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Analysis of Proposed Changes to Select Ohio Taxes Included in the Ohio Executive Budget and Ohio House Bill Number 64

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Initiated by the Coalition of Ohio Metro Chambers of Commerce**

Introduction

This report analyzes proposed changes to the existing Ohio tax structure as described in the State of Ohio Executive Budget for fiscal years 2016 and 2017 and House Bill Number 64. The budget estimates that the proposal would reduce taxes by a total of \$523 million over fiscal years 2016 and 2017. As with other recent changes to the Ohio tax code, the proposal derives its tax reductions from the individual income tax (\$5.7 billion reduction over two years) and uses increased general sales and tobacco taxes to offset a large portion of the cost along with increases to the Commercial Activity Tax (CAT) and severance taxes.

This report analyzes several of the major provisions of the proposal. Specifically considered are changes to the personal income tax, the CAT, and the general retail sales tax. The individual income tax analysis considers the proposed 23 percent rate reduction for all tax brackets, an increase in personal exemptions, a means-testing of selected credits, and a change in the level of exclusion of pass-through income. The analysis also considers the proposed CAT rate increase of 23 percent from 0.26% to 0.32%. Finally, this report considers the economic effects of the proposed sales tax base expansion (to business and professional services) and a 0.5 percent increase in the sales tax rate.

Key findings of the analysis include:

- **Increasing the Commercial Activity Tax rate on gross receipts has the potential to magnify economic distortions caused by tax pyramiding.** At its current 0.26 percent rate, the distortions are small. However, at an increased rate, the distortions grow and could increase in-state costs for Ohio businesses selling outside the state as compared to businesses located outside the state.
- **Extending the sales tax to household services moves the sales tax base closer to a true consumption tax, but including business services results in tax pyramiding.** An estimated 62% of the sales tax base expansion will be on business-to-business transactions. For companies exporting their products to national or global markets, this tax on business inputs increases in-state costs relative to businesses located outside the state.
- **The complete exemption of pass-through income for firms with \$2 million or less of receipts would result in high marginal effective tax rates on additional revenue earned by firms just over the size threshold.** While the exemption provides a low-tax environment for small businesses, these types of “cliffs” in effective tax rates can cause economic distortions.
- **Using a receipts test for the pass-through income exemption may result in significantly different effective tax rates for owners of firms that have similar dollar**

amounts of profits but different amounts of receipts. Firms can generate equal dollar amounts of profits by various combinations of sales volume and profit margin. The current proposal imposes a higher tax on low-margin, high-volume firms relative to high-margin, low-volume firms. The unequal treatment of firms earning the same amount of profit creates horizontal inequity.

- **Individual income tax rate cuts provide benefits to households at all income levels, while the exemption increase provides benefits to households with under \$80,000 of income.** The 23 percent individual income tax rate decrease combined with the expanded exemptions results in an overall 43 percent decrease in tax liability for a household with approximately \$38,000 of adjusted gross income and three exemptions. Income tax reductions provided to households in the first and second quintile of income earners help to offset the regressive effect of sales taxes increases on these households.
- **Although senior tax credits and deductions for certain types of retiree income are reduced by the plan, retirees still experience an overall reduction in tax due to lower rates.** A large portion of the average social security benefit of approximately \$15,600 becomes subject to tax for higher income retiree households, but the incremental tax on this additional income is offset by lower rates.

The following sections present detailed analyses of each component of the proposal.

Analysis of proposed changes to Ohio's personal income tax

The proposal would make substantial changes to the personal income tax, including rate reductions, exemption increases, expanding the pass-through exclusion, and means-testing of credits and deductions for retirees and senior citizens. The specific provisions analyzed in this report include:

- An across-the-board reduction in personal income tax rates of 23 percent;
- An increase in exemptions
 - From \$2,200 to \$4,000 for incomes under \$40,000 per year
 - From \$1,950 to \$2,850 for incomes between \$40,000 and \$80,000¹
- Means testing for taxpayers with income above \$100,000 of
 - The retirement credit
 - The Old-Age, Survivors, and Disability Insurance (OASDI) benefits deduction
 - The senior credit
- Small business pass-through exclusion for sole proprietorships, partnerships, S-corporations and LLC's, excluding
 - All income from businesses with annual gross receipts of \$2 million or less
 - 50% of income for businesses with receipts greater than \$2 million (with the existing maximum exclusion/deduction limit of \$125,000 for businesses with more than \$2 million in receipts unchanged)

¹ These will be indexed for 2016.

The proposal phases in its changes over two years, 2015 and 2016. Table 1 shows Ohio taxable income brackets and current and proposed rates. The rate reduction for 2015 is 15 percent and the cumulative reduction for 2016 is 23 percent. Personal exemption increases are shown in Table 2. They have the effect of altering the scale of taxable income brackets in a manner that varies by household size. The increased exemptions for lower levels of Ohio Adjusted Gross Income (O-AGI) essentially constitute an increase in the size of the zero marginal tax rate bracket.

Table 1. Ohio tax brackets and marginal rates

Ohio taxable income brackets (2012-15) ¹	Current bracket tax rate	Proposed bracket tax rate 2015	Proposed bracket tax rate 2016
\$0 – \$5,200	0.528%	0.449%	0.407%
\$5,200– \$10,400	1.057%	0.898%	0.814%
\$10,400 – \$15,650	2.113%	1.796%	1.627%
\$15,650 – \$20,900	2.642%	2.246%	2.034%
\$20,900 – \$41,700	3.169%	2.694%	2.440%
\$41,700 – \$83,350	3.698%	3.143%	2.847%
\$83,350 – \$104,250	4.226%	3.592%	3.254%
\$104,250 – \$208,500	4.906%	4.170%	3.778%
More than \$208,500	5.333%	4.533%	4.106%

Source: H.B. No. 64

Table 2. Personal exemptions under current and proposed law

O-AGI	Current personal exemption	Proposed personal exemption
\$0-\$39,999	2,200	4,000
\$40,000-\$79,999	1,950	2,850
More than \$80,000	1,700	1,700

Note: The Governor's proposal increases these for 2015 and annually indexes them to the January 1 gross domestic product deflator beginning August 2016, applicable to the 2016 tax year, rounding up to the nearest \$50.

Source: H.B. No. 64.

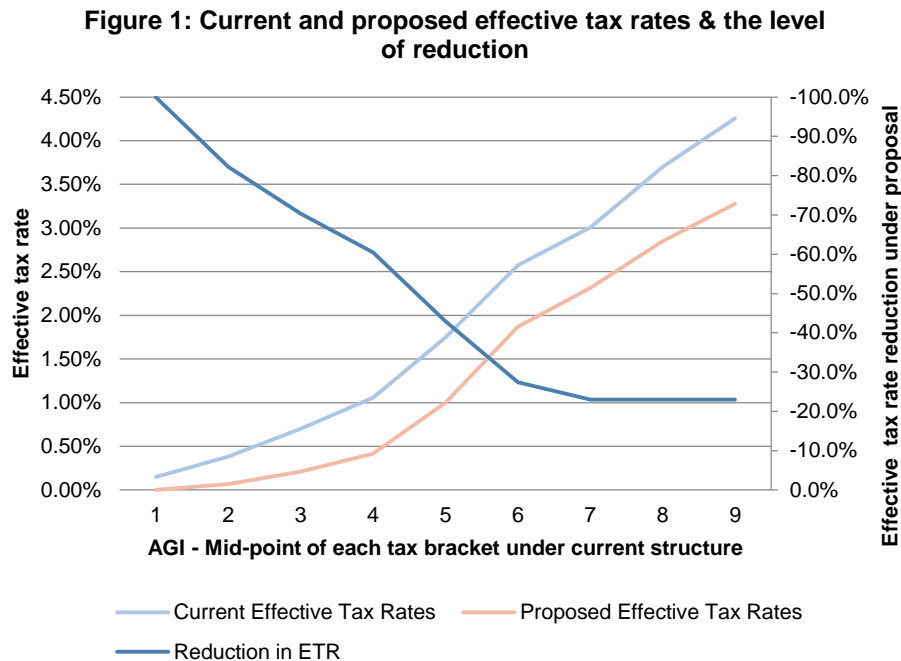
General tax rate reductions and exemption increases. The current structure and proposed changes to the personal income tax rates and exemptions are illustrated in Table 3, below. This table compares effective tax rates (ETRs) for hypothetical tax paying units with three exemptions and taxable income equal to the mid-point of each current Ohio income tax bracket. No other deduction or exclusions are considered.

The mid-bracket taxable income for the lowest bracket is \$2,600. A household filing a joint return with three exemptions (\$2,200 each) would have an O-AGI of \$9,200 resulting in taxable

income of \$2,600 ($\$9,200 - (3 \times \$2,200) = \$2,600$). A household filing in the 7th bracket (with a taxable income of \$93,800), would have an O-AGI of 98,900.

The proposal reduces statutory tax rates by 23 percent across the board by 2016. However, it results in more than a 23 percent reduction in effective tax rates for lower income taxpayers due to the increase in the value of exemptions (creating an expanded zero bracket amount). Under the current structure, the effective tax rates for households with taxable income equal to the mid-point of each bracket (and three exemptions) ranges from 0.15 percent for the mid-point of the lowest tax bracket (\$2,600 in taxable income) to 4.26 percent for households with taxable income of approximately \$260,000.

