HANDOUT #2

Understanding Debt-to-GDP Ratio

Debt to GDP is really referring to the relationship between our total national debt and our national income. To help you understand what this relationship is, and why it is important, let's examine our nation's debt and deficit situation by thinking of it on a personal level.

Suppose you live in a two-income household and that, together, the two incomes bring in $50,000 a year. At the same time, suppose the household incurs annual expenses of $55,000.The financial picture of this household is as follows:

Total Income:	$50,000	
Total Expenses:	$55,000	
Operating Deficit:	($ 5,000)	Debt
Debt as a Portion of Income =	10%	5,000/50,000]

If this is the household's first year of operating, the debt at the end of year one would be $5,000.

Now, suppose the next year is exactly the same, that is, no increase in household income, an additional $5,000 in debt, and no extra expenses. Oops – hold on. There is one additional expense - the interest cost on the new debt. [Note: We will assume an interest rate of 5 per cent on outstanding debt.]

Total Income:	$50,000
Total Expenses:	$55,000
Deficit:	($5,000)
Interest on Last Year's Debt:	$250
Total Deficit for this Year	$5,250
Plus Previous Debt from last year:	$ 5,000
Total Accumulated Debt:	$10,250 (Interest cost is now = 5% of $10,250 = $512.50)

Last year, the household’s debt to income ratio was - $5,000 (debt)/$50,000 (income) = 10%.

This household added another $5,000 in debt in this second year. The interest payment on the past debt added another $250. This brings the household’s total deficit for the second year to $5,250. Combined with the deficit from the first year, the total household debt is now $10,250. The household’s debt-to-income ratio is now 20.5%.

What is the consequence of this? It is very significant.
The household's ability to pay for (carry) debt will be related to the household income. The more debt the household takes on in relation to its income, the harder it is for the household to carry the debt costs.

The household will also have to use more of its income to pay the interest costs. That leaves less money for other things such as food, shelter, entertainment, transportation, and so on.

If the household continued on this financial path year after year it would very soon be in a very difficult financial situation. It would be spending more and more each year to pay the interest costs on its debt. It would have less and less money to spend on other things. And it could become harder and harder for the household to borrow more money if it was needed.

How can this household reverse the situation? There are two things that can be done. First, the household can stop borrowing – or at least borrow less. Second, the household income can be increased.

For example, suppose in the second year the household was able to reduce its expenses by $1,000 to $54,000. And suppose that both income earners were able to increase incomes by 2%, increasing household income by 4%.

Let's look at the situation then.

Total Income:	$52,000 (4% higher)
Total Expenses:	$54,000
Deficit:	$ 2,000
Interest on Last Year's Debt:	$. 250
Total Deficit for this Year	$. 2,250
Previous Debt from last year:	$. 5,000
Total Accumulated Debt:	$. 7,250

(Note Interest cost now on this higher debt = 5% of $7,250 = $362.50)

With higher income and lower expenses, the household's debt-to-income ratio is $7,250/$52,000 = 13.9% - rather than 20.5%.

This would mean the household is now not paying as much interest on its debt. It also has more income available to use on other things. And, if it should need to borrow more for some reason, it is better able to do so.

This example shows why the debt-to-income ratio is important. Ideally you would like to have the debt-to-income ratio as low as you can and, if it is high, you would like to get it lower.

This is the same for Canada. The only difference from our example above is that our income is referred to as GDP our Gross Domestic Product, which is the current value of all the goods and services produced in Canada.

When Canada goes into deficit and adds more to our federal debt, a key factor to consider is how much our income – our GDP is growing – in comparison to our debt.

If our debt is growing at a faster rate than our income, this means that a higher and higher portion of our government revenues will go to pay interest on the debt, we will have less revenue available for other areas of spending, and, over time, if it continues in that direction, our ability to borrow money may be more limited – or the cost we have to pay to borrow will go higher.

Now, if the government believes it is important to go into deficit and add to the country's federal debt, but our income/our GDP grows at the same rate as, or faster than, our debt, then our financial situation in terms of our ability to carry debt, or take on new debt, will stay the same or will actually improve.

Most economists would tell you that this doesn't mean you should just keep borrowing if you have a growing economy with a rising GDP. If you did that, you are likely to eventually get into debt problems – especially if growth in the economy stalls or falls. And, if it does, if you kept on adding to the federal debt, you may not be able to put the money into the economy to help it out when it needs it.

What it does mean, though, is, if you are going to borrow and add more to our debt, it is much better if the debt-to-GDP ratio can stay the same, or actually improve, as you take on more debt.

Many eyes will be watching to see how things work out -- to see if Canada's debt-to-GDP ratio stays the same or improves. For that to happen, our GDP will have to increase at the same rate as, or better than, the rate of increase in our debt. This is something for future generations – many in our schools today – to consider.

Globe and Mail Online Classroom Edition – Lesson Plan Support Materials/Illustrations for:
"How the latest budget affects Canadians" (April 2023)
Lesson plan by: Gary Rabbior, President, Canadian Foundation for Economic Education (CFEE), April 2023