ECON 156: HW #2

Part I: Mortgage-Backed Securities: In September 2008, the global economy fell into the Global Financial Crisis, which led to the Great Recession. A financial instrument, known as a mortgage backed security (MBS), is often blamed for helping cause the crisis.

1. Systemic risk is the possibility that a microeconomic or company-level event/failure has the potential to destabilize or collapse an entire industry or economy. Mortgage-backed securities created systemic risk because banks bundled risky mortgages together and sold them in the market, so when homeowners defaulted on their payments, the financial losses spread to firms holding them, which helped lead to the destabilization/collapse of the economy. This is an unintended consequence of their failure, and the effects/costs of economic instability fall on a third party who wasn't a part of the original transaction. When firms decide how many MBS's they are going to create or hold, they only consider their potential gains and losses, and not the potential losses of third parties (other firms, households, etc.). Because the firm does not pay for the costs it imposes on outside parties if unregulated, this is a negative externality.

Boyle, Michael J. "Securitization's Impact on the 2008 Global Financial Crisis." *Investopedia,* January 22, 2026. https://www.investopedia.com/ask/answers/041515/what-role-did-securitization-play-us-subprime-mortgage-crisis.asp

Kelly, Robert C. "Moral Hazard's Role in the 2008 Financial Crisis Explained." *Investopedia,* December 3, 2025. https://www.investopedia.com/ask/answers/050515/how-did-moral-hazard-contribute-financial-crisis-2008.asp

2. Graph and work shown on the next page.

2.

#2

$P = 500 - 20Q$: D/MU

$P = 100 + 30Q$: S/MC

Social cost = \$50

$500 - 20Q = 100 + 30Q$

$-100 + 20Q \quad -100 + 20Q$

$\frac{400}{50} = \frac{50Q}{50}$

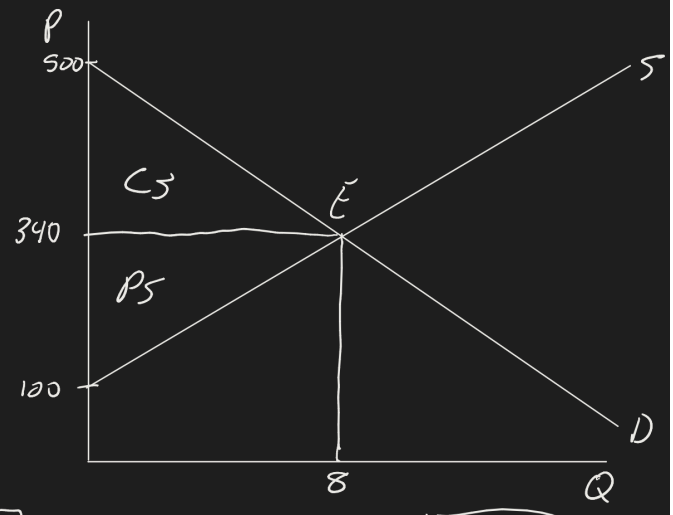
$\boxed{Q = 8}$

↳ $100 + 30(8) = 100 + 240$

$= \boxed{340 = P}$

$CS: \frac{1}{2} \cdot 8 \cdot 160 = \boxed{640 = CS}$

$PS: \frac{1}{2} \cdot 8 \cdot 240 = \boxed{960 = PS}$



Social cost $= 8 \cdot 50 = \boxed{400 = SC}$

3.