Under the proposal, the increased size of the exemptions means that households with a taxable income previously equal to the mid-point of the first bracket and three exemptions (3 x 4000) would have no taxable income and would pay no income tax. This produces a 100 percent reduction in their income tax liability (reducing the liability from \$14 to zero). The new effective tax rates on the same O-AGI would range from 0.0 percent to 3.28 percent. The tax burden for households with an O-AGI of \$14,400 is reduced by 82 percent, and by 70% for households with O-AGI of \$19,625. The proportion of the tax reduction declines until it reaches 23 percent for households with an O-AGI of \$98,900. Figure 1 graphs the effective tax rate under the existing and proposed structure. The rate reductions and exemption increases provide a general tax reduction and increase the progressivity of the income tax in general terms.



Source: EY analysis based on H.B. No. 64.

Table 3. Illustrative impacts of proposed exemption and tax rate changes

Adjusted gross income	Current pers. exemp. per depend.	Pers. exemp. per depend. 2015	Current law taxable income	Proposed law taxable income	Ohio current law taxable income brackets (2012-15) ¹	Ohio proposed law taxable income brackets (2012-15) ¹	Current bracket tax rate	Proposed bracket tax rate 2015	Proposed bracket tax rate 2016	Marginal rate change 2014-15	Marginal rate change 2014-16	Current ETR w/ pers. exempt.	2016 ETR w/ pers. exempt.	ETR change, 2014-2016
\$9,200	\$2,200	\$4,000	\$2,600	\$0	0 – \$5,200	0 – \$5,200	0.528	0.449	0.407	-14.96%	-22.92%	0.15%	0.00%	-100.0%
\$14,400	\$2,200	\$4,000	\$7,800	\$2,400	\$5,200 – \$10,400	0 – \$5,200 ²	1.057	0.449	0.407	-57.52%	-61.49%	0.38%	0.07%	-82.2%
\$19,625	\$2,200	\$4,000	\$13,025	\$7,625	\$10,400 – \$15,650	\$5,200 – \$10,400 ²	2.113	0.898	0.814	-57.50%	-61.48%	0.70%	0.21%	-70.3%
\$24,875	\$2,200	\$4,000	\$18,275	\$12,875	\$15,650 – \$20,900	\$10,400 – \$15,650 ²	2.642	1.796	1.627	-32.02%	-38.42%	1.06%	0.42%	-60.5%
\$37,900	\$2,200	\$4,000	\$31,300	\$25,900	\$20,900 – \$41,700	\$20,900 – \$41,700 ⁵	3.169	2.694	2.440	-14.99%	-23.00%	1.75%	1.00%	-42.9%
\$68,375	\$1,950	\$2,850	\$62,525	\$59,825	\$41,700 – \$83,350	\$41,700 – \$83,350	3.698	3.143	2.847	-15.01%	-23.01%	2.58%	1.87%	-27.4%
\$98,900	\$1,700	\$1,700	\$93,800	\$93,800	\$83,350 – \$104,250	\$83,350 – \$104,250	4.226	3.592	3.254	-15.00%	-23.00%	3.01%	2.31%	-23.0%
\$161,475	\$1,700	\$1,700	\$156,375	\$156,375	\$104,250 – \$208,500	\$104,250 – \$208,500	4.906	4.170	3.778	-15.00%	-22.99%	3.70%	2.85%	-23.0%
\$265,725	\$1,700	\$1,700	\$260,625	\$260,625	More than \$208,500	More than \$208,500	5.333	4.533	4.106	-15.00%	-23.01%	4.26%	3.28%	-23.0%

Note: This analysis assumes a three person household (exemption is multiplied by three and subtracted from AGI to arrive at taxable income).

¹Brackets and exemptions are indexed to GDP deflator. Proposed law freezes the adjustment for 2013, 2014 and 2015, retaining the 2012 brackets. Inflation adjustments will resume for 2016.

²Due to the increased exemption for taxpayers with AGI under \$40,000, the applicable tax bracket changes.

³Income tax reduction fund. Tax rates are temporarily reduced if Ohio's fund balance exceeds 5% of GF as a refund of excess taxes to taxpayers (see Section 131.44 (b)). This provision is not included in the analysis.

Source: H.B. No. 64 and EY analysis.

Effect of means testing of senior credits and OASDI exemptions. Some provisions of the income tax proposal will differentially affect seniors. Current provisions provide tax benefits for certain forms of retirement payments and provide credits to taxpayers based on age.

The current tax provisions impose lower taxes on certain income to seniors and, in general terms, the proposed provisions move toward the treatment of retirement income in a manner similar to income from other sources and to others in similar circumstances, other than age. These proposed changes will alter effective tax rates, however, they do not have the same scale of effect as the general reductions in tax rates and expansion of exemptions.

The net effect of the income tax proposal is to lower taxes on the income received by those in retirement. Table 4 identifies the effect of the proposal's revised Social Security exemption, income credit and senior credit for taxpayers with income under and over \$100,000 that receive \$15,600 in annual Social Security payments and have two exemptions (husband and wife).²

The current tax structure imposes a tax on the income of seniors far below that imposed on non-seniors. The current effective tax rates on total income of seniors ranges from zero for incomes to levels greater than \$30,000 (assuming half is from Social Security) to 3.1 percent on income just over \$150,000.

The proposed changes to the personal income tax structure still provide lower relative effective tax rates to seniors, exempting income beyond \$45,000, however, the taxes paid by senior and non-seniors begin to converge at approximately \$150,000 of household income as taxable income becomes more comprehensive and credits are reduced. For lower income seniors, the proposed changes to the personal income tax result in significant reductions in effective tax rates. However, compared to the current tax structure, the reductions are smaller for higher income seniors. Seniors with a total income of approximately \$100,000 have a tax rate that is slightly higher than under the existing structure.

² Under Federal law, for a joint return, social security is excluded from taxable income if your combined income (income from all sources, plus nontaxable interest plus ½ of your social security benefit) is less than \$32,000. Fifty percent of social security payments are excluded for the amount that these payments raise your joint income to between \$32,000 and \$44,000 and only 15 percent is excluded for amounts that raise your income above \$44,000. H.B. No. 64 allows tax filers to deduct from Ohio Adjusted Gross Income any Social Security and Railroad Retirement benefits to the extent that they are included in federal adjusted gross income unless federal adjusted gross income is greater than \$100,000. At income above that level, any social security payments included in federal adjusted gross income are included in Ohio Adjusted Gross Income.

Table 4. Combined impact of rate reductions, exemption increases, and elimination of Social Security deduction, retirement income credit, and senior citizen credit for taxpayers with income over \$100,000

Social Security	Other AGI	Taxable Social Security	Federal AGI	Ohio AGI		Retirement income portion	Personal exemption		Taxable income		Pre-credit tax		Retirement income credit and senior citizen credit		Post-credit tax		ETR on total income		Change in ETR on total income
				Current law	Proposed law		Current law	Proposed law	Current law	Proposed law	Current law	Proposed law	Current law	Proposed law	Current law	Proposed law	Current law	Proposed law	
\$15,600	\$0	\$0	\$0	\$0	\$0	\$0	\$2,200	\$4,000	\$0	\$0	\$0	\$0	\$50	\$50	\$0	\$0	0.0%	0.0%	N/A
\$15,600	\$15,000	\$0	\$15,000	\$15,000	\$15,000	\$7,500	\$2,200	\$4,000	\$10,600	\$7,000	\$87	\$36	\$180	\$180	\$0	\$0	0.0%	0.0%	N/A
\$15,600	\$25,000	\$400	\$25,400	\$25,000	\$25,000	\$12,500	\$2,200	\$4,000	\$20,600	\$17,000	\$324	\$176	\$250	\$250	\$74	\$0	0.2%	0.0%	-100.0%
\$15,600	\$35,000	\$5,400	\$40,400	\$35,000	\$35,000	\$17,500	\$2,200	\$4,000	\$30,600	\$27,000	\$639	\$405	\$250	\$250	\$389	\$155	0.8%	0.3%	-60.3%
\$15,600	\$50,000	\$13,260	\$63,260	\$50,000	\$50,000	\$25,000	\$1,950	\$2,850	\$46,100	\$44,300	\$1,154	\$837	\$250	\$250	\$904	\$587	1.4%	0.9%	-35.0%
\$15,600	\$65,000	\$13,260	\$78,260	\$65,000	\$65,000	\$32,500	\$1,950	\$2,850	\$61,100	\$59,300	\$1,709	\$1,264	\$250	\$250	\$1,459	\$1,014	1.8%	1.3%	-30.5%
\$15,600	\$80,000	\$13,260	\$93,260	\$80,000	\$80,000	\$40,000	\$1,700	\$1,700	\$76,600	\$76,600	\$2,282	\$1,757	\$250	\$250	\$2,032	\$1,507	2.1%	1.6%	-25.8%
\$15,600	\$90,000	\$13,260	\$103,260	\$90,000	\$103,260	\$45,000	\$1,700	\$1,700	\$86,600	\$99,860	\$2,669	\$2,486	\$250	\$0	\$2,419	\$2,486	2.3%	2.4%	2.8%
\$15,600	\$100,000	\$13,260	\$113,260	\$100,000	\$113,260	\$50,000	\$1,700	\$1,700	\$96,600	\$109,860	\$3,091	\$2,841	\$250	\$0	\$2,841	\$2,841	2.5%	2.5%	0.0%
\$15,600	\$120,000	\$13,260	\$133,260	\$120,000	\$133,260	\$60,000	\$1,700	\$1,700	\$116,600	\$129,860	\$4,021	\$3,597	\$250	\$0	\$3,771	\$3,597	2.8%	2.7%	-4.6%
\$15,600	\$140,000	\$13,260	\$153,260	\$140,000	\$153,260	\$70,000	\$1,700	\$1,700	\$136,600	\$149,860	\$5,002	\$4,352	\$250	\$0	\$4,752	\$4,352	3.1%	2.8%	-8.4%

Note: Assumes two personal exemptions.
Source: H.B. No. 64 and EY analysis.

