COMMENTS ON PACIFICORP'S INTERJURISDICTIONAL
AND CLASS COST-OF-SERVICE MODELS – June 22, 2009
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There are two types of circularities or interdependent relations in the Company's models. Vertical circularities are within a column of the worksheet models – the interdependent relations among the accounts *for a given jurisdiction* (or class, or function, or sub-function). Horizontal circularities are within a row of the worksheet models – the interdependent relations among jurisdictions *for a given account*.

The vertical circularities include the well-known interdependent relations among imputed interest expense, income taxes, and cash working capital. Adjusted results of operations, whether for reporting or ratemaking purposes, are based on an imputation of interest expense (this adjustment is often termed interest synchronization). Imputed interest expense is calculated by applying the weighted cost of debt to rate base. Income taxes are based on taxable income includes the deduction of imputed interest expense. Cash working capital is calculated by applying a net lag day factor (divided by 365 days) to the sum of operations and maintenance expenses, taxes other than income and income taxes.[1] And the rate base, upon which imputed interest is calculated, includes cash working capital. Therefore, interest expense influences income taxes, income taxes influence cash working capital, and cash working capital influences interest expense, thus completing the circle.

The horizontal circularities arise from the treatment of state income taxes in the Company's Jurisdictional Allocation Model (JAM). To each state's taxable income is applied the associated state-specific income tax rate. The sum of all state income taxes is calculated. This total is then allocated back to jurisdictions using an Income-Before-Tax (IBT) factor.[2] The IBT factor is the relative state taxable income of jurisdictions. Thus each jurisdiction is obligated to recover a share of the system's total state income tax obligation based on relative state taxable income, rather than being responsible for its own state income tax. Due to different state-specific income tax rates and the sharing of total system state income taxes among jurisdictions, the results for any one jurisdiction are dependent upon the results of each of the other jurisdictions.

In Docket No. 08-035-38, additional circularities are introduced for the first time by applying the IBT factor to a component of accumulated deferred income tax in Account 190, a deduction to rate base, and applying the IBT factor to a component of deferred income tax expense in Account 41010. Previously, the IBT factor has only been applied to the allocation of state income taxes. From a modeling perspective, extending the use of the IBT to accounts other than state income tax introduces a great deal of complexity.

Additional circularities arise from the use of an Excise Tax (EXCTAX) factor in JAM. The EXCTAX factor is the relative federal taxable income of jurisdictions, excluding excise tax expense. Beginning with the merger in 1989 and for 1990 as well, a Superfund excise tax expense was allocated to jurisdictions based on the System Overhead (SO) factor. From 1991 through 1997, the EXCTAX factor

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[1] In Docket No. 08-035-38, under the Revised Protocol method the Company removed the Embedded Cost Differential adjustments from the O&M expenses used to calculate cash working capital. The Company has not used this adjustment to the Revised Protocol method in prior Utah rate cases nor in the Semi-Annual Reports filed in Utah. This adjustment had no effect in Docket No. 08-035-38 since the revenue requirement for Utah under the Multi-State Process (MSP) was determined by applying the Rate Mitigation Cap of 1.06% for 2009 to Utah's revenue requirement obtained under the Roll-In method.

[2] In Docket No. 08-035-38, under the Roll-In method the Company applied an "effective" state income tax rate of 4.54% to the total taxable income of the system (excluding the imputed interest expense associated with the Other Electric Utility and the Non-Utility "jurisdictions"). The "effective" state income tax rate of 4.54% was first used in the March 2003 Semi-Annual Report and has been used in subsequent reports to calculate the state income tax consequences of adjustments to results of operations. In rate cases, it has been used only in the calculation of the Company's "Net-to-Gross" factor, which in turned is used to calculate the revenue change necessary to achieve the allowed rate of return on rate base. This adjustment to the calculation of state income tax under Roll-In did have an effect on Utah's MSP revenue requirement in Docket No. 08-035-38.

was used to allocate this excise tax expense to jurisdictions (this expense was approximately $600,000 per year during this period). Since 1998, this excise tax expense has been zero. Explicit recognition of excise taxes in Account 186, Miscellaneous Deferred Debits (an addition to rate base) began in 1998 and lasted until 2002 (reaching a maximum value of $33,493 in 2001). These excise taxes in rate base were also allocated to jurisdictions on the EXCTAX factor. Even though the Company's model still calculates the EXCTAX factor, it has not been used since 2002.

From a modeling perspective, the vertical circularities among imputed interest expense, income taxes, and cash working capital are easy to handle. These are simple linear relations and an algebraic solution is straightforward. These solution methods have a long-standing use both for reporting and ratemaking purposes (for electric and gas, and once upon a time, telecommunications utilities as well).

