HANDOUT #2

Understanding Debt-to-GDP Ratio

Debt to GDP is really referring to the relationship between our 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 Revenues:	$50,000	
Total Expenses:	$55,000	
Operating Deficit:	$ 5,000	Debt: $5,000
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 revenue increase, an additional $5,000 in debt, and no extra expenses, except there is one - the interest cost the household now has to pay on the debt that was taken on the previous year. [Note: we will assume an interest rate of 5 per cent on outstanding debt.]

Total Revenues:	$50,000	
Total Expenses:	$55,000	
Operating Deficit:	$ 5,000	
Interest on Last Year's Debt:	250	[5% of $5,000]
Total Deficit for this Year	$ 5,250	
Previous Debt from last year:	$ 5,000	
Total Accumulated Debt:	$10,250	(Interest cost on this higher debt = 5% of $10,250 = $512.50)

Now look what has happened to the household’s level of debt in relation to the household’s income.

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

The household’s debt to income ratio is now, with the added debt and no increase in income, 10,250/50,000 = 20.5%.

Therefore, the operation of this household for another year contributed another $5,000 to the household’s deficit. The interest payment on the past debt contributed another $250 to the deficit. This brings the household’s total deficit for the year to $5,250. Combined with the deficit from the

previous year, the total debt is now $10,250 and the household's debt-to-income ratio is now 20.5%.

Note how the household's debt, as a portion of the household's income, has increased from 10 per cent in the first year to over 20 per cent in one year.

What is the consequence of this? It is very significant.

The household's income represents its ability to carry debt. The higher the level of debt in relation to income, the harder it is for the household to meet the debt payments and carry the debt.

Furthermore, the household will have to use more and more of its income to pay interest costs to carry the debt. That means the household will have less money available for other things such as food, shelter, entertainment, transportation, and so on.

So the higher the debt-to-income ratio, the higher are the payments on interest to carry the debt, the less income there is to spend on other things, and the more stretched a household becomes in terms of its ability to carry the debt, and the more difficult it is to take on more debt if needed.

If the household continued on this financial path, year after year, it would very soon be in a very difficult situation. It would be spending more and more to carry its debt. It would have less and less money to spend on other things. And it would be harder and harder, perhaps even impossible, for the household to borrow more money if it was needed.

How does this change? How does the 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, let's go back to our first example. Suppose in the second year, the household reduced their expenses by $1,000 to $54,000. And suppose that both income earners in the household were able to increase their incomes by 2% for a total increase in the household income of 4%.

Let's look at the situation then.

Total Revenues:	$52,000	4% higher
Total Expenses:	$54,000	
Operating Deficit:	$ 2,000	
Interest on Last Year's Debt:	$ 250	[5% of $5,000]
Total Deficit for this Year	$ 2,250	
Previous Debt from last year:	$ 5,000	
Total Accumulated Debt:	$ 7,250	(Interest cost 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 means the household is better off than in the first scenario. It is not paying as much interest on its debt. It therefore 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 show 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 will add more to our federal debt, a key factor to consider is how much our income (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 difficult, 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/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.

That is what Finance Minister Morneau has said the government will insure. That is, as the government incurs a deficit, and takes on more debt, it will do so while insuring that our ability to carry our debt, our debt-to-GDP ratio, will stay the same or even improve.

There are many eyes that will be watching 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. The Minister will have to hope that the government forecasts for economic growth are correct – or even below - the actual rate of economic growth we will achieve. Sometimes global forces, beyond Canada's control, can throw a wrench into such forecasts. We can all hope that is not the case.

Globe and Mail Online Classroom Edition – Lesson Plan Support Materials/Illustrations for:
"Ten ways the budget will affect your finances" – by Rob Carrick, March 22, 2016.