Content Moderation in Presence of Fringe Platforms

Iván Rendo (TSE)



- Increased interest in online hateful/extreme/unsafe content:
 - e.g. Jiménez-Durán (2022) links online hate to offline violence
 - e.g. 25% of terrorists radicalized exclusively online
 - e.g. racism, bullying, food disorders...

- Increased interest in online hateful/extreme/unsafe content:
 - e.g. Jiménez-Durán (2022) links online hate to offline violence
 - e.g. 25% of terrorists radicalized exclusively online
 - e.g. racism, bullying, food disorders...



→ EU Response: Digital Services Act

- Increased interest in online hateful/extreme/unsafe content:
 - e.g. Jiménez-Durán (2022) links online hate to offline violence
 - e.g. 25% of terrorists radicalized exclusively online
 - e.g. racism, bullying, food disorders...



→ EU Response: Digital Services Act

- Increased interest in online hateful/extreme/unsafe content:
 - e.g. Jiménez-Durán (2022) links online hate to offline violence
 - e.g. 25% of terrorists radicalized exclusively online
 - e.g. racism, bullying, food disorders...



→ EU Response: Digital Services Act

But... users could migrate to small (fringe) platforms!

Rizzi (2023)

- Increased interest in online hateful/extreme/unsafe content:
 - e.g. Jiménez-Durán (2022) links online hate to offline violence
 - e.g. 25% of terrorists radicalized exclusively online
 - e.g. racism, bullying, food disorders...



→ EU Response: Digital Services Act

- Rizzi (2023)
 - → ↑ moderation on Twitter = ↑ migration to fringe platforms

- Increased interest in online hateful/extreme/unsafe content:
 - e.g. Jiménez-Durán (2022) links online hate to offline violence
 - e.g. 25% of terrorists radicalized exclusively online
 - e.g. racism, bullying, food disorders...



EU Response: Digital Services Act

- Rizzi (2023)
 - → ↑ moderation on Twitter = ↑ migration to fringe platforms
- ~ 6% of the US citizens use fringe platforms: Parler, Truth...

- Increased interest in online hateful/extreme/unsafe content:
 - e.g. Jiménez-Durán (2022) links online hate to offline violence
 - e.g. 25% of terrorists radicalized exclusively online
 - e.g. racism, bullying, food disorders...



EU Response: **Digital Services Act**

- Rizzi (2023)
 - → ↑ moderation on Twitter = ↑ migration to fringe platforms
- ~ 6% of the US citizens use fringe platforms: Parler, Truth...
- Duch-Brown's view: Constant unsafe content across time
 - → BUT more impact today: everyone in the same large platforms

Platforms' competition model to analyze the **net effect** of **Content Moderation on the level of Content Unsafety** while **allowing** for **Migration*** to a **fringe** platform

Platforms' competition model to analyze the net effect of

Content Moderation on the level of Content Unsafety

while **allowing** for **Migration*** to a **fringe** platform

POV of large mainstream platform (or the regulator)

Platforms' competition model to analyze the net effect of

Content Moderation on the level of Content Unsafety

while **allowing** for **Migration*** to a **fringe** platform

POV of large mainstream platform (or the regulator)

Fringe platform taking as given (quite realistic!)

Platforms' competition model to analyze the **net effect** of

Content Moderation on the level of Content Unsafety

while **allowing** for **Migration*** to a **fringe** platform

POV of large mainstream platform (or the regulator)

Fringe platform taking as given (quite realistic!)

Questions:

- → How migration is affected by content moderation policies
- → How unsafe content is affected by migration
- → What incentives do platforms have to self-regulate
- → Characterize the **optimal regulation** to **minimize** unsafe content

Users:

- Create + read content on platforms
- Common preferences for network size + quality of the platform
- Heterogeneous preferences for unsafe content

Users:

- Create + read content on platforms
- Common preferences for network size + quality of the platform
- Heterogeneous preferences for unsafe content

2 Asymmetric **Platforms**:

- A Moderated one, higher quality platform: moderates (bans) content
 - Maximizes revenues from advertisers (averse to unsafe content)
- An Unmoderated one, lower quality platform: no content moderation

Users:

- Create + read content on platforms
- Common preferences for network size + quality of the platform
- Heterogeneous preferences for unsafe content

2 Asymmetric **Platforms**:

Twitter, Instagram, Facebook

- A Moderated one, higher quality platform: moderates (bans) content
 - Maximizes revenues from advertisers (averse to unsafe content)
- An Unmoderated one, lower quality platform: no content moderation 8Chan, Truth, Parler

Users:

- Create + read content on platforms
- Common preferences for network size + quality of the platform
- Heterogeneous preferences for unsafe content

2 Asymmetric **Platforms**:

Twitter, Instagram, Facebook

- A Moderated one, higher quality platform: moderates (bans) content
 - Maximizes revenues from advertisers (averse to unsafe content)
- An Unmoderated one, lower quality platform: no content moderation 8Chan, Truth, Parler
- Endogenous composition ~ migration
 - Users' trade-off: network size, quality, (un)safe content
 - Moderated platform's trade-off: participation, unsafe content

Preview of the Main Results

Preview of the Main Results

1. Prevalence of unsafe content:

- i. **U-shaped** in moderation intensity, w **large** network effects
- ii. **Decreasing** in moderation intensity, w **small** network effects

Preview of the Main Results

1. Prevalence of unsafe content:

- i. **U-shaped** in moderation intensity, w large network effects
- ii. Decreasing in moderation intensity, w small network effects

2. Policy:

- Incentives misalignment b/ platform & regulator (min unsafe content)
- Imposing a minimal content moderation intensity (policy):
 - i. Only useful with small network effects (or high competition)
 - ii. Otherwise, always **superfluous** (not binding)

Roadmap

- I. Model
 - Equilibrium
- **II. Policy Discussion**
- III. Extensions
 - Multihoming
 - Radicalization & Offline Violence

THEORY

• A unit mass of **users**, heterogeneous in their preferences for unsafe content: $\theta_i \sim U(0,1)$

