

Econ 1759: Pset 1

Cory Zimmerman

1.1

- Assets: $0.2 \cdot 0 + 0.2 \cdot 70 + 0.2 \cdot 80 + 0.4 \cdot 100 = 70$.
- Senior debt: $0.2 \cdot 0 + 0.8 \cdot 70 = 56$.
- Sub debt: $0.4 \cdot 0 + .2 \cdot 10 + 0.4 \cdot 20 = 10$.
- Equity: $0.6 \cdot 0 + 0.4 \cdot 10 = 4$.

1.2 Suppose the bank raises $n < 10$ units of equity.

- Senior debt: $0.2n + 0.8 \cdot 70 = 56 + 0.2n$.
- Sub debt: $0.2 \cdot 0 + 0.2n + 0.2 \cdot (10 + n) + 0.4 \cdot 20 = 10 + 0.4n$
- Equity: $0.6 \cdot 0 + 0.4 \cdot (10 + n) = 4 + 0.4n$.

60 percent of the value accrues to debt, and 40 percent accrues to equity. Say $n = 8$. Senior debt is now worth 57.6, sub debt is worth 13.2, and equity is worth 7.2. In this example, equity gets an increase of 3.2 for an investment of 8, which is a bad deal.

1.3 TO DO