street analysts (as collected and compiled by Reuters, Yahoo!, and MSN) and Value Line and (2) a long-term growth rate equal to the projected GNP growth rate. It is well known that the EPS growth rate projections of Wall Street analysts are upwardly biased and produce an overstated DCF equity cost rate. Furthermore, the Staff had provided no theoretical or empirical support to justify using the projected GNP growth rate as the expected long-term DCF growth rate.
25. Q. What is the Staff's response to these DCF objections?
A. In the Staff's estimation, the period of a year is a natural cycle for this phenomenon, and it is also a reasonable tradeoff between stability and timeliness.

Reuters, MSN, and Yahoo do not identify their constituent analysts. Even if they were known, weighting them equally would be arbitrary. The Staff's method gives them relative importance in accordance with their frequency of occurrence in the media.

If it is recognized that revenues are collected monthly while dividends are paid quarterly, then an adjustment should be made to reduce the cost of equity estimate. Such a refinement, however, would be of little consequence.

Staff will not predict economic conditions for the rate period when formulating its DCF recommendation. Staff believes that growth rates occur in a manner independent of the preceding growth rate. Analysts formulate company-specific growth estimates for the next five years. Staff moderated these growth rates by merging them into the long term GNP growth rate. In the absence of company-specific growth rates for beyond
five years, the long term GNP rate is a satisfactory proxy, as it would be an average rate that companies on balance could not exceed.
26. Q. The Office of Consumers' Counsel has an objection concerning "flotation costs," Objection 5, stating:

The OCC objects to the Staff Reports' incorporation of an excessive flotation cost adjustment to the cost of equity. This adjustment is erroneous for several reasons. The Staff has not identified any actual flotation costs for the Company, and the Company has not requested a flotation cost adjustment. Therefore, the Staff is recommending that the Company receives annual revenues in the form of a higher return on equity for flotation costs that have not been identified by either the Staff or the Company.

What is the Staff's response to this objection?
A. OCC makes a recommendation for the next rate case, not this one. It is not relevant if the Applicant or its parent or affiliates have plans to issue new equity. Staff makes its equity issuance adjustment to support the portion of the embedded balance of equity that was raised from equity issuance and not generated internally. Merely, the Staff's adjustment is structured to support this balance on an annual basis. The Staff has no intention of reflecting issuance costs as annual operating expense in the revenue requirement.

OCC misconstrues Staff's issuance adjustment as including flotation costs. Staffs adjustment in no way reflects flotation costs, if such a term is meant to refer to dilution or price pressure. Staff's adjustment reflects only properly included issuance costs.
27. Q. What are common stock issuance costs?
A. Issuance costs include expenditures made directly by the company issuing stock, for the purpose of issuing stock. Some of these expenditures would be for filing with the SEC, accounting, legal representation, printing, and exchange listing. Issuance costs also include the underwriting spread, which is not an expenditure for the issuing company. Basically, the underwriting spread is the difference between the proceeds to the company and the price paid by the primary purchasers of an issue. Issuance costs are the difference between the amount paid by the primary purchasers and the net proceeds, which is the amount available for investment by the company.
28. Q. Why is an adjustment for issuance cost necessary?
A. The cost of issuance is properly spread over the life of the stock issue. As long as stock has been issued, an equity adjustment is necessary. It does not matter what future financing plans have been prepared. The investor requires a full return as long as the investor owns the stock. The company issuing new equity, initially receives funds in the amount of the equity issued. The amount of equity issued less the issuance cost is the amount available to the company for investment, yet the investor is, as required,
paid a return on the full amount of investment. A greater return, therefore, must be earned on the lesser amount that can be invested. This is made possible by the Staff's adjustment to the baseline cost of equity.
29. Q. Should an adjustment be made to the cost of equity to reflect dilution or price pressure?
A. No. The investors pay the public offering price, which reflects any dilution effect. The investors require a return on the amount they have invested, not the amount that their investment would have entailed had they been able to buy shares at market price prior to any public announcement of stock issuance.
30. Q. Why has the Staff applied its equity issuance adjustment to the common equity balance less retained earnings?
A. A fraction of invested funds, issuance expense, cannot earn a return. The difference, total investment less issuance, is equity and is available for company operations. As retained earnings accumulate, the proportion of invested capital that can earn a return increases. By applying its equity issuance adjustment to the common equity balance less retained earnings, the Staff allows a premium to be earned to compensate for invested funds the company could not commit to operations, but does not apply that premium to retained earnings, which are available in their entirety for reinvestment. As the proportion of investment, which can earn a return,

8 31. Q. Does this conclude your testimony?
9 A. Yes. decreasing.
increases, the adjustment commensurately decreases. Retained earnings increase the available pool of capital, but issuance expense, which is not available to the company, increases only with new stock issuance. The adjustment increases commensurately with the occurrence of new stock issuance, by virtue of the retained earnings' proportion of equity

## PROOF OF SERVICE

I hereby certify that a true copy of the foregoing Prefiled Testimony of Stephen R. Chaney, submitted on behalf of the Staff of the Public Utilities Commission of Ohio, was served by regular U.S. mail, postage prepaid, hand-delivered, and/or delivered via electronic mail, upon the following parties of record, this $1^{\text {st }}$ day of August, 2008.


Anne L. Hammerstein
Assistant Attomey General

## Parties of Record:

Joseph P. Serio
Assistant Consumers' Counsel
Office of the Ohio Consumers' Counsel
10 West Broad Street, Suite 1800
Columbus, OH 43215
David A. Kutik
Jones Day
North Point, 901 Lakeside Avenue
Cleveland, Oh 44114-1190
Barth E. Royer
Bell \& Royer Co., LPA
33 South Grant Avenue
Columbus, OH 43215-3900
Mark A. Whitt
Andrew J. Campbell
Jones Day
P.O. Box 165017

Columbus, OH 43216-5017
M. Howard Petricoff

Stephen Howard
Vorys Sater Seymour \& Pease
52 East Gay Street
P.O. Box 1008

Columbus, OH 43216-1008

Joseph P. Meissner
Legal Aid Society of Cleveland
1223 West Sixth Street
Cleveland, OH 44113
John M. Dosker
General Counsel
Stand Energy Corporation
1077 Celestial Street, Suite 110
Cincinnati, OH 45202-1629
Todd M. Smith
Schwartzwald \& McNair
616 Penton Media Building
1300 East Ninth Street
Cleveland, Oh 44114
W. Jonathan Airey

Gregory D. Russell
Vorys Sater Seymour \& Pease
52 East Gay Street
P.O. Box 1008

Columbus, OH 43216-1008

- David Rinebolt

Colleen Mooney
Ohio Partners for Affordable Energy
P.O. Box 1793

Findlay, OH 45839-1793
David F. Boehm
Michael L. Kurtz
Boehm, Kurtz \& Lowry
36 East Seventh Street, Suite 1510
Cincinnati, Oh 45202

Steve Beeler

City of Cleveland Cleveland City Hall
601 Lakeside Avenue
Room 206
Cleveland, OH 44114-1077
Samuel C. Randazzo
Daniel J. Neilsen
Joseph M. Clark
McNees, Wallace \& Nurick
21 East State Street, Suite 1700
Columbus, OH 43215

## ATTACHMENT 1

## Schedule D-1

> Rate of Return Summary The East Ohio Gas Company

|  | $\%$ of <br> Total | $\%$ <br> Cosi | Weighted <br> Cost \% |
| :--- | :---: | :---: | :---: |
| Long Term Debt | $47.67 \%$ | $6.50 \%$ | $3.10 \%$ |
| Preferred Stock | $0.00 \%$ | $0.00 \%$ | $0.00 \%$ |
| Common Equity | $52.33 \%$ | $9.64 \%-10.66 \%$ | $5.04 \%-5.58 \%$ |
| Total Capital | $100.00 \%$ |  | $8.14 \%-8.68 \%$ |

## Schedule D-1.1

## Equity Issuance Cost Adjustment The East Ohio Gas Company March 31.2007

| (1) Retained Earnings ${ }^{1}$ | $\$ 267,427,353$ |
| :--- | ---: |
| (2) Total Common Equity ${ }^{2}$ | $\$ 878,726,386$ |
| (3) Ratio of (1) to (2) | 0.68833 |
| (4) Generic Issuance Cost, f | $3.50 \%$ |
| (5) External Equity Ratio, w $[1.0-(3)]$ | 0.69566 |
| (6) Net Adjustment Factor, $(w /(1-1)\rangle+(1-w)$ | 1.02523 |
| (7) Low End Equity Cost $[9.64 \% \times(6)]$ | $9.89 \%$ |
| (8) High End Equity Cost [10.64\% $\times(6)]$ | $10.91 \%$ |
| (9) Adjusted Low End Equity Cost | $9.64 \%$ |
| (10) Adjusted High End Equily Cost | $10.66 \%$ |