- A unit mass of **users**, heterogeneous in their preferences for unsafe content: $\theta_i \sim U(0,1)$
- 2 platforms j = 1,2
 - with $K_j = \max$ unsafety level allowed $(K_2 = 1)$

- A unit mass of **users**, heterogeneous in their preferences for unsafe content: $\theta_i \sim U(0,1)$
- 2 platforms j = 1,2
 - with $K_j = \max$ unsafety level allowed

$$(K_2 = 1)$$

- User i in platform j creates 1 piece of content of unsafety θ_i^C

- A unit mass of **users**, heterogeneous in their preferences for unsafe content: $\theta_i \sim U(0,1)$
- 2 platforms j = 1,2
 - with $K_j = \max$ unsafety level allowed

$$(K_2 = 1)$$

• User i in platform j creates 1 piece of content of unsafety θ_i^C $\theta_i^C = \min\{\theta_i, K_j\}$

- A unit mass of **users**, heterogeneous in their preferences for unsafe content: $\theta_i \sim U(0,1)$
- 2 platforms j = 1,2
 - with $K_j = \max$ unsafety level allowed

$$(K_2 = 1)$$

- User i in platform j creates 1 piece of content of unsafety θ_i^C $\theta_i^C = \min\{\theta_i, K_i\}$
- User i in platform j **reads** a random sample of the content, of avg unsafety $\bar{\theta}_j$

$$\bar{\theta}_j = \int_{i \in j} \theta_i^C \mathrm{d}i$$
 = average unsafety of content in platform j

• Platform 1, moderated, is intrinsically better than 2, unmoderated

- Platform 1, moderated, is intrinsically better than 2, unmoderated
- Utilities of user i joining j = 1,2 are defined as:

- Platform 1, moderated, is intrinsically better than 2, unmoderated
- Utilities of user i joining j = 1,2 are defined as:

$$U_1(\theta_i) = \alpha N_1 - |\theta_i - \bar{\theta}_1| + \Delta$$

$$U_2(\theta_i) = \alpha N_2 - |\theta_i - \bar{\theta}_2|$$

- Platform 1, moderated, is intrinsically better than 2, unmoderated
- Utilities of user i joining j=1,2 are defined as:

Users in the Platform

$$U_1(\theta_i) = \alpha N_1 - |\theta_i - \bar{\theta}_1| + \Delta$$

$$U_2(\theta_i) = \alpha N_2 - |\theta_i - \bar{\theta}_2|$$

- Platform 1, moderated, is intrinsically better than 2, unmoderated
- Utilities of user i joining j = 1,2 are defined as:

Users in the Platform

Average "Unsafety" of the Content

$$U_1(\theta_i) = \alpha N_1 - |\theta_i - \bar{\theta}_1| + \Delta$$

$$U_2(\theta_i) = \alpha N_2 - |\theta_i - \bar{\theta}_2|$$

- Platform 1, moderated, is intrinsically better than 2, unmoderated
- Utilities of user i joining j = 1,2 are defined as:

Users in the Platform

Average "Unsafety" of the Content

$$U_1(\theta_i) = \alpha N_1 - |\theta_i - \bar{\theta}_1| + \Delta$$

$$U_2(\theta_i) = \alpha N_2 - |\theta_i - \bar{\theta}_2|^{ ext{Quality Premium of the Moderated}}$$

- Platform 1, moderated, is intrinsically better than 2, unmoderated
- Utilities of user i joining j = 1,2 are defined as:

Users in the Platform

Average "Unsafety" of the Content

$$U_1(\theta_i) = \alpha N_1 - |\theta_i - \bar{\theta}_1| + \Delta$$

$$U_2(\theta_i) = \alpha N_2 - |\theta_i - \bar{\theta}_2|^{\text{Quality Premium of the Moderated}}$$

Strength of network effects

- Platform 1, moderated, is intrinsically better than 2, unmoderated
- Utilities of user i joining j=1,2 are defined as:

Users in the Platform

Average "Unsafety" of the Content

$$U_1(\theta_i) = \alpha N_1 - |\theta_i - \bar{\theta}_1| + \Delta$$

$$U_2(\theta_i) = \alpha N_2 - \|\theta_i - \bar{\theta}_2\|^{ ext{Quality Premium of the Moderated}}$$

Strength of network effects

User i joins (only!) the platform that maximizes their utility

- Platform 1, moderated, is intrinsically better than 2, unmoderated
- Utilities of user i joining j=1,2 are defined as:

Users in the Platform

Average "Unsafety" of the Content

$$U_1(\theta_i) = \alpha N_1 - |\theta_i - \bar{\theta}_1| + \Delta$$

$$U_2(\theta_i) = \alpha N_2 - \|\theta_i - \bar{\theta}_2\|^{ ext{Quality Premium of the Moderated}}$$

Strength of network effects

User i joins (only!) the platform that maximizes their utility

Rk: No outside option!

Buy a fixed amount of ads in the moderated platform (1)

Buy a fixed amount of ads in the **moderated** platform (1)

Are averse to unsafe content

Buy a fixed amount of ads in the moderated platform (1)

Are averse to unsafe content

Price of ads: $1 - b\bar{\theta}_1$

Buy a fixed amount of ads in the **moderated** platform (1)

Are averse to unsafe content

Price of ads: $1 - b\bar{\theta}_1$

Moderated Platform

Buy a fixed amount of ads in the moderated platform (1)

Are averse to unsafe content

Price of ads:
$$1 - b\bar{\theta}_1$$

Moderated Platform

The moderated platform (1) chooses a content moderation policy

$$K := K_1 \in [0,1]$$
: perfectly and costlessly bans any content $\theta_i > K$

Buy a fixed amount of ads in the moderated platform (1)

Are averse to unsafe content

Price of ads:
$$1 - b\bar{\theta}_1$$

Moderated Platform

The moderated platform (1) chooses a content moderation policy

$$K:=K_1\in[0,1]$$
: perfectly and costlessly bans any content $\theta_i>K$

Platform (1) maximizes revenues:

$$\Pi(K) = N_1(K) \times (1 - b\bar{\theta}_1(K))$$

Buy a fixed amount of ads in the moderated platform (1)