#3

- We will implement a tax of \$50 per unit on firms/suppliers

$P = 500 - 20Q$: D/MU

$P = 150 + 30Q$: S/MC

$500 - 20Q = 150 + 30Q$

$-150 + 20Q \quad -150 + 20Q$

$\frac{350}{50} = \frac{50Q}{50}$

$\boxed{Q = 7}$

↳ $150 + 30(7) = 150 + 210$

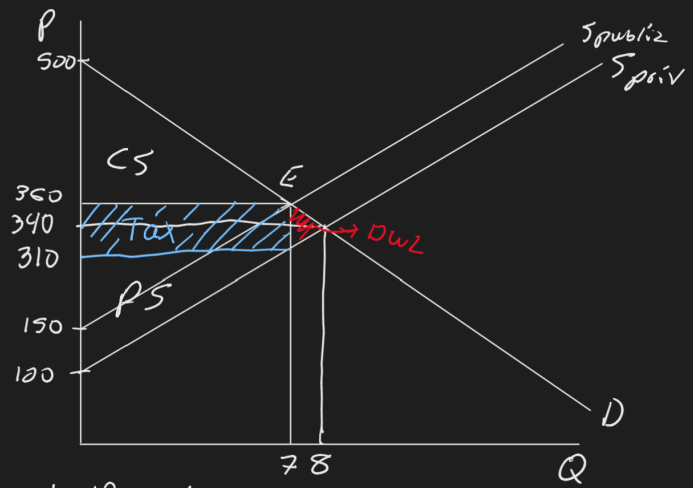
$= \boxed{360 = P}$

$CS: \frac{1}{2} \cdot 7 \cdot 140 = \boxed{490 = CS}$

$PS = \frac{1}{2} \cdot 7 \cdot 210 = \boxed{735 = PS}$

$Tax = 50 \cdot 7 = \boxed{350 = Tax}$

Social cost $= 50 \cdot 7 = 350$

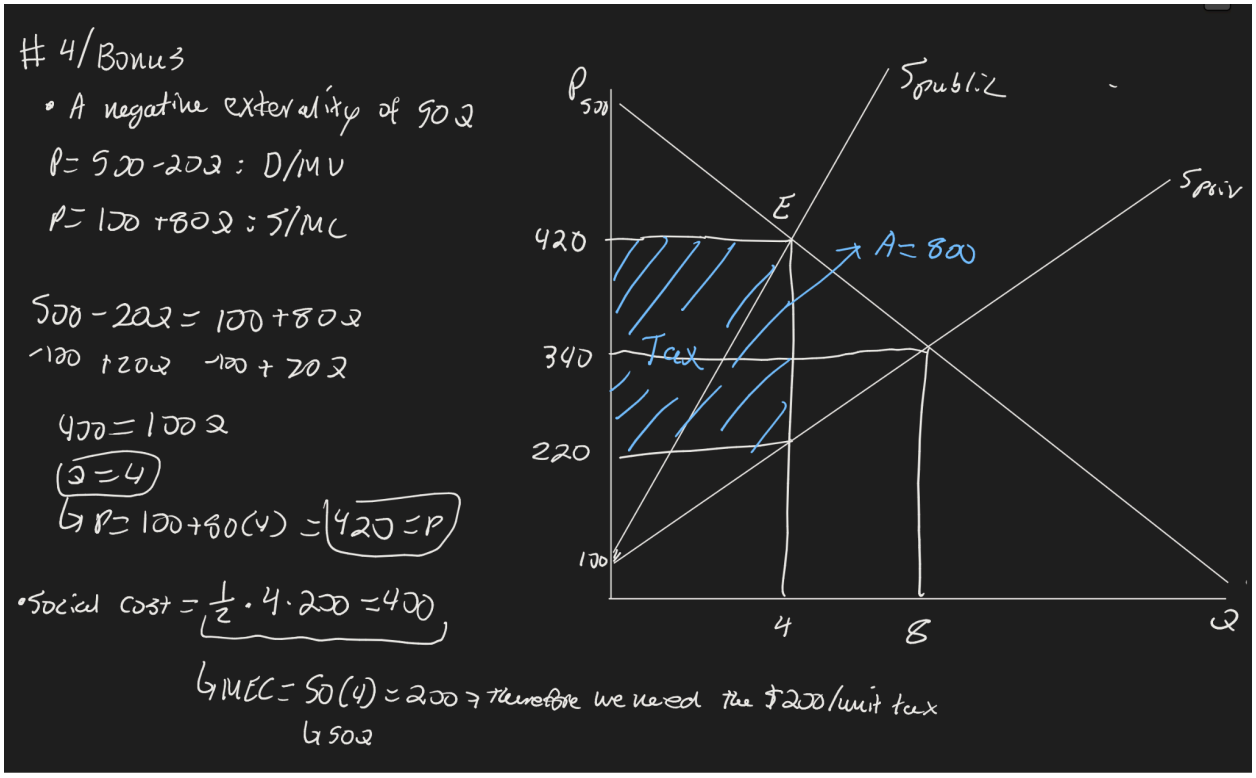


Welfare #2 $= 640 + 960 - 400 = 1200$

Welfare #3 $= 490 + 735 - 350 + 350 = 1225$

$1225 > 1200$ ∴ Total welfare is higher in #3, w/ the corrected externality

4. With an externality of 50, every unit does the same amount of external damage, so the marginal external cost stays the same at 50 per unit. If the externality changes to 50Q, the marginal