ECON 2152 – MIDTERM #2

Chapter 5:

- Using the microeconomic behaviour of a representative consumer and a representative firm and build it into a working model of the macro-economy
- Increases in government spending increase aggregate output and crowd out private consumption expenditures
- Increases in productivity can lead to increases in aggregate output and standard of living
- Government tax collection distorts private decisions

Closed Economy: a model of a single country that has no interaction with the rest of the world – it does not trade with other countries

Open Economy: international trade is allowed

3 Actors for the Economy:

a) The representative consumer who stands in for the many consumers in the economy who sell labour and buy goods
b) The representative firm that stands in for the many firms in the economy that buy labour and sell goods
c) The government

Government:

- Wants to purchase a given quantity of consumptions goods (G), and finances these purchases by taxing the representative consumer.
- Economists generally agree that the Government has a special role in providing **public goods** – national defense, education etc.
- **Public goods**: Difficult to get an individual to pay for it in a private market according to how much he/she uses it
- An **exogenous variable** is determined outside the model, while an **endogenous variable** is determined by the model itself (Government spending is **exogenous** – independent of what happens in the rest of the economy)
- Must abide to the **Government Budget Constraint**, which is written as G = T
- **Fiscal Policy:** refers to the government's choices over its expenditures, taxes, transfers and borrowing
- **Government Budget Constraint** always is G – T = 0

Competitive Equilibrium:

- **Exogenous variables: G** (government spending), **z** (total factor productivity), **K** (economy's capital stock)
- **Endogenous variables: C** (consumption), **N*s** (quantity of labour supplied), **N*d** (quantity of labour demanded), **T** (taxes), **Y** (aggregate output), and **w** (the market real wage)

- **Competitive Equilibrium:** Demand is equal to supply in each market in the economy, ***competitive*** refers to all consumers and firms being ***price-takers***, and the economy is in ***equilibrium*** when the actions of all firms are consumers are ***consistent***
- **Market Clearing:** When demand equals supply in all markets

A competitive equilibrium is a set of **endogenous** quantities, Consumptions, Labour supply, Labour demand, Taxes, Aggregate Output, and an **endogenous** Real Wage, such that, given **exogenous** variables Government spending, Total Factor Productivity, and Capital Stock and the following are satisfied:

1) The representative consumers chooses **consumption**, and **labour supply** to make himself/herself as well off as possible subject to his/her budget constraint, given **the real wage**, **taxes**, and **dividend income**. Representative consumers optimizes given his/her budget constraint.
2) The representative firm chooses **labour demand** to maximize profits, with maximized **output** [Y = zF (K,N*d)] and maximized **profits** ($\pi = Y - wN^d$). The representative firm optimizes given total factor productivity, its capital stock and the market real wage (in equilibrium, the profits that the firm earns must equal to the dividend income that is received by the consumer)
3) The market for labour clears. The **quantity of labour** that the representative **firms wants to hire** is EQUAL to the **quantity of labour** the **consumer wants to supply**
4) The government budget constraint is satisfied – that is, G = T. The **taxes consumers paid** are **equal** to the **exogenous quantity of government spending**

- An important property of a competitive equilibrium is that Y = C + G (**Income-expenditure identity)**
- **Production Possibilities Frontier** – describes what the technological possibilities are for the economy as a whole, in terms of the production of consumption goods and leisure. **Captures the tradeoff between leisure and consumption that the available production technology makes available to the representative consumer in the economy.**
- **Pareto-optimality –** a competitive equilibrium is **pareto-optimal** if there is no way to rearrange production to reallocate goods so that someone is made better off without making someone else worse off
- Pareto Optimum is where the indifference curve is tangent to the PPF, on the highest indifference curve and on the PPF
- In a single, closed economy the Pareto Optimum is identical to the competitive equilibrium

First Fundamental Theorem of Welfare Economics: states that, under certain conditions, a competitive equilibrium is **Pareto-optimum**

Second Fundamental Theorem of Welfare Economics: states that, under cetain conditions, a Pareto optimim is a competitive equilibrium
Externality – any activity for which an individual firm or consumer does not take account of all associated costs and benefits
Distorting taxes – depends on the actions of the person being taxed

Real Business Cycle Theory: view total factor productivity shocks as the most important cause of business cycles. Argue that much of the short run variation in labour supply is due to **intertemporal substitution of labour** (which is the substation of labour over time in response to real wage movements)

Laffer Curve: The relationship between income tax revenue and he income tax rate.

Distorting income tax gives consumers a disincentive to work, and tends to lower aggregate consumption and aggregate output

- **In a competitive equilibrium, the actions of the representative consumer, the representative firm, and the government must be mutually consistent, which implies that the market on which labour is exchanged for goods must clear, and the government budget constraint must hold**
- **In a competitive equilibrium, we determine aggregate output, consumption, employment, taxes and the real wage (the endogenous variables), given the capital stock, total factor productivity, and government spending (the exogenous variables)**
- **A competitive equilibrium can be represented in a single diagram, and we used this diagram to illustrate the equivalence between the competitive equilibrium and the Pareto optimum, which is an economically efficient state of affairs**
- **The model shows how an increase in government spending has a pure negative income effect on the representative consumer, so that employment increases and consumption decreases. Government spending thus crowds out private consumption, but not completely, as there is an increase in aggregate output**
- **An increase in total factor productivity, which may arise from technology, leads to an increase in output, consumption, and the real wage, but employment may increase or decrease because of opposing income and substitution effects**
- **A simplified version of the one-period model illustrates the incentive effects of proportional income taxes. The model exhibits a Laffer curve, a relationship between tax revenue and tax rate**
- **The one period model was modified to include public goods, and to show how we might determine an optimal size for the government. The model shows that the size of the government increases with GDP, through a pure income effect on the demand for public goods. The size**

of the government also increases as public goods provision becomes more efficient

Chapter 9 –

Inter-temporal decisions - involve economic tradeoffs across periods of time.

