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REVENUE FORECASTING METHODOLOGY

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Discussion of the forecast

Through November, revenues were \$36.5M (0.8%) above the April 16, 2007 forecast update. The economic forecast underlying this update of the April 16, 2007 revenue forecast update projects that Indiana nonfarm personal income will increase by 4.5% in FY 2008 and 2.5% in FY 2009. For the April 16, 2007 revenue forecast update, Indiana nonfarm personal income was projected to increase by 4.3% in FY 2008 and 4.6% in FY 2009. For this update, Real U.S. Gross Domestic Product is projected to increase by 2.5% in FY 2008 and 1.6% in FY 2009 compared to the projections made for the April 16, 2007 revenue forecast update of 2.5% in FY 2008 and 2.9% in FY 2009.

Discussion of the equations used in the forecast

Sales Tax

The Committee retained the equation it first adopted in December 2006. This equation uses fiscal year nominal Indiana Nonfarm Personal Income (FY_NFIPI) and a dummy variable (D1) to account for the rapid increase and destruction of wealth during the years of 1996 through 2002. The model used by the Committee is replicated as Equation (1) below. The Committee adjusted the results from this equation to account for the response of consumers to the increase in the sales tax rate in 2002 and the effect of subsequently enacted tax measures.

$$\text{Equation (1)} \quad \text{Sales Tax} = 152.849114 + 0.021265 (\text{FY_NFIPI}) + 87.726101 (\text{D1}) + \text{Adjs.}$$

$$\text{D1} = 1 \text{ if year } >1995 \text{ and } < 2003$$

Individual Income Tax

The Committee retained the equation it first used in December, 2004. It also retained the methodology it first adopted in December, 2004 to remove the effects of capital gains and losses above long-run trend in the late 1990s. In retaining this approach, the Committee is assuming that the realization of capital gains and losses has returned to its historical relationship to growth in the U.S. economy and will remain there throughout the period. The equation uses fiscal year nominal Indiana Nonfarm Personal Income and is replicated as Equation (2) below.

Income taxes imposed by counties in Indiana are collected by the State and distributed back to the imposing counties. The collection and distribution mechanisms result in a material lag between the time local income taxes are collected and the time the State is able to segregate those taxes for distribution to the appropriate counties. As a result, local income taxes collected in prior years are distributed from current income tax collections. The Committee found that the collection and distribution mechanisms in place will result in a material impact on current State income tax revenues reported during the forecast period. The results from Equation (2) were adjusted to account for this impact.

$$\text{Equation (2)} \quad \text{Individual Income Tax} = -105.297445 + 0.023446 (\text{FY_NFPI}) + \text{Adjs.}$$

Corporate Income Tax

The Committee elected to retain the equation it used in December 2006 and to account separately for the effects of *Azstar Indiana Gaming Corporation vs. the Indiana Department of State Revenue*, the Utilities Receipts Tax, the Financial Institutions Tax, and enacted tax measures. The equation employed by the Committee is replicated as equation (3) below.

$$\text{Equation (3)} \quad \text{Corporate Adjusted Gross Income} = 3,015.158371 + \\ 0.74113(\text{CY_RGDP}) - 24,803.338 (\text{Rate Differential}) - 2,411.083 \\ (\text{D1}) + \text{Utility Receipts Tax} + \text{Financial Institutions Tax} + \text{Adj.}$$

Where D1 = 1 if year > 2001

Cigarette & Tobacco Products Tax

The Committee adopted two equations to estimate the Cigarette Tax and Tobacco Products Tax. Cigarette Sales, measured in packs of 20, depend upon fiscal year real Indiana Nonfarm Personal Income (RFY_NFPI), and estimate of the sum of the four surrounding states real prices (RALLPRICE), the real Indiana price (RINPRICE), a dummy variable for 1985 and years after (D85), a variable which takes the real Indiana price multiplied by D85 (PRICED85), the real cigarette excise tax rate (CIGRATE) and a trend variable equal to the fiscal year forecasted minus 1965 (TREND). Tobacco Product sales are estimated based on fiscal year real Indiana Nonfarm Personal Income (RFY_NFPI), a price index for tobacco products (PRICE), and the excise tax on tobacco products (TOBRATE). The sales, income, price, and tobacco product excise tax variables are expressed in natural logarithms.