external cost increases with each additional unit produced. Therefore, the first unit imposes $50 of external damage, the second produces $100 (50 × 2), the third $150, and so on. This means that producing each additional unit is more harmful than the previous one, and total damage grows much quicker. Graph on next page (has my visual for #4 and work for the bonus).



Bonus) We would need to implement a tax of $200/unit. The efficient quantity is 4 units, where marginal utility equals public marginal cost, and the marginal external cost at 4 units is $200. Taxing firms by that amount for each unit makes firms internalize the cost of the last unit, therefore correcting the externality.

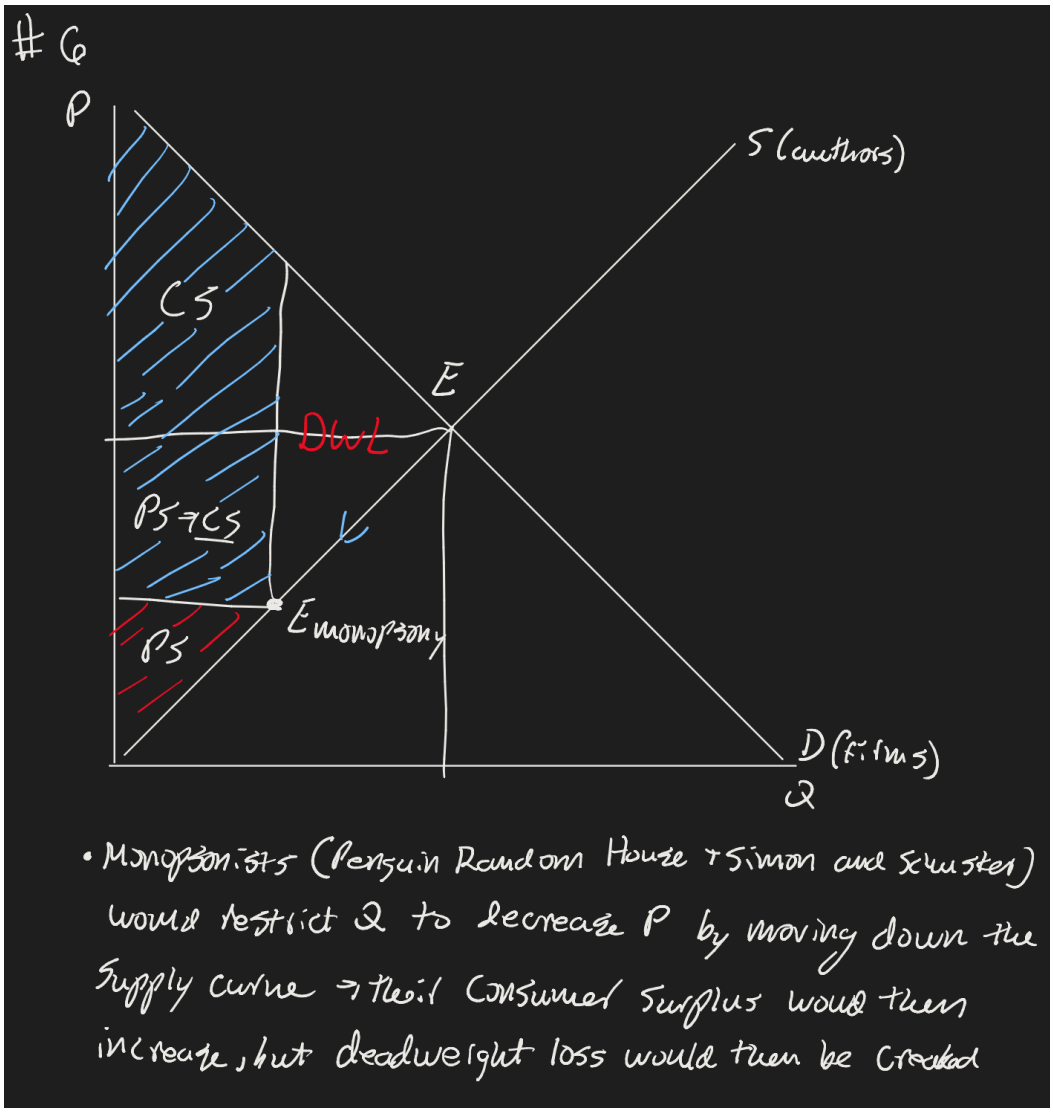
Part II: Monopsony: In 2022, two large publishers, Penguin Random House and Simon & Schuster, proposed merging to create a unified, larger publisher.