## Sources:

1 East Ohio Gas Company's Balance Sheet, March 31, 2007
2 Applicant's Schedule D-1

## ATTACHMENT 1

## CAPM Cost of Equily Estimate

| Date: | Closing 10Yr Yid (\%) | Closing $30 Y$ Y Md $/ \%$ ) |
| :---: | :---: | :---: |
| 26-Jul-07 | 4.78 | 4.95 |
| 27-Jul-07 | 4.79 | 4.95 |
| 30-Jul-07 | 4.80 | 4.96 |
| 31-Jut07 | 4.77 | 4.92 |
| 1-Aug-07 | 4.76 | 4.91 |
| 2-Aug-07 | 4.75 | 4.90 |
| 3-Aug-07 | 4.70 | 4.87 |
| 6-Aug-07 | 4.73 | 4.91 |
| 7-Aug-07 | 4.74 | 4.80 |
| 8-Aug-07 | 4.88 | 5.02 |
| 9-Aug-07 | 4.79 | 5.03 |
| 10-Aug-07 | 4.78 | 5.01 |
| 13-Aug-07 | 4.78 | 5.01 |
| 14-Aug-07 | 4.73 | 4.99 |
| 15-Aug-07 | 4.71 | 5.01 |
| 16-Aug-07 | 4.60 | 4:83 |
| 17-Aug-07 | 4.67 | 5.00 |
| 20-Aug-07 | 4.63 | 4.97 |
| 21-Aug-07 | 4.59 | 4.94 |
| 22-Aug-07 | 4.62 | 4.95 |
| 23-Aug-07 | 4.62 | 4.92 |
| 24-Aug-07 | 4.63 | 4.80 |
| 27-Aug-07 | 4.60 | 4.86 |
| 28-Aug-07 | 4.53 | 4.86 |
| 29-Aug-07 | 4.55 | 4.88 |
| 30-Aug-07 | 4.50 | 4.82 |
| 31-Aug-07 | 4:54 | 4.83 |
| 4-Sep-07 | 4.66 | 4.84 |
| 5-Sep-07 | 4.47 | 4.78 |
| 6-Sep-07 | 4.50 | 4.79 |
| 7-Sep-07 | 4.37 | 4.89 |
| 10-Sep-07 | 4.32 | 4.84 |
| 11-Sep-07 | 4.36 | 4.65 |
| 12-Sep-07 | 4.41 | 4.65 |
| 13-Sep-07 | 4.48 | 4.74 |
| 14-Sep-07 | 4.46 | 4.72 |
| 17-Sep-07 | 4.47 | 4.71 |
| 16-Sep-07 | 4.48 | 4.76 |
| 19-Sep-07 | 4.52 | 4.82 |
| 20-Sep-07 | 4.67 | 4.94 |
| 21-5ep-07 | 4.63 | 4.89 |
| 24-Sep-07 | 4.62 | 4.88 |
| 25-Sep-07 | 4.61 | 4.89 |
| 26-Sep-07 | 4.62 | 4.89 |
| 27-Sep-07 | 4.57 | 4.84 |
| 28-Sep-07 | 4.58 | 4.83 |
| 1-Oct-07 | 4.56 | 4.80 |
| 2-Oct-07 | 4.53 | 4.78 |
| 3-0ct-07 | 4.54 | 4.79 |

ATTACHMENT 1

CAPM Cost of Equity Estimate

| Date: | Closing 10Yr Yid (\%) | Clasina 30Yr Yid (\%) |
| :---: | :---: | :---: |
| $40 \mathrm{ct}-07$ | 4.52 | 4.77 |
| 5-0ct-07. | 4.64 | 4.87 |
| $8-0 c t-07$ | 4.64 | 4.86 |
| $9.0 c t-07$ | 4.65 | 4.85 |
| 10-Oct-07 | 4.85 | 4.88 |
| 11.Oct-07 | 4.66 | 4.88 |
| 12-Oct-07 | 4.69 | 4.94 |
| 15-Oct-07 | 4.87 | 4.91 |
| 16.Oct-07 | 4.66 | 4.91 |
| 17-Oct-07 | 4.55 | 4.81 |
| 18-Oct-07 | 4.50 | 4.78 |
| 19-Oct-07 | 4.40 | 4.69 |
| 22-0ct-07 | 4.39 | 4.67 |
| 23-Oct-07 | 4.41 | 4.69 |
| 24-Oct-07 | 4.33 | 4.64 |
| 25-0ct-07 | 4.35 | 4.66 |
| 28-0ct-07 | 4.39 | 4.68 |
| 29-0ct-07 | 4.38 | 4.66 |
| 30-0ct-07 | 4.38 | 4.67 |
| 31-Oct-07 | 4.47 | 4.75 |
| 1-Nov-07 | 4.36 | 4.65 |
| 2-Nov-07 | 4.29 | 4.59 |
| 5-Nov-07 | 4.32 | 4.62 |
| 6 -NOY-07 | 4.36 | 4.65 |
| 7-Nor-07 | 4.33 | 4.67 |
| $8-\mathrm{Nor-07}$ | 4.27 | 4.66 |
| 9-Nov-07 | 4.22 | 4.60 |
| 12-Nov-07 | 4.21 | 4.59 |
| 13-Nov-07 | 4.26 | 4:61 |
| 14-Nov-07 | 4.27 | 4.60 |
| 15-Nov-07 | 4.16 | 4.53 |
| 16-Nov-07 | 4.15 | 4.52 |
| 19-Nov-07 | 4.08 | 4.48 |
| 20-Nov-07 | 4.05 | 4.48 |
| 21-Nov-07 | 4.02 | 4.47 |
| 23-Nov-OT | 4.01 | 4.44 |
| 20-Nov-Ot | 3.86 | 4.28 |
| 27-Nov-07 | 3.94 | 4.36 |
| 28-Nov-07 | 4.03 | 4.41 |
| 29-Nov-07 | 3.94 | 4.35 |
| 30-Nov-07 | 3.97 | 4.40 |
| 3-Dec-07 | 3.89 | 4.35 |
| 4-Dec-07 | 3.89 | 4.35 |
| 5-Dec-07 | 3.91 | 4.39 |
| $6-$ ec-07 | 4.00 | 4.48 |
| 7-Dec-07 | 4.12 | 4.59 |
| 10-Dec-07 | 4.15 | 4.61 |
| 11-Dec-07 | 3.99 | 4.48 |
| 12-Dec-07 | 4.08 | 4.53 |

