

1. The equilibrium price will be equal to the expected damages of the average consumer who decides to buy insurance (at that price). This expected damage will be half way between the highest and the lowest risk individual who remains in the market (at that price). Since any individual with expected damages less than $P - 100$ will not buy insurance, then the highest and lowest risk individuals remaining in the market at any price will be those with damages of \$1000 and $\$P - 100$ respectively. Thus the price will be half way between these, i.e.,: $P = \frac{1}{2}(1000 + (P - 100))$. Solving this we get the equilibrium price $P = 900$. At that price drivers with expected damages of \$800 or less will decide not to buy insurance. Thus, only the riskiest 20% of the drivers will buy insurance in this market.

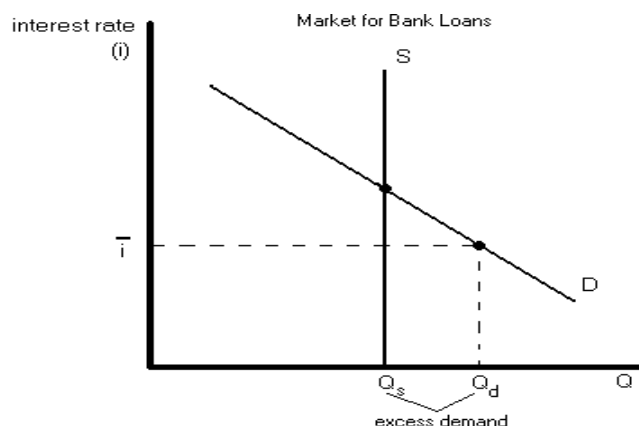
Notice that firms might start out in this market by charging \$500. However, then the safest 40% of the drivers drop out of the market (don't buy insurance). But then the insurance companies are left with a riskier pool of drivers. The average of the expected damages of the remaining drivers is \$700. If the insurance companies then raise their prices to \$700, an additional 20% of the population of drivers drop out (don't buy insurance). Again this raises the average riskiness of the remaining pool of insured drivers, and so the companies will raise prices again. This process will come to a rest when the price rises to \$900. At that point, only those drivers with expected damages of \$800 or more are still buying insurance.

2. Low interest rates may attract borrowers with relatively low likelihoods of default.

To the degree to which banks can not predict which borrowers are more or less likely to default, they will charge the same rate to each kind of borrower. Potential borrowers who wish to undertake projects with low expected return will not be willing to borrow at high interest rates to finance these projects. If it is the case that high rates of expected return tend to go hand in hand with high risk of return, then those borrowers who are willing to pay higher interest rates on loans will have higher likelihoods of defaulting on their loans. Consequently, as banks raise their interest rates, they will lose safer borrowers and find the rate of default on their loans to have increased.

This adverse selection problem (high risk borrowers are more likely to select into the market) may prompt banks not to raise interest rates in the face of excess demand. Setting an interest rate below the market clearing rate will attract a favorable composition of borrowers (by bringing low risk borrowers into the market), and this effect may be strong enough to make higher rates less profitable.

If all banks do this, then excess demand will persist, and some customers who desire loans at the going rate will be turned down. Banks will ration the quantity of loans that they are offering among the demanders of loans in some way. As long as banks can not distinguish between high and low risk borrowers, some of each type of borrower will be denied credit.



The diagram above assumes for simplicity that banks have a fixed supply of funds that they are willing to lend out.

3i. The deregulation of the S&Ls in the early 1980s left depositors insured by the federal government (FSLIC) but lifted restrictions on the types of investments (loans) that the S&Ls could make with the deposits.¹ The S&Ls could now make riskier loans (in order to receive higher interest rates) and offer higher rates to depositors, who were still insured and so were sheltered from the added risk. Essentially, the S&Ls could pass the additional risk onto the general public, who subsequently paid off depositors of bankrupt S&Ls with tax dollars.

This is an example of a moral hazard problem. Bank managers took on excessive risk because the cost of that risk was spread out over deposit insurers, who in this case were the general public.

3ii. There are a number of public concerns about the health care system in the US today. One is access. For example, about 15% of the population has no health insurance and so have sub-standard access to care. A second problem is that health care costs have risen rapidly in recent years. The U.S. currently spends about 15% of its national income on health care (i.e., health care services currently make up about 15% of GDP in the U.S.). This percentage has risen in recent years and is substantially larger than in many other industrialized countries.

