1. Introduction : (a) What is Public Economics?

First, a very brief and broad outline of the structure of government finance, particularly government revenue sources, in Canada. In other words, "what level of government levies what tax, and how important are the different taxes?".

Before that, **an important message**. This course is a fourth–year level course. The prerequisites are intermediate microeconomics, and intermediate macroeconomics : AP/ECON 2300, 2350, 2400 and 2450, or their equivalents. Those prerequisites are meant to be taken seriously. In particular, you will find out very soon that this course is a course in the application of **microeconomic theory**. It is microeconomic theory applied to taxation. Some of the concepts used in Econ 2300 and 2350 are going to get used here again — every day. Indifference curves, income and substitution effects, general equilibrium prices : these will keep popping up. So this is a double warning : (*i*) you have to have the formal prerequisites in order to get in to the course, and (*ii*) the course content is going to keep reminding you of material from Econ 2300 and 2350.

Why is this course full of microeconomic theory? Because economists think that the concepts of microeconomic theory are useful in analyzing the behaviour of consumers and workers and firms and voters. And because much of the subject matter of the course is the effects of taxation on the behaviour of these economic agents, and the analysis of how the behaviour of these economic agents should affect the government's choices of taxes.

Why *micro*economics? After all, there is something pretty public about most of the material in macroeconomics. Certainly the effects of taxes on unemployment, or on growth are important. Here, however, it turns out that I will follow a peculiar convention in economics, a convention that's persisted for at least 50 years, probably longer. We leave discussion of macroeconomic aspects of the public sector for other courses (courses such as AP/ECON 2400, 2450, 3140, 4010, 4240). This is just a way the economics profession has of dividing up the course material. Material involving **aggregate** government expenditure and revenue does not get talked about (or certainly not talked about much) in courses labelled "public economics" or "public finance". So there will be very little, next to nothing in fact, about the overall government deficit, or about the effect of overall government taxation and spending on short–run economic fluctuations, or even about their effect on long–run economic growth. This will be very much a course on the **microeconomics of taxes**. "Micro" means small, which means we will mostly be looking at individual taxes, and individual economic agents. And that is standard practice in the economics profession. It may not be truth in advertising, but it's consistent.

On a sort of related subject : there's precious little *finance* in public finance. The origin of the term goes back to much earlier, before World War II, when courses in public finance had a lot of material on the financing of government : the term structure of the interest rates on government debt, for example. We don't do that any more, but the name has sort of stuck. Economists are trying to be more truthful : a lot of courses and textbooks are now called "Public Economics", or the "Economics of the Public Sector". And those titles are certainly more accurate descriptions of what will be going on here.

So here are some of the issues that will take up a lot of the course : how does the personal income tax affect people's choice of hours worked? does the taxation of interest income distort people's allocation of consumption over their lifetimes? who really bears the cost of the corporate income tax? what mix of taxes would put a consumer on the highest possible indifference curve, given a revenue target the government must meet? what is a "fair" way to tax the incomes of married couples?

Those are all questions in applied microeconomic theory. They may not be the questions that many taxpayers, or voters, or business journalists, feel are terribly important or pressing questions, but they are the questions that get covered in this course.

This is a course on the **revenue sources** of the **public sector**. What is the public sector? In a word, government. Now Canada has a *federal* form of government, which means more than one level of government. There are three important layers of government in Canada, the national (or "federal") government, the provincial governments, and the local governments. There are other layers than those three, but they are less important. In Ontario, outside the major cities, the county governments play some role. Highways (except for the big ones) are maintained by counties for example. In some parts of Ontario, the school districts do not correspond exactly with the towns. That means that some people pay taxes both to a town government, and to a school district, as well as to the Ontario and Canadian governments. They also elect different governments for the town and for the school district. There are some "authorities" which are different from local, provincial or national governments, which have their own revenue sources, their own officials, and their own legal powers. Prior to 1999, what is now Toronto had two layers of local government, the Municipality of Metropolitan Toronto, and the lower level local governments of North York, East York, York, Etobicoke, Scarborough and the City of Toronto. A lot of cities outside Ontario still do have that multi–level structure : London (UK), Paris (France), Sydney (Australia).