Ricardian equivalence theorem – states that there are conditions under which the size of the government's deficit is irrelevant, in that it does not affect any macroeconomic variables of importance or the economic welfare of any individual.

The consumption-savings decision involves inter-temporal choice, as this is fundamentally a decision involving a tradeoff between current and future consumption

The government's financing decision is a decision about the quantity of government saving, or the size of the government deficit, making it closely related to consumption-savings decisions of private consumers

Two period model – the simplest framework for understanding inter-temporal choice and dynamic issues. First period in the model is the current period and the second period is the future period.

- A key variable is the **real interest rate,** which in the model is the interest rate at which consumers and the government can borrow and lend.

Consumption smoothing: natural forces that cause consumers to want to have a smooth consumption path over time, as opposed to a choppy one.

Lifetime budget constraint – states that the **present value** of lifetime consumption $(c + c' / 1 + r)$ equals the present value of lifetime income $(y + y' / 1 + r)$ minus the present value of lifetime taxes $(t + t' / 1 + r)$

$$t + t\left(\frac{t'}{1+r}\right) + C + \frac{C'}{1+r} = \left(Y + \frac{Y'}{1+r}\right)$$

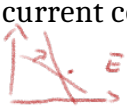
Endowment point – which is the consumption bundle the consumer gets if he or she simply consumes disposable income in the current period and in the future period – that is , $c = y - t$

Preferences to consider:

1. **More is always preferred to less**
2. **The consumer likes diversity in his or her consumption bundle**
3. **Current consumption and future consumption are normal goods**

Permanent Income Hypothesis – Milton Freidman, argued that a primary determinant of a consumer's current consumption is his or her permanent income, which is closely related to the concept of lifetime wealth in our model

Inter-temporal Substitution effect: higher real interest rate lowers the relative price of future consumption in terms of current consumption, and this leads to a substitution of future consumption for current consumption and therefore to an increase in savings.



Government Present-Value Budget Constraint: Present value of government purchases must equal the present value of taxes

- G + G' / 1 + r = T + T' / 1 + r

Credit Market: The market in which m consumers in the economy and the government interact which consumers and the government can borrow and lend

- Trading future consumption goods for current consumption goods

Competitive equilibrium must:

1) Each consumer chooses first- and second period consumption and savings optimally given the real interest rate, r
2) The government present-value budget constraint holds
3) The credit market clears when net quantity that consumers want to lend in the current period is equal to the quantity that the government wants to borrow

National saving is equal to aggregate private savings minus B (quantity of debt issued by the government) in equilibrium this =’s 0

Y = C + G

Ricardian Equivalence Theorem – states that if current and future government spending are held constant, a change in current taxes with an equal and opposite change in the present value of future taxes leaves the equilibrium real interest rate and the consumptions of individuals unchanged

- **A two-period macroeconomic model was constructed to understand the interremporal consumption-savings decisions of consumers and the effects of fiscal policy choices concerning the timing of taxes and the quantity of government debt**
- **In the model, there are many consumers, and each makes decisions over a two-period horizon where a consumer’s incomes in the two periods are given, and the consumer pays lumpsum taxes in each period to the government**
- **The lifetime budget constraint of the consumer states the the present value of consumption over the consumer’s two period time horizon is equal to the present value of disposable income**
- **A consumer’s lifetime wealth is his or her present value of disposable income**
- **A consumer’s preferences have the property that more is preferred to less with regard to current and future consumption, there is a**

preference for diversity in current and future consumption, and current and future consumption are normal goods. A preference for diversity implies that consumers wish to smooth consumption relative to income over the present and the future

- **Consumption smoothing yields the result that, if income increases in the current period for a consumer, then current consumption increases, future consumption increases, and current saving increases.**
- **If future income increases, then consumption increases in both periods and current savings decrease**
- **A permanent increase in income (when current and future income increase) has a larger impact on current consumption than does a temporary increase in income (only current income increases)**
- **If there is an increase in the real interest rate that a consumer faces, then there are income and substitution effects on consumption. Because an increase in the real interest rate causes a reduction in the price of future consumption in terms of current consumption, the substitution effect is for current consumption to fall, future consumption to rise and current savings to rise when the real interest rate rises.**
- **For a lender (borrower) the income effect of an increase in the real interest rate is positive (negative) for both current and future consumption**
- **The Ricardian equivalence theorem states that changes in current taxes by the government that leave the present value of taxes constant have no effect on consumers' consumption choices or on the equilibrium real interest rate.**
- **The Ricardian equivalence depends critically on the notion that the burden of the government debt is shared equally among the people alive when the debt is issued. The burden of the debt is not shared equally when there are current distributional effects of changes in taxes , there are intergenerational distribution effects, taxes cause distortions, or there are credit market imperfections**

Chapter 10

Asymmetric Information: refers to a situation in which, a particular market, some market participant knows more about his or her own characteristics than do other market participants

- Asymmetric information exists in that a particular borrower knows more about his or her own creditworthiness than do potential lenders

Default Premium: acts to compensate lenders for the fact that some borrowers will default on their loans

Interest rate spreads: are gaps between the interest rates on risky loans and safer loans, or between the rates of interest at which some class of borrowers can lend and borrow

Limited Commitment – refers to situations in which it is impossible for a market participant to commit in advance to some future action
- In credit markets there can be lack of commitment in the sense that a borrower cannot commit to repaying a loan

Collateralizable wealth: consumers are constrained in their borrowing by how much wealth they have that can serve as collateral