Equation (4) $Cigarette\ Sales = 2.058 + 0.642 (RFY_NFIPI) + .025 (ALLPRICE) - 0.692(RINPRICE) - 1.834 (D85) + 0.370 (PRICE\ 85) - 0.134 (CIGRATE) - 0.009 (TREND)$

Equation 4(a) $Cigarette\ Tax = 0.995 (Cigarette\ Sales)$

Equation (5) $Tobacco\ Product\ Sales = -16.440 + 1.771 (RFY_NFIPI) - 0.229 + (PRICE) - 0.412 (TOBRATE) + 0.028 (TREND)$

Equation (5a) $Tobacco\ Products\ Tax = 0.24 (Tobacco\ Products\ Sales)$

Alcoholic Beverage Taxes

The alcoholic beverage tax model includes three equations: one for beer, one for liquor, and one for wine. All three equations include fiscal year real Indiana Nonfarm Personal Income (RFY_NFIPI), the real beverage price (BPRICE, LPRICE, WPRICE) and the lagged sales of the beverage in gallons (BLAGSALE, LLAGSALE, WLAGSALE). The beer equation has a trend variable (TREND). The liquor equation includes a trend variable (TREND), a dummy variable for 1991 and years after (D91), and a variable which takes the trend variable multiplied by D91 (TREND91). The wine equation includes a dummy variable for 1987 and years after multiplied by the log of real Indiana Nonfarm Personal Income (D87_RFY_NFIPI). For all equations, the income and price variables were adjusted by the Gross Domestic Product price deflator. The sales, income and price variables are expressed in terms of natural logarithms.

Equation (6) $Beer\ sales = -1.549 + 0.913(LAGSALE) + 0.258(RFY_NFIPI) - 0.171(BPRICE) - 0.007(TREND)$

Equation (6a) $Beer\ tax = 0.115(Beer\ sales)$

Equation (7) $Liquor\ sales = -0.599 + 0.648(LAGSALE) + 0.446 (RFY_NFIPI) - 0.443(LPRICE) - 0.022(TREND) - 0.488(D91) + 0.018 (TREND91)$

Equation (7a) $Liquor\ tax = 2.68(Liquor\ sales)$

Equation (8) $Wine\ sales = -0.537 + 0.844 (LAGSALE) + 0.203 (RFY_NFIPI) - 0.281 (WPRICE) - 0.009 (D87_RFY_NFIPI)$

Equation (8a) $Wine\ tax = 0.47(Wine\ sales)$

Riverboat Wagering Tax

The Committee adopted a riverboat wagering receipts equation to estimate the riverboat wagering tax base in thousands of dollars from the state's riverboat casinos, excluding the French Lick Casino. The tax base estimate is then used to compute estimated wagering tax collections from the state's riverboat casinos, excluding the French Lick Casino. Amounts are subtracted from this result to account for annual distributions to the Indiana Gaming Commission, local revenue sharing, and riverboat communities.

The Committee also adjusted the wagering tax estimate to account for the net revenue impact to the state from the French Lick Casino and negative revenue impacts due to competition from the Four Winds Casino in New Buffalo, Michigan.

The wagering receipts equation uses quarterly nominal Indiana Nonfarm Personal Income (Q_NFIPI) in thousands of dollars. The equation also contains the quarterly turnstile count in thousands (Q_TURNSTILE) at the riverboat casinos (excluding the French Lick Casino) to account for the impact of market and capacity factors on the wagering tax base. It also contains dummy variables (DIN) to account for the impact of Indiana dockside gaming on wagering in Indiana and (DQ1_02) to account for facilities changes and other economic impacts on wagering during the 1st Quarter of 2002. The equation chosen is replicated as Equation (9) below.

$$\text{Equation (9)} \quad (\text{Total Wagering Receipts})^2 = -479,959,409,871.94 + (2,905.39 * Q_NFIPI) + (40,301,355.05 * Q_TURNSTILE) + (21,094,209,294.98 * DIN) + (27,563,212,010.62 * DQ1_02)$$

Where Q_TURNSTILE is the actual quarterly casino turnstile count through the 3rd Quarter of 2007 (excluding the French Lick Casino) and thereafter is assumed to experience no year-over-year growth.

Where DIN = 1 if calendar quarter = 3rd Quarter 2002 or after.

Where DQ1_02 = 1 if calendar quarter = 1st Quarter 2002.

SPECIFIC METHODOLOGY (December 13, 2007)

GENERAL FUND

Sales Tax:

For Each Fiscal Year to be Forecasted

1. Multiply 0.021265 times fiscal year Indiana Nonfarm Personal Income.
2. Add 152.849114 to the results of Step 1.
3. Divide the results of Step 2 by 0.05 and multiply the results by 0.06 to account for the sales tax rate increase effective December 1, 2002 under HEA 1001-2002ss.
4. Subtract 70.6 in FY 2008, and 70.2 in FY 2009 from the result of step 3 to account for the response of consumer to the retail sales tax rate increase under HEA 1001-2002ss and tax measures enacted in 2004, 2005, 2006 and 2007.
5. Multiply the results of Step 4 by 0.49067 to account for the percentage of sales taxes deposited in the General Fund under HEA 1001- 2007.

