SEC 5162 ADVANCED MACROECONOMICS

MID-SEMESTER EXAMINATION

26th OCTOBER 2023

16:30 – 19:30 HRS

TIME ALLOWED: THREE HOURS (Plus 5 minutes to read through the paper)

INSTRUCTIONS:

1. This Examination carries a total of **100 marks.**
2. Section A is Compulsory and carries 50 marks.
3. Section B Answer any 2 questions.
4. Candidates must not turn this page until the invigilator tells them to do so

SECTION A-COMPULSORY QUESTION (50 marks)

QUESTION ONE

This paper examines what happens to economic growth prospects after a debt surge. It studies how real and potential economic growth tends to perform following a debt surge by using a local projection method to a dataset of debt surge in advanced and developing economies between 1970 and 2019 for a sample of 190 countries. We focus on three debt categories, namely: household debt (loans and debt securities), nonfinancial corporate debt (loans and debt securities), and public debt (% of Gross Domestic Product, GDP). Data comes from the IMF's Global Debt Database. The high indebtedness raises concerns about whether it will undermine future growth prospects. Results show that the relationship between debt surges and economic growth is complex. Our analysis shows that surges in total debt (public plus private) are usually followed by lower output over the medium term. However, the negative relationship does not always hold because debt issues are complex. The effect depends on different factors and types of debt surge. Economic performance tends to be particularly worse over the medium term following a surge in public debt, less so for surges in private (household or nonfinancial corporates). Debt surges are never associated with an increase in potential output and may even decrease it. We also examine if the current interest rates have an impact. In the short-term, we find that the impact of a debt surge does not vary with the cost of borrowing. However, GDP may be persistently lower following a debt surge when contemporaneous interest rates are low contrary to what would have been expected. Further, the paper explores how the different types of debt surges have different impacts on future growth depending on the initial level of total debt and the state of the economy (output gap). The argument is that the total level of leverage of the economy matters to assess whether further accumulation of debt may be excessive and have a negative impact on growth (Lim, 2019). At low levels of debt, the benefits from rising debt may be higher—for example, finance productive investment and help manage economic cycles—while at high debt levels, further increases in debt may have more negative effects such as high inflation and high unemployment rates. For example, if the economy is already highly leveraged, increasing debt may raise concerns from external creditors or push domestic borrowing costs higher, discouraging some productive investments.

Source: Economic Growth After Debt Surges, IMF, WP/22/159, July 2022.

https://www.imf.org/-/media/Files/Publications/WP/2022/English/wpiea2022159-print-pdf.ashx

(a). Outline the differences between budget deficit and budget surplus and analyses the impact of implementing budget deficits and budget surpluses on the economy. **[10 marks]**

(b). Evaluate the approaches to mitigating the problem of unemployment by Okun's Law and Phillips Curve. **[6 marks]**

(c). "…GDP may be persistently lower following a debt surge when contemporaneous interest rates are low contrary to what would have been expected." This is an empirical puzzle.

(i) By referring to the appropriate conventional policy, analyse the impact of relatively low interest rates on stimulating economic growth in terms of the level of investment(I), aggregate output (Y), employment (N), consumption(C), and disposable income (Y_D) **[20 marks]**

(ii). Evaluate the causes of the empirical puzzle given in the report where low interest rates seem to be counter-productive in stimulating economic growth across 190 countries. **[7 marks]**

(d). According to the report, outline the conditions that make contracting further debt promote economic growth and stability? **[7 marks]**

[Total 50 marks]

SECTION B: Answer any 2 questions in this section.

QUESTION TWO

Consider the following hypothetical economy that produces and consumes sugar and cars. Table 2.1 shows data for two different years spanning a period of 10 years.

Table 2.1: Macroeconomic Variables-Hypothetical Economy

	2012		2022	
Good	Quantity	Price/K	Quantity	Price/K
Sugar	500 000	10	400,000	20
Cars	100	50 000	120	60000

(a). Using 2012 as the base year, compute the following statistics for each year

(i)Nominal Gross Domestic Product (nominal GDP) **[5marks]**

(ii). Real gross Domestic Product (real GDP) **[5marks]**

(iii) Inflation rate between 2012 and 2022 using the deflator approach. **[5marks]**

(iv) Consumer Price Index (CPI) **[5marks]** **[20 marks]**

(b). GDP deflator is the average price of the goods produced in the economy, whereas the Consumer Price Index (CPI), is the average price of goods consumed in the economy. Which approach would you recommend to the Social Security Authority to adjust the benefits to offset the cost of living? Explain your choice. **[5marks]**

[Total 25 marks]

QUESTION THREE

Trends in the level of employment are highly dependent upon economic performance and business investment. These are, of course, influenced by government policy action affecting such key economic variables as aggregate demand and savings, investment incentives, and wage policy. If, by changing structural, policy or institutional arrangements, unemployment can be reduced, major gains will flow from the reduced costs associated with a lower level of unemployment. Table 3.1 shows labour force data for a fictitious country.

Table 3.1 Labor Force Data

Adult Pop. 16 and Older	218 million
Labour force	133 million
Employed	117 million
Discouraged workers	16 million

(a). Briefly, explain the concept of labour force and hence calculate the number of people who are unemployed in this country **[3 marks]**

(b). Using the answer, you found in (a), compute the number of people not in the labor force. **[3 marks]**

(c). Define the concept of unemployment and calculate the unemployment rate. **[5 marks].**

(d). Compute the labour force participation rate and evaluate your answer. **[5 marks]**

(e) Identify what type of unemployment (cyclical, frictional, or structural) applies to each of the following:

(i) Construction workers are laid off in response to a rise in the use of automation in new housing construction. **[3marks]**

(ii) An unemployed Accountant who received a letter of appointment on 20th September 2023, but the effective date was 2nd October 2023 **[3marks].**

(iii). Restaurant and hotel workers in the Tourism Industry who lost their jobs during the COVID-19 Crisis in 2020 **[3 mark]**

[Total 25 marks]

QUESTION FOUR

Production, consumption, and capital formation are the three basic economic activities of an economy. Consumption and saving decisions are at the heart of both short- and long-run macroeconomic analysis. In the short run, spending dynamics are of central importance for business cycle analysis and the management of monetary policy. In the Keynesian model, aggregate demand, which is the sum of society's expenditures on consumption and investment, determines the equilibrium level of income. In the long run, aggregate saving determines the size of the aggregate capital stock, with consequences for wages, interest rates, and the standard of living.

Consider a closed economy described by the following equations:

$Y = C + I + G$
$Y = 5{,}000$
$G = 1{,}000$
$T = 1{,}000$
$C = 250 + 0.75(Y - T)$
$I = 1{,}000 - 50r$

(a). In this closed economy, calculate the:

(i) private saving **[3marks]**

(ii). public saving **[3 marks]**

(iii) national saving **[3marks]**

b. Find the equilibrium interest rate **[3 marks]**

c. Now suppose that G rises to 1,250. Compute private savings, public savings, and national savings **[8 marks]**

d. Give a macroeconomic analysis of the cyclic nature of booms and busts in an economy. **[5marks]**

[Total 25 marks]

END OF EXAMINATION