

**Homework Assignment 11 solution.**

1. (2 point) Banking regulation suffers from the principal-agent problem. Describe how this problem relates to regulators and politicians.

**Taxpayers are the principals, and regulators and politicians are the agents. Regulators want to escape blame for poor performance, so they have incentives to loosen capital requirements and practice forbearance, the opposite of what they should do. Regulators must also please politicians, who in turn receive contributions from the banks being regulated. Thus, politicians may pressure regulators to practice forbearance, and fail to address problems if resolving problems conflicts with their personal interests.**

2. (1 points) Explain the factors that account for the large increase in market share experienced by mutual funds since 1980.

**The growth of mutual funds is attributed to the stock market boom; the ability to invest in a variety of assets including bonds, foreign securities and specialized industries; the growing importance of pension plans that invest through mutual funds; and the growth of money market mutual funds as an alternative to bank deposits.**

3. (2 point) What informational problems do insurance companies face? Name at least one method to deal with each one.

**The problems are adverse selection and moral hazard. Adverse selection can be ameliorated by screening, charging risk-based premiums. Moral hazard can be dealt with by using deductibles, coinsurance and using various restrictive provisions.**

4. (1 point) How is it possible for money market mutual funds to insure that their shares are redeemable at a fixed value?

**Money Market Mutual Funds invest in very low-risk and highly liquid securities such as Treasury Bonds. This means that the returns (and prices) on these assets do not fluctuate a lot, and these securities can be sold at a moment's notice.**

5. (1 points) How can a sum of the prices of shares of a closed-end mutual fund be different from the value of stocks that this mutual fund owns?

**Factors like liquidity of the shares in the fund's portfolio as well as the quality of fund's management may affect the price of the mutual fund's shares (but not the price of the shares that the fund itself owns).**

6. (2 point) Suppose that because of the new knowledge about human genome it became possible to predict the time of death of each individual with near certainty. What do you think would happen to the life insurance industry?

**Life insurance companies would start requiring a DNA test as a part of the screening medical examination before a policy is written. Individuals that are about to die because of some genetic problems would face extremely high premiums (which reflect their individual risk). These individuals may not be able to afford life insurance and may leave the market. Healthy individuals would face extremely low premiums. These people may not want to participate because they also know that they face extremely low probability to die soon (mostly because of accidents). In the end, the market can disappear completely because there would be almost no risk involved, and therefore there would be no need for insurance.**

7. (1 point) Can a defined-contribution pension fund be underfunded?

**No. The definition of underfunded implies that there is not enough money in the fund to pay all promised pensions. The definition of defined-contribution fund implies that you are promised to get back only what you've put in (contributed). In addition, your contributions are stored on a separate account, so you can always see what you have (and what you have is exactly what are promised to be paid).**