CAPM Cost of Equity Estimate

| Date: | Closing 10Yr Yid (\%) | Closing 30Yr had (\%) |
| :---: | :---: | :---: |
| 13-Dec-07 | 4.17 | 4.01 |
| 14-Dec-07 | 4.23 | 4.66 |
| 17-Dec-07 | 4.19 | 4.62 |
| 18-Dec-07 | 4.12 | 4.54 |
| 19-Dec-07 | 4.07 | 4.48 |
| 20-Dee-07 | 4.03 | 4.45 |
| 21-Dec-07 | 4.17 | 4.57 |
| 24-Dec-07 | 4.21 | 4.62 |
| 26-Dec-07 | 4.28 | 4.89 |
| 27-Dec-07 | 4.20 | 4.81 |
| 28-Dec-07 | 4.10 | 4.51 |
| $37-$ Dec-07 | 4.03 | 4.46 |
| 2-Jan-08 | 3.90 | 4.35 |
| 3-Jan-08 | 3:00 | 4.37 |
| 4-Jan-08 | 3.85 | 4.36 |
| 7 -Jan-08 | 3.84 | 4.34 |
| 8-Jan-08 | 3.84 | 4.38 |
| 9-Jan-08 | 3.79 | 4.32 |
| 10-Jan-08 | 3.89 | 4.44 |
| 11-Jan-08 | 3.81 | 4.39 |
| 14-Jan-08 | 3.79 | 4.37 |
| 15-Jan-08 | 3.70 | 4.29 |
| 16-Jan-08 | 3.71 | 4.32 |
| 17-Jan-08 | 3.64 | 4.25 |
| 18-Jan-08 | 3.65 | 4.30 |
| 22-Jan-08 | 3:48 | 4.23 |
| 23-Jan-08 | 3.43 | 4.18 |
| 24-Jan-08 | 3.64 | 4.35 |
| 25-Jan-08 | 3.58 | 4.28 |
| 23-Jan-08 | 3.59 | 4.28 |
| 29-Jan-08 | 3.68 | 4.34 |
| 30-Jan-08 | 3.73 | 4.43 |
| 31-Jan-08 | 3.64 | 4.35 |
| 1-Feb-08 | 3.60 | 4.32 |
| 4-Feb-08 | 3.64 | 4.37 |
| 5-Feb-08 | 3.59 | 4.34 |
| 6-Feb-08 | 3.61 | 4.37 |
| 7-Feb-08 | 3.74 | 4.50 |
| 8 -Feb-08 | 3.65 | 4.44 |
| 11-Feb-08 | 3.62 | 4.41 |
| 12-Feb-08 | 3.68 | 4.46 |
| 13-Feb-08 | 3.69 | 4.51 |
| 14-Feb-08 | 3.82 | 4.65 |
| 15-Feb-08 | 3.78 | 4.59 |
| 19-Feb-08 | 3.88 | 4.66 |
| 20-Feb-08 | 3.92 | 4.64 |
| 21.Feb-08 | 3.78 | 4.55 |
| 22.Feb-08 | 3.79 | 4.58 |
| 25-Feb-08 | 3.90 | 4.68 |

ATTACHMENT 1

CAPM Cost of Equity Estimate

| Date: | Closing 10Y( Yld (\%) | Closing 30Yr Yid (\%) |
| :---: | :---: | :---: |
| 26-Feb-08 | 3:86 | 4.66 |
| 27-Feb-08 | 3.85 | 4.65 |
| 28-Feb-08 | 3.71 | 4.55 |
| 29-Feb-08 | 3.53 | 4.42 |
| 3 -Mar-08 | 3.53 | 4.43 |
| 4-Mar-08 | 3.58 | 4.48 |
| 5-Mar-08 | 3.60 | 4.61 |
| 6-Mar-08 | 3.62 | 4.58 |
| 7-Mar-08 | 3.54 | 4.54 |
| 10-Mar-08 | 3.44 | 4.45 |
| 11-Mar-08 | 3.60 | 4.53 |
| 12-Mar-08 | 3.48 | 4.41 |
| 13-Mar-08 | 3.53 | 4.45 |
| 14-Mar-08 | 3.42 | 4.35 |
| 17-Mar-08 | 3.31 | 4.28 |
| 18-Mar-08 | 3.45 | 4.33 |
| 19-Mar-08 | 3.36 | 4.22 |
| 20-Mar-08 | 3.33 | 4.16 |
| 24-Mar-08 | 3.62 | 4.31 |
| 25-Mar-08 | 3.49 | 4.30 |
| 26-Mar-08 | 3.48 | 4.33 |
| 27-Mar-08 | 3.53 | 4.38 |
| 28-Mar-08 | 3.47 | 4.34 |
| 31-Mar-08 | 3.43 | 4.31 |
| 1-Apr-08 | 3.55 | 4.38 |
| 2-Apr-08 | 3.58 | 4.39 |
| 3-Apr-08 | 3:59 | 4.39 |
| 4-Apr-08 | 3.48 | 4.32 |
| 7-Apr-08 | 3.56 | 4.37 |
| 8-Apr-08 | 3:56 | 4.38 |
| S-Apr-08 | 3.47 | 4.31 |
| 10-Apr-08 | 3.53 | 4.34 |
| 11-Apr-08 | 3.47 | 4.30 |
| 14-Apr-D8 | 3.50 | 4.34 |
| 15-Apr-08 | 3.57 | 4.41 |
| 16-Apr-08 | 3.70 | 4.53 |
| 17-Apr-08 | 3.73 | 4.52 |
| 18-Apr-08 | 3.74 | 4.52 |
| 21-Apr-08 | 3.71 | 4.48 |
| 22-Apr-08 | 3.72 | 4.47 |
| 23-Apr-08 | 3.73 | 4.49 |
| 24-Apr-08 | 3.83 | 4.54 |
| 25-Apr-08 | 3.87 | 4.59 |
| 28-Apr-08 | 3.84 | 4.57 |
| 29-Apr-08 | 3.83 | 4.56 |
| 30-Apr-08 | 3.76 | 4.50 |
| 1-May-08 | 3.75 | 4.48 |
| 2-May-08 | 3.85 | 4.57 |
| 5-May-08 | 3.85 | 4.58 |

ATTACHMENT 1

| CAPM Cost of Equity Estimate |  |  |
| :---: | :---: | :---: |
| Date: | Closing 10Yr Yod (\%) | Closing 3OYr Yid (\%) |
| 6-May-08 | $3: 89$ | 4.84 |
| 7-May-08 | 3.87 | 4.82 |
| 8-May-08 | 3.81 | 4.56 |
| S-May-08 | 3.77 | 4.52 |
| 12-May-08 | 3.78 | 4.52 |
| 13-May-08 | $3: 91$ | 4.62 |
| 14-May-08 | 3.94 | 4.64 |
| 15-May-08 | 3.84 | 4.58 |
| 16-May-08 | \$.85 | 4.58 |
| 19-May-08 | 3.84 | 4.57 |
| 20-May-08 | 3.78 | 4.53 |
| 21-May-08 | 3.82 | 4.56 |
| 22-May-08 | 3.92 | 4.63 |
| 23-May-08 | 3.83 | 4.56 |
| 27-May-08 | 3.92 | 4.64 |
| 28-May-08 | 4.01 | 4.70 |
| 29-May-08 | 4.08 | 4.76 |
| 30-May-08 | 4.05 | 4.71 |
| 2-Jun-08 | 3.97 | 4.68 |
| 3-Jun-08 | 3.90 | 4.62 |
| 4-Jun-08 | 3.94 | 4.68 |
| 5-Junt08 | 4.03 | 4.73 |
| 6-Junt08 | 3.94 | 4.65 |
| 9 Jun-08 | 3.99 | 4.62 |
|  | 4.10 | 4.70 |
| 11-Jun-08 | 4.07 | 4.70 |
| 12-Jun-08 | 4.20 | 4.76 |
| 13-Jun-08 | 4.28 | 4.80 |
| 16-Jur-08 | 4.24 | 4.78 |
| 17-Jun-OB | 4.22 | 4.79 |
| 18-Jun-08 | 4.15 | 4.73 |
| 18-Jut-08 | 4.20 | 4.75 |
| 20-Jun-08 | 4.14 | 4.70 |
| 23-Jum-08 | 4.17 | 4.71 |
| 24-Jun-08 | 4.11 | 4.66 |
| 25-Jun-08 | 4.11 | 4.66 |
| 26-Jun-08 | 4.03 | 4.60 |
| 27.Jun-08 | 3.98 | 4.54 |
| 30-Jun-08 | 3.88 | 4.53 |
| 1-Jut08 | 3.99 | 4.54 |
| 2-Jut-08 | 3.98 | 4.50 |
| 3-Jul-08 | 3.97 | 4.53 |
| 7 Jut-08 | 3.93 | 4.50 |
| 8 -Jut-08 | 3.88 | 4.46 |
| 9-Jut-08 | 3:83 | 4.43 |
| 10-Jul-CB | 3.81 | 4.42 |
| 11 -Jul-08 | 3.94 | 4.52 |
| 14-Jul-08 | 3.88 | 4.47 |
| 15-Jul-08 | 3.84 | 4.47 |

## ATTACHMENT 1

| CAPM Cost of Equity Estimate |  |  |
| :---: | :---: | :---: |
| Date: | Clasing 10Yr Y 10.0 | Closing 30Yr Yid (\%) |
| 16-Jul-08 | 3.93 | 4.58 |
| 17-Jur08 | 4.04 | 4.84 |
| 18-Jut-08 | 4.08 | 4.66 |
| 21 -Jut08 | 4.07 | 4.65 |
| 22-Jul-08 | 4.10 | 4.66 |
| 23-Jut08 | 4.15 | 4.70 |
| 24-Jut-08 | 4.02 | 4.81 |
| Averages: |  |  |
| Last 63days | 3.9677 | 4.8128 |
| Last 126 days | 3.7921 | 4.5236 |
| Last 188 days | 3.6773 | 4.5124 |
| Last 251 days | 4.0577 | 4.5983 |
| Average | 3.9237 | 4.5618 |
| Average of 10 and 30 Year Yielda | 4.2 |  |
| CAPM Cost of Equky Estimate | 8.76 |  |