Are averse to unsafe content

Price of ads:
$$1 - b\bar{\theta}_1$$

Moderated Platform

The moderated platform (1) chooses a content moderation policy

$$K:=K_1\in[0,1]$$
: perfectly and costlessly bans any content $\theta_i>K$

Platform (1) maximizes revenues:

$$\Pi(K) = N_1(K) \times (1 - b\bar{\theta}_1(K))$$

users in platform

Buy a fixed amount of ads in the moderated platform (1)

Are averse to unsafe content

Price of ads: $1 - b\bar{\theta}_1$

Moderated Platform

The moderated platform (1) chooses a content moderation policy

$$K:=K_1\in[0,1]$$
: perfectly and costlessly bans any content $\theta_i>K$

Platform (1) maximizes revenues:

$$\Pi(K) = N_1(K) \times (1 - b\bar{\theta}_1(K))$$
users in platform

Price of ads

Buy a fixed amount of ads in the moderated platform (1)

Are averse to unsafe content

Price of ads: $1 - b\bar{\theta}_1$

Moderated Platform

The moderated platform (1) chooses a content moderation policy

$$K:=K_1\in[0,1]$$
: perfectly and costlessly bans any content $\theta_i>K$

Platform (1) maximizes revenues:

Advertisers aversion to unsafe content

$$\Pi(K) = N_1(K) \times (1 - b\bar{\theta}_1(K))$$
Price of ads
users in platform

Buy a fixed amount of ads in the moderated platform (1)

Are averse to unsafe content

Price of ads: $1 - b\bar{\theta}_1$

Moderated Platform

The moderated platform (1) chooses a content moderation policy

$$K:=K_1\in [0,1]$$
: perfectly and costlessly bans any content $\theta_i>K$

Platform (1) maximizes revenues:

Advertisers aversion to unsafe content

$$\Pi(K) = N_1(K) \times (1 - b\overline{\theta}_1(K))$$
Price of ads

users in platform

Average content unsafety

Buy a fixed amount of ads in the moderated platform (1)

Are averse to unsafe content

Price of ads: $1 - b\bar{\theta}_1$

Moderated Platform

The moderated platform (1) chooses a content moderation policy

$$K:=K_1\in[0,1]$$
: perfectly and costlessly bans any content $\theta_i>K$

Platform (1) maximizes revenues:

Advertisers aversion to unsafe content

$$\Pi(K) = N_1(K) \times (1 - b\bar{\theta}_1(K))$$
 Average content unsafety Price of ads

...platform (2) just exists with $K_2=1$

1. The moderated platform (1) chooses the content moderation policy K and commits to it

- 1. The moderated platform (1) chooses the content moderation policy K and commits to it
- 2.All the users simultaneously choose whether to join platform (1) xor (2) depending on their θ_i

- 1. The moderated platform (1) chooses the content moderation policy K and commits to it
- 2.All the users simultaneously choose whether to join platform (1) xor (2) depending on their θ_i
- 3. Agents derive the corresponding payoffs from the composition of the social network

Threshold Equilibrium (subgame for given K)

User i joins platform (1) iff $\theta_i < t^*$, otherwise, they join (2)

Threshold Equilibrium (subgame for given K)

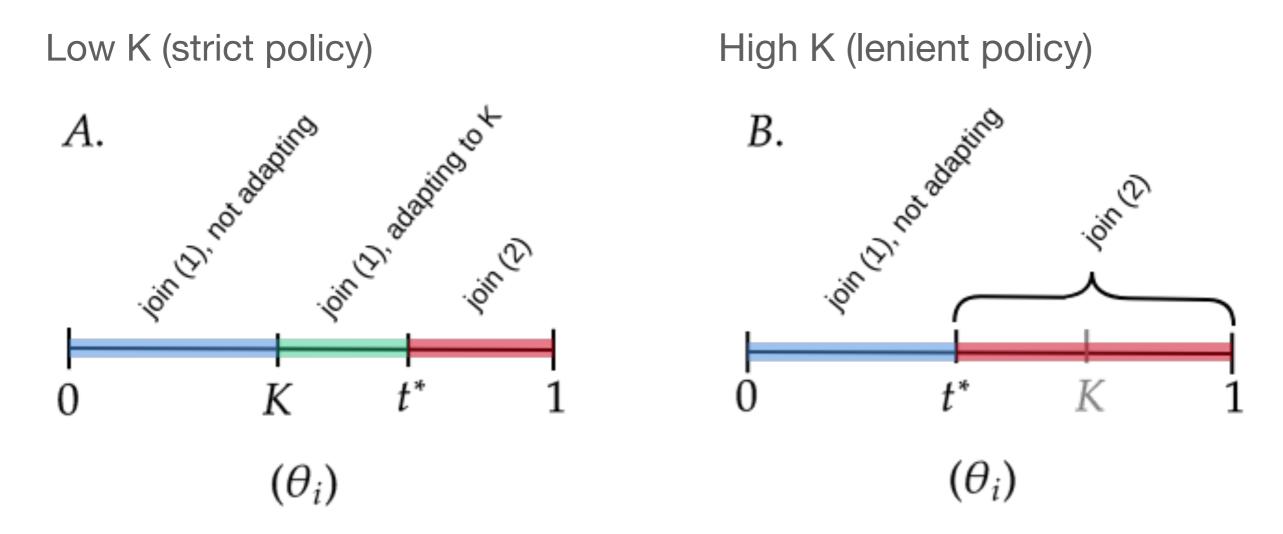
User i joins platform (1) iff $\theta_i < t^*$, otherwise, they join (2)