But there are three important levels of government in Canada. By "important", I mean that each of the three levels is responsible for an important amount of public spending, and each of the levels is responsible for collecting an important chunk of revenue.

The following table shows government revenue collected by the different levels of government in Canada in 2011. (The data are taken from *Finances of the Nation 2012*, accessible online at `https://www.ctf.ca/ctfweb/CMDownload.aspx?ContentKey=3cf7f7fd-cf2b-44f4-bfab-fe3a0233fe8a&ContentItemKey=d286fa01-a996-4214-ac1c-cd794820f102` .)*

* These data leave out "contributions" to the Canada Pension Plan, and the Québec Pension Plan, money which properly should be included in the revenue of the federal government and the Québec provincial government respectively.

level	million dollars
federal	243351
provincial	303747
local	37525

So, roughly speaking, the federal government collected about 42 percent of the tax revenue in Canada, the provincial governments about 52 percent, and local governments the other 6 percent.

While AS/ECON 4070 is a course on government revenue, just for completeness here is the breakdown of government **expenditure** by level of government in Canada in 2011.

level	million dollars
federal	203053
provincial	361816
local	161340

Notice the difference in the composition of tax revenue, and in the composition of government expenditure. That is because of the tendency for money to flow "down" in Canada, from the highest level of government to lower levels. These transfers, particularly transfers from the federal government to the provinces, play an important role in Canadian intergovernmental relations. (They will not be discussed in this course but they are covered AP/ECON 4080).

As mentioned, Canada is considered a **federal** state, meaning that several levels of government play important roles. The opposite of a federal state is a **unitary** state, in which the national government does all the taxing and spending. But really, there are very few "pure" unitary states, just varying degrees of federalism. Canada, the United States, Germany, and Switzerland are very much federal states, for example. France, Japan and the United Kingdom are considered more unitary. But there has been quite a bit of decentralization in France and in the UK in recent years. Besides which, European unification has proceeded to the stage that it may be more accurate to consider France and Germany (and even the UK) as provinces of a bigger, federal government called the European Union.

Now, for the most part in AP/ECON 4070 not much attention will be paid to the fact that Canada is a federal state. The public sector discussed here could be the provincial, or the local, or the federal. They all levy taxes, they all provide public services, a lot of the analysis will be the same whatever the level of government. But a brief comment on the relation among levels of governments : "revenue sources of the public sector" are the main topic of the course. What are the revenue sources? For the most part, taxes. How else do governments get their money?

Well, if you look at the data (for example, in any textbook, or in *Finances of the Nation*, Table A1), you can see that governments in Canada do have revenue sources which are not taxes. For example, some income comes from "investment income". That's a combination of a couple of things. Governments do own a lot of businesses that sell goods and services. They used to own a lot more, thirty or more years ago. In 1975, some governments in Canada owned airlines, passenger rail lines, bus lines, telephone companies, gas stations, hydroelectric companies, liquor stores, and lots of other enterprises. Most of those businesses sell goods and services to the public. Now many of these enterprises have been privatised since the 1970's. But some have not. As well, governments still have some ownership retained in some of these enterprises, so that they are getting a return on their shares of Petro Canada and Telus and so on. That investment income would also include the return on short–term securities various government agencies might hold as well.

