ECO2143 Macroeconomic Theory II
Final examination: April 18, 2012
University of Ottawa
Professor: Louis Hotte
Time allotted: 3 hours

## 1. Fiscal stimulus and expectations (25 points)

**a) (15 points)** Some economists believe that a government can kick-start a slowing economy through increased government spending. Skeptics argue that this will not achieve much because of the *permanent income hypothesis*. Describe the argument of the skeptics. Begin by stating the equation that links current GDP with current demand for domestic goods and give a brief description of the permanent income hypothesis.

Using the same notation as in class, we have:

$$Y_t = C_t + I_t + G_t + (EX_t - IM_t)$$

where $EX_t - IM_t = NX_t$. According to the above relation, an increase in current government spending $G_t$ should increase current GDP $Y_t$ one-to-one. But this assumes no change in current consumption $C_t$ and investment $I_t$.

The permanent income hypothesis (PIH) says that $C_t$ and $I_t$ both depend on expectations about future income and profit levels, which in turn depend negatively on tax levels. Now if $G_t$ increases and is financed with a deficit, then future tax levels are expected to increase in order to repay that deficit. This causes both $C_t$ and $I_t$ to decrease and consequently some or all of the increase in $G_t$ may be compensated for.

The skeptics thus argue that the effect of $G_t$ on $Y_t$ may be very small and not worth all the trouble caused by an increased government debt, such as higher future inflation.✓

Additional relevant comments:

- If the government tries to increase $G_t$ without running an additional deficit, it will have to raise taxes now. Most economists would agree that this will deepen the recession. Hence, in order to stimulate the economy now, an increase in $G_t$ should be financed with a deficit.
- If the recession is accompanied with deflation, people may associate increased government deficits with future inflation as the central bank increases the money supply in order to pay back the debt. This may increase investment now as inflation makes it easier to pay back a given stock of debt.

**b) (10 points)** Suppose that you are asked to conduct an empirical study that seeks to determine whether increased government expenditures can contribute to higher GDP growth during a recession. Explain why *expectations* are both important but challenging for such an analysis.

As argued above, $C_t$ and $I_t$ are in large part determined by future income levels. In particular, if firms expect future profit opportunities to increase, then they will be inclined to increase current investment $I_t$. We have seen in class that according to some studies, current investment $I_t$ can increase now if firms expect <u>future</u> government spending, say $G_{t+1}$, to increase. The argument is that they need to invest now in order to be ready for future government contracts.

The above implies that $I_t$ is not determined by actual government spending but rather by firms' expectations about future government spending. If one wants to demonstrate that increased government spending can stimulate an economy in recession, one should therefore look for a correlation between investment today and firms' expectations about future government spending. This is challenging from an empirical point of view because one typically cannot observe directly what people think about the future, i.e. reliable data on expectations are difficult to come by.✓