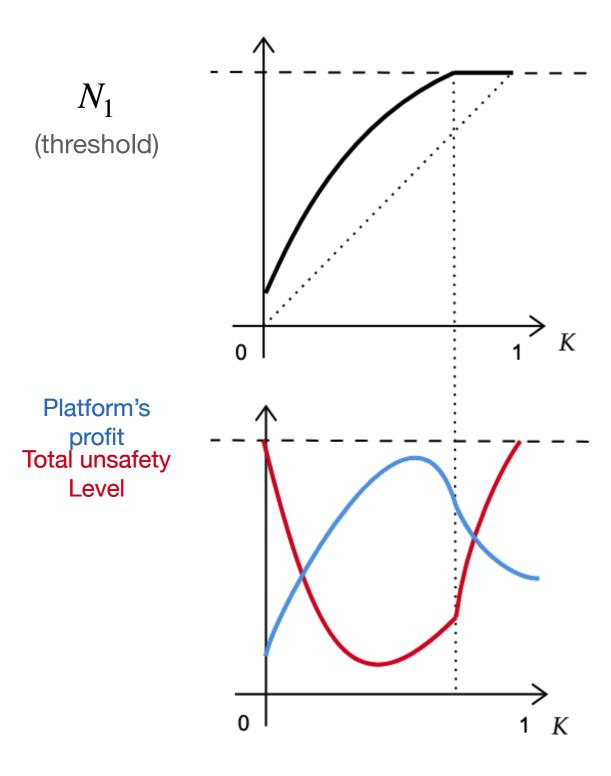
Under some assumptions on α , Δ ; for any K, there exist a **unique threshold equilibrium**, which takes one of these two forms:

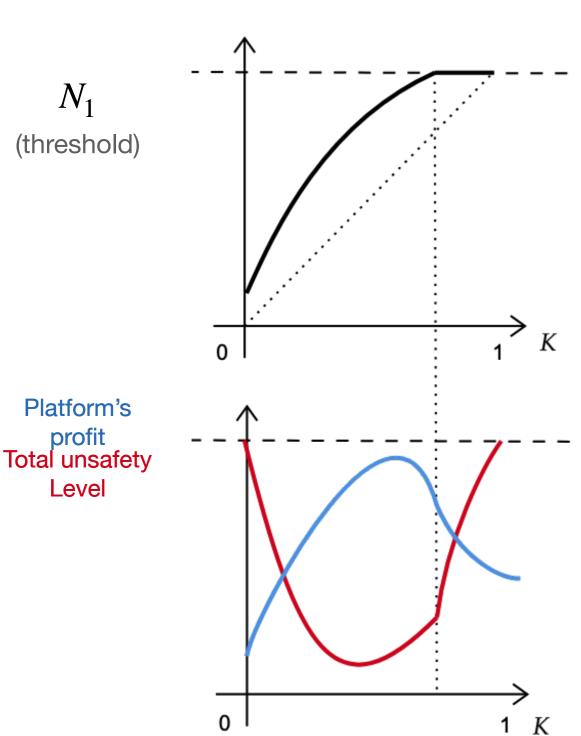
Threshold Equilibrium (subgame for given K)

User i joins platform (1) iff $\theta_i < t^*$, otherwise, they join (2)

Under some assumptions on α , Δ ; for any K, there exist a **unique threshold equilibrium**, which takes one of these two forms:





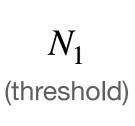


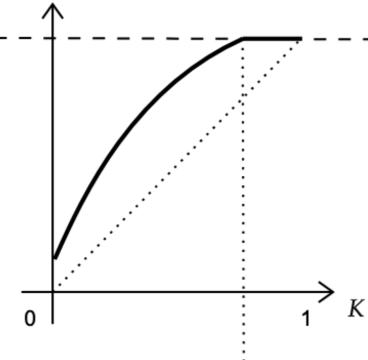
$$\uparrow \alpha, \uparrow \Delta$$

$$\frac{\mathrm{d}^2 N_1}{\mathrm{d} K \mathrm{d} \alpha} > 0$$

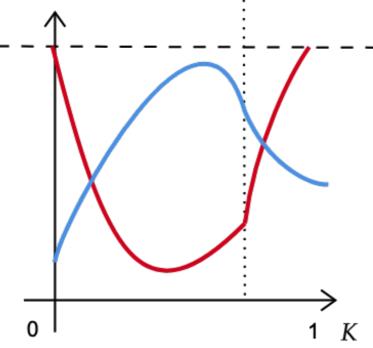
~ more attractive moderated platform (market could tip!)

Content moderation affects participation more with high network effects





Platform's profit
Total unsafety
Level



$$\uparrow \alpha, \uparrow \Delta$$

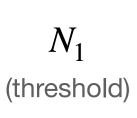
~ more attractive moderated platform (market could tip!)

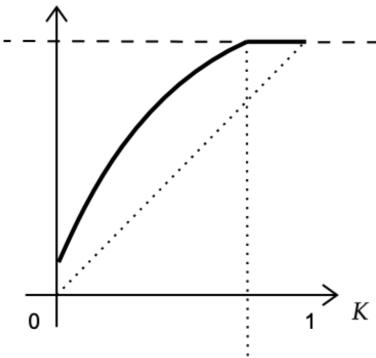
$$\frac{\mathrm{d}^2 N_1}{\mathrm{d} K \mathrm{d} \alpha} > 0$$

Content moderation affects participation more with high network effects

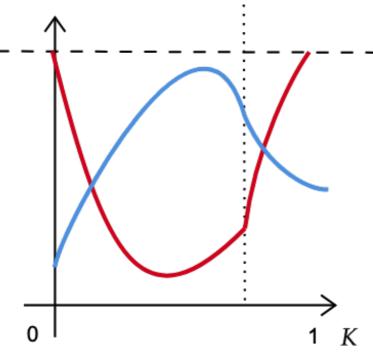
In general, total unsafety non-monotonic!

Key: mass of users willing to self-censor varies





Platform's profit Total unsafety Level



$$\uparrow \alpha, \uparrow \Delta$$

~ more attractive moderated platform (market could tip!)

$$\frac{\mathrm{d}^2 N_1}{\mathrm{d} K \mathrm{d} \alpha} > 0$$

Content moderation affects participation more with high network effects

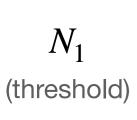
In general, total unsafety non-monotonic!

