Final Exam Bus Econ

1) $P = 1 - q_1 - q_2 \qquad c(q_1) = 0 \qquad c(q_2) < \frac{1}{2}$

$\pi_1(q_1, q_2) = q_1(1 - q_1 - q_2) - 0$

$\pi_2(q_1, q_2) = q_2(1 - q_1 - q_2) - cq_2$

we must assume that for nash equillibrium output (q_1^*, q_2^*)

$\pi(q_1^*, q_2^*) > \pi(q_1^*, q_2) \quad q_2 \geq 0$

$\pi(q_1^*, q_2^*) > \pi(q_1, q_2^*) \quad q_1 \geq 0$

$\frac{d\pi_1}{dq_1} = 0 = 1 - 2q_1 - q_2 \Rightarrow \boxed{q_1 = \frac{1 - q_2}{2}}$

$\frac{d\pi_2}{dq_2} = 0 = 1 - q_1 - 2q_2 - c \Rightarrow \boxed{q_2 = \frac{1 - q_1 - c}{2}}$

2) $q_2^c = \frac{1 - \frac{1-q_2}{2} - c}{2} \Rightarrow 2q_2 = 1 - \frac{1-q_2}{2} - c$

$\hookrightarrow 2q_2 + \frac{1-q_2}{2} = 1 - c \Rightarrow 4q_2 + 1 - q_2 = 2 - 2c$

$\hookrightarrow 3q_2 = 1 - 2c \Rightarrow \boxed{q_2^c = \frac{1-2c}{3}}$

$q_1^c = \frac{1 - \frac{1-2c}{3}}{2} \Rightarrow \boxed{q_1^c = \frac{1+c}{3}}$

$\pi_1^c = \left(1 - \left(\frac{1+c}{3}\right) - \left(\frac{1-2c}{3}\right)\right)\left(\frac{1+c}{3}\right) - 0 \Rightarrow \boxed{\frac{(1+c)^2}{9}}$

$\pi_2^c = \left(1 - \left(\frac{1+c}{3}\right) - \left(\frac{1-2c}{3}\right)\right)\left(\frac{1-2c}{3}\right) - \left(\frac{1-2c}{3}\right)c \Rightarrow \boxed{\frac{(1-2c)^2}{9}}$

3) The cost minimizing way to share production between the firms is to collude on the new technology allowing F2 to reach $MC = 0$ and then have F2 pay F1 a reasonable part of the profit earned

4) $\pi_1(q_1, q_2) = q_1(1 - q_1 - q_2) - 0 \Rightarrow \frac{d\pi_1}{dq_1} = 0 = \boxed{q_1 = \frac{1-q_2}{2}}$

$\pi_2(q_1, q_2) = q_2(1 - q_1 - q_2) - 0 \Rightarrow \frac{d\pi}{dq_2} = 0 = \boxed{q_2 = \frac{1-q_1}{2}}$

$q_1 = \frac{1 - \frac{1-q_1}{2}}{2} \Rightarrow 4q_1 = 2 - 1 + q_1 \Rightarrow \boxed{q_1 = \frac{1}{3}}$

$q_2 = \frac{1 - \frac{1}{3}}{2} \Rightarrow 6q_2 = 3 - 1 = \boxed{q_2 = 1/3}$

$\pi_1^c = \frac{1}{3}\left(\frac{2}{3}\right) = \frac{2}{9}$

$\pi_2^c = \frac{1}{3}\left(\frac{2}{3}\right) = \frac{2}{9}$

5) Since for F2 profit jumps from $\frac{(1-2c)^2}{9}$ to $2/9$, it is willing to pay a fraction to F1. If we assume $c \approx 1/2$ (given)

F2's profit goes from $\frac{(1-2(1/2))^2}{9} \approx 0$ to $2/9$

whereas F1's profit goes from $\frac{(1+1/2)^2}{9} \approx 2.25/9$ to $2/9$

as such, we can expect F2 to pay at least $0.25/9$ in remuneration

or more formally a maximum of $2/9 - \frac{(1-4c+2c^2)}{9} \Rightarrow 1 - 4c + 2c^2$