One reason for growing costs of health care is improvements in medical technology. Many new treatments are more effective but also more expensive than are the older treatments that they have replaced. However, another reason for rising costs may be excessive treatment of insured

¹ The banking category S&L had originally been created by the federal government to promote home ownership. Prior to the 1980s, S&Ls were restricted to lending money for home mortgages. Price ceilings were placed on both the interest rates that they could pay depositors and the interest rates that they could charge on mortgages. In return for providing low rate mortgages, S&Ls received a variety of federal subsidies. In the 1970s, high rates of return on other savings instruments (like CDs and mutual funds) caused a drain of deposits out of the S&Ls. This prompted the deregulation of the S&Ls, in which the interest rate ceilings were removed and restrictions on investments were relaxed.

patients. Under the traditional third party insurance system, there may be insufficient incentives for patients and health care providers (physicians, nurses, etc.) to weigh the benefits of various treatments against their costs.

Traditionally there have been three parties involved in treatment: the patient, the provider (e.g., physician), and the insurer. The costs of an individual patient's treatments, if paid by an insurance company, are partly spread out over the premiums of other policy holders, and so the patient will desire more treatment than she would if she had to pay for it. This is the standard moral hazard problem in insurance markets. Similarly, the provider may have little or no incentive to keep treatment costs down, if the insurer is a third party, since her practice (or hospital) is paid by the insurance company according to the amount of treatment given (this is called *fee for service*). Consequently, the provider may have little or no incentive to counter the tendency for excessive treatment under this system.

Note that treatment is excessive here in the sense that consumers are choosing to undertake some treatments (on the advice of their health care providers) that they would not choose if they had to pay the full cost (even if they could spread the payments over time). An example might be electing an expensive but highly accurate diagnostic test (such as a \$1000 MRI) over a substantially less expensive and somewhat less accurate test (such as a \$50 X-ray).

HMOs (Health Maintenance Organizations) and other "managed care" organizations attempt to remove this moral hazard problem by attempting to combine the roles of insurer and health care provider. The company sells health insurance to individuals (or their employers) and then provides the health care directly to their insured patients when they need it. Rather than allowing their member physicians to bill the company (as insurer) on a fee for service basis, the HMO typically tries to structure the physician's pay (e.g., via profit sharing or limiting reimbursement per patient) to reflect the profitability of her practice. Notice that the patient has paid a fixed insurance premium, so any health care actually given is reducing the profits of the HMO.

One risk of such a system is that the incentives to cut costs will work too well, and the quality of care will decline too much. HMOs might be replacing incentives for doctors to provide excessive care with incentives to provide too little care.

3iii. Enron misled investors (including its workers who owned shares in the company) into believing that the company was making profits rather than losses. To the degree that its executives believed that if or when the bubble burst they would be able to sell their shares before others caught on, they were willing to continue to take on these losses.

4. In terms of efficiency, what we are asking here is whether, by reallocating resources from (to) the production of advertising to (from) the production of other goods like broccoli, automobiles, and health care, consumers as a whole would gain more utility than they lose. Advertising is a 150 billion dollar industry in the U.S. This means that 150 billion dollars worth of resources, which could be used elsewhere, go into advertising each year. Do we get our money's worth? Do consumers (as a whole) get 150 billion dollars worth of entertainment, information, persuasion, etc. out of it?

If advertising is informative, it allows people to make better choices in the market place, and thus be better off. I.e., advertising may promote an efficient allocation of resources among other products in the economy. On the other hand, if advertising is not informative, but rather is persuasive, and is engaged in by firms merely because their competitors advertise, then it may be that no one benefits from advertising (neither consumers of the advertised products, nor the firms who are doing it—recall our discussion of the prisoner's dilemma aspect of advertising). In this case, we would clearly be better off reallocating resources from advertising to the production of

other goods. On still another hand, if persuasive advertising actually changes peoples preferences (by associating the product with pleasing or humorous social images, for example), then it is hard to evaluate whether people are made better off by it, since their measures of what make them well off are changing. If I could convince you that Spam was your favorite food, would you be better off?