Effect of pass-through exclusions for business income. Currently, small business owners are able to exclude one-half of the income derived from small businesses from their Ohio adjusted gross income in an amount not to exceed \$62,500 for each spouse filing separate returns or \$125,000 for all other returns. The amendments contained in H.B. No. 64 expand the exclusion of pass-through income by providing the ability to exclude/deduct all pass-through income from small businesses with gross receipts less than or equal to \$2 million with no aggregate limit. One-half of pass-through income is deductible from income for firms with gross receipts greater than \$2 million and the aggregate limits remain as in current law: \$62,500 per spouse and \$125,000 in total.

Reduction in the pass-through tax on small business could be considered a vehicle for avoiding the double taxation of income (once as a business entity and a second time under the personal income tax). While Ohio does levy an entity tax on gross receipts of pass-through entities (the CAT³), there is currently no tax which directly levies on the net income of these businesses at an entity level. The result is less equitable treatment for tax purposes of households at the same income level based on the source of their income (i.e., wage and salary versus business ownership). In addition, this pass-through provision for small businesses has the potential to create distortions as business organization and compensation shift toward this untaxed vehicle.

The proposed structure will likely increase distortionary incentives. The 100 percent unlimited exclusion of income from businesses with receipts less than or equal to \$2 million would result in a significant spike in effective tax rates for firms just above the \$2 million threshold. Further, tax liabilities would vary considerably with the difference in the ratio of profit (income) to gross receipts. Owners of businesses with high margins would receive favorable tax treatment compared to owners of businesses with low margins, irrespective of the aggregate level of profit the owners receive from those respective businesses.

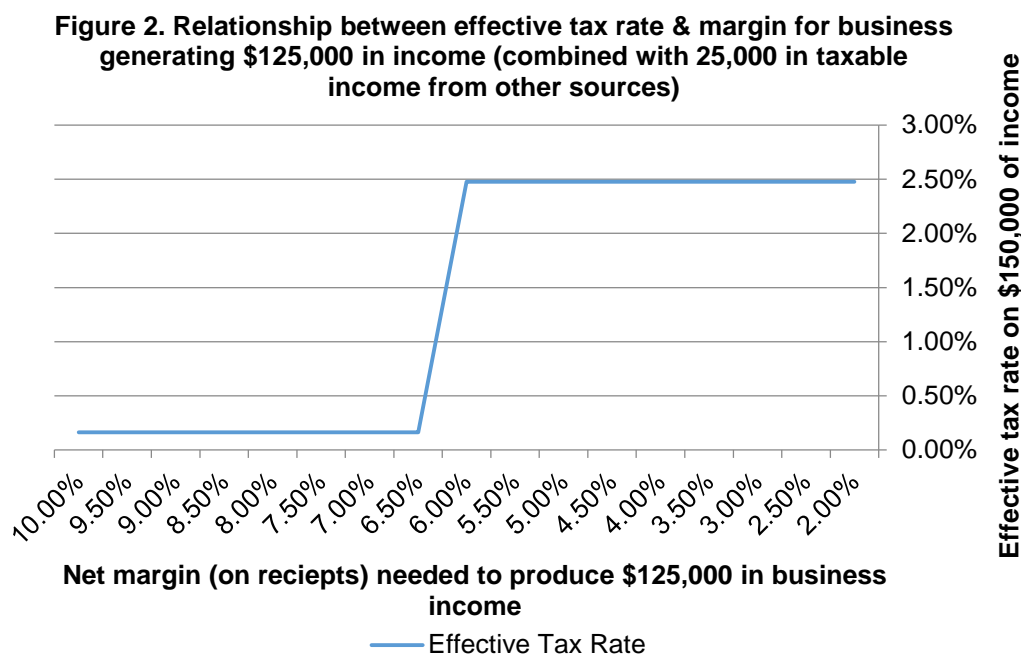
For example, two business owners each receiving \$125,000 in business income would be taxed substantially differently if one's income margin was 10%, requiring \$1,250,000 in gross receipts to generate \$125,000 in income, while the other's profit margin was 5%, requiring \$2,500,000 in gross receipts to generate \$125,000 in income. Their income position is the same, but their tax liability (and after tax income) would be substantially different. The owner of the business with a 10 percent return would receive a \$125,000 exclusion and the owner of the firm with a 5 percent margin would receive a \$62,500 exclusion. In essence, none of the business income is subject to the personal income tax for businesses with gross receipts of \$2 million or less and half of the first \$250,000 and all above \$250,000 is taxed for businesses with greater than \$2 million in gross receipts. This outcome creates horizontal inequity.⁴

³ The first \$1 million in gross receipts is, however, exempt from the ad valorem CAT rate.

⁴ The wording of the statute is problematic. Allowing the business owner to "Deduct ... [a]ll of the individual's Ohio small business income from businesses each of which has gross receipts not exceeding two million dollars for the taxable year," has the potential to encourage the owner to organize their

Figures 2 and 3 illustrate these effects. Figure 2 considers a household with \$125,000 in business income combined with additional taxable income of \$25,000 from other sources. Business income can be generated from a variety of entrepreneurial activities. Some of these businesses have higher income margins (10 percent), and a smaller gross value of sales to generate \$125,000 in net income for the businesses owners. Other businesses have lower margins (1 percent) and require ten times the sales volume to produce the same \$125,000 of income for its owners.

As is evident from Figure 2, differing margins between firms can result in significant differences in effective tax rates between households of identical net incomes under the proposed tax structure. In this example, effective tax rates (liabilities) range from 0.16 percent (\$245) to 2.48 percent (\$3,717). The tax liability is fifteen times greater for the hypothetical business operating under a 6 percent margin than for a business operating under a 6.5 percent margin because the lower-margin business has receipts above the \$2 million threshold.



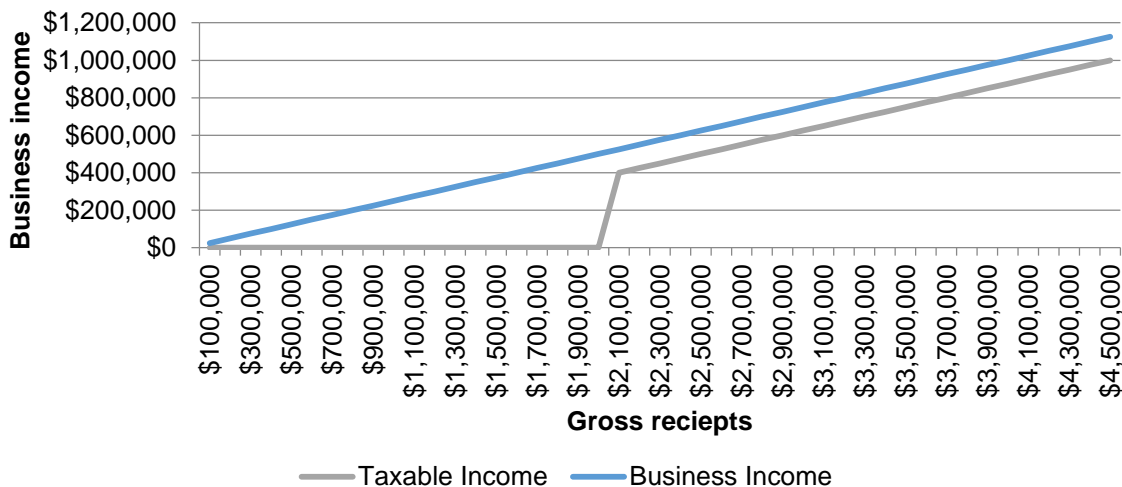
Source: EY analysis based on H.B. No. 64.

Figure 3 depicts the difference in taxable income for a set of hypothetical firms operating under a constant 25 percent net income margin. A kink in taxable income (and, therefore, in effective and marginal tax rates) is evident. Under this scenario, with a 25 percent net income margin, income to owners reaches \$500,000 before the \$2+ million limit to gross receipts is reached. This income is excluded from taxation under the proposed personal income tax. However, at

operations into multiple distinct entities to avoid exceeding the two-million dollar threshold in any one entity to maximize the level of income deduction.

\$2,000,001 in receipts, the income exclusion drops from \$500,000 to \$125,000, resulting in a \$375,000.25 increase in taxable income for a 25¢ increase in real income.

Figure 3: Business & taxable income relative to gross receipts with constant 25% income margin



Source: EY analysis based on H.B. No. 64.

