EC 103–002

Problem Set 4

Prof. Santetti

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INSTRUCTIONS:

For the *Reflection* and *Concepts Review* sections, your answers must be **handwritten**, scanned (you may use a phone app such as *CamScanner*), and submitted in a single PDF file with your *first name* (mine would be `marcio.pdf`). You can convert images to PDF format `here`. Also, you can merge different PDF files `here`.

For the *Hands-on* section, follow the submission instructions given in the problem.

Submit your files via `theSpring`. In case you experience any issues, email them to `msantetti@skidmore.edu`.

`Assignment due 12/05, before class`.
`Points Possible: 65`

- You have 2 weeks to complete this assignment. In accordance with our `course syllabus`, no late submissions will be accepted.
- Be honest. Don't cheat.
- As a Skidmore student, always recall your votes of academic integrity, and the **`Honor Code`** you have abided by:

> *"I hereby accept membership in the Skidmore College community and, with full realization of the responsibilities inherent in membership, do agree to adhere to honesty and integrity in all relationships, to be considerate of the rights of others, and to abide by the college regulations."*

Have fun!

Reflection

The *Inflation Reduction Act* (IRA) of 2022 is the most recent fiscal policy measure adopted by the U.S. government. Write a **2-page** essay (min. required) *critically* discussing its main features. (*15 points*)

You may wrap your analysis around some key features, such as:

- Its strengths;
- Its weaknesses;
- Its main targets:
    - Health care;
    - Taxing policies;
    - Climate change and clean energy transition.

To help you with that, feel free to look at news articles and blog posts. I provide here three recommended readings:[1]

- `Doing the Math on the Inflation Reduction Act` (NYT);
- `Why the Inflation Reduction Act Is a Big Deal`, by 2001 Nobel Prize laureate and former member and chairman of the (US president's) Council of Economic Advisers Joseph Stiglitz;
- `False Advertising for the Inflation Reduction Act`, by Michael Boskin, former chairman of George H.W. Bush's Council of Economic Advisers.

[1] If any of these original links does not work, you can access them `here`, `here`, and `here`.

Concepts Review

[True/False]: For the following 10 parts, evaluate whether the sentences are true or false. If false, give a brief explanation of why the sentence is incorrect.

(a) In an economy with government, the income that ultimately gets to households is known as *disposable* (after-tax) income. (*1 point*)

(b) In an economy with government, aggregate (private) investment still needs to be fully financed by aggregate (private) savings. (*1 point*)

(c) Whenever changing the level of government expenditures and the supply of money, the government is engaging in *fiscal* policy. (*1 point*)

(d) The government expenditures multiplier produces the same effect as the spending multiplier in a closed economy without government. (*1 point*)

(e) The tax multiplier is always greater than the government expenditures multiplier. (*1 point*)

(f) In an economy with no change in aggregate investment, any new government expenditures fully financed by taxes on consumers will generate a growth in output proportional to the change in government spending. (*1 point*)

(g) The *Inflation Reduction Act* of 2022 is an example of macroeconomic *monetary* policy. (*1 point*)

(h) COVID-19 era stimulus checks are an example of recent *fiscal* policy. (*1 point*)

(i) If an economy's marginal propensity to save (*MPS*) is 0.2, its government expenditures multiplier will be equal to 5. (*1 point*)

(j) If government purchases and taxes are increased by $100 billion simultaneously, equilibrium output will also be increased by $100 billion. (*1 point*)

[Short answers on money]: Give brief answers to the following questions on money supply and demand:

(a) List the *three* main functions of money. (*2 points*)

(b) List the components of M1 money supply. (*2 points*)

(c) List the components of M2 money supply. (*2 points*)

(d) What is the current reserve requirement ratio determined by the US FED on commercial banks? (*2 points*)

(e) List the three motives for demanding money. (*2 points*)

[Aggregate expenditures & multiplier effects II]: Assume a closed economy with government, and you are given the following information:

- Households consume 75% of their disposable income (Y_d) on consumption, saving the rest;
- The amount of aggregate consumption that *does not* depend on the current level of disposable income is $160;
- Government expenditures: $G = \$200$;
- Net taxes on consumption: $T = \$200$;
- Planned Investment: $I = \$300$;
- Aggregate expenditures definition: $AE \equiv C + I + G$;
- In equilibrium, aggregate income (Y) must be equal to aggregate expenditures (AE).

Answer the following questions. (If you **do not** show your calculations, you will be given **no credit**.)

(a) Using the above information, write the expression for this economy's aggregate expenditures (AE), as a function of income (Y). (*2 points*)

(b) At what aggregate income level do aggregate expenditures exactly meet what is being currently produced in the economy? (*2 points*)

(c) Based on your answer to part (b), what is the level of aggregate savings (S) in this economy? (*2 points*)

(d) From your previous answers, show that the amount of *leakages* is compensated by the amount of *injections* in this economy. (*2 points*)

(e) Suppose you are this economy's policymaker, and need to stimulate the economy. In other words, the prime minister has given you the task of increasing aggregate output by $500. Show **3 ways** in which this goal can be achieved with fiscal policies. To get full credit, you need to give brief explanations and prove your story mathematically. *Obs*: Just using ready-made formulas is not enough to get full credit. (*10 points*)

Hands-on

From `FRED`, grab data for the U.S. federal deficit/surplus as a % of GDP over time. (These data were used in Lab 11.)

For the entire period (1929—2021), make a table (using the `{gt}` package) only listing *all* years when the U.S. government showed a budget *surplus*. (i.e., net taxes were greater than government expenditures), and the corresponding % of GDP for that year.

Follow the same procedures as in Problem Set 3 (such as giving a proper title, labeling the columns, giving the source of the data, and putting your name as the author in the source space as well).

Save your table in a PDF format, saving it as `ps4_table.pdf`. Include this file in your submission through `theSpring`. (*12 points*)

Note: Bonus points if you figure out how to `highlight` the *row* corresponding to the *highest* surplus as a % of GDP. *Hint*: use the `{gtExtras}` package.