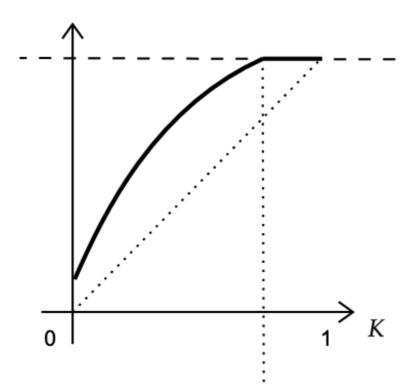
Key: mass of users willing to self-censor varies

Incentives misalignement:

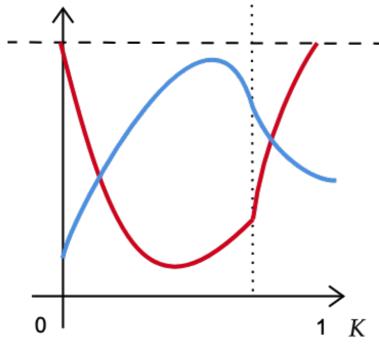
Regulator: Unsafety (and participation) in both platforms

Platform: Unsafety and participation in its platform





Platform's profit Total unsafety Level



$$\uparrow \alpha, \uparrow \Delta$$

~ more attractive moderated platform (market could tip!)

$$\frac{\mathrm{d}^2 N_1}{\mathrm{d} K \mathrm{d} \alpha} > 0$$

Content moderation affects participation more with high network effects

In general, total unsafety non-monotonic!

Key: mass of users willing to self-censor varies

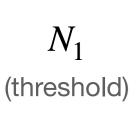
Incentives misalignement:

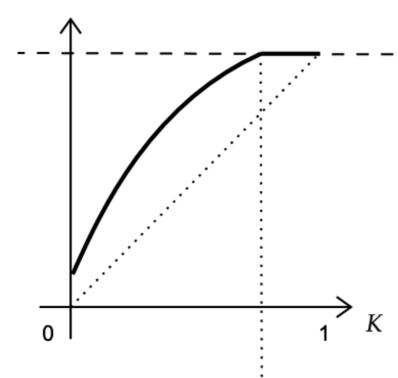
Regulator: Unsafety (and participation) in both platforms

Platform: Unsafety and participation in its platform

High Network Effects: Stricter or Lenient Moderation?

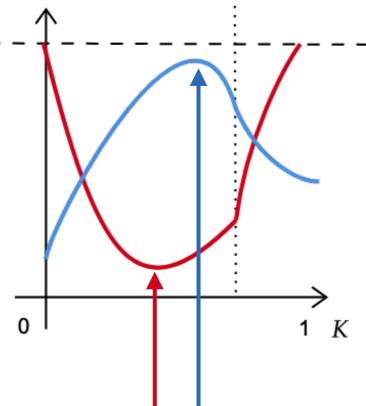
Regulator: Lenient! wants users to self-censor IN the moderated platform





Platform's profit Total unsafety Level

Optimal for Platform
Optimal for Regulator



 $\uparrow \alpha, \uparrow \Delta$

~ more attractive moderated platform (market could tip!)

$$\frac{\mathrm{d}^2 N_1}{\mathrm{d} K \mathrm{d} \alpha} > 0$$

Content moderation affects participation more with high network effects

In general, total unsafety non-monotonic!

Key: mass of users willing to self-censor varies

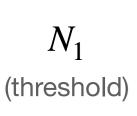
Incentives misalignement:

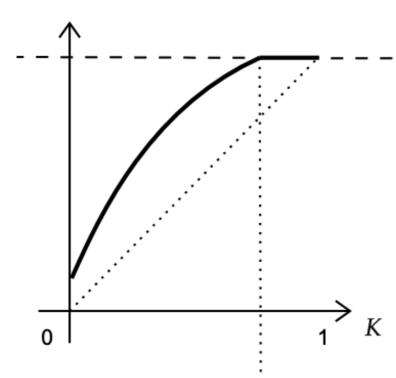
Regulator: Unsafety (and participation) in both platforms

Platform: Unsafety and participation in its platform

High Network Effects: Stricter or Lenient Moderation?

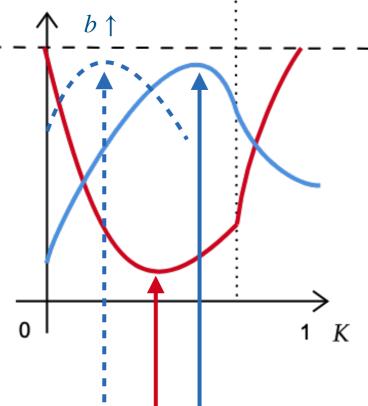
Regulator: Lenient! wants users to self-censor IN the moderated platform





Platform's profit
Total unsafety
Level

Optimal for Platform
Optimal for Regulator



 $\uparrow \alpha, \uparrow \Delta$

~ more attractive moderated platform (market could tip!)

$$\frac{\mathrm{d}^2 N_1}{\mathrm{d} K \mathrm{d} \alpha} > 0$$

Content moderation affects participation more with high network effects

In general, total unsafety non-monotonic!

Key: mass of users willing to self-censor varies

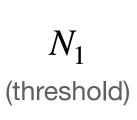
Incentives misalignement:

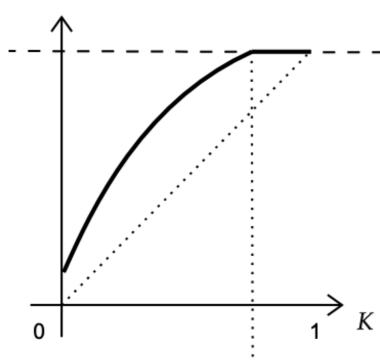
Regulator: Unsafety (and participation) in both platforms

Platform: Unsafety and participation in its platform

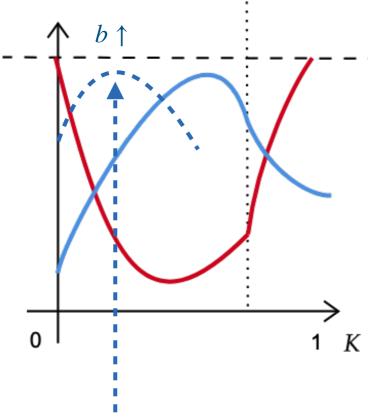
High Network Effects: Stricter or Lenient Moderation?