Table 5 identifies the effect of the proposed changes to the personal income tax structure for seven hypothetical persons/households with pass-through business income. The scenario is for three-person households with \$48,100 in wage and salary income and business income which ranges from \$37,000 to \$2.4 million, gross receipts ranging from \$125,000 to \$8 million, and with a net profit/income margin of 30 percent for the related business. Table 5 shows the effects of the level of receipts (below and above \$2 million), business income, the level of the business deduction, Ohio AGI, personal exemptions, current and proposed taxable income, the change in taxable income, tax levels under the existing and proposed law, effective tax rates, and changes in effective tax rates.

Taxable income declines significantly for businesses with receipts under \$2 million (shown in the table as a percentage change in taxable income). All business income is excluded with no limit for any household that has income from a business with less than \$2 million in receipts. Because the exclusion is not limited, the reduction proportionately increases above \$125,000 in income until \$2 million in gross receipts is reached. For Table 5’s hypothetical scenario, which includes non-business income of \$48,100, the change in taxable income ranges from a 35 percent reduction to a 92 percent reduction (see Figure 4). Once the \$2 million gross receipts mark is reached, there is no change in taxable income under the proposed structure.

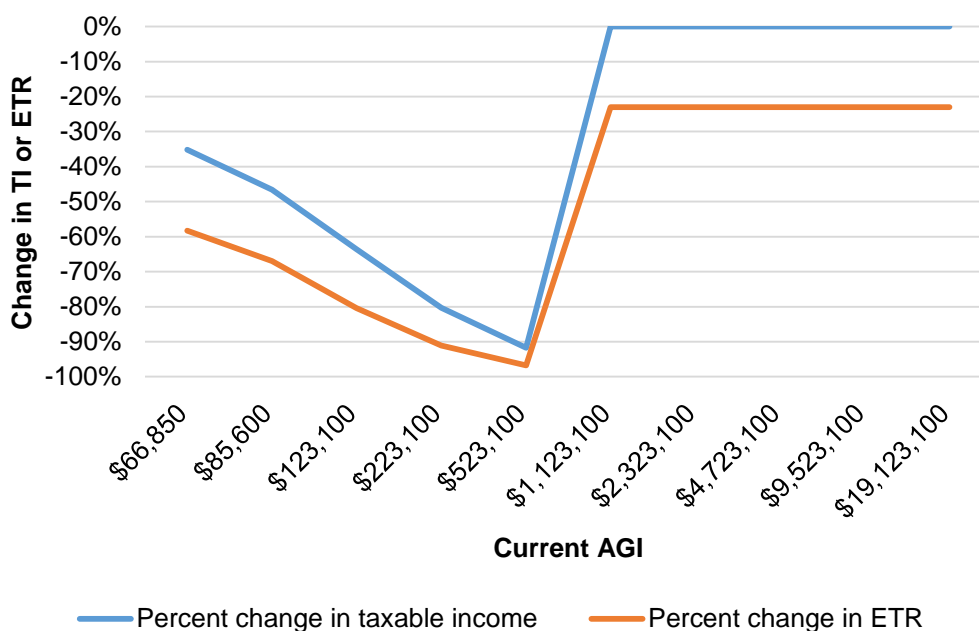
Table 5. Effect on hypothetical households receiving business income of proposed changes to the pass-through exclusion for small businesses, reduction in income tax rates, and increase in personal exemptions

Hypothetical Household Assumptions				Ohio AGI		Personal Exemption		Taxable Income		Percent change in taxable income	Tax		ETR on federal AGI		Percent change in ETR
Business Receipts	Business net income	Current deduction	Wage and salary income	Current Law	Proposed Law	Current Law	Proposed Law	Current Law	Proposed Law		Current Law	Proposed Law	Current Law	Proposed Law	
\$125,000	\$37,500	\$18,750	\$48,100	\$66,850	\$48,100	\$1,950	\$2,850	\$61,000	\$39,550	-35.2%	\$1,705	\$711	2.0%	0.8%	-58.3%
\$250,000	\$75,000	\$37,500	\$48,100	\$85,600	\$48,100	\$1,700	\$2,850	\$80,500	\$39,550	-50.9%	\$2,426	\$711	2.0%	0.6%	-70.7%
\$500,000	\$150,000	\$75,000	\$48,100	\$123,100	\$48,100	\$1,700	\$2,850	\$118,000	\$39,550	-66.5%	\$4,089	\$711	2.1%	0.4%	-82.6%
\$1,000,000	\$300,000	\$125,000	\$48,100	\$223,100	\$48,100	\$1,700	\$2,850	\$218,000	\$39,550	-81.9%	\$9,036	\$711	2.6%	0.2%	-92.1%
\$2,000,000	\$600,000	\$125,000	\$48,100	\$523,100	\$48,100	\$1,700	\$2,850	\$518,000	\$39,550	-92.4%	\$25,035	\$711	3.9%	0.1%	-97.2%
\$4,000,000	\$1,200,000	\$125,000	\$48,100	\$1,123,100	\$1,123,100	\$1,700	\$1,700	\$1,118,000	\$1,118,000	0.0%	\$57,033	\$43,912	4.6%	3.5%	-23.0%
\$8,000,000	\$2,400,000	\$125,000	\$48,100	\$2,323,100	\$2,323,100	\$1,700	\$1,700	\$2,318,000	\$2,318,000	0.0%	\$121,029	\$93,184	4.9%	3.8%	-23.0%

Note: Assumes three personal exemptions.
Source: HB 64 and EY analysis.

When the change in taxable income resulting from the proposal is filtered through the proposed reduced income tax rates, the tax savings to households with business income increases. The change in the effective tax rates faced by the hypothetical household declines between 58 and 97 percent for businesses with less than \$2 million in gross receipts and by 23 percent (due to the change in tax rates) after \$2 million of receipts (Figure 4). The reduction in effective tax rates for households receiving business income is more than double the reduction for other households (shown in Table 3).

Figure 4. Proposal's change in taxable income & effective tax rate (household of three w/ \$48,100 non-business income w/ 30% margin)



Source: EY analysis based on H.B. No. 64.

Discussion – income tax elements

A reduction in income taxes is expected to have several positive economic effects. These outcomes are, however, only realized if the resulting revenue yield remains sufficient to finance the public services necessary to support the needs and demands of the state population and businesses, and only if the reduced revenue from the income tax is not offset by revenues from other tax instruments that have detrimental equity, efficiency or economic development effects.

Potential income tax effects.

- Personal income tax rate reductions, exemption increases, and means testing of credits and social security exclusions
 - labor supply increase
 - increase in consumption (increased disposable income)
 - increased progressivity (at lower levels due to exemptions increases)
 - higher federal tax payments
 - higher relative rates on higher income
 - higher taxes on retirement income
 - retirement migration
- Business effect of the above and the increased pass-through exclusion
 - lower effective tax rate
 - greater investment / business expansions / employment?
 - higher cost compared to alternatives
 - change in operations
 - inequity

The stated reasons for reducing state income taxes are the negative consequences of higher income taxes for economic growth and business investment and for stimulating out migration of affluent segments of the resident population. While the economic literature concludes that it is the combination of government tax and expenditure policy which stimulates investment and retains population and that a desirable balance is needed, the scale at which income taxation may become an inhibitor of investment or a stimulus to migration and the expected aggregate effect is not analyzed in this report.

Reduced income taxation, and reductions in marginal tax rates, can have several positive economic effects. An increased marginal return to labor is expected to increase labor supply and possibly productivity, but the magnitude of these changes is uncertain. An increase in disposable (after tax) income will increase consumption and investment and, to the degree that consumption is from Ohio businesses and investment is local, increase economic activity and local income. However, to the degree that consumption and investment leaks across state borders, this effect will be dampened. The general openness of state economies and the integration of the national economic structure suggest that leakage is highly probable.

A shift in the distribution of the relative tax burden to higher income (non-business income, i.e., wage and salary income) households through increased exemptions, while simultaneously lowering tax rates, has equity ramifications. However, it is the marginal rate which affects behavior and a further lowering of the top marginal rate is more easily accomplished via a flat rate tax, while maintaining high standard deductions and exemptions to promote efficiency at lower income levels.

The exemption of significant amounts of income from taxation via the exclusion/deduction of pass-through income of small businesses is suggested as an enticement to business

investment. However, it results in horizontal and vertical inequities in the income tax system and necessitates higher rates than would be otherwise necessary on other forms of income to recover the lost revenue, which offsets the benefits of the lower rate. More targeted mechanisms are available to achieve investment and employment objectives, such as credits for job creation and investment, which could result in smaller impacts on the Ohio treasury and greater equity between residents of the state. Business income exclusion/deduction may shift business practices toward arrangements that maximize the level of excludable income. The exclusion may even reduce the level of business investment by lowering the relative cost of taking gains as income in the present period rather than reinvesting them in the business for larger future period gains.