2) $U = \theta + vn - p$ p = price θ = r.v. $U[0,1]$ $v > 0$ $n = N$

1) $n = n^e$ Indifferent: $U = 0$

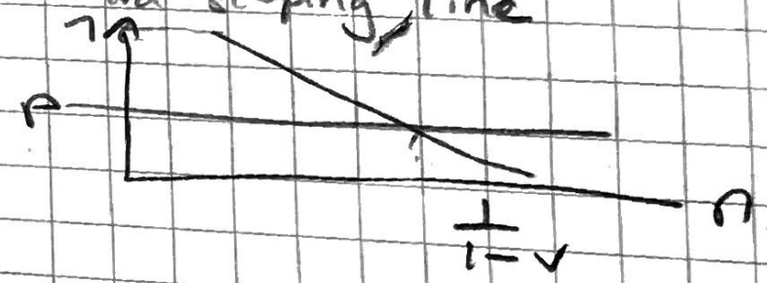
rational expectations

$\Rightarrow 0 = \theta + vn^e - p \Rightarrow \theta = p - vn^e$

2) If all consumers with a type larger than θ will buy the good; $\theta = 1 - n$
and $n^e = n_A + \gamma n_B$; $p_i = 1 - (q_A + q_B) + v[q_A + \gamma q_B]$ where $U = \theta + vn^e - p$

3) when $v < 1$ the demand function is a downward sloping line
The stability occurs when $n = p$

The equilibrium is when
$n = D = \frac{1-p}{1-v}$

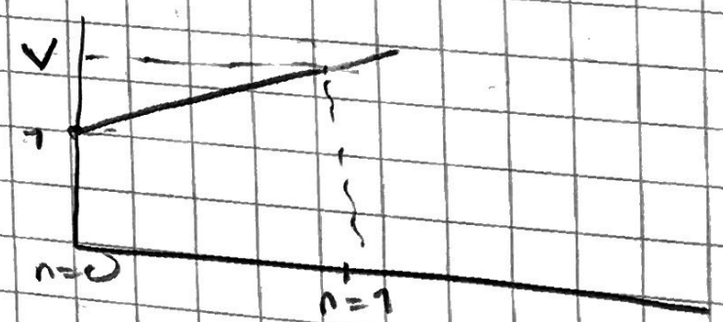


if a customer leaves the network will increas

4) The inverse demand would be positively sloped

$n = \frac{1}{1-v} - \frac{1}{1-v} p$

it is not stable when $v > 1$
(goes to infinity)



3) market share up to 70% 3,4 B€
M6 earns 1,50€ dividend 647m€ so bouygues ↑ 30% RTL ↓ 16%
4/12 bouygues chairs ; 3/12 RTL = 1/2 + CEO from RTL saves VAT 250-350M€

1) Evidently the biggest impact will be in the broadcasting industry. (aka French television advertising market)
If the deal goes through, having a single entity with 70% of the market share creates room for anti-competitive behaviors in an otherwise (relatively) standard market.
The other main market to be impacted is that of the entertainment industry. TF1 & M6 claim that in order to compete with its main competitors Netflix, Amazon, Disney, etc, it must merge to create a "guarantee of the long-term independence of french content, and local content that is diversified, high quality, and in the public's interest".

The main position on the French television advertising market is that this would create good local content, create a national leader and allow consolidation within European markets. However this would heavily impact local broadcasters

2) The risks associated w/ the merger include

1) Monopoly Behavior: Price discrimination, gatekeeping, foreclosure

2) Extending monopoly on adjacent markets: entertainment, media, advertising

3) Collusion: could lead to cost slashing which would force competitors out of market

4) Control over spread of information: creates dissonance, mass ignorance, privacy

5) lack of diverse thought: echo chambers, decreased innovation

3) benefits include:

1) network effects: for multihoming customers

2) decreased costs: reducing by 250-350M€

3) employment opportunities: by the merger spreading. Could also be negative

4) National leader to combat internationally: against Netflix, etc

5) market of attention

4) If I was the decision maker, I would NOT allow this merger. Although I think it is important to create a French front for the international streaming wars, the risks from monopolistic events in France/domestically will outharm the intl. gain

Following what we learned from TSM, the new merger could create multihoming customer based revenue, but because their argument for local customers relies on the gain from a much fiercer intl market, the TOH, and risks of how this monopoly would take advantage of local consumers, would be too dangerous to allow. Especially if the law is already breached.

Using the HHI index: $70^2 + 30^2 = 5{,}800$ which tend towards the monopoly side on a scale of 0 to 10,000