Regulator: Lenient! wants users to self-censor IN the moderated platform





Platform's profit Total unsafety Level



$$\uparrow \alpha, \uparrow \Delta$$

~ more attractive moderated platform (market could tip!)

$$\frac{\mathrm{d}^2 N_1}{\mathrm{d} K \mathrm{d} \alpha} > 0$$

Content moderation affects participation more with high network effects

In general, total unsafety non-monotonic!

Key: mass of users willing to self-censor varies

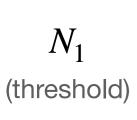
Incentives misalignement:

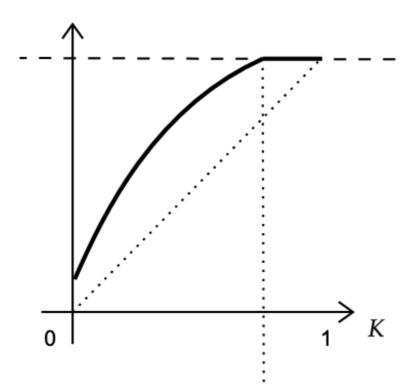
Regulator: Unsafety (and participation) in both platforms

Platform: Unsafety and participation in its platform

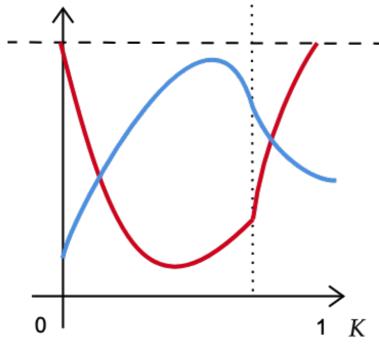
High Network Effects: Stricter or Lenient Moderation?

Regulator: Lenient! wants users to self-censor IN the moderated platform





Platform's profit Total unsafety Level



$$\uparrow \alpha, \uparrow \Delta$$

~ more attractive moderated platform (market could tip!)

$$\frac{\mathrm{d}^2 N_1}{\mathrm{d} K \mathrm{d} \alpha} > 0$$

Content moderation affects participation more with high network effects

In general, total unsafety non-monotonic!

Key: mass of users willing to self-censor varies

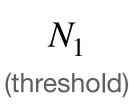
Incentives misalignement:

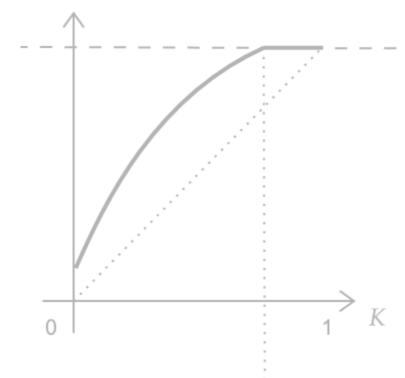
Regulator: Unsafety (and participation) in both platforms

Platform: Unsafety and participation in its platform

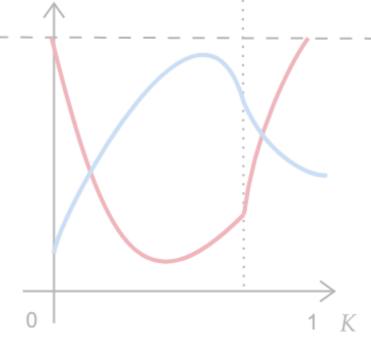
High Network Effects: Stricter or Lenient Moderation?

Regulator: Lenient! wants users to self-censor IN the moderated platform





Platform's profit Total unsafety Level



$$\uparrow \alpha, \uparrow \Delta$$

~ more attractive moderated platform (market could tip!)

$$\frac{\mathrm{d}^2 N_1}{\mathrm{d} K \mathrm{d} \alpha} > 0$$

Content moderation affects participation more with high network effects

In general, total unsafety non-monotonic!

Key: mass of users willing to self-censor varies

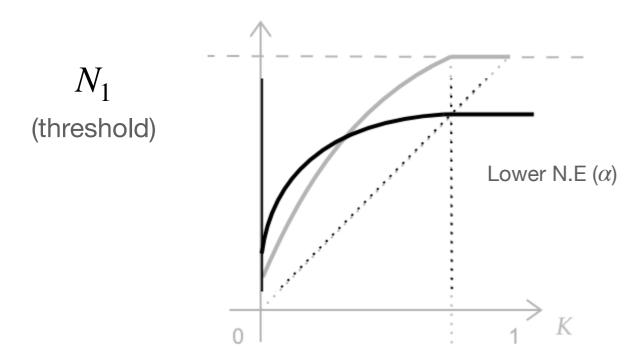
Incentives misalignement:

Regulator: Unsafety (and participation) in both platforms

Platform: Unsafety and participation in its platform

High Network Effects: Stricter or Lenient Moderation?

Regulator: Lenient! wants users to self-censor IN the moderated platform



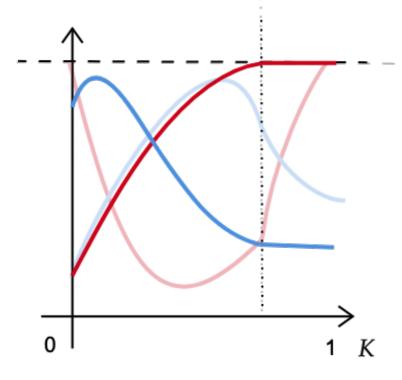
 $\uparrow \alpha, \uparrow \Delta$

~ more attractive moderated platform (market could tip!)

$$\frac{\mathrm{d}^2 N_1}{\mathrm{d} K \mathrm{d} \alpha} > 0$$

Content moderation affects participation more with high network effects

Platform's profit Total unsafety Level



In general, total unsafety non-monotonic!