## Source: Yahoo.com

Sehearte D1-3
Page 1 of 5

ATTACHMENT $\dagger$

DCF Cost of Equity Estimate.
Stock Prices 1 (\$)

|  | ATC | ATO | ENY | S. 4 |
| :---: | :---: | :---: | :---: | :---: |
| 07/26/07 | 38.6800 | 29.2100 | 23.9900 | 33:0000 |
| $07727 / 07$ | 37.9000 | 28.4509 | 23.4800 | 32.7200 |
| 07/30/57 | 38.0900 | 28.4400 | 23.4800 | 32.8400 |
| 07/31/07 | 37.7000 | 28.0700 | 23.1900 | 32.7700 |
| 08\%01007 | 38.3700 | 28.4500 | 23.9800 | 33.6800 |
| 0810207 | 39.0500 | 28.3700 | 24.2800 | 33.8600 |
| 0810307 | 37.7900 | 27.3100 | 23.3400 | 31.9800 |
| 08606/07 | 38.0100 | 27.6900 | 24,1300 | 33,4200 |
| $08107 / 07$ | 38.2200 | 27,8900 | 24.5400 | 33.2200 |
| 08108/07 | 37.0700 | 26.7309 | 26.0890 | 34.0200 |
| (06109/07 | 38.2700 | 26.4700 | 20.2400 | 35.3000 |
| $08 / 10077$ | 38.3500 | 27.8000 | 28.5400 | 35.0300 |
| $08 / 13107$ | 38.3500 | 27.4200 | 25.5000 | 33.8700 |
| $08 / 14007$ | 37.5500 | 27.0100 | 24.7500 | 33.1400 |
| 08/15/07 | 36.5100 | 28.6900 | 24.5200 | 33.0500 |
| 08/16007 | 37.9500 | 28.8500 | 28.3300 | 33,1790 |
| 08/17/07 | 37.7900 | 27.2300 | 27.0100 | 33.1500 |
| 08 C 2001 | 37.7900 | 27.3500 | 26.9700 | 33.2300 |
| 08121007 | 38.1000 | 27.4800 | 26.6700 | 33.8300 |
| 0812207 | 38.8100 | 27,5700 | 26.6700 | 33.9500 |
| $08 / 23 / 07$ | 39.0400 | 27.3900 | 26.5100 | 33.9000 |
| 08/24/07 | 39.5800 | 27.6400 | 26.9100 | 34.6500 |
| 08/27/07 | 39.0500 | 27.6500 | 26.2800 | 34.0000 |
| 08 r 2807 | 38.3000 | 27.5300 | 25.6200 | 33.2500 |
| 08/29107 | 39.4500 | 27.9800 | 26.5300 | 34.0800 |
| 0833007 | 39.5100 | 27.9100 | 28.3700 | 38.7600 |
| 08/31/07 | 39.7100 | 28.1100 | 26.4090 | 33.9100 |
| 09\%04/07 | 40.1100 | 28.1600 | 26.4600 | 34.0200 |
| 690507 | 39.2500 | 27.9200 | 26.0800 | 33.3400 |
| $09108 / 07$ | 38.3800 | 27.830才 | 26.2800 | 33.0200 |
| 09107/07 | 39.0100 | 27.5400 | 25.6000 | 32.4200 |
| $09 \% 10 / 07$ | 38.9700 | 27.6800 | 24.7400 | 32.3800 |
| 09M11/07 | 39:3200 | 28.2000 | 25.4400 | 32.2300 |
| 09/1207 | 39.6900 | 28.1200 | 25.2600 | 33.1700 |
| 0913/07 | 39.7300 | 27.7800 | 24.8900 | 33.4000 |
| $0914 / 07$ | 39.9500 | 27.5900 | 24.9800 | 33.2400 |
| 09/17/07 | 39.4400 | 27.4200 | 24.6900 | 33,5500 |
| 091807 | 39.8700 | 27.8700 | 25.5300 | 34.8500 |
| 09119/07 | 39.8800 | 28.1800 | 26.2409 | 35.5700 |
| 09/20/07 | 39.7300 | 28.2300 | 25.6500 | 35.5000 |
| 08/21/07 | 40.0400 | 28.3000 | 25.4400 | 35.9700 |
| 09/24/07 | 39.9500 | 28.3200 | 25.4000 | 35.5800 |
| $09 / 25 / 07$ | 39.8400 | 28.2500 | 25.2900 | 35.4100 |
| 09/20107 | 39.7700 | 28.5000 | 25.8300 | 35.5300 |
| $09 / 27 / 07$ | 39.8000 | 28.4400 | 25.7500 | 35.4500 |
| 09/28/07 | 39.6200 | 28.3200 | 25.0900 | 34.8000 |
| 1001/07 | 40.0300 | 28.9200 | 25.7300 | 35.5200 |
| 100207 | 39.9900 | 28.8300 | 25.6000 | 35.8900 |
| 10/03/07 | 40.1000 | 28.8200 | 25.8300 | 35.5300 |
| 10/04/07 | 40.4300 | 29.0000 | 25.8600 | 36.1300 |
| 10/05/07 | 40.6800 | 25.2600 | 26.5700 | 37.0600 |
| 10/08/07 | 40.6500 | 29.1700 | 26.2600 | 36.7000 |
| 10\%09\%7 | 41.0000 | 29,4400 | 26.5700 | 37.4700 |
| 10/10/07 | 40.4100 | 29.3200 | 26.3400 | 37.0800 |
| 10/11/07 | 40.3800 | 29.4600 | 28.2000 | 37.0300 |
| 1011207 | 40.0600 | 29.3800 | 26.2300 | 37.4400 |
| 10115/07 | 39.8100 | 28.8500 | 25.3900 | 36.5100 |
| 10/16/07 | 38.2000 | 28.6300 | 25.0700 | 36.8900 |
| 10117/07 | 38.8900 | 28.2700 | 25.0200 | 36.4800 |
| 10/18/07 | 38.8500 | 28.2900 | 24.7700 | 36.1700 |
| 10/19/57 | 38.2500 | 27.7800 | 24.3900 | 34.5500 |
| 10/2207 | 37.2300 | 27.9200 | 24.8300 | 35.8400 |