From a modeling perspective (apart from possible conceptual shortcomings), the horizontal circularities among jurisdictions from sharing the system total of state income taxes by means of the IBT factor are very problematic, and are unique to PacifiCorp's multi-jurisdictional operations.[3] No straightforward solution can be obtained (and ultimately involves solving ten very long and cumbersome simultaneous quadratic equations corresponding to the jurisdictions of JAM). JAM implicitly uses an iterative process to obtain a simultaneous solution for all jurisdictions ("implicitly" since the process is presumably buried somewhere in a programmed macro). In my model, the iterative process is explicit, and a solution occurs within five iterations (which is surprisingly quick). As mentioned above, expanding the use of the IBT factor, from application to state income taxes to components of deferred income tax expense and accumulated deferred expense is especially troublesome.

In order to determine the changes in revenue required to recover cost-of-service at an allowed rate of return in JAM, the Company employs jurisdictional "Net-to-Gross" factors (often termed Income-to-Revenue multipliers). These factors are based on a common "effective" state income tax rate of 4.54 percent. These factors vary by jurisdiction based on state-specific uncollectible rates and state-specific non-income tax rates. A jurisdiction's uncollectible rate is the ratio of its direct-assigned bad debt expense in Account 904 to its direct-assigned revenues in Accounts 440-445. The state-specific non-income tax rates include franchise and revenue tax rates, and for Oregon a resource supplier tax rate as well. Utah's Net-to-Gross factor does not include any non-income tax rates since the elimination of Utah's gross receipts tax beginning with the September 2005 Semi-Annual Report.

There is a problem calculating jurisdictional revenue changes required to recover cost-of-service at an allowed rate of return using the Company's Net-to-Gross factors. These factors fail to recognize the circularities inherent in the Company's model. The revenue changes calculated using Net-to-Gross factors do not achieve the allowed rate of return (as a check, place the revenue changes, net of bad debt and non-income taxes, back into the model and note the resulting earned rates of return).

It seems odd to develop a model of some 2,000 lines of accounting and allocation detail, and develop an iterative process, which for given revenues reflect all circularities and determine earned rates of return, then ignore all this complexity in determining revenue changes. It is a simple matter to reverse the iterative process, and for a given rate of return reflect all circularities and determine the revenues required to recover cost-of-service, and hence revenue changes. This reverse iterative process can be also be used to impute revenues to functions at the jurisdictional earned rate of return, and will obtain precisely the same results as does the Company in JAM. It seems inconsistent to use a detailed approach to impute revenues for functions of a jurisdiction, yet use a shortcut to determine revenue changes for jurisdictions. My model uses this "reverse" iterative process to calculate revenue changes at the allowed rate of return, and again a solution occurs within five iterations.

For the purposes of comparing required revenue changes among jurisdictions, it is convenient to use a jurisdiction's average bad debt ratio. However, it is inappropriate to apply this jurisdictional average

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[3] Consider Questar Gas Company (QGC), the local natural gas distribution utility, which serves two jurisdictions. About 95 percent of QGC's cost-of-service is in Utah, and about 5 percent is in Wyoming. Utah has a five percent state income tax rate, and Wyoming has none. There is no sharing of Utah's state income tax with Wyoming.

to classes for ratemaking purposes. Note a jurisdiction's bad debt ratio is simply a weighted average of schedules' bad debt ratios, the weights being the schedules' revenue relative to jurisdictional total revenue (in accounts 440-445). Only when all schedules receive a uniform percent change in revenue is the jurisdictional bad debt appropriate for ratemaking.

In Docket No. 08-035-08, Schedule 1 has approximately 86 percent of the direct-assigned bad debt expense in Account 904, and the Company's cost-of-service study indicates this schedule is due about a $9.7 million revenue decrease. Schedules 6, 8 and 9 together have approximately 12.25 percent of the bad debt expense, and are due about $44.3 million of the $45 million total revenue increase. Applying the specific bad debt ratios of schedules to their corresponding revenue changes, the jurisdictional total of direct-assigned bad debt expense will decrease.

In addition to allocating total system results to jurisdictions, JAM subsequently allocates the results of a given jurisdiction to functions. The cost-of service study imports the functional results from JAM and then allocates them to schedules. In the Company's functional and class cost-of-service studies, there are no horizontal circularities and all vertical circularities are eliminated through decisions regarding allocation factors. However, these allocation factor decisions are inconsistent with those decision made in JAM.

Consistent with the approach used by JAM, the functional study allocates the (fixed) state income tax (excluding state renewable energy credits) to functions using an income-before-tax factor, which is the ratio of a function's state taxable income to Utah's (fixed) jurisdictional state taxable income. This is equivalent to applying a fixed "realized" state income tax rate to the state taxable income of a function or a class.

