Problem Set #3

1. Suppose that the government runs a budget deficit of $400 billion and private savings is $1700 billion.
   a. If this is a closed economy, what is the value of planned investment?
   b. If this is an open economy, and we are running a trade deficit of $700 billion, will investment have the same value as you found in a? Briefly explain, why or why not?

2. The following is the consumption schedule for the Republic of Asgard in 2013.

<table>
<thead>
<tr>
<th>Y</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>110</th>
<th>120</th>
<th>130</th>
<th>140</th>
<th>150</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>52</td>
<td>62</td>
<td>71.5</td>
<td>80.5</td>
<td>89</td>
<td>97</td>
<td>104</td>
<td>110</td>
<td>115</td>
<td>119</td>
<td>122.5</td>
</tr>
</tbody>
</table>

   a. Construct a graph of the consumption function. Assume that within each income range the slope of the consumption function is constant.
   b. Compute the marginal propensity to consume over each income range. What is the geometrical meaning of the MPC?
   c. What happens to the average propensity to consume as income rises?
   d. Let savings $S = Y - C$. Compute and graph the savings schedule (savings as a function of income).
   e. The marginal propensity to save (MPS) is the fraction of a change in income that is saved. Compute the MPS over each income range.

3. Consider the following Keynesian model of the short run economy:

$$ Y = C + I + G + NX $$

$$ C = 1000 + 0.8Y_d $$

$$ Y_d = Y - T $$

$$ T = 100 $$

$$ I_p = 200 $$

$$ G = 200 $$

$$ NX = -100 $$

   a. What is the short run equilibrium level of GDP?
   b. What is the marginal propensity to consume? What is the marginal propensity to save?
   c. If the U.S. decides to raise taxes to 200 in order to balance the budget, what happens to equilibrium GDP?
   d. If taxes are maintained at 100, and government spending is reduced to 100 in order to balance the budget, what happens to equilibrium GDP?
   e. If consumers become less profligate and decrease their MPC to 0.75 in a) above, what will happen to the equilibrium level of GDP?

4. Suppose you are on the Council of Economic Advisors. The new president elect wants to increase GDP by $500 billion. You know that the marginal propensity to consume is 0.8 in the US. We are currently running a government budget deficit of $400 billion. You are considering three different policy proposals. The first proposal is to increase government spending. The
second proposal is to decrease taxes. And the third proposal is to increase government spending and taxes by the same amount. For each of these proposals, answer the following:

a. What is the required change in G and in T?
b. What is the impact of this policy on the government budget deficit?
c. What is the impact of this policy on aggregate consumption C?

5. Automatic stabilizers reduce the size of the multiplier and therefore reduce the impact of spending shocks on the economy. Provide an example of an automatic stabilizer, and explain how it reduces the size of the multiplier.

6. Which of the following is considered part of the U.S. money supply? (Use the M1 measure).
   a. A $10 bill you carry in your wallet.
   b. A $100 traveler’s check you bought but did not use.
   c. A $100 bill in a bank’s vault.
   d. The $325.43 balance in your checking account.
   e. A share of Exxon Mobil stock worth $75.
   f. A balance of $90 in your Claremont Cash account.

7. Read the accompanying article “Mackerel Economics in Prison Leads to Appreciation for Oily Fillets,” Wall Street Journal, October 2, 2008. This has been posted to the course web page. Why is mackerel used as a form of money in the prison system. What qualities make mackerel a good and bad form of money?

**Due Thursday 13 March**