|  | ATG | ATO | PNY | Sㅛㅐ |
| :---: | :---: | :---: | :---: | :---: |
| 1023/07 | 37.4100 | 28.0800 | 24.8800 | 36.1800 |
| 10/2407 | 37.6400 | 28.1200 | 24.8800 | 36.1100 |
| 10/2507 | 38.0400 | 28.0800 | 25.0600 | 36.5100 |
| 10/2607 | 38.7200 | 28.1200 | 25.6900 | 37.4400 |
| 10/2907 | 38.7700 | 27,9600 | 26.2100 | 38.6200 |
| 10/30\%7 | 38.7300 | 27.7700 | 25.0900 | 36.5200 |
| 10/3107 | 39.5300 | 28.0500 | 25.5300 | 37.5600 |
| 11/01/07 | 38.7700 | 27.7600 | 24.7000 | 36.3700 |
| 11/0207 | 38.2000 | 28.0800 | 25.1100 | 36:6200 |
| 11/05/07 | 37.7800 | 27.8300 | 23.0000 | 36,4100 |
| 11/0607 | 38.1800 | 27.8400 | 25.3000 | 38.9000 |
| 11/07,07 | 37.1600 | 26.5500 | 24.5200 | 35.7500 |
| 11/0807 | 38.3300 | 26.9600 | 25.4500 | 36.9400 |
| 11/09/07 | 38.0100 | 28.0000 | 26.4500 | 38.6200 |
| 11/12/07 | 37.6400 | 28.7700 | 25.5100 | 38.7700 |
| 11/13/07 | 37.7500 | 27.1200 | 25.6500 | 37.6400 |
| 11/14407 | 36.6300 | 27.0200 | 25.4800 | 37.7900 |
| 11/15/07 | 36.8100 | 27.2400 | 25.6700 | 37.9200 |
| 11/1607 | 36.8300 | 26.8000 | 25.5600 | 37.8400 |
| 11/1907 | 36.6700 | 26.9000 | 25.5100 | 37.6500 |
| 11/20007 | 36.7200 | 26.9200 | 25.5000 | 37.9300 |
| 11/21/07 | 36,4000 | 26.4700 | 25.4100 | 37.7600 |
| 11/2307 | 39.1400 | 28.5800 | 25.0300 | 38.0200 |
| 11/2607 | 36.1200 | 26.2100 | 28.4200 | 37.2400 |
| 14/27/07 | 36.6700 | 26.1300 | 25.7800 | 37.3100 |
| 11/2807 | 37.5400 | 26.2000 | 26.5200 | 37.6600 |
| 11/29/07 | 36.8400 | 26.1100 | 26.0800 | 37.5000 |
| 11/30/07 | 37.0800 | 26.1800 | 26.0400 | 36.8000 |
| $12 \% 3 / 07$ | 37.1500 | 28.1800 | 28.2500 | 36.7100 |
| $12104 \% 07$ | 37.5400 | 26.4900 | 26.2100 | 36.7300 |
| $12 \% 0507$ | 38.1100 | 28.8200 | 26.5300 | 36.9400 |
| $12106 / 07$ | 38.5100 | 27.3900 | 27.4200 | 37.0500 |
| 1207/07 | 38,3200 | 27.0700 | 28.8200 | 38.5200 |
| 12/1007 | 38.2200 | 27.1900 | 28.6200 | 36.3100 |
| 12/11/07 | 37.6400 | 27.0300 | 26.1900 | 35.5900 |
| 12/1207 | 37.3100 | 26.9400 | 26.5200 | 36.2300 |
| 12\%13/07 | 37.1300 | 27.2800 | 26.7200 | 36.1300 |
| 12/14/07 | 36.2500 | 26.8900 | 26.1800 | 35.4100 |
| $12 / 17807$ | 35.8100 | 25.7400 | 25.8800 | 34.8600 |
| 12/1807 | 36.1500 | 27.1500 | 26.5300 | 35.4400 |
| 12f19/07 | 36.2400 | 27.4300 | 26.5900 | 35.4500 |
| 122007 | 36,2900 | 25.0000 | 28.8000 | \$6.1300 |
| 12/21/07 | 37.1700 | 26.6500 | 27.5800 | 37.6700 |
| 12/24/07 | 37.2600 | 28.7600 | 27.7600 | 37.9800 |
| 12/2007 | 37.2700 | 28.3800 | 27.6800 | 37.7900 |
| 12/27/07 | 37.3800 | 20.2100 | 26.6700 | 36.7300 |
| 12/28107 | 37.4200 | 28.1600 | 26.6400 | 36.6100 |
| 12/31/07 | 37.6400 | 28.0400 | 28.1600 | 36:0900 |
| 01/0208 | 37.3000 | 27.9500 | 25.5000 | 36.2700 |
| 01/03/08 | 38.9300 | 27.7500 | 25.4600 | 35.9700 |
| 01/04/08 | 38.8000 | 27.6700 | 25.5100 | 36.1500 |
| 01/07/08 | 37.2700 | 27.9400 | 25.8400 | 37.2700 |
| 01/08/08 | 37.3700 | 28.0000 | 25.9400 | 36.8700 |
| 01709/08 | 38.0000 | 28.1700 | 26.3300 | 37.5900 |
| 0414008 | 38.0800 | 28.0200 | 26.6800 | 38.0800 |
| 01/11/08 | 36.3800 | 27.8500 | 26.2800 | 37.2200 |
| 01/7408 | 37:9800 | 27.8700 | 26.6800 | 37.4600 |
| 01/1508 | 37.3900 | 27.5600 | 26.5300 | 36.9100 |
| 01/15108 | 37.7200 | 27.8000 | 28.5500 | 37,3400 |
| 01/17108 | \$7.1300 | 27.3600 | \% 5.9300 | 38.8400 |
| 01/18/68 | 36.6900 | 26.9200 | 25.1600 | 36.1400 |
| $01 / 22008$ | 36.3800 | 26.9100 | 25.1100 | 34.9400 |

ATTACHMENT 1

DCF Cost of Equily Estimate
Stock Prices 1 (\$)

|  | ATE | ATO | PNY | Sill |
| :---: | :---: | :---: | :---: | :---: |
| 01/23/08 | 37.6900 | 27.9500 | 26.2900 | 36.4900 |
| 0172408 | 36.8200 | 27.5600 | 24.7200 | 35.3300 |
| 01/25/08 | 36.8800 | 27.4700 | 24.5400 | 34.9900 |
| 01/28/08 | 37.2200 | 27.8000 | 24.9200 | 35.4600 |
| 01/29/08 | 37.4900 | 28.3200 | 24.9300 | 35.3400 |
| $01 / 30108$ | 36.9800 | 28.2500 | 24.3200 | 34.5400 |
| 01/31/08 | 37.8500 | 28.7400 | 25.0700 | 35.0300 |
| 02/01/08 | 38,4600 | 28.9800 | 25.5200 | 35.7900 |
| 02/04/08 | 30.0300 | 28.9100 | 25.6600 | 36:0800 |
| 0270508 | 37.8400 | 28.3300 | 25.0500 | 35.0800 |
| 02/0508 | 37.6300 | 27.6300 | 24.9400 | 34.9300 |
| 02/07\%8 | 36.7600 | 27.4600 | 25.1600 | 35.3600 |
| 0208108 | 36.9200 | 27.5100 | 24.8800 | 35.1500 |
| 02/11/08 | 36.8800 | 27.9890 | 24.8600 | 35.0200 |
| $02 / 1208$ | 37.1000 | 27.6300 | 25.0500 | 35.3400 |
| $02 \mathrm{H3} 108$ | 36.4400 | 27.5100 | 25.7100 | 35.8400 |
| 02\%44108 | 36.4300 | 27,2400 | 25.1300 | 35.2800 |
| 02\% 15408 | 38.3800 | 27.0400 | 25.1100 | 35.5600 |
| 0219108 | 36.2700 | 27.2300 | 25.2200 | 35.7000 |
| 02720108 | 36.5000 | 27.6500 | 25.5100 | 35.9300 |
| 02/2100: | 35.7700 | 26.8500 | 24.5500 | 35.3000 |
| 02/22109 | 35.6500 | 26.7200 | 24.8900 | 35.3700 |
| 02125108 | 36.4200 | 27.0700 | 25.0700 | 36.0300 |
| 02IEEU8 | 36.4400 | 27.1300 | 25.3700 | 36.3600 |
| 02/27/08 | 36.1800 | 26.7400 | 25.3100 | 36.7300 |
| 02/28108 | 35.8000 | 26.6100 | 25.0100 | 35.9400 |
| 02/2908 | 34.6800 | 26.0000 | 24.6000 | 34.1700 |
| 03/03/08 | 35.0300 | 26.0700 | 24.6800 | 34.1800 |
| 03/04/08 | 35.54400 | 26.3400 | 24.9800 | 34.2300 |
| 03/05/08 | 35.3300 | 26.2400 | 24.7700 | 33.9400 |
| 03/06\%8 | 34.4400 | 25.8700 | 24.4100 | 32.6500 |
| 03/107/08 | 34.5500 | 25.7800 | 24.4100 | 32.6200 |
| 03/10/08 | 34.36001 | 25.6000 | 24.3700 | 32.3400 |
| 03/11/08 | 34.7800 | 28.0300 | 25.7700 | 32.6300 |
| 03/12/08 | 34.4600 | 25.6700 | 25.3900 | 32.4800 |
| 03/13/08 | 34.7300 | 25.8500 | 26.0000 | 33.4700 |
| 03/14/08 | 34.4300 | 25.9000 | 25.9400 | 33.4800 |
| D3/1700 | 33.8200 | 25.6100 | 26.1900 | 33.7500 |
| 03/1808 | 34.3900 | 25.68800 | 26.7500 | 35.0800 |
| $03 / 18100$ | 33,9800 | 25.2800 | 26.1800 | 34.0000 |
| 03/20108 | 33.9600 | 23.2200 | 26.2100 | 34.5600 |
| 04/3004 | 34.1900 | 25.1100 | 25.8700 | . 34.7600 |
| 03/25/0日 | 34.5100 | 25.1000 | 25.7800 | 34.9400 |
| 03/28108 | 33.8000 | 25.2400 | 25.8900 | 35.1800 |
| 03827109 | 34.0500 | 25.3000 | 25.7800 | $34.8 \pm 00$ |
| 03/2808 | 33.8500 | 25.0600 | 28.6800 | 34.8200 |
| 03/31/08 | 34.3200 | 25.5000 | 26.2600 | 35.1100 |
| 04/01/08 | 35.2700 | 26.2700 | 26.6600 | 35,7300 |
| 04/02/58 | 34.9100 | 26.7800 | 26.9800 | 36.8000 |
| 04/03/08 | 34.6000 | 28.7200 | 26.6800 | 36.8300 |
| $04 / 0408$ | 34.0400 | 26.4400 | 26.4300 | 36.0900 |
| 04/07/08 | 34.6090 | 26.8200 | 26.5000 | . 36.3900 |
| 04/08\%8 | 34.6200 | 26.4100 | 26.7100 | 36:500 |
| 04/09\%8 | 34.2700 | 26.2500 | 26.4100 | 36.4100 |
| 04/1008 | 34.0300 | 26.0500 | 26.8600 | 36.7000 |
| 04/11108 | 33.8500 | 25.8100 | 28.3200 | 36.0900 |
| 04/14/08 | 33.9200 | 25.8300 | 26.4800 | 358600 |
| 04/15.08 | 34.2000 | 28.3000 | 26.6500. | 36.6400 |
| 04/1608 | 35.2700 | 27.0700 | 27.5300 | 37.3900 |
| 04/17/08 | 35.2000 | 27.1100 | 27.0900 | 36.9600 |
| 04/18/08 | 35.3900 | 27.3600 | 27.4200 | 37.2900 |
| 0421/08 | 35.0700 | 27.0100 | 27.0400 | 37.0800 |