Governments also collect revenues from fees for example : passport fees, marriage licences and so on. These are called "fees", rather than taxes, although the line is quite blurred. What is the difference between a tax and a fee? The most obvious answer is that you have to pay your taxes, whereas fees are charges which you choose to pay if you want to consume the goods or services. But that distinction doesn't really stand up under close examination, which is why I won't do much close examination. No–one has to pay gasoline taxes : they can always choose not to buy any gas. Why is that any different from a fee for a passport? If I want to get a passport, I have to pay the passport fee, and if I want to buy gas I have to pay the gasoline tax. The government contributes to the confusion by calling some of its taxes "premiums" (for employment insurance), or "contributions" (for Canada Pension Plan or Quebec Pension Plan). But those premia and contributions are quite definitely taxes. Most economists and accountants are not fooled, and EI premia and CPP/QPP contributions are included under "payroll taxes", as they should be, in the tables in textbooks, or in *The Finances of the Nation.* Forced to make a definition of what makes a tax a tax, I think it might be the property that, for a tax, the amount you pay is unrelated to the benefits you receive. You can't avoid a marriage licence fee if you're going to get married, but the benefits are related to the amount you pay. The more often you get married, the more you pay in marriage licence fees. On the other hand, Employment Insurance premia are taxes, not fees, since the amount you get in EI benefits does **not** depend on what you've paid in taxes. However you could find a lot of (little) holes in that definition if you tried, so I'm going to leave this issue.

So are taxes the only important revenue source for governments? If you look at the aggregate revenue over all levels of government in Canada, then that seems roughly true. However, if you disaggregate, and look at individual levels of government, then the story appears somewhat different.

At both the provincial and local levels, **transfers** from other levels of government are an important revenue source — which is not a tax. Newfoundland and Prince Edward Island got almost as much revenue from transfers from the federal government as they collected in taxes. Transfers are also very important as a revenue source to local governments.

So in Canada, there is (as mentioned above) a major flow of money down, from higher levels of government, from the federal government to the provinces, and from the provinces to the municipalities. When we aggregate over all levels of government these flows disappear. That is, federal grants to the provinces are a source of revenue to the provinces, and a major form of expenditure to the federal government. It would be **double counting** to include this money both in aggregate revenue and in expenditure. To see the problem in its extreme form, look at a country (such as

Australia), in which the higher level of government collects most of the taxes, and the lower levels do most of the spending. Exaggerating somewhat, imagine that the Australian federal government collects 40% of people's income in taxes, and then transfers all the tax revenue it collects to the state governments, which spend the money on schools and roads and so on. Imagine that the states collect no taxes of their own, that the federal government does no spending on its own, and that the public sector budget is balanced, so that expenditure at each level equals revenue. In this example, it should be clear that the public sector accounts for 40% of Australian income : the federal government is collecting 40% of income in taxes, and the state governments are spending all that money on schools and roads. But if you simply added up revenues, or expenditures, of all levels of government, then you'd get a very misleading impression if you didn't net out transfers among levels. If Australian GDP were 100 billion dollars, then we have the federal government of Australia spending 40 billion — all on transfers to the state governments. The state governments together spend 40 billion. Add spending at both levels, and you get total expenditure of 80 billion, or 80% of GDP. (Similarly, federal revenues, all from taxes, are 40 billion, and state government revenues, all from transfers, are 40 billion, so if you just added them up, you'd get government revenue of 80 billion.) So, in the Australian answer, there is a right answer and a wrong answer to how big government is, in aggregate. The right answer is that government accounts for 40% of GDP : you can get that right answer either by adding up how much each level of government collects in taxes, or adding up how much each level of government spends on programmes and transfers to people. You get the wrong answer only by double–counting, by counting the transfer from central government to states as both spending by the central government **and** as revenue earned by the states.

So it is important to remember that a transfer from one level of government to another does not mean any increase in the overall share of all levels of government in the economy. In adding up tax revenues, or expenditures across all levels, add in only "own source" revenue, or only "expenditure on goods and services" and "transfers to individuals".

This flow down of money means that the higher level governments are doing more of the tax collecting, and the lower levels are doing more of the spending. This may be a very rational system : perhaps there are advantages from having one high–level government in charge of most of the tax collection, or having the lowest level possible actually providing the goods and services. But it is not the only way of doing things. If we regard the European Union as a big "supranational" government, then money flows *up* there. The EU does not collect taxes directly, but finances its expenditures from transfers from the national governments. China is another significant example of a (sort of) federal country in which the money flows up : taxes are collecting by state and local government and remitted to the national government.