Individual Income Tax:

For Each Fiscal Year to be Forecasted

1. Multiply 0.023446 times fiscal year Indiana Nonfarm Personal Income.
2. Subtract 105.297445 from the results of Step 1.
3. Subtract 268.5 for FY 2008, and 274.7 for FY 2009 from the results of Step 2 to account for tax measures enacted in 1997, 1999, 2002, 2005, 2006, and 2007.
4. Subtract 36.7 for FY 2008, and 56.3 for FY 2009 from the results of Step 3 to account for the impacts of local income tax distributions as explained in the section of this document describing the individual income tax equation.
5. Multiply the results of Step 4 by 0.86 to account for the percentage of individual income tax deposited in the General Fund under HEA 1001-2002ss.

Corporate Income Tax:

For Each Fiscal Year to be Forecasted

1. Multiply 0.741134005 times calendar year U.S. Real Gross Domestic Product.
2. Add 3,015.158371 to the results of Step 1.
3. Multiply -24,803.33859 times 0.0534 and add the result to the results of Step 2 to account for the impact of a differential between the corporate income tax rate and the individual income tax rate.
4. Subtract 2,411.083023 from the results of Step 3.
5. Multiply the results of Step 4 by the statutory corporate income tax rate of 0.085.
6. Subtract 31.5 from the results of Step 5 to account for the impact of changes to the Research and Development Expense Credit contained in HEA 1001-2002ss.
7. Add 236.4 to the results of Step 6 to account for the revenues from the Utility Receipts Tax.
8. Add 20.0 to the results of Step 7 to account for General Fund revenues from the Financial Institutions Tax.
9. Add 48.3 for FY 2008, and 47.8 for FY 2009 to account for tax measures enacted in 2005, 2006, and 2007.
10. Add 15.8 for FY 2008, and 16.4 for FY2009 to the results of Step 10 to account for the ongoing impact of *Azta Indiana Gaming Corporation vs. the Indiana Department of State Revenue*.

Cigarette Tax:

For Each Fiscal Year to be Forecasted

1. Multiply 0.642 by the logarithm of fiscal year real Nonfarm Indiana Personal Income.
2. Add 2.058 to the result of step 1.
3. Multiply 0.025 by the logarithm of the sum of the real cigarette prices in the four surrounding states.
4. Add the result of step 3 to the result of step 2.
5. Multiply -0.692 by the logarithm of the real cigarette price in Indiana.
6. Add the result of step 5 to the result of step 4.
7. Subtract -1.834 from the result of step 6 for years after 1985.
8. Multiply 0.370 by the logarithm of real Indiana prices for years after 1985.
9. Add the result of step 8 to the result of step 9.
10. Multiply -0.134 by the logarithm of the real cigarette excise tax rate.
11. Add the result of step 10 to the result of step 9.
12. Subtract 1965 from the fiscal year forecasted.
13. Multiply the result of step 12 by -0.009.
14. Add the result of step 13 to the result of step 11.
15. Take the exponential of step 14, to get sales.
16. Multiply the result of step 15 by 0.988 to get total revenue.
17. Multiply the result of step 16 by 0.627 to get General Fund revenue.

Tobacco Products Tax:

1. Multiply 1.771 by the logarithm of fiscal year real Nonfarm Indiana Personal Income.
2. Subtract 16.440 from the result of step 1.
3. Multiply 0.229 by the logarithm of the of the real tobacco product price.
4. Subtract the result of step 3 to the result of step 2.
5. Multiply 100 by the tobacco products excise tax rate.

6. Multiply -0.412 by the logarithm of the result of step 5.
7. Add the result of step 6 to the result of step 4.
8. Take the exponential of step 7, to get sales.
9. Multiply the result of step 8 by 0.24 to get total revenue.
10. Multiply the result of step 9 by .75.
11. Multiply the result of step 10 by 0.627 to get General Fund revenue.

Alcoholic Beverage Tax - Beer:

For Each Fiscal Year to be Forecasted

1. Multiply 0.913 by the logarithm of beer sales, lagged one year.
2. Subtract 1.549 from the result of step 1.
3. Multiply 0.258 by the logarithm of fiscal year real Non-Farm Indiana Personal Income.
4. Add the result of step 3 to the result of step 2.
5. Multiply -0.171 by the logarithm of the real beer price.
6. Add the result of step 5 to the result of step 4.
7. Multiply -0.007 by a trend term.
8. Add the result of step 7 to the result of step 6.
9. Take the exponential of the result of step 8 to get sales.
10. Multiply the result of step 9 by 0.115, to get total revenue; multiply the result of step 9 by .04 to get General Fund revenue.