Reduced reliance on income taxes and movement to a greater reliance on consumption taxes reduces the equity of the Ohio tax system and produces a higher local burden per dollar of tax collected. State taxes function within a system of federal tax provisions. One of those provisions has allowed for the deductibility of either an individual's state income tax payments or sales tax payments from the definition of taxable income at the nation level.⁵ For taxpayers that itemize on their federal return, this reduces the burden of the tax that is elected for deduction. For example, a household in the 30 percent federal tax bracket that pays \$4,000 in state income taxes will be allowed to deduct that \$4,000 from taxable income under the federal income tax. This results in a tax savings of \$1,200 ($\$4,000 \times .30$) on federal income taxes. This \$1,200 is an implicit subsidy to the state. The taxpayer contributes \$4,000 in taxes to the state, but it only cost him/her \$2,800 (or 70 cents on the dollar) reducing the taxpayer cost of state services. Though sales tax deductibility is presently expired for 2015 and onward, a similar calculation applies to sales taxes if reinstated. However, effective sales tax rates decline as income increases, while effective income tax rates increase (pass-through provisions excepted). This means that it is generally more beneficial to Ohio taxpayers to deduct income taxes than sales taxes.⁶ This federal income tax deductibility of state income taxes mitigates higher tax rates for higher income taxpayers and reduces the negative economic effect of the state income tax (for higher income taxpayers in the state).

⁵ Deductibility of state and local sales (and use) taxes is a temporary provision of the tax code (eliminated as a permanent provision in 1986) that has been continuously renewed since 2004. Deductibility of state and local income taxes is a permanent provision. Presently, sales tax deductibility has expired for the 2015 tax year and onward, but it may be reinstated retroactively as done in the previous few years.

⁶ For a 2014 Ohio household with approximately \$150,000 in taxable income, the state income tax liability would be approximately \$5,000, however, the IRS sales tax deduction calculator estimates a general deduction of \$1,763 (for state and local sales taxes) for a Columbus Ohio resident making \$180,000. It is true that the federal calculator allows a household to itemize actual receipts and provides additional allowances for less recurrent big ticket expenditures (i.e., a motor vehicle, boat, aircraft or home), however, in most circumstances for the higher income households which itemize their federal income taxes, the income tax deduction will provide a much larger tax advantage than will the sales tax deduction. Deducting income taxes effectively reduces the marginal tax rate on income and offsets some of the progressivity on the higher rates via an implicit federal subsidy to the taxpayer. It should be noted that for persons whose income is received largely through untaxed pass-through, it may be more beneficial to deduct sales taxes.

The proposed changes to the tax system remove credits and exclusions of the federally included social security and railroad retirement income for households with federal adjusted gross income of more than \$100,000. While there are theoretical reasons for this change, one of the concerns expressed in the proposal revolves around migration. Higher tax rates on retired populations are likely to stimulate more retirement migration and those with income above \$100,000 are more mobile. It is not clear how responsive these populations are to marginal changes in rates and the net effect of lowered marginal rates across the board means that while this proposal reduces absolute taxes on higher income retirees, it slightly increases relative taxes (compared to other taxpayers).

Ohio Commercial Activity Tax

This section of the report analyzes the expected effect of a CAT rate increase from 0.26% to 0.32%, a 23 percent change, and changes to the annual minimum tax levied on all businesses with over \$150,000 in receipts. Gross receipts taxes generate significant amounts of revenue at low tax rates because they essentially tax every transaction in the economic chain of bringing goods and services to market, irrespective of the intermediate nature of the transaction or the profitability of the entity. While the distortions created by this form of tax are small at very low tax rates, the distortions caused by higher rate gross receipts taxes may be significant.

The proposal includes:

- An increase in the CAT rate from 0.26% to 0.32%, or a 23 percent increase;
- CAT not applied to firms with taxable receipts of \$150,000 or less;
- Fixed levy of \$150 for firms with taxable receipts between \$150,000 to \$2 million (previously \$1 million or less), with the CAT rate applied to receipts over \$1 million;
- Proposed creation of a CAT receipts fund (0.85% of fund dedicated to defray the cost of administering the tax, the remainder is credited to the motor fuel receipts fund, general fund, school district tangible property tax replacement fund, and local government tangible personal property replacement fund); and
- Leaves unchanged the application of the CAT to each person of substantial nexus with taxable gross receipts and the fixed levies of \$2,100 for firms with between \$2 million and \$4 million of gross receipts, and \$2,600 for firms with more than \$4 million in gross receipts.

Table 6 shows the proposed changes to the Commercial Activity Tax. The base of the tax remains unchanged. The CAT is actually composed of two separate levies, the annual minimum tax (ranging from \$150 to \$2,600) and an ad valorem levy on total gross receipts, less \$1 million. This effectively means that firms with less than \$1 million in sales pay only the annual minimum tax.⁷ The proposal would, however, increase the tax rate by 23 percent to 0.32% and reduce the minimum tax on businesses with gross receipts between \$1 million and \$2 million

⁷ The annual minimum tax was originally calibrated so that the \$2,600 specific levy for firms with more than \$4 million in gross receipts would equal the level of tax that would have been paid on the first \$1 million in gross receipts, had it not been excluded. It effectively claws back the deduction for larger firms.

from \$800 to \$150. Businesses with less than \$150,000 in gross receipts are excluded from the minimum tax and pay no ad valorem tax.

Table 6. Commercial Activity Tax, current and proposed law

Taxable gross receipts (TGR)	Annual Minimum Tax		CAT rate and base	
	Current law	Proposed law	Current law	Proposed law
\$0-\$150,000	Excluded	Excluded	Excluded	Excluded
\$150,000-\$1,000,000	\$150	\$150	No additional tax	No additional tax
\$1,000,001-\$2,000,000	\$800	\$150	0.26% x (TGR - \$1 mill)	0.32% x (TGR - \$1 mill)
\$2,000,001-\$4,000,000	\$2,100	\$2,100	0.26% x (TGR - \$1 mill)	0.32% x (TGR - \$1 mill)
More than \$4,000,000	\$2,600	\$2,600	0.26% x (TGR - \$1 mill)	0.32% x (TGR - \$1 mill)

Source: H.B. No. 64.

The burden of the CAT changes with firm size (gross receipts), based on the number of stages (or supply links) in bringing a good to consumers and reflects a different effective rate on profits depending on the profit margin (profit/gross receipts) of the industry and firm.

Table 7 shows the CAT's effective tax rate by the level of business receipts under the existing structure and for the proposed increased rate and minimum tax change. The rate shown in Table 7 is for a single stage of production and assumes that the CAT is paid only once and does not cascade or pyramid across transactions. (See Table 10 for an illustration of pyramiding.) The effective tax rate does not change for firms with receipts under \$150,000, but gradually increases as receipts increase asymptotically approaching 0.32 percent at high levels of gross receipts. For a firm with \$2 million in gross receipts, the tax falls slightly, by 1.5% (0.002 percentage points). For firms with \$20 million in sales, it increases by 22 percent (to 0.317 percent of receipts).

Table 7. Effective tax rate on receipts by firm size

Size in Taxable Receipts	Current Tax Liability	Proposed Tax Liability	Current Tax ETR	Proposed Tax ETR	Change in ETR
\$150,000	\$0	\$0	0.000%	0.000%	N/A
\$1,000,000	\$150	\$150	0.015%	0.015%	0.000%
\$2,000,000	\$3,400	\$3,350	0.170%	0.168%	-1.471%
\$3,000,000	\$7,300	\$8,500	0.243%	0.283%	16.438%
\$4,000,000	\$10,400	\$12,200	0.260%	0.305%	17.308%
\$5,000,000	\$13,000	\$15,400	0.260%	0.308%	18.462%
\$10,000,000	\$26,000	\$31,400	0.260%	0.314%	20.769%
\$20,000,000	\$52,000	\$63,400	0.260%	0.317%	21.923%

Source: H.B. No. 64 and EY analysis.

A fixed tax rate based on the level of gross receipts may have little relationship to the profitability of an enterprise. The result is that the burden of the tax as a percent of firm profits varies greatly between firms. Some firms require large volumes of transactions to create a normal economic return. For firms with a relatively high profit margin, the effective tax rate on profits is low. For firms with a relatively small profit margin, the effective tax rate is relatively high.

Table 8 shows the effective tax rate on profits of the current CAT and the proposed CAT for firms with \$10 million in taxable receipts and varying profit margins (profits/receipts ratio). The higher the profit margin the greater the profitability of a firm on the same level of gross receipts. For firms with the theoretically highest possible profit/receipts ratio of 1 (where all receipts reflect profit), the implicit effective profits tax rate is 0.26 percent under the existing CAT and 0.314 percent under the proposed CAT. For all other firms, the implied tax on profits is greater than the CAT rate.

For a firm with a 90 percent profit margin, the effective tax rate is 0.289 percent under the existing tax and 0.349 percent under the proposed CAT, reflecting a 21 percent increase. These effective tax rates steadily increase as the profit margin of a firm declines. For firms with 10 percent (0.1) profit margins, the effective tax rates are 2.6 percent and 3.14 percent. For 5 percent (0.05) profit margins, the rates are 5.2 and 6.28 percent and 10.4% and 12.6% for firms with 2.5 percent profit margins and 26% and 31.4% for firms with 1 percent profit margins. For unprofitable firms, the effective tax rate on profits is essentially infinite. Gross receipts taxes, like the CAT, have the characteristic of taxing firms with lower profit margins more heavily. The effective tax rate difference for a firm with a 1% profit margin, compared to a firm with a 100% profit margin is 100 times greater (at 31.4 percent of profits).

