個經作業

1. Landsburg, Ch.9, #6.

2. Landsburg, Ch.9, #15.

3. Consider the following commercial:

SAVE認證聯盟除銷售經認證優質中古車輛外，提供引擎、變速箱及方向機三大系統保固一年或兩萬公里。

(a) What problem does SAVE 認證聯盟 intend to resolve? Moral hazard or adverse selection?

(b) Consider a market of second-hand automobiles. Though a seller understands the condition of his car, buyers could not tell its condition. If the car is in a good condition, it is worth $80,000 to the buyer and $70,000 to the seller. If the car is in a bad condition, it is worth $40,000 to the buyer and $30,000 to the seller. When a buyer could not tell the condition of a car, he will pay for its expected value to him. There are 50 good cars and 50 bad cars to be sold. On the other hand, there are 1,000 interested buyers and because of the relatively large number of buyers, when a deal is made, the interested buyers will bid up the price to their willingness to pay.

i. How many cars will be sold in equilibrium?

ii. The owners of good cars consider to offer a warranty like SAVE’s. This warranty is costless to them. If an owner of a bad car offers the same warranty, because of the expected repairing fee, the warranty costs the seller $10,000. While a warranty of a good car adds no value to the car, a warranty of a bad car makes the value to a buyer higher by $10,000. In the end, could the good car owners use the warranty to successfully signal the condition of their cars?

4. 自付額乃投保人選擇自行負擔的醫療費用。例如，自付額為 230 者，若投保期間醫療費用為 300，保險公司僅付 70 (300 – 230)。自付額越低，保費越高。請問表1、2的內容各與反向選擇還是道德危険的描述相符？

表 1: 各自付額下醫療支出的分配（%）

<table>
<thead>
<tr>
<th>自付額</th>
<th>0</th>
<th>1–299</th>
<th>230–399</th>
<th>400–599</th>
<th>600–1199</th>
<th>1200–1499</th>
<th>&gt;1500</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>11.97</td>
<td>5.59</td>
<td>3.77</td>
<td>4.34</td>
<td>10.74</td>
<td>4.79</td>
<td>58.79</td>
</tr>
<tr>
<td>400</td>
<td>13.15</td>
<td>7.40</td>
<td>5.33</td>
<td>4.57</td>
<td>12.74</td>
<td>5.01</td>
<td>51.80</td>
</tr>
<tr>
<td>600</td>
<td>24.15</td>
<td>9.34</td>
<td>5.15</td>
<td>5.24</td>
<td>12.56</td>
<td>5.17</td>
<td>38.40</td>
</tr>
<tr>
<td>1200</td>
<td>48.50</td>
<td>9.75</td>
<td>6.08</td>
<td>4.60</td>
<td>7.47</td>
<td>2.82</td>
<td>20.79</td>
</tr>
<tr>
<td>1500</td>
<td>52.41</td>
<td>12.59</td>
<td>6.09</td>
<td>4.81</td>
<td>8.42</td>
<td>2.63</td>
<td>13.05</td>
</tr>
</tbody>
</table>

表 2: 各自付額下醫療支出超過7,500瑞士法郎的比率

<table>
<thead>
<tr>
<th>自付額</th>
<th>比例 (%)</th>
<th>自付額</th>
<th>比例 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>19.25</td>
<td>1200</td>
<td>4.07</td>
</tr>
<tr>
<td>400</td>
<td>10.65</td>
<td>1500</td>
<td>2.11</td>
</tr>
<tr>
<td>600</td>
<td>7.14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. 考慮 Spence 的模型：高生產力與低生產力的人各占人口一半。高生產力的人分別會為僱主賺到$100與$60。高生產力的人念大學的教育成本為$10,低生產力的人念大學的教育成本為$15。

(a) 請問是否有 separating equilibrium?

(b) 今有研究所為大學畢業生開設，高生產力的人念研究所的成本為$15，低生產力的人念研究所的教育成本為$30；其他數字不變。請寫出所有可能的均衡中兩類人的學歷。

解答

1. Assume that in plan (a), out of 1,000 young people in total, 100 of them join the army, and each citizen pays $200 tax to support the army. In other words, we assume there are 900 young people whose opportunity costs are higher than $200, and 100 others whose opportunity costs are less than $200.

In (c) and (d), the same 100 people will join the army as in (a). (c) and (d) are equivalent a priori, young people as group pay for soldiers' salaries. (a), (c) and (d) are the same efficient. Young people prefer (a) to (c) and (d), but all other consumers prefer the latter two plans.

With plan (b), the army will recruit different 100 young people, not necessarily the one with the lower opportunity costs. There will be a deadweight loss. Young people distastes plan (b) the most. Not only that they have to pay for the cost of the army, they are also deprived of the opportunity to trade the position with others. However, for other citizens, plan (b) is as good as plans (c) and (d).

2. All incomes are voluntarily revealed.

3a. adverse selection

3(b)i. Only bad cars would be sold. When the good cars are also on offer, the price of a car is only $60,000. This will cause the owner of the good cars to withdraw their offers. At the end, only the bad cars remain the market.

3(b)ii. If the good car owners offer the warranty, a bad car owner will follow suit because the cost is $10,000, but the market will pay him $65,000, i.e.$25,000 more than the case if he offers no warranty. When every bad car owner offers the warranty, the good car owners will withdraw from the market. The signal doesn’t work for them.

4. 表1: 兩者。表1顯示，自付額低者傾向選高醫療支出。這可能表示他們存心要保險公司當冤大頭。沒事便跑醫貪（道德危險）；也有可能他們早知就醫費用不貴，故選自付額低者（反向選擇）。

表2: 反向選擇。不論所選自付額為何超越7,500的費用對投保人言近似成為0，道德危險方面表現無差，其醫療支出的差異只可能緣於反向選擇。

Lucien Gardiol, Pierre-Yves Geoffard and Chantal Nicolet (2001) 一文的目的在實證 adverse selection 是否真有其事，還只是觀念性的存在。這類研究的難點在於：moral hazard 通常伴隨 adverse selection 而存在，研究者需動腦筋撇清兩者。

真奇怪。經濟學的理論尚未獲得堅實的實證支持，就可獲 Nobel 獎。可憐 Stephen W. Hawking 鑽研之黑洞理論信受贊賞，但因缺乏可行之實驗支持，始終與 Nobel 獎無緣。經濟學界的科學態度與物理學界相去甚遠，為何我們還自詡為社會科學家呢?

5a no

5b separating: H will go to both university and the graduate school, and L will attend neither place. (the competitive employer pays $100 to a student w. master degree, and $60 to all others.) pooling: H and L attend neither university nor graduate school. (the employer will pay $80 to everybody.)