5. The U.S. Department of Justice blocked this potential merger by filing a civil lawsuit to block the merger of Penguin Random House and Simon & Schuster under Section 7 of the Clayton Act. The DOJ argued that this merger would create monopsony power, which would then result in lower advance payments to authors. The judge in the case, Florence Y. Pan, specifically noted

that the Clayton Act was designed to help prohibit mergers that would severely reduce competition, and thus contributed to the ruling. Additionally, Penguin Random House and Simon & Schuster at the time were each other's main competitors, which allowed for advances to be driven higher for authors, and if they were to have merged, these advances would decrease significantly as the competition would be eliminated.

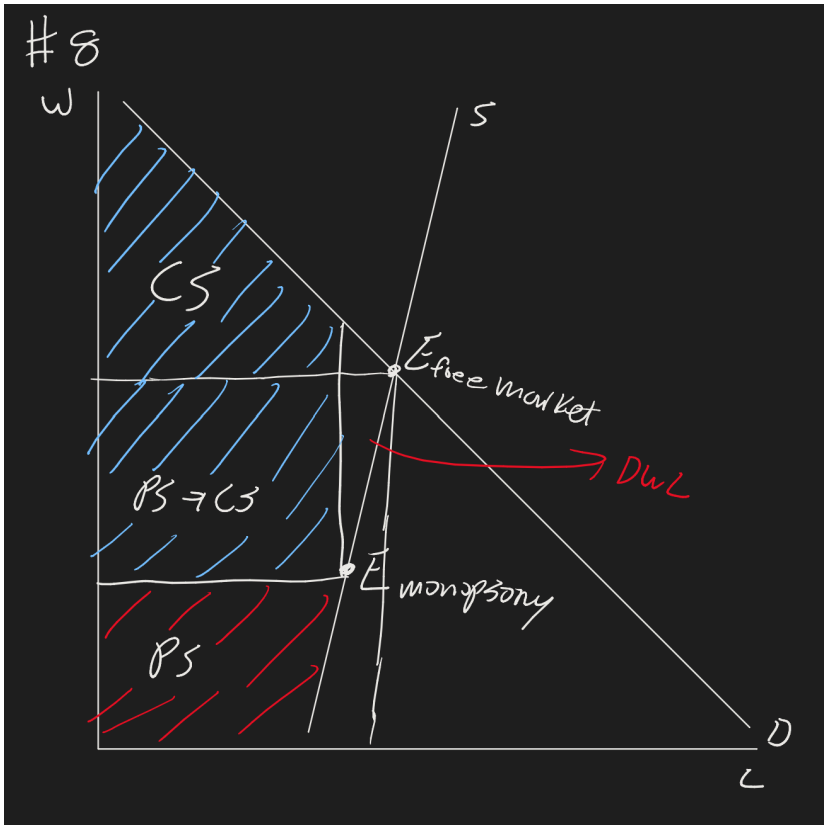
Berger, Lee F. "DOJ Blocks the Penguin Random House/Simon & Schuster Deal." *California Lawyers Association*, Accessed October 7, 2026. https://calawyers.org/antitrust-and-consumer-protection/doj-blocks-the-penguin-random-house-simon-schuster-deal/

6.