ATTACHMENT 1

DCF Cost of Equity Estimala
Slock Prices1 (\$):

|  | ATG | ATO | PTY | S. |
| :---: | :---: | :---: | :---: | :---: |
| 04/22/08 | 34,7300 | 26.8100 | 26.7800 | 36.79\% |
| 04/2308 | 34.8600 | 27.3100 | 27.1700 | 37.1200 |
| 04/24/08 | 35.0800 | 27.6400 | 27.2000 | 37.2100 |
| 04/25/08 | 35.1000 | 27.8800 | 26,8700 | 37.0100 |
| 04/2808 | 35.0900 | 28.0700 | 26.6100 | 37.0400 |
| 04/29108 | 35.0000 | 27.9400 | 26.4500 | 38.8000 |
| $04 / 30108$ | 34:0000 | 27,6800 | 26.2900 | 38.5400 |
| 0501008 | 35.1600 | 28:1003 | 26.8600 | 37.4000 |
| 05/02\%08 | 34.9700 | 27.9700 | 28.4500 | 37.2200 |
| 05/05/08 | 35.5500 | 28.4400 | 26.6700 | 37.0500 |
| 05/06/08 | 35.8200 | 28.4300 | 26:5300 | 37.7200 |
| 05/07/08 | 35.6600 | 27.9000 | 25.9800 | 36.8900 |
| 05f06108 | 35.7100 | 27,6500 | 25.2900 | 37.1500 |
| 0510908 | 35.8200 | 27.8600 | 26.4100 | 37.3300 |
| 05/12/08 | 36.2500 | 27.8800 | 26.8700 | 38.2300 |
| 05/13/08 | 36.3300 | 28.7300 | 27.1400 | 38.8900 |
| 05/14/08 | 36.4400 | 28.5400 | 26.9400 | 38.7500 |
| 05/15/08 | 36.2400 | 28.3400 | 26.6300 | 38.5600 |
| 05/1608 | 35.7200 | 28.2800 | 26.8000 | 38.5900 |
| 05/99/08 | 35.8900 | 28.2400 | 26.9400 | 38.3700 |
| $05 / 20108$ | 35.7500 | 28.0500 | 26.7500 | 38.5900 |
| 0512108 | 35.8000 | 28.0200 | 26.7900 | 38.3200 |
| 0572208 | 35.7000 | 27.5300 | 26.9700 | 38.8000 |
| 05/23\%0 | 35.2000 | 27.3100 | 26.7200 | 38.1800 |
| 03/2708 | 35.4600 | 27.5400 | 27.1200 | 38.8800 |
| 05 C 8808 | 35.6600 | 27.5600 | 27.1000 | 38.7900 |
| 05/29108 | 36.0500 | 27.4000 | 27.1100 | 38.5300 |
| 05/30\%08 | 35.7000 | 27.3900 | 27.0300 | 38.2500 |
| 06.0208 | 35.7300 | 27.1600 | 26.7800 | 37.9800 |
| 06\%13/08 | 35.7000 | 27.0600 | 26.5500 | 38.0400 |
| 090408 | 35.9500 | 27.2200 | 27.0100 | 38.6100 |
| 06105/08 | 38.4200 | 27.4100 | 27.7900 | 39.1800 |
| 0310608 | 35.8300 | 27.0600 | 27.4500 | 38.1700 |
| 06109/08 | 35.8800 | 27.1500 | 26.1000 | 38.2900 |
| 06/10/08 | 35.3800 | 27.0500 | 25.9000 | 38.2000 |
| 0611108 | 34.8500 | 26.8500 | 25.7600 | 37.7100 |
| 08/12/08 | 34,2900 | 28.5500 | 26.0400 | 37.8700 |
| 06/13/08 | 34.2300 | 26.4300 | 26.2500 | 38.2500 |
| 0616178 | 34.0800 | 26.6700 | 27.0600 | 38.0800 |
| 0617\%8 | 34.1500 | 26.8800 | 27.1300 | 㖟0300 |
| 06/18/08 | 34.8200 | 27:3200 | 27.3900 | 38:3400 |
| 0618908 | 34.5600 | 27.4400 | 27.7300 | 38.3200 |
| $06 / 20708$ | 34.2900 | 27.2000 | 27.2800 | 38.6300 |
| 06/2308 | 34.1600 | 27.6700 | 27.2400 | 39.0000 |
| $06 / 2408$ | 33.5300 | 27.2800 | 26.7100 | 34.4100 |
| 08/25/08 | 33.9300 | 27.4400 | 27.4200 | \$8.6600 |
| 06/28/08 | 33.9400 | 27.0800 | 28,3800 | 37.9000 |
| 06/2708 | 33.9400 | 26.8000 | 25.7700 | 36.9900 |
| 06/30\%8 | 34.5890 | 27.5700 | 26.1600 | 37.3600 |
| 07/01/08 | 34.2200 | 27.7500 | 26.3700 | 37.3200 |
| 07/0208 | 33.5600 | 27.7300 | 25.9400 | 37.4700 |
| 07/03/08 | 32.7200 | 27.2100 | 25.7800 | 36.8800 |
| 07107108 | 32.9900 | 26.6500 | 25.3500 | 36.2200 |
| 07/0909 | 33.6300 | 26.5800 | 26.0100 | 37.4800 |
| 07/0908 | 34.0400 | 26.7200 | 26.3500 | 37.3900 |
| 07/10/08 | 33.7400 | 26.7800 | 26.3000 | 37.9800 |
| 07/11/09 | 33.8000 | 26.6800 | 26.7500 | 38.3700 |
| 07/14909 | 33,6200 | 26.2600 | 25.9400 | 37.9900 |
| 07/15108 | 33,5000 | 26.0100 | 25.8100 | 38,0000 |
| 07/16100 | 33.2700 | 25.8200 | 25.3300 | 37.51.00 |
| 07/17/08 | 33.4000 | 25.4600 | 25.4400 | 37.0800 |
| 07/1808 | 33.3400 | 25.5100 | 25.0400 | 36.8100 |