For the results in Docket No. 08-035-38, the realized state income tax rate is 6.1671 percent at Utah's earned rate of return, and is 5.3598 percent at the allowed rate of return. As a result of using a fixed state income tax rate across classes, functions or sub-functions, there is no horizontal circularity in the functional or class cost-of-service studies. Thus, iterative processes are no longer required, and independent algebraic solutions can be directly derived for each class, function or sub-function.

In contrast to the approach used in JAM, the functional study directly assigns to the production function the component of deferred income tax expense allocated in JAM to jurisdictions on the IBT factor. This removes one source of circularity. Instead of imputing interest expense by applying the weighted cost of debt to rate base, the functional study in JAM allocates the jurisdictional interest expense to functions using a gross plant factor. This removes another source of circularity.

The functional study calculates cash working capital in the same manner as in the JAM. Hence, cash working capital remains a function of income taxes. State taxable income, when the rate of return rather than revenue is given, is dependent upon rate base, so there remains the vertical circularity between cash working capital and income taxes. Regarding the accumulated deferred income tax expense, which JAM allocates to jurisdictions using the IBT factor, the functional study also allocates this item using an income-before tax factor. This source of vertical circularity remains.

In contrast to JAM and the functional study, the class cost-of-service study allocates cash working capital based on relative O&M expenses. Cash working capital is no longer dependent upon the net lag day factor, taxes other than income, and income taxes. Regarding the component of accumulated deferred income tax expense, which JAM and the functional study allocate using income-before-tax factors, the class cost-of-service study allocates this component using the direct-assigned revenues in accounts 444-445, as well as AGA revenues. The allocation of this component no longer depends upon taxable expenses, Schedule M items, or imputed interest expense. These two decisions remove the last remaining circularities between rate base and income taxes.

In contrast to the approach of JAM and the functional cost-of-service study, and given the lack of circularity between rate base and income taxes resulting from prior allocation decisions, the cost-of-service study allocates taxes other than income, deferred income tax expense, and deferred investment tax credits

on relative rate base. Finally, Utah's jurisdictional income taxes, at the jurisdictional earned rate of return, are allocated to classes on relative rate base.

Note income taxes for a class are not calculated at the earned rate of return of a class, but instead are based on the earned rate of return of the jurisdiction. This treatment of income taxes overstates the earnings performance of a class. Those classes performing above the jurisdictional average are allocated less than their contribution to the income tax obligation of the jurisdiction. Conversely, those classes performing below the jurisdictional average are allocated more than their contribution to the income tax obligation of the jurisdiction.

My Model differs from the Company's models based on the following:

1. The jurisdictional allocation model and the cost-of-service studies for classes, functions and sub-functions are integrated into a single Excel workbook, not downloading results of one model into a separate second model.

2. Utah's jurisdictional revenue change recognizes all interdependencies (among imputed interest expense, income taxes, cash working capital, and the use of the income-before-tax factor), not a simple "net-to-gross" factor.

3. Cash working capital for classes is calculated by applying Utah's net lag day factor (divided by 365 days) to the sum of O&M expenses, taxes other than income, and income taxes, not allocated on relative O&M expense.

4. The components of deferred income tax expense and accumulated deferred income tax allocated in JAM on the IBT factor are allocated to classes on relative state taxable income, (the class equivalent to the IBT factor in JAM).

5. Jurisdictional taxes other than income, deferred income tax expense, deferred investment tax credits, and Schedule M items are allocated to classes similar to the allocation of system amounts to jurisdictions.

6. Income taxes are calculated for classes based on taxable income, not allocated on rate base.

7. The revenues from Schedules 21 and 31 and the revenues from special contract "D" are credited to classes based on earned and allowed cost of service, not solely on cost-of-service at the jurisdictional earned rate of return.

8. The earned rates of return and consequent revenue changes for classes recognize the interdependent relations among imputed interest expense, income taxes, cash working capital, and the use of the income-before-tax factor.

9. The revenue change for classes is based on the "realized" state income tax rate (the ratio of Utah's allocated share of state income tax, excluding renewable energy credits, to Utah's state taxable income at the allowed rate of return, or 5.3598 percent), not the Company's "effective" state income tax rate of 4.54 percent.

10. The revenue change for classes is based on class-specific uncollectible revenue, or bad debt expense, not the average for the Utah jurisdiction.

11. Revenues are imputed to functions and sub-functions of a class based on the earned rate of return of a class, not the Utah jurisdictional earned rate of return on rate base.

12. Cost-of-service results for classes, functions, and sub-functions are also calculated at the Utah jurisdictional earned rate of return on rate base, to provide a comparison to the Company's results.