Key: mass of users willing to self-censor varies

Incentives misalignement:

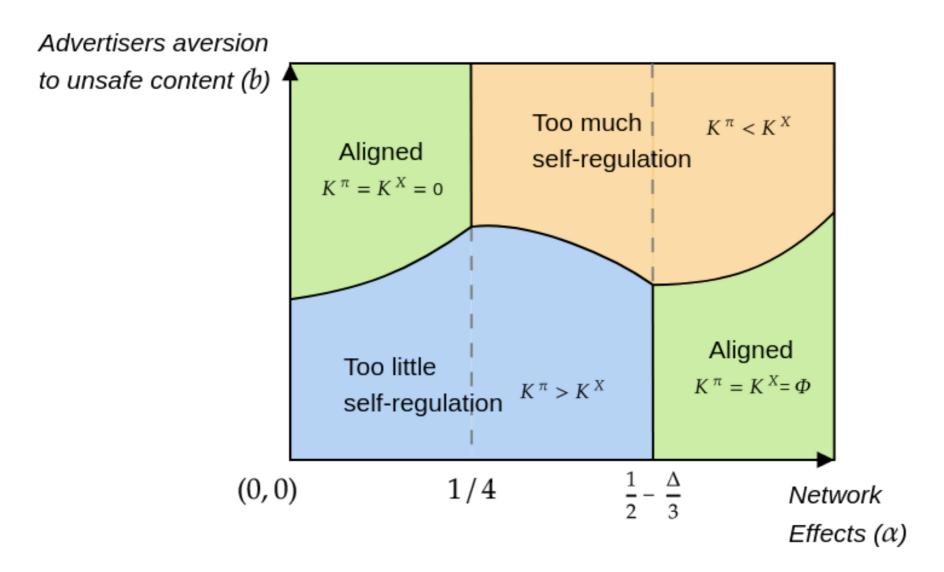
Regulator: Unsafety (and participation) in both platforms

Platform: Unsafety and participation in its platform

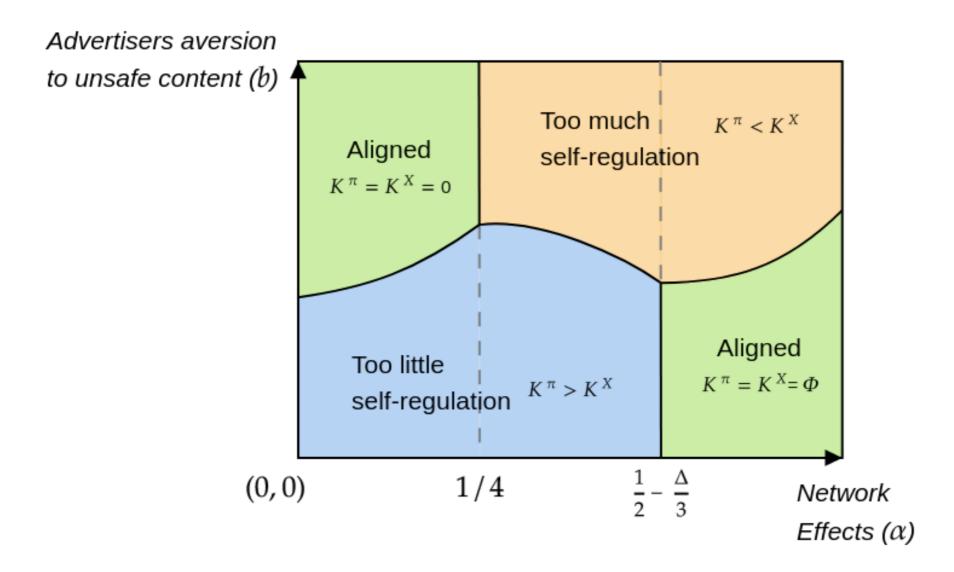
High Network Effects: Stricter or Lenient Moderation?

Regulator: Lenient! wants users to self-censor IN the moderated platform

Policy (to min unsafe content)



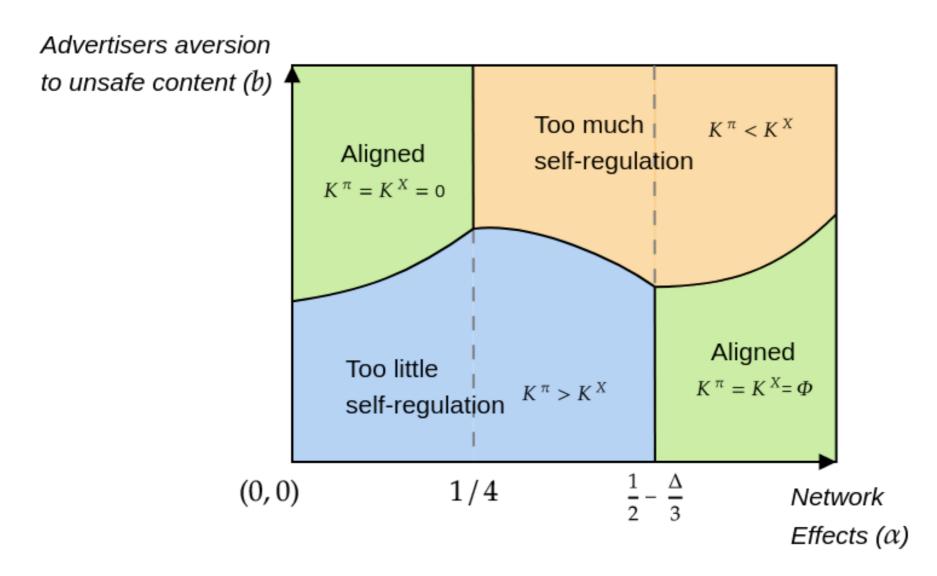
Policy (to min unsafe content)



Blue Area:

Beneficial for the regulator to impose a minimal moderation policy

Policy (to min unsafe content)



Blue Area:

Beneficial for the regulator to impose a minimal moderation policy

Orange Area: such a policy wouldn't bind.