## ATTACHMENT 1

## Schedule D-1.4

ATG Nor-Constant DCF Calcuation

| $\mathrm{g}=$ | 4.56\% | non const dcf= | 10.62\% | const dcf= | 9.30\% |
| :---: | :---: | :---: | :---: | :---: | :---: |
| D= | \$1.66 |  |  | $\mathrm{g}(\mathrm{e})=$ | 6.77\% |
|  |  | $\mathrm{P}=$ | \$36.65 |  |  |
|  | GROWTH |  |  |  |  |
| YEAR | RATE |  | DIVIDEND |  |  |
| 1 | 4.56\% |  | \$1.74 |  |  |
| 2 | 4.56\% |  | \$1.82 |  |  |
| 3 | 4.56\% |  | \$1.90 |  |  |
| 4 | 4.56\% |  | \$1.98 |  |  |
| 5 | 4.56\% |  | \$2.08 |  |  |
| 6 | 4.67\% |  | \$2.17 |  |  |
| 7 | 4.79\% |  | \$2.28 |  |  |
| 8 | 4.90\% |  | \$2.39 |  |  |
| 9 | 5.01\% |  | \$2.51 |  |  |
| 10 | 5.12\% |  | \$2.64 |  |  |
| 11 | 5.23\% |  | \$2.77 |  |  |
| 12 | 5.34\% |  | \$2.92 |  |  |
| 13 | 5.45\% |  | \$3.08 |  |  |
| 14 | 5.56\% |  | \$3.25 |  |  |
| 15 | 5.67\% |  | \$3.44 |  |  |
| 16 | 5.78\% |  | \$3.63 |  |  |
| 17 | 5.89\% |  | \$3.85 |  |  |
| 18 | 6.00\% |  | \$4.08 |  |  |
| 19 | 6.11\% |  | \$4.33 |  |  |
| 20 | 6.22\% |  | \$4.60 |  |  |
| 21 | 6.33\% |  | \$4.89 |  |  |
| 22 | 6.44\% |  | \$5.20 |  |  |
| 23 | 6.55\% |  | \$5.54 |  |  |
| 24 | 6.66\% |  | \$5.91 |  |  |
| 25 | 6.77\% |  | \$6.31 |  |  |
| 26 | 6.77\% |  | \$6.74 |  |  |
| 27 | 6.77\% |  | \$7.20 |  |  |
| 28 | 6.77\% |  | \$7.68 |  |  |
| 29 | 6.77\% |  | \$8.20 |  |  |
| 30 | 6.77\% |  | \$8.76 |  |  |

This schedule is truncated; the calculation extends to 400 years to ensure the stability of the calculation.
g, $D, P$ are from Schedule D-1.3 $g(e)$ is from Schedule D-1.13

## ATTACHMENT 1

## Schedule D-1.5

| ATO Non-Constant DCF Calculation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| g= | 4.92\% | $\begin{aligned} & \text { non const } \\ & \text { def= } \end{aligned}$ | 10.96\% | const dci= | 9.89\% |
| $D=$ | \$1.30 | $\mathrm{P}=$ | \$27.34 | $g(e)=$ | 6.77\% |
|  | GROWTH |  |  |  |  |
| YEAR | RATE |  | DIVIDEND |  |  |
| 1 | 4.92\% |  | \$1.36 |  |  |
| 2 | 4.92\% |  | \$1.43 |  |  |
| 3 | 4.92\% |  | \$1.50 |  |  |
| 4 | 4.92\% |  | \$1.57 |  |  |
| 5 | 4.92\% |  | \$1.65 |  |  |
| 6 | 5.01\% |  | \$1.73 |  |  |
| 7 | 5.10\% |  | \$1.82 |  |  |
| 8 | 5.20\% |  | \$1.91 |  |  |
| 9 | 5.29\% |  | \$2.01 |  |  |
| 10 | 5.38\% |  | \$2.12 |  |  |
| 11 | 5.47\% |  | \$2.24 |  |  |
| 12 | 5.57\% |  | \$2.36 |  |  |
| 13 | 5.66\% |  | \$2.50 |  |  |
| 14 | 5.75\% |  | \$2.64 |  |  |
| 15 | 5.84\% |  | \$2.79 |  |  |
| 16 | 5.94\% |  | \$2.96 |  |  |
| 17 | 6.03\% |  | \$3.14 |  |  |
| 18 | 6.12\% |  | \$3.33 |  |  |
| 19 | 6.21\% |  | \$3.54 |  |  |
| 20 | 6.31\% |  | $\$ 3.76$ |  |  |
| 21 | 6.40\% |  | \$4.00 |  |  |
| 22 | 6.49\% |  | \$4.26 |  |  |
| 23 | 6.58\% |  | \$4.54 |  |  |
| 24 | 6.68\% |  | \$4.84 |  |  |
| 25 | 6.77\% |  | \$5.17 |  |  |
| 26 | 6.77\% |  | \$5.52 |  |  |
| 27 | 6.77\% |  | \$5.89 |  |  |
| 28 | 6.77\% |  | \$6.29 |  |  |
| 29 | 6.77\% |  | \$8.72 |  |  |
| 30 | 6.77\% |  | \$7.17 |  |  |

This schedule is truncated; the calculation extends to 400 years to ensure the stability of the calculation.

```
g, D, P are from Schedule D-1.3
g(o) is from Schedule D-1.13
```


## ATTACHMENT 1

Schedule D-1.6
PNY Non-Constant DCF Calculation

| $\mathrm{g}=$ | 5.45\% | non const dcf= | 10.43\% | const dof= | 9.60\% |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $D=$ | \$1.02 |  |  | $g(e)=$ | 6.77\% |
|  |  | P= | \$25.93 |  |  |
|  | GROWTH |  |  |  |  |
| YEAR | RATE |  | DIVIDEND |  |  |
| 1 | 5.45\% |  | 1.08 |  |  |
| 2 | 5.45\% |  | 1.13 |  |  |
| 3 | 5.45\% |  | 1.20 |  |  |
| 4 | 5.45\% |  | 1.26 |  |  |
| 5 | 5.45\% |  | 1.33 |  |  |
| 6 | 5.52\% |  | 1.40 |  |  |
| 7 | 5.59\% |  | 1.48 |  |  |
| 8 | 5.65\% |  | 1.57 |  |  |
| 9 | 5.72\% |  | 1.66 |  |  |
| 10 | 5.78\% |  | 1.75 |  |  |
| 11 | 5.85\% |  | 1.85 |  |  |
| 12 | 5.91\% |  | 1.96 |  |  |
| 13 | 5.98\% |  | 2.08 |  |  |
| 14 | 6.05\% |  | 2.21 |  |  |
| 15 | 6.11\% |  | 2.34 |  |  |
| 16 | 6.18\% |  | 2.49 |  |  |
| 17 | 6.24\% |  | 2.64 |  |  |
| 18 | 6.31\% |  | 2.81 |  |  |
| 19 | 6.37\% |  | 2.99 |  |  |
| 20 | 6.44\% |  | 3.18 |  |  |
| 21 | 6.51\% |  | 3.39 |  |  |
| 22 | 6.57\% |  | 3.61 |  |  |
| 23 | 6.64\% |  | 3.85 |  |  |
| 24 | 6.70\% |  | 4.11 |  |  |
| 25 | 6.77\% |  | 4.38 |  |  |
| 26 | 6.77\% |  | 4.68 |  |  |
| 27 | 6.77\% |  | 5.00 |  |  |
| 28 | 6.77\% |  | 5.33 |  |  |
| 29 | 6.77\% |  | 5.70 |  |  |
| 30 | 6.77\% |  | 6.08 |  |  |

This schedule is truncated; the calculation extends to 400 years to ensure the stablility of the calculation.
g, D, P are from Schedule D-1.3
$g(e)$ is from Schedule D-1.13

## ATTACHMENT 1

Schedule D-1.7
SJI Non-Constant DCF Calculation

| $g=$ | 7.30\% | non const dcf= | 10.07\% | const dcf= | 10.43\% |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $D=$ | \$1.06 |  |  | $g(\mathrm{e})=$ | 6.77\% |
|  |  | $P=$ | \$36.13 |  |  |
|  | GROWTH |  |  |  |  |
| YEAR | RATE |  | DIVIDEND |  |  |
| 1 | 7.30\% |  | \$1.13 |  |  |
| 2 | 7.30\% |  | \$1.21 |  |  |
| 3 | 7.30\% |  | \$1.30 |  |  |
| 4 | 7.30\% |  | \$1.40 |  |  |
| 5 | 7.30\% |  | \$1.50 |  |  |
| 6 | 7.27\% |  | \$1.61 |  |  |
| 7 | 7.25\% |  | \$1.73 |  |  |
| 8 | 7.22\% |  | \$1.85 |  |  |
| 9 | 7.19\% |  | \$1.98 |  |  |
| 10 | 7.17\% |  | \$2.13 |  |  |
| 11 | 7.14\% |  | \$2.28 |  |  |
| 12 | 7.11\% |  | \$2.44 |  |  |
| 13 | 7.09\% |  | \$2.61 |  |  |
| 14 | 7.06\% |  | \$2.80 |  |  |
| 15 | 7.03\% |  | \$2.99 |  |  |
| 16 | 7.01\% |  | \$3.20 |  |  |
| 17 | 6.98\% |  | \$3.43 |  |  |
| 18 | 6.95\% |  | \$3.67 |  |  |
| 19 | 6.93\% |  | \$3.92 |  |  |
| 20 | 6.90\% |  | \$4.19 |  |  |
| 21 | 6.87\% |  | \$4.48 |  |  |
| 22 | 6.85\% |  | \$4.78 |  |  |
| 23 | 6.82\% |  | \$5.11 |  |  |
| 24 | 6.79\% |  | \$5.46 |  |  |
| 25 | 6.77\% |  | \$5.83 |  |  |
| 26 | 6.77\% |  | \$6.22 |  |  |
| 27 | 6.77\% |  | \$6.64 |  |  |
| 28 | 6.77\% |  | \$7.09 |  |  |
| 29 | 6.77\% |  | \$7.57 |  |  |
| 30 | 6.77\% |  | \$8.09 |  |  |