Next, a few words about what are the important taxes, and who levies them.

To begin at the beginning, at the time of Confederation, government spending accounted for a much smaller percentage of income in Canada than it does today. In 1867, no government, federal, provincial or local, levied any sort of income taxes. So the two key features here are that governments back then needed much less tax revenue, as a fraction of national income, than they do today, and that they used a very different set of tax instruments.

The primary revenue sources of government in 1867 were customs duties and excise taxes. Customs duties are revenue collected on the import of various goods : in other words, tariffs. In the nineteenth century, these duties were very high on many goods. Since World War II, tariff rates have declined to virtual insignificance. We have free trade, of a sort, with the United States and Mexico, but our duties on imports from the rest of the world are also levied at a very low rate.

Excise taxes mean taxes on a specific good, or class of goods. Examples are taxes on tobacco, on gasoline, on car rentals, on cable television bills, and on hotel rooms. Those are all examples of excise taxes which are still in use today. But they do not collect an enormous fraction of government revenue. In 2009, the federal and provincial governments together, for example, raised just over \$8 billion from excise taxes and duties on alcohol and tobacco products. That's about \$250 per Canadian per year, and a little over 1 percent of the total revenue raised by all levels of government. (Excise taxes on gasoline are a little more important than that, taising about \$13 billion.) Custom duties accounted for even less revenue, less than 1 percent of the revenue raised by government in Canada in 2009.

So neither of the two prime revenue sources of government in 1867 are relatively very important today. In part that's because the rates of these taxes have fallen, but in large part it's due to the fact that governments have found new, broad–based taxes, to collect the much larger fraction of national income which they now control.

In 1867, only the federal government could collect most taxes and duties. The British North America Act specified that provincial governments could collect only **direct** taxes, not indirect taxes. The federal government could collect either direct or indirect taxes.

What's a direct tax? That's a legal term, not an economists' term, and it is a little vague. But the basic notion is that a direct tax is collected directly from people, while indirect taxes are collected from businesses. So the personal income tax and estate duties on people who die are examples of direct taxes. The corporate income tax can be thought of as an indirect tax, since it is levied on corporations. Corporations are the entities which are legally obliged to remit the money to the government. But it certainly could be argued — and will be argued, later in the course — that corporations really can't be the ones actually paying the tax. It must be the corporation's owners, or employees, or customers, or perhaps someone else, who are really bearing the cost of the tax. Hence, the corporate income tax can be viewed as an indirect tax, in which the government is not collecting money directly from those paying the tax. Sales taxes are usually regarded as indirect, since they are collected from the stores that sell the goods and services, not from the customers. In other words, when people buy shirts, they do not pay the sales tax directly to the government. They pay the taxes to the store, and then the store remits the taxes to the government. That's different from a personal income tax, in which taxes are collected by the government directly from each worker's pay cheque. But provinces do in fact levy both corporate income taxes, and sales taxes, nowadays — even though they seem to be "indirect" taxes, and the British North America Act of 1867 did not allow provinces to levy indirect taxes. The clause in the BNA Act has not been changed, either, just interpreted very liberally. With the federal government's blessing, the supreme court ruled (a long time ago) that provinces could levy sales taxes, never mind that these taxes seem pretty indirect.

In 1867, however, the provinces didn't levy any sales taxes, or excise taxes. How did they get their money? First and foremost, they didn't spend much money. So they didn't need to get much money. Government spending was a much smaller fraction of national income than it is today, and the federal government accounted for most of that. The main source of revenue for what money the provinces did spend was grants from the federal government. So grants from the federal government to the provinces are very important now. As a revenue source for the provinces, they were even more important in 1867. But change has occurred in an up–and–down fashion. Grants from the federal government to the provinces went from very important in 1867, to quite unimportant by World War II, to more important again in the 1960's and 1970's, to somewhat less important today. Federal transfers to the provinces, for example, as a fraction of total provincial revenues, have gone from over 60% in 1867 to about 10% in 1926, to about 30% in 1960, just under 25% in 1970, just over 20% in 1980, just under 20% in 1990, and about 15% in 2004.