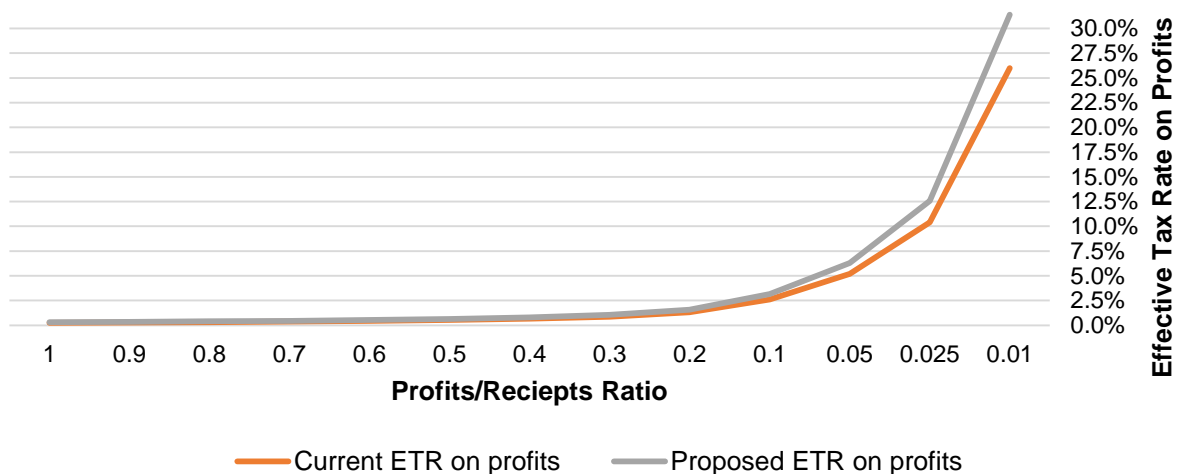
Table 8. Effective tax rate in relation to the profits / receipts ratio (firm with \$10 million in taxable receipts)

Profits / receipts ratio	Current ETR on profits	Proposed ETR on profits
-0.05	infinite	infinite
0.01	26.000%	31.400%
0.025	10.400%	12.560%
0.05	5.200%	6.280%
0.1	2.600%	3.140%
0.2	1.300%	1.570%
0.3	0.867%	1.047%
0.4	0.650%	0.785%
0.5	0.520%	0.628%
0.6	0.433%	0.523%
0.7	0.371%	0.449%
0.8	0.325%	0.393%
0.9	0.289%	0.349%
1	0.260%	0.314%

Source: EY analysis based on H.B. No. 64.

Figure 5 shows the relationship between the profits/receipts ratio under the current and proposed CAT structures. It should be noted that a profits/receipts ratio of significantly less than 0.3 is common and, thus, the effective tax rate on firm profits is likely to be many times greater than the actual CAT tax rate.

Figure 5. Effective CAT rate in relation to the profits / receipts ratio (firm with \$10 million in taxable receipts)



Source: EY analysis based on H.B. No. 64.

In fact, Table 9 provides the profits/receipts ratio for broad sectors of the North American Industry Classification System (NAICS) and only management companies have a profits/receipts ratio of more than 30 percent. Only one other sector (real estate and rental and leasing) has a ratio over 15 percent. Therefore, most industries would experience an effective tax rate on profits under the CAT of somewhere between 3.14 and 12.6 percent (up from 2.6 to 10.4 percent under the existing CAT). The highest expected effective tax rate is on the construction industry (10.4 percent) and wholesaling (10.1 percent), where large scale materials and goods purchases are necessary to generate the sector's net return. Similarly, the implicit effective tax rates on profits is greater than 7 percent for retail merchandising, transportation and warehousing, mining, quarrying, and oil and gas, administrative and support and waste management and remediation services, and arts entertainment and recreation (where large gates are required). All industries would face an increased effective tax rate on income of 20.8%. These estimates are for a single stage and are compounded when the pyramiding character of the tax is considered.

Table 9. Profit / receipt ratios and effective tax rates by industry for business with \$10 million in taxable receipts, 2012

NAICS	Industry	Profits / receipts ratio	Profits	Current expected ETR on profits	Proposed expected ETR on profits
11	Agriculture, forestry, fishing, and hunting	5%	\$547,887	4.7%	5.7%
21	Mining, quarrying, and oil and gas extraction	4%	\$387,706	6.7%	8.1%
23	Construction	3%	\$301,917	8.6%	10.4%
31-33	Manufacturing	6%	\$643,333	4.0%	4.9%
42	Wholesale	3%	\$312,013	8.3%	10.1%
44-45	Retail	3%	\$330,086	7.9%	9.5%
48-49	Transportation and warehousing	4%	\$369,930	7.0%	8.5%
51	Information	8%	\$764,200	3.4%	4.1%
53	Real estate and rental and leasing	18%	\$1,846,241	1.4%	1.7%
54	Professional, scientific, and technical services	5%	\$522,247	5.0%	6.0%
55	Management of companies and enterprises	70%	\$7,027,363	0.4%	0.4%
56	Administrative and waste services	4%	\$410,894	6.3%	7.6%
61	Educational services	6%	\$580,606	4.5%	5.4%
62	Health care and social assistance	6%	\$597,224	4.4%	5.3%
71	Arts, entertainment, and recreation	4%	\$418,776	6.2%	7.5%
72	Accommodation and food services	6%	\$597,611	4.4%	5.3%
81	Other services (except public administration)	4%	\$435,922	6.0%	7.2%
Weighted average total for all industries		5%	\$548,443	4.7%	5.7%

Note: Receipts are defined as business receipts taxable under the Commercial Activity Tax.
Source: Internal Revenue Service Statistics of Income and EY calculations.

Tax pyramiding occurs because there are multiple transactions in bringing a good or service to the ultimate consumer. The CAT is paid on each of these transactions that occurs in Ohio, meaning that the same base is taxed repeatedly, embedding a pyramiding tax into the price of goods and services. For example, goods may (and generally do) change hands repeatedly between businesses on their way to the final consumer. Raw materials extraction may be the first stage, followed by sales to a refiner of raw materials, a fabricator of materials, an assembler, a wholesaler, distributor, retailer and then ultimately to a final consumer. A similar chain can be identified for agricultural goods or services. The final retailer has suppliers, who each in turn have suppliers. As long as these transactions take place between firms in Ohio, they will generally be subject to the CAT tax.⁸

The degree of pyramiding is a function of the number of transactions (stages) and the level of value added at each stage. That is, presumably each link in the supply chain adds value to the mix of goods and services as they are sold onward. The larger the value added at each stage the greater the new elements of the base. Pyramiding occurs as the transactions progress, but only up to the level of the transaction value at the previous stage. So, if 30 percent of value is added at a stage, then the tax at the following stage falls for the first time on that 30 percent. This means that only 77 percent (100/130) of the tax paid at the next stage is levied on the previous transaction base. In this way, pyramiding declines as the level of value added at each stage increases.

Table 10 provides an example of tax pyramiding as firms with \$10 million dollars in taxable receipts exchange goods through six stages with 30 percent value added at each stage.⁹ The total embedded tax on gross receipts is equal to the initial tax rate for the first stage, 0.26 percent under the current tax and 0.314 percent under the proposed tax. The tax grows steadily with each stage, until it reaches 0.9 percent at stage six under the current CAT and 1.1 percent of the underlying value of the transactions for the proposed CAT. The effective tax rate grows with each transaction and different goods and services and different firms will experience divergent levels of embedded tax liability depending on the number of stages in the supply chain and the level and distribution of value added across the stages. The implied effective tax rate will vary arbitrarily, raising prices and reducing returns on some goods and services, consumers and businesses more than others.

⁸ The implication of this structure is that firms have an incentive to limit the links in the supply chain (by vertically integrating and/or have incentives to purchase from out-of-state suppliers, as only the final stage of the CAT will be embedded). Note that financial services and public utilities that pay the utility excise tax are not subject to CAT.

⁹ If higher proportions of value added are added at earlier stages compared to later, the portion of cascading in the final sales price will be greater.

Table 10. Effective Commercial Activity Tax rates on receipts and tax pyramiding for hypothetical example with 30% value added at each stage under current and proposed law

Supply chain	Total embedded tax (ETR on receipts)	
	Current law	Proposed law
Stage 1	0.260%	0.314%
Stage 2	0.460%	0.557%
Stage 3	0.614%	0.745%
Stage 4	0.732%	0.890%
Stage 5	0.823%	1.003%
Stage 6	0.893%	1.090%

Note: Stage 1 has gross receipts of \$10 million
Source: EY analysis based on H.B. No. 64.

These effects are compounded when placed in the context of profit margin. As shown above in Table 9, the profit/receipts ratio determines the effective tax rate of the CAT on profits. Most sectors have profits/receipts ratios of around 5 percent. Table 11 conservatively doubles this profit ratio to 10 percent of receipts and estimates the tax embedded in transactions at each stage as a portion of the profit earned at that stage for firms with \$10 million in receipts and 30 percent value added per stage.