This schedule is truncated; the calculation extends to 400 years to ensure the stability of the calculation.
g, D, P are from Schedule D-1.3
$g(e)$ is from Schedule D-1.13

## ATTACHMENT 1

Growth in U.S. Gross National Product, 1929 to 2005

| Year | GNP <br> (\$billion) | Change <br> (\$billion) | Growth\% |
| :--- | ---: | ---: | ---: |
|  |  |  |  |
| 1929 | 104.4 |  |  |
| 1930 | 91.90 | -12.70 | $-12.32 \%$ |
| 1931 | 77.00 | -14.60 | $-16.15 \%$ |
| 1932 | 59.10 | -17.80 | $-23.48 \%$ |
| 1933 | 56.70 | -2.40 | $-4.14 \%$ |
| 1934 | 66.30 | 9.50 | $17.09 \%$ |
| 1935 | 73.60 | 7.10 | $10.91 \%$ |
| 1936 | 84.00 | 10.30 | $14.27 \%$ |
| 1937 | 92.20 | 7.90 | $9.58 \%$ |
| 1938 | 86.50 | -5.70 | $-6.31 \%$ |
| 1939 | 92.50 | 6.60 | $7.79 \%$ |
| 1940 | 101.70 | 9.10 | $9.97 \%$ |
| 1941 | 127.20 | 25.10 | $25.00 \%$ |
| 1942 | 162.30 | 33.50 | $26.69 \%$ |
| 1943 | 198.90 | 33.70 | $21.19 \%$ |
| 1944 | 220.10 | 18.70 | $9.70 \%$ |
| 1945 | 223.40 | 2.00 | $0.95 \%$ |
| 1946 | 222.90 | -1.00 | $-0.47 \%$ |
| 1947 | 245.30 | 22.80 | $10.73 \%$ |
| 1948 | 270.60 | 26.40 | $11.22 \%$ |
| 1949 | 268.60 | -1.20 | $-0.46 \%$ |
| 1950 | 295.20 | 27.90 | $10.71 \%$ |
| 1951 | 341.20 | 45.10 | $15.64 \%$ |
| 1952 | 360.30 | 18.20 | $5.46 \%$ |
| 1953 | 381.30 | 20.00 | $5.69 \%$ |
| 1954 | 382.50 | 0.90 | $0.24 \%$ |
| 1955 | 417.20 | 33.40 | $8.97 \%$ |
| 1956 | 440.30 | 22.30 | $5.49 \%$ |
| 1957 | 464.10 | 22.80 | $5.32 \%$ |
| 1958 | 469.80 | 5.80 | $1.29 \%$ |
| 1959 | 509.30 | 53.50 | $11.71 \%$ |
| 1960 | 529.50 | 20.30 | $3.98 \%$ |
| 1961 | 548.20 | 18.70 | $3.52 \%$ |
| 1962 | 589.70 | 41.40 | $7.54 \%$ |
| 1963 | 622.20 | 32.50 | $5.50 \%$ |
| 1964 | 668.50 | 46.20 | $7.41 \%$ |
| 1965 | 724.40 | 56.10 | $8.38 \%$ |
| 1965 | 792.90 | 69.00 | $9.51 \%$ |
| 1967 | 838.00 | 45.00 | $5.66 \%$ |
| 1968 | 916.10 | 78.10 | $9.30 \%$ |
| 1969 | 990.70 | 77.90 | $8.05 \%$ |
| 1970 | 1.044 .90 | 54.60 | $5.51 \%$ |
| 1971 | $1,134.70$ | 90.10 | $8.61 \%$ |
| 1972 | $1,246.80$ | 112.90 | $9.94 \%$ |
| 1973 | $1,395.30$ | 149.10 | $11.94 \%$ |
| 1974 | 1.515 .50 | 118.50 | $8.48 \%$ |
|  |  |  |  |

Growth in U.S. Gross National Product, 1929 to 2005

| Year | GNP <br> (\$billion) | Change <br> (\$billion) | Growth\% |
| :--- | ---: | ---: | ---: |
|  |  |  |  |
| 1975 | $1,651.30$ | 131.70 | $8.68 \%$ |
| 1976 | $1,842.10$ | 192.60 | $11.68 \%$ |
| 1977 | $2,051.20$ | 211.10 | $11.47 \%$ |
| 1978 | $2,316.30$ | 265.90 | $12.96 \%$ |
| 1979 | $2,595.30$ | 281.30 | $12.14 \%$ |
| 1980 | $2,823.70$ | 231.50 | $8.91 \%$ |
| 1981 | $3,161.40$ | 335.30 | $11.84 \%$ |
| 1982 | $3,291.50$ | 129.60 | $4.09 \%$ |
| 1983 | $3,573.80$ | 276.10 | $8.38 \%$ |
| 1984 | $3,969.50$ | 396.30 | $11.10 \%$ |
| 1985 | $4,246.80$ | 270.30 | $6.81 \%$ |
| 1986 | $4,480.60$ | 229.90 | $5.42 \%$ |
| 1987 | $4,757.40$ | 287.90 | $6.44 \%$ |
| 1988 | $5,127.40$ | 370.60 | $7.79 \%$ |
| 1989 | $5,510.60$ | 382.60 | $7.46 \%$ |
| 1990 | $5,837.90$ | 322.80 | $5.86 \%$ |
| 1991 | $6,026.30$ | 178.70 | $3.06 \%$ |
| 1992 | $6,367.40$ | 331.40 | $5.51 \%$ |
| 1993 | $6,689.30$ | 324.40 | $5.11 \%$ |
| 1994 | $7,098.40$ | 404.40 | $6.07 \%$ |
| 1995 | $7,433.40$ | 349.80 | $4.95 \%$ |
| 1996 | $7,851.90$ | 410.30 | $5.53 \%$ |
| 1997 | $8,337.30$ | 473.80 | $6.05 \%$ |
| 1998 | $8,768.30$ | 445.00 | $5.36 \%$ |
| 1999 | $9,302.20$ | 486.20 | $5.56 \%$ |
| 2000 | $9,855.90$ | 553.70 | $5.95 \%$ |
| 2001 | $10,171.60$ | 315.70 | $3.20 \%$ |
| 2002 | $10,514.10$ | 342.50 | $3.37 \%$ |
| 2003 | $11,059.20$ | 545.10 | $5.18 \%$ |
| 2004 | $11,778.90$ | 719.70 | $6.51 \%$ |
| 2005 | $12,520.80$ | 741.90 | $6.30 \%$ |
|  |  |  |  |
| Average |  |  | $6.77 \%$ |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Sources: (1) National Income and Product Accouints ( NIPA ) from the U. S. Bureiau of Economic Anafysis and Econostats; BEA Data; NIPA Index; Section 1. Domestic Product and Income Table 1.7.5 Relation of Gross Domestic Product, Gross National Product, Net National Product, National Income, and Personal Income, (2) U, S. Department of Commerce; Survey of Currant of the Uniled States Business and Historical Statistics
ATTACHMENT 1
Schedule D-1.9


| Staff's Comparable Group Companies' Exposure To Revenue Decoupling |  |
| :--- | :---: |
|  |  |
| Company | States With Operating Companies |
| Atmos Energy Corporation | CO GA KS KY LA MS MO TX VA |
| AGL Resources | FL GA *MD NJ TN |
| Piedmont Natural Gas | NC SC TN |
| South Jersey Industries | NJ |

*States With Potential Exposure To Revenue Decoupling Are In Bold