Alcoholic Beverage Tax - Liquor:

For Each Fiscal Year to be Forecasted

1. Multiply 0.648 by the logarithm of liquor sales, lagged one year.
2. Subtract 0.599 to the result of step 1.
3. Multiply 0.446 by the logarithm of fiscal year real Non-Farm Indiana Personal Income.

4. Add the result of step 3 to the result of step 2.
5. Multiply -0.443 by the logarithm of the real liquor price.
6. Add the result of step 5 to the result of step 4.
7. Multiply -0.022 by a trend term.
8. Add the result of step 7 to the result of step 6.
9. Multiply -0.488 by a dummy for 1991.
10. Add the result of step 9 to the result of step 8.
11. Multiply 0.018 by the trend term multiplied by the dummy for 1991.
12. Add the result of step 11 to the result of step 10.
13. Take the exponential of the result of step 12 to get sales.
14. Multiply the result of step 13 by 2.68, to get total revenue; multiply the result of step 13 by 1.00 to get General Fund revenue.

Alcoholic Beverage Tax - Wine:

For Each Fiscal Year to be Forecasted

1. Multiply 0.844 by the logarithm of wine sales, lagged one year.
2. Subtract 0.537 from the result of step 1.
3. Multiply 0.203 by the logarithm of fiscal year real Non-Farm Indiana Personal Income.
4. Add the result of step 3 to the result of step 2.
5. Multiply -0.281 by the logarithm of the real wine price.
6. Add the result of step 5 to the result of step 4.
7. Multiply -0.009 by the dummy for 1987 multiplied by the logarithm fiscal year Non-Farm Indiana Personal Income.
8. Add the result of step 7 to the result of step 6.
9. Take the exponential of the result of step 8 to get sales.
10. Multiply the result of step 9 by 0.47, to get total revenue; multiply the result of step 9 by 0.20 to get General Fund revenue.

PROPERTY TAX REPLACEMENT FUND

Sales Tax:

For Each Fiscal Year to be Forecasted

1. Multiply the results of Step 4 of the General Fund Sales Tax calculation by 0.5 to account for the percentage of sales tax deposited in the Property Tax Replacement Fund under HEA 1001-2002ss.

Individual Income Tax:

For Each Fiscal Year to be Forecasted

1. Multiply the results of Step 4 of the General Fund Individual Income Tax calculation by 0.14 to account for the percentage of sales tax deposited in the Property Tax Replacement Fund under HEA 1001-2002ss.

Riverboat Wagering Tax:

For Each Fiscal Year to be Forecasted

1. Multiply 2,905.39 by quarterly nominal Indiana Nonfarm Personal Income in thousands of dollars.
2. Subtract 479,959,409,871.94 from the result of Step 1.
3. Multiply 40,301,355.05 by the appropriate quarterly casino turnstile count in thousands (excluding the French Lick Casino) and add the result to the result of Step 2.
4. Add 21,094,209,294.98 to the result of Step 3 for the 3rd Quarter of 2002 and each calendar quarter thereafter.
5. Take the square root of the result of Step 4 to obtain quarterly total wagering receipts in thousands of dollars.
6. Sum the quarterly totals from Step 5 for the fiscal year and multiply by one thousand to obtain fiscal year total wagering receipts.
7. Distribute fiscal year total wagering receipts from Step 6 among the state's riverboat casinos (excluding the French Lick Casino) based on the actual FY 2007 percentage distribution of wagering receipts among these 10 riverboat casinos.
8. Use the fiscal year wagering receipts distributed to each riverboat casino (excluding the French Lick Casino) from Step 7 to compute the fiscal year wagering tax for each riverboat casino.

9. Sum the fiscal year wagering tax totals for each riverboat casino from Step 8 to obtain fiscal year total wagering tax collections from the state's riverboat casinos (excluding the French Lick Casino).
10. Subtract from the Step 9 result, 2,519,789 each year to account for reimbursement to the Indiana Gaming Commission for administrative expenses; 33,000,000 each year to account for local revenue sharing; and 95,046,641 each year to account for wagering tax distributions to riverboat communities.
11. Subtract from the Step 10 result, 633,810 in FY 2008 and 595,209 in FY 2009 to account for the net revenue impact of the French Lick Casino.
12. Subtract from the Step 11 result, 28,565,477 in FY 2008 and 29,071,582 in FY 2009 to account for the impact of the Four Winds casino in New Buffalo, Michigan.