The embedded tax begins at 2.6 percent of profits for the current CAT and 3.14 of profits for the proposed CAT and increases rather linearly to 9 and 11 percent by stage 6. What begins as a small levy emerges from the system of economic exchanges as a levy that exceeds the burden of most states' corporate and personal income taxes as a portion of final stage profit. The burden of this pyramiding outcome is differentially felt across industries and consumers. What appears as a very small rate change is magnified in its effect.

Table 11. Effective tax rates on income and tax pyramiding for hypothetical example with 10% profit on sales, 30% value added at each stage

Supply chain	Total embedded tax (ETR on income)	
	Current law	Proposed law
Stage 1	2.600%	3.140%
Stage 2	4.600%	5.569%
Stage 3	6.138%	7.449%
Stage 4	7.322%	8.902%
Stage 5	8.232%	10.027%
Stage 6	8.932%	10.897%

Note: Stage 1 has gross receipts of \$10 million
Source: EY analysis based on H.B. No. 64.

Discussion – Commercial Activity Tax Elements, Rate Increase

The above analysis shows the CAT to be a pyramiding tax that results in tax embedded in the price of inputs as they move between businesses and consumer in the supply chain.

- Potential effects from CAT rate increases*
- Differential effects across businesses, products, services and consumers
 - differential price changes
 - sectors with lower sales to profit ratios (high volume sales), raising their prices more
 - sectors with longer supply chains, more intermediate transaction steps (increasing effective tax rates on goods and services that vary with the length of the supply chain in bringing them to market)
 - imposition of different tax burdens on different industries (and potentially local consumers of the products of those industries) because of the above
 - incentives to vertically integrate businesses to reduce external transactions
 - providing relative competitive advantages to larger firms
 - non-transparency regarding the level of the embedded tax

The level of embedded tax will vary by the length of the supply chain and amount of value added at each stage of production as well as the degree to which goods and services are produced and distributed in Ohio. This means that different goods will have different levels of embedded tax. The result is that consumers of goods with higher embedded taxes will face a higher implicit tax burden than consumers of goods with less embedded tax. This violates

normal conceptions of tax equity and efficiency because it entices consumers to shift their consumption to alternative goods or alternative suppliers because of the application of the tax.

Alternative goods can be different products that are produced in a fashion that results in less embedded tax or alternative goods can mean consumption of the same type of good or service that has lower levels of embedded tax. Shifting to alternative goods essentially forces producers to bear an additional component of the tax to make their product's price competitive, reducing their compensation and the availability of resources for reinvestment or creating incentives to shift the tax back to labor (or suppliers or land).

Consumption of the same type of good from alternative suppliers is a viable consumer strategy if different suppliers are available that are subject to different levels of taxation. For suppliers in Ohio, this would favor larger firms; more vertically and horizontally integrated firms which contain more stages of the supply chain within their organizational umbrella. A second mechanism is to purchase goods from geographic territories in which the CAT does not operate. That is, make purchases from firms outside of the state of Ohio, minimizing the number of stages on which the CAT is applied. The result is that Ohio-based firms are placed at a competitive disadvantage for both purchases from residents and for purchases of non-residents and as intermediate suppliers, if suppliers are available who are not subject to the CAT. The level of this price disadvantage will vary by industry based on the level of embedded CAT and is magnified at higher CAT rates.

The implicit burden of the CAT also varies substantially between producers depending on the number of stages in the supply-production-distribution-consumption chain, by the level of value added at each stage and by profit margin. The level of the tax in comparison to the net return (income/profit) to the entity responsible for payment of the tax is the most critical factor in tax burden. Firms with high profits/receipts ratios pay an amount which is a much smaller portion of their aggregate profit than do firms with very low profit margins. In eking-out normal economic returns, higher CAT rates can be problematic to thin margin activities. The degree of potential competitive disadvantage is higher for firms with low profit margins, as a firm with a 1 percent profit margin experiences 50 times the effective tax rate on profits as does a firm with a 50 percent profit margin.

The distortionary characteristics of the CAT are muted at very low rates. As rates are increased, distortions and differential effects increase significantly.

Ohio general retail sales tax

The proposal would expand the sales tax base to many business services and increase the tax rate from 5.75 to 6.25 percent, an 8.7 percent increase. Expansion of the sales tax to include new categories of business and professional services (as well as consumer services) has implications that are similar to those of a gross receipts tax, though with a much narrower base. Such an expansion runs contrary to the basic economic premise of the general retail sales tax as a tax on final consumption. Many of the same undesirable outcomes that occur from increased CAT rates are possible from taxing business services depending upon the extent to which taxed services are used across different sectors and the number of stages that such services appear in the supply chain of a particular product or service. While the aggregate effect may not be as great as for the CAT, the effect on specific products or services (and price differentials between products and services) may be significant. With combined state and local sales tax rates currently ranging from 6.5 percent to 8.0 percent across Ohio, the effect can be significant and can vary substantially in its implications based on the degree to which these categories of business services are included in bringing a good or service to market.

Specifically, the proposal includes:

- Increase in the state sales tax rate from 5.75% to 6.25%;
- Base broadening to services
 - Consumer services – cable TV, parking, travel packages, tours,
 - Business services – lobbying, public relations, market research/opinion, management consulting, debt collection, repossessions;
- 50 percent reduction in the credit on trade-in vehicles or water craft; and
- Reduction in retailer/vendor collection discounts from 0.75 percent of all collections to a maximum of \$1,000 per month.

Sales taxes have been traditionally intended to be a tax on final consumption with an economic burden intended to fall on consumers. Sales taxes with comprehensive consumption bases that are levied only on the final stage of consumption are most able to achieve this goal.

Expansion of the sales tax base to include consumer services is consistent with a comprehensive tax base levied on final consumption. Taxation of business services which function as inputs to the production of goods and services is not. Table 12 identifies the new services proposed to be included in the tax.

Table 12. Proposed new services subject to tax

	Consumer	Business
Cable Service (one-way video or other transmission)	x	√
Bad debt (5739.121)	√	x
Travel Service (acting as an agent selling travel, tours, accommodations)	√	x
Research and public opinion polling (including political)		x
Public relations		x
Lobbying (to influence behavior of individuals, an industry or organization)		x
Management consulting services (assistance and advice to business and organizations -- financial planning, budgeting, equity & asset management, records management, office planning, strategic/organizational planning, site selection, new business startup, business process improvement, human resources management, marketing and planning, new product development, pricing strategies, licensing and franchise planning, manufacturing operations improvement, productivity improvement, production planning and control, quality assurance and control, inventory management, distribution and warehouse operations, materials management and handling, telecommunications management, and utilities management.		x
Parking	√	x
Debt collection (collecting payments for claims and remitting payments collected including, account or delinquent account collection services, tax collection services on a contract or fee basis, and bill or debt collection services).		x
Repossession services (tangible assets for the creditor, autos, boats, equipment, etc.)		x

X = highest purchaser; √ = limited purchaser

Businesses will attempt to embed taxes on inputs into the final price to consumers of goods and services produced by the businesses paying the tax, resulting in a forward shifting of this burden to consumers and a final tax on those consumers which is greater than the nominal general retail sales tax rate. The burden on individual consumers varies as a portion of a consumer's total consumption to the degree that the consumer prefers goods and services with a larger complement of taxed intermediate inputs.

The ability to shift the tax forward to consumers is largely dependent upon the market which the producer supplies, the demand characteristics of the consumer, and the availability of untaxed substitute goods for consumption.

For substantial shifting from business to consumers to occur, the business must be selling in local Ohio markets, where competing firms also bear the tax on intermediate inputs. In situations where a business produces for markets outside of Ohio, where competing businesses are not subject to such a tax, the Ohio firm will likely be required to absorb the tax or it may shift it to local labor (or to local owners of land), to the degree to which competitors for local labor (or land) bear a similar tax. However, because different sectors of business will use these inputs at

different rates, the business sectors which are most dependent on them (and produce for out-of-state markets) will be less likely to be able to backward shift the burden (to labor and land) and more likely to bear (absorb) its burden in the short-run. In the long-run, these businesses may gradually shift their operations out of state.

For all markets, the degree to which shifting this burden to consumers is feasible is determined by the existence of alternative, substitute, forms of consumption which are untaxed and by the price sensitivity of consumers for that particular category of good or service. If there are no substitutes (such as in local markets where all producers are taxed) and consumers are price inelastic (i.e., not price sensitive), then the burden of the additional tax will fall on consumers. If there are, however, untaxed substitutes (such as from out-of-state suppliers) and/or consumers are price elastic (price sensitive), then producers will need to lower their price (and or seek alternative untaxed markets) or reduce supply, both transferring some of the burden to them.

Alternatively, producers might alter production processes and rearrange inputs in a fashion in which more are produced in-house (and thus not subject to tax) or purchased from out-of-state (and thus avoid tax pyramiding before the intermediate sale to the Ohio producer). However this will alter the efficiency of production operations; some services which would more efficiently be contracted will now be performed in-house, again placing some of the burden on producers.

For Ohio firms that produce for sale in markets outside of Ohio, this additional embedded tax will place them at a disadvantage with competing, non-Ohio firms. Firms producing in this environment will be required to absorb most of the economic burden of the tax. Ohio firms producing for national or local markets will also have incentives to purchase from out-of-state suppliers to reduce the level of embedded tax. This will force local, Ohio, suppliers to reduce prices and absorb the tax.