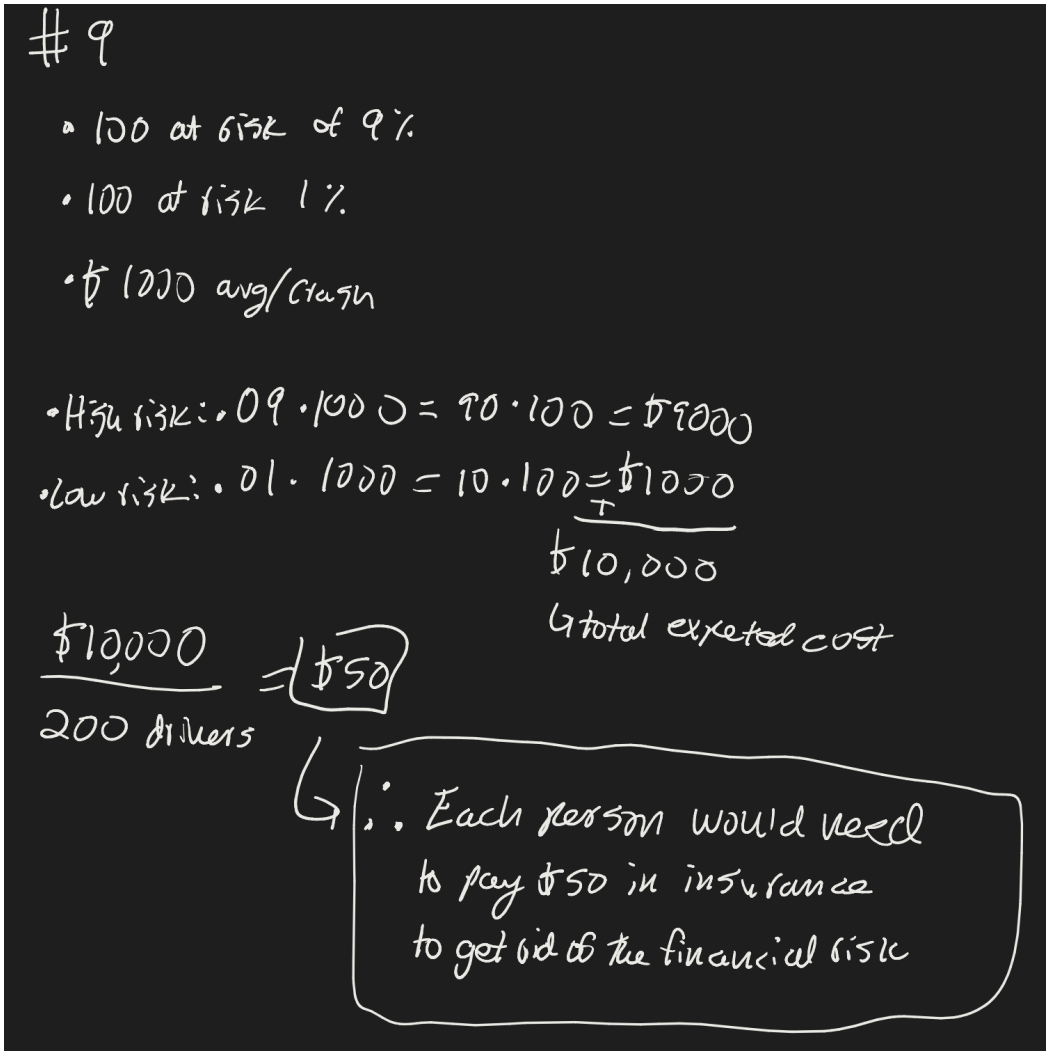
7. The specific price included on the vertical axis is the advance payments made to authors for their books/other writings, and instead of the retail price of a product, price here is the compensation/payment that an author is receiving for their work. The specific quantity included on the horizontal axis is the number of book contracts purchased by the publisher; it is essentially measuring the number of book deals being made/bought in the market. It would be accurate to call this a labor market because the demanders in the market are the firms (publishers), and they are demanding labor from the workers/suppliers (the authors writing books) for their creative works. This interpretation fits in with the case that blocked the merger, as monopsony power typically refers to market power held by buyers in the labor market, and the DOJ argued that the merger would harm workers (authors) by suppressing their wages (advances), making it a typical monopsony case. Therefore, P on the vertical axis would now be considered W (wages), and Q on the horizontal axis would now be considered L (labor).