Regulators would like to impose a maximal moderation policy to attract users from the fringe platform.

EXTENSIONS

Allow for multihoming. User i utilities are:

- If single homing in $j \in \{1,2\}$: U_j^{ij}
- If multihoming : $U_1^i + U_2^i$

Allow for multihoming. User i utilities are:

- If single homing in $j \in \{1,2\}$: U^i_j
- If multihoming : $U_1^i + U_2^i$

In equilibrium:

Multihoming users ↑ with strictness of content moderation and ↓ with NE Essentially users that otherwise singlehome in the moderated platform

Allow for multihoming. User i utilities are:

- If single homing in $j \in \{1,2\}$: U^i_j
- If multihoming : $U_1^i + U_2^i$

In equilibrium:

Multihoming users ↑ with strictness of content moderation and ↓ with NE Essentially users that otherwise singlehome in the moderated platform

General Result in the Literature: (cf. Crémer et al 2019's report for the EU)

Multihoming = Soften Network Effects = Increase Competition

Allow for multihoming. User i utilities are:

- If single homing in $j \in \{1,2\}$: U^i_j
- If multihoming : $U_1^i + U_2^i$

In equilibrium:

Multihoming users ↑ with strictness of content moderation and ↓ with NE Essentially users that otherwise singlehome in the moderated platform

General Result in the Literature: (cf. Crémer et al 2019's report for the EU)

Multihoming = Soften Network Effects = Increase Competition

Here... same!

Multihoming = Soften Network Effects = Increase Competition = Incentives of the platform to moderate content

Allow for multihoming. User i utilities are:

- If single homing in $j \in \{1,2\}$: U^i_j
- If multihoming : $U_1^i + U_2^i$

In equilibrium:

Multihoming users ↑ with strictness of content moderation and ↓ with NE Essentially users that otherwise singlehome in the moderated platform

General Result in the Literature: (cf. Crémer et al 2019's report for the EU)

Multihoming = Soften Network Effects = Increase Competition

Here... same!

Multihoming = Soften Network Effects = Increase Competition = Incentives of the platform to moderate content

Also here (!!!)

High NE: unsafety min with a **more lenient** moderation wrt single-homing **Low NE**: unsafety min with a **stricter** moderation wrt single-homing

- Online content unsafety is considered bad per se
- BUT its offline consequences are a first order concern for regulators

- Online content unsafety is considered bad per se
- BUT its offline consequences are a first order concern for regulators
- This extension adds two periods to the model seen:

- Online content unsafety is considered bad per se
- BUT its offline consequences are a first order concern for regulators
- This extension adds two periods to the model seen:
 - i. In t=3, users' preferences either:

- Online content unsafety is considered bad per se
- BUT its offline consequences are a first order concern for regulators
- This extension adds two periods to the model seen:
 - i. In t=3, users' preferences either:
 - Converge to the unsafety of the content they read, OR

- Online content unsafety is considered bad per se
- BUT its offline consequences are a first order concern for regulators
- This extension adds two periods to the model seen:
 - i. In t=3, users' preferences either:
 - Converge to the unsafety of the content they read, OR
 - **Diverge** from it

- Online content unsafety is considered bad per se
- BUT its offline consequences are a first order concern for regulators
- This extension adds two periods to the model seen:
 - i. In t=3, users' preferences either:
 - Converge to the unsafety of the content they read, OR
 - **Diverge** from it
 - ii) In t=4, users perpetrate a unit of violence with a probability

- Online content unsafety is considered bad per se
- BUT its offline consequences are a first order concern for regulators
- This extension adds two periods to the model seen:
 - i. In t=3, users' preferences either:
 - Converge to the unsafety of the content they read, OR
 - **Diverge** from it
 - ii) In t=4, users perpetrate a unit of violence with a probability
 - Increasing in their taste for unsafety

- Online content unsafety is considered bad per se
- BUT its offline consequences are a first order concern for regulators
- This extension adds two periods to the model seen:
 - i. In t=3, users' preferences either:
 - Converge to the unsafety of the content they read, OR
 - **Diverge** from it
 - ii) In t=4, users perpetrate a unit of violence with a probability
 - Increasing in their taste for unsafety
 - **Decreasing** in their taste for unsafety (i.e. substitutes, *video games*)

- Online content unsafety is considered bad per se
- BUT its offline consequences are a first order concern for regulators
- This extension adds two periods to the model seen:
 - i. In t=3, users' preferences either:
 - Converge to the unsafety of the content they read, OR
 - **Diverge** from it
 - ii) In t=4, users perpetrate a unit of violence with a probability
 - Increasing in their taste for unsafety
 - **Decreasing** in their taste for unsafety (i.e. substitutes, *video games*)

Main Result:

- With converging preferences + and violence increasing in unsafety, then:
 - Intermediate levels of moderation are preferable to min violence
 - Why? We can attract users to the moderated platform to read content safer than it would be without content moderation

CONCLUSION

Today:

Today:

- Simple model, simple intuition, policy oriented:
 - → DSA may have some unintended consequences
- It gets worse with more competition (DMA!)
- Non very tractable but still analytical
- Consumer surplus, another platform...in the paper

Today:

- •Simple model, simple intuition, policy oriented:
 - → DSA may have some unintended consequences
- It gets worse with more competition (DMA!)
- Non very tractable but still analytical
- Consumer surplus, another platform...in the paper

- Empirics!
- Q: Is the model right?
 - If yes, where are we?
- I do have data and a draft of a structural model
- Not my field, (will never be?)

Today:

- Simple model, simple intuition, policy oriented:
 - → DSA may have some unintended consequences
- It gets worse with more competition (DMA!)
- Non very tractable but still analytical
- Consumer surplus, another platform...in the paper

- Empirics!
- Q: Is the model right?
 - If yes, where are we?
- I do have data and a draft of a structural model
- Not my field, (will never be?)
- Very open to suggestions: ivan.rendo@tse-fr.eu