The most important event in the fiscal history of Canada is World War I. Suddenly, the scale of government got much larger, as they had to pay for this enormous war. The federal government decided it needed new revenue sources to pay for these expenditures, so they introduced the corporate income tax in 1916, the personal income tax in 1918, and the manufacturers' sales tax in 1920. Although the beginning of World War I meant a big increase in government spending as a fraction of national income, the end of the war did not mean that government spending dropped back to where it had been before. The fraction of national income accounted for by government spending, in peacetime, stayed much higher than it had been. It stayed even higher after the "temporary" increase caused by World War II. So the personal income tax went from a tax collected only from a small fraction of the population, to a broad–based tax, under which the large majority of adult Canadians file returns.

Meanwhile, the provinces introduced their own main revenue sources : succession duties late in the nineteenth century, and then sales, personal income, and corporate income taxes (mostly between the 2 world wars). The local governments have been the steady ones, relying throughout Canada's history on two main revenue sources : property taxes, and grants from the provinces.

So by World War II, most of the major taxes we know had been introduced. What has happened since then? Several features are worth noting about the last fifty years or so of taxation. Most importantly, *payroll* taxes have become a very important revenue source. These were unknown in 1950. Payroll taxes are proportional taxes, collected on labour income, usually up to a "ceiling", and usually collected from both employees and employers. So they're collected as a fraction of income, just like personal income taxes. But they're only collected on labour income, not on investment income, they're collected as a flat proportion of income (not at several different rates, depending on the bracket you're in), and they're collected from both employers and employees. The leading examples are employment insurance premia, and contributions to the Canada Pension Plan. Those are both federal programmes, they're both relatively recent (1941 and 1966 respectively), and they have really come into their own as major sources of revenue in recent years.

At the same time, the corporate income tax has become relatively less significant as a source of government revenue — although corporate income tax revenues vary a lot over the business cycle. The relative importance of personal income taxes has been fairly steady at about one–third of all government tax revenues. The importance of the property tax as a revenue source has fallen, as has the relative importance of the level of government that uses it : local government. Sales and excise taxes have remained fairly steady, at around 30% of the total revenue of governments. But within the category of sales and excises taxes, there has been some changes. These taxes have become relatively less important to the federal government, and relatively more important to the provincial government. That first statement may surprise some of you (or your parents) who can remember 1991. You might think that federal sales taxation was invented by Brian Mulroney. It was not. The federal government introduced the *manufacturers' sales tax* in 1920. In 1991, Mulroney replaced that tax by the **goods and services tax** – the GST. One difference : the GST applies to a much wider class of goods and services than the old MST. When the GST was introduced, in 1991, Mulroney promised that it was supposed just to replace the MST, not to collect more revenue. Good old lyin' Brian : in 1990, the federal MST collected 4.0% of national income in revenues ; in 1998 the GST accounted for 3.9%. So why were people upset about the introduction of the GST, when it was just the replacement of one sales tax by another sales tax? A key difference between the GST and the MST was that the MST was invisible to many : it was collected at the manufacturing stage, not at the retail sales stage, so that many people did not know that they were paying it.

So that's a rough picture of taxes in Canada in the early twenty–first century. Altogether, government revenue is just under 40% of national income. The personal income tax, shared by federal and provincial governments, is the most important tax, collecting about 35% of total government tax revenues. Payroll taxes — "contributions" to employment insurance and old age pensions by employers and employees — account for about 13% ; sales taxes (federal GST and provincial sales taxes) around 30%, property taxes and the corporate income tax just over 10% each. Payroll and corporate income taxes are collected by both federal and provincial governments (more by the federal), and property taxes by local governments.