8. If the supply curve is almost vertical or inelastic, this makes it much easier for the monopsonist to exploit their market power, as a large change in wages will not cause a large change in labor, meaning that authors essentially have to accept whatever wages/payment the monopsonist is willing to pay. Because of this, the consumer surplus region grows by a large amount, without creating much deadweight loss, as the laborers need to stay in the market. The graph below demonstrates how this can be done.



Part III: Car Insurance:

9.



10. In this insurance scheme, it would make sense for low-risk drivers to opt out. This is because, at a 1% chance of getting into an accident, their expected cost per person is $10, which is significantly lower than the cost of $50 they would have to pay in the insurance scheme. The price is $50 as the high-risk drivers drive the cost per person up, as they are more likely to get into an accident. This would therefore cause the low-risk drivers to pull out of the scheme, leaving only the high-risk drivers, and this would be the market failure of adverse selection. This causes the whole market to "unzip," as there are no drivers on the low end anymore, and the high-risk ones place more costs on the insurance company.

11. 49 states, as well as most developed countries, have chosen to correct this potential market failure by establishing an individual mandate for car insurance. This means that each individual

is required to have some sort of minimum insurance coverage in order to legally drive, and it works by forcing drivers to maintain active liability policies so victims in an accident can be properly compensated. This helps prevent adverse selection because people have to pay car insurance, and if they don't and get in an accident, they can have severe legal and financial consequences. Therefore, significantly fewer low-risk drivers pull out of the scheme because the tradeoff of paying the insurance is better than facing the other, more severe consequences, and the market doesn't unzip and only leave high-risk drivers. The one U.S. state that does not require official car insurance is New Hampshire, but they do have other rules regarding how much money one needs to have so they can cover any damages created in an accident where they are at fault.

Robinson, Heather. "Moral Hazard and Adverse Selection." *Lewis & Ellis Insurance Consultants & Solutions*, May 23, 2022. https://lewisellis.com/specialties/health-care-reform-policy/moral-hazard-and-adverse-selection/

Brenan, Rachel. "Car Insurance Laws in New Hampshire." *U.S. News & World Report,* October 5, 2026. https://www.usnews.com/insurance/auto/car-insurance-laws-new-hampshire

12. If insurers can determine who exactly is a high-risk driver (9% risk) and who exactly is a low-risk driver (1% risk), then the simplest way to eliminate adverse selection is to charge each person a rate that is their expected cost. This would mean the low-risk drivers would each be charged $10 (.01x1000) as their rate, and with 100 drivers, that comes to a total of $1000 generated from the low-risk drivers. Then, the high-risk drivers would each be charged $90 (.09x1000) as their rate, and with 100 drivers, that comes out to a total of $9000 generated from the high-risk drivers. This generates the same $10,000 of total revenue that would come from pooling everyone together, but it eliminates the risk of adverse selection, as the low-risk drivers are paying exactly what their expected cost is, and not $40 more as they did with a pooled rate. This only works if the companies can discriminate on who is who in terms of risk.