Taxation of intermediate inputs can create many non-neutral effects. It can reduce or shift consumption between goods, entice consumers to seek alternative suppliers, entice producers to seek alternative (out-of-state) untaxed producers, and entice current producers to shift business operations out-of-state. While the scale of these inclusions is not likely to have significant effects on the location of consumption or production or the distribution and scale of consumption, it can produce effects at the margins.

In fiscal year 2014, state sales taxes (including vendor sales, motor vehicles and water craft and alcoholic beverages) equaled \$9.4 billion.¹⁰ Using the governor's estimate of the total tax yield associated with base broadening, EY estimates (Table 13) of selected services included in the governor's base expansion proposal indicate that the additional yield from business by including these services in the sales tax base will equal \$269 million, an amount equal to 2.9 percent of last year's total sales tax collection and 62 percent of the expected increased yield of \$432 million for 2016. By far, the largest source of this revenue will be from taxes on management consulting services at \$160 million. This will be followed at substantial distance by market research and public opinion polling, collections and then travel. The business sector most

¹⁰ State of Ohio – Fiscal Year Ended June 30, 2014, Comprehensive Annual Financial Report.

heavily hit will be manufacturing (a \$44 million increase in sales tax burden); professional, scientific, and technical services (\$40 million); health care and social assistance (\$38 million); finance and insurance (\$35 million); management entities (\$26 million); and wholesale (\$19 million). Sectors which produce for national markets (export activity) will be most sensitive to this increased burden and are more likely to take steps to minimize its effects. The business share of the increased 2017 yield is estimated to be \$309 million (Table 15).

A 0.5 percent increase in the sales tax rate would be expected to increase the absolute burden on the business sector by approximately 8.7 percent or \$24 million for 2016 and \$29 million for 2017, assuming no behavioral adjustments and maintaining consistency with revenue growth in the budget estimate.

Just as the service burden will differentially affect different business sectors, it will also have varying implications across populations, based on their consumption of taxed services. Table 14 estimates the effect of the sales tax base expansion on household tax liabilities as a percent of income. It indicates that, on average, households' sales tax bills will increase by approximately \$115 annually (from \$1,051 to \$1,166), with a greater absolute increase as income increases.

Under the current 5.75 percent sales tax, sales taxes paid on taxed consumption equals 4.4 percent of income for lower income households and declines to 1.3 percent of income for higher income households. This is a common pattern of sales tax burden, as lower income households consume a larger fraction of their annual income and a higher percentage of purchases of higher income households are for untaxed services.

Depending on the type of sales tax base expansion, a broadening of the sales tax base may reduce its regressivity. However, selective broadening may have the reverse effect if the services taxed are a higher proportion of lower income household's consumption. To the degree that the new taxed services are consumed by households, they are consumed in quantities that reflect a higher portion of the budget of lower income households, particularly cable television services. The result is a more regressive sales tax burden after base broadening.

Broadening the base of the sales tax increases the effective rate of the tax by 19 percent (to 5.3 percent) for lower income households and by 7.7 percent (to 1.4 percent) for higher income households. The effective tax rate on lower income households is 3.5 times that of higher income households under the existing tax structure and 3.9 times that of higher income households under the proposed, base-expanded structure.

Prior EY estimates show that taxes on business inputs account for 42 percent of Ohio sales tax collections. With the broadened sales tax base, the burden on business increases, and 49.7 percent of the incremental sales tax revenue from this proposal is expected to come from business.

Table 13. Ohio sales tax increase from base broadening by sector (\$millions at 5.75% tax rate)

Sector	Cable	Travel	Market research, polling	Public relations, lobbying	Management consulting	Parking	Collections	Repo. services	Total increase
Agriculture, forestry, fishing, hunting	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mining, quarrying, oil/gas extraction	0	0	0	0	0	0	0	0	0
Utilities	0	0	6	0	1	0	1	0	8
Construction	0	0	0	0	0	0	0	0	1
Manufacturing	0	0	14	1	22	0	6	0	44
Wholesale	0	0	1	1	11	1	4	0	19
Retail	0	0	2	1	5	0	2	0	10
Transportation and warehousing	0	1	1	0	4	0	1	0	7
Information	2	0	3	0	4	0	1	0	10
Finance and insurance	0	3	5	1	22	0	3	0	35
Real estate and rental and leasing	0	0	2	0	2	0	4	0	8
Professional, scientific, tech. services	0	1	6	0	28	1	4	0	40
Management of companies	0	2	3	1	19	0	1	0	26
Administrative and waste services	0	1	1	0	6	0	2	0	10
Educational services	0	0	1	0	1	0	0	0	2
Health care and social assistance	0	1	3	0	30	0	3	0	38
Arts, entertainment, and recreation	0	0	0	0	2	0	0	0	3
Accommodation and food services	0	0	0	0	2	0	0	0	3
Other services (ex. public admin)	0	0	1	0	2	0	0	0	4
Total	\$4	\$10	\$50	\$6	\$160	\$3	\$34	\$2	\$269

Source: EY analysis based on Economic Census, Bureau of Economic Analysis, and State of Ohio Executive Budget.

Table 14. Impact of proposed Ohio sales tax changes on households

Quintile by Income	Income range (money income before taxes)	Taxable consumption		Sales tax liability			Sales taxes as a percent of income			Percent increase in sales taxes
		Current law	Proposed law	Current law	Proposed law (base expansion only)	Proposed law (base and rate change)	Current law	Proposed law (base expansion only)	Proposed law (base and rate change)	
1	\$9,658	\$7,415	\$8,835	\$426	\$508	\$552	4.4%	5.3%	5.7%	29.5%
2	\$26,275	\$11,538	\$13,285	\$663	\$764	\$830	2.5%	2.9%	3.2%	25.1%
3	\$45,826	\$15,287	\$17,167	\$879	\$987	\$1,073	1.9%	2.2%	2.3%	22.1%
4	\$74,546	\$21,532	\$23,682	\$1,238	\$1,362	\$1,480	1.7%	1.8%	2.0%	19.5%
5	\$162,720	\$35,670	\$38,420	\$2,051	\$2,209	\$2,401	1.3%	1.4%	1.5%	17.1%
All	\$63,784	\$18,285	\$20,274	\$1,051	\$1,166	\$1,267	1.6%	1.8%	2.0%	20.5%

Source: Consumer Expenditure Survey, H.B. No. 64, and EY analysis.

Table 15. Business and household shares of proposed sales tax expansion (\$millions)

Sales tax change	FY2016	FY 2017	Total	Share
Base broadening				
Business	\$269	\$309	\$577	62.2%
Household	\$163	\$187	\$351	37.8%
<i>Total</i>	<i>\$432</i>	<i>\$496</i>	<i>\$928</i>	<i>100.0%</i>
Rate increase				
Business	\$270	\$375	\$645	41.5%
Household	\$381	\$527	\$908	58.5%
<i>Total</i>	<i>\$651</i>	<i>\$902</i>	<i>\$1,553</i>	<i>100.0%</i>
Sales tax rate change on expanded base				
Business	\$24	\$29	\$54	62.2%
Household	\$15	\$18	\$32	37.8%
<i>Total</i>	<i>\$39</i>	<i>\$47</i>	<i>\$86</i>	<i>100.0%</i>
Total sales tax change				
Business	\$563	\$712	\$1,276	49.7%
Household	\$559	\$733	\$1,291	50.3%
<i>Total</i>	<i>\$1,122</i>	<i>\$1,445</i>	<i>\$2,567</i>	<i>100.0%</i>

Source: The State of Ohio Executive Budget, H.B. No. 64, Economics Census, Consumer Expenditure Survey, and EY analysis.

Discussion – General Retail Sales Tax, Base Expansion & Rate Increase

As discussed above, expansion of the sales tax base to intermediate business inputs will result in differential price changes across goods and services to the degree that taxed inputs are used in their production. With 62 percent of consumption of the new services in the base coming from business, the potential for embedded price effects is significant.

Potential general retail sales tax effects

- Differential effect on businesses and consumers:
 - differential price change
 - sectors with higher service content in production face higher tax
 - sectors with longer service supply chains face higher tax
 - imposition of different tax burdens
 - incentives to vertically and horizontally integrate businesses to reduce external transactions
 - providing relative competitive advantages to larger firms
 - higher local cost of revenue from reduced federal deductibility
 - non-transparency regarding the level of the embedded tax

Price effects due to embedded sales taxes have detrimental effects similar to a gross receipts tax and the CAT. These price effects provide an incentive for consumers to shift consumption between goods, suppliers and locations and provide incentives for firms to change production processes, suppliers and location. They result in inefficient outcomes and inequity in the taxation of both consumers and firms, increasing the burden to consumer of goods and services containing taxed inputs and benefiting large firms that horizontally integrate.

Part of the objective stated in the governor's proposal is to move state financing toward consumption taxes to reduce economic distortions and promote investment and growth. Consumption taxation contributes to this objective when it is levied in a non-distortionary manner. Taxing intermediate inputs produces greater levels of distortion. With approximately 50 percent of increased consumption tax revenue coming from business, 62 percent of the newly taxable services consumed by business and more than 42 percent of the existing consumption tax base falling on business, the proposed consumption tax increases are not neutral to business. They produce business winners and losers and are likely to influence business decisions at the margins.