

Part I: Multiple Choice

- 1) "E" is the answer. The formula you need is that change in the money supply = $(1/f) \times$ change in bank reserves (or the initial change to the money supply, if you prefer) where "f" is the required reserve ratio. So we have here that
 $\Delta \text{Money} = (1/0.2) \times 10$
 $\Delta \text{Money} = 5 \times 10 = 50$ billion dollars
 So the initial purchase of 10 million in bonds by the Fed generates a 50 billion-dollar increase in the money supply through the money creation/money multiplier process.
- 2) "E" is the answer. When you take the hundred dollars out of your checking account it simply becomes currency in the economy. Both checking accounts and currency are part of M1 so M1 can't change as you are moving from one type of M1 to another type of M1. M2 can not change either since everything that is in M1 is also in M2 plus certain time deposits. ($M2 = M1 +$ time deposits)
- 3) "D" is the answer. Taxing the high skill workers shifts back their labor supply curve, generating a deadweight loss in the high skill market. Transferring that tax revenue to low skill workers generates a disinclination to work (low skill income rises, so they don't need to work as much to earn the same amount of income so to get them to work the same amount you have to pay them more, or as your income rises you have a higher preference for leisure, typically) so the low skill supply curve also shifts to the left creating another deadweight loss in the low skill market. Thus, there is an overall loss for society.
- 4) "A" is the answer. The idea of Ricardian equivalence is that a tax cut that creates a deficit should not affect people's behavior. People should be forward-looking enough to recognize that a tax cut that creates a deficit implies that taxes will have to rise in the future to pay off that debt and so the rational behavior is to save the extra income from the tax cut in order to pay that future tax burden.
- 5) "B" is the answer. This is straight off of the Professor's outline. According to the professor, in order for a deficit to not be a burden on future generations the government should make its effect on total investment the same as the deficit. The idea is simply that if the government spends money today to finance future investment then a deficit today should be ok because the payoffs to that investment won't be realized until the future and then those payoffs can be used in the future to payoff the debt and hence won't be a burden on future generations.

Part II: Short Answer

- 1) $T_x - T_r - G < 0$ is a deficit (where $T_x =$ taxes, $T_r =$ transfers, $G =$ government spending)
 $= 0$ is a balanced budget
 > 0 is a surplus
- 2) The deficit can be financed either through the issuing of new bonds or the printing of money (increasing the money supply)
- 3) "Crowding out" is the concept that government deficits (or even simply government spending) can reduce the level of private investment in the economy.
- 4) "Twin deficits" are running a budget deficit and a trade deficit (importing more than you are exporting) at the same time. One possible explanation would be that a government unable to find

the funds necessary to finance its deficit would have to borrow money from abroad and this could create “twin deficits”. (See Ch. 16 of the book)

- 5) One reason to have a balanced budget requirement is to prevent budget deficits and hence debt from becoming a burden to future generations. One reason to not have a balanced budget requirement is that during a recession, the government will not be able to cut taxes or increase government spending in order to stimulate (increase GDP) the economy.

Part III: Short Answer

- 1) A “fully funded” social security system is a “forced savings” system whereby the government takes a portion of your income and saves it, returning that income to you once you’ve retired in some type of installment payments. A “pay as you go” system is when the current working population pays for the current retired population. Income is taken from the employed and transferred directly to retired people, like a lump sum transfer. The money you pay in will not necessarily equal the money you get back in a “pay as you go” system.
- 2) The key equation is $t \cdot Y_{\text{young}} \cdot N_{\text{young}} = B \cdot N_{\text{old}}$ where t =tax rate, Y_{young} = avg. income of the young, N_{young} = the number of young people, B = avg. benefits paid to the old, and N_{old} = number of old people.
So we have
 $(0.2) \cdot 20,000 \cdot 100 = B \cdot 200$, hence $B = 2,000$
- 3) The generosity rate of benefits is
$$B/Y_{\text{young}} = t \cdot N_{\text{young}}/N_{\text{old}}$$

So if the N_{young} in an economy increase then the generosity rate of benefits should go up. Thinking about it, if there are more young people, then there are more young people who can work, and so the society can afford to increase the benefits to the old, all else equal.
- 4) There is no one correct answer to this question as long as your argument is consistent. This is an extreme situation. The country is switching from a transfer of wealth from the young to the elderly system to a forced savings system. People who are currently old would be screwed (this switch is assuming that the old system would not be phased out but that it would end immediately) as the old would not be able to go out and work and would likely not have sufficient savings to provide for their retirement. This switch would eliminate current benefits to the elderly. Young people may or may not be better off. You might argue that since they are now saving for themselves rather than others, then they are better off. However, it really depends on the demographics (births and deaths) in the economy. If the next generation of young people were larger than the current generation, then the current generation of young people would likely be better off with “pay as you go”. If the next generation is smaller than the current generation, then the current generation might be better off with a “fully funded” system.