# Content Moderation and Migration in Social Media: Evidence from Musk's Twitter Acquisition

Iván Rendo (TSE)



# Motivation

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- Increased interest in online hateful/extreme/unsafe content:
  - E.g. spread of jihadism, bullying, food disorders...
  - Jiménez-Durán (2022) links online hate to offline violence
    - → EU Response: **Digital Services Act** (DSA)

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    - → EU Response: Digital Services Act (DSA)
- Different complementary views on content moderation:
  - "Old Internet" Duch-Brown's perspective:
    - → Constant unsafe content across time BUT today good and bad people together
  - Lefouili & Madio (2022): migration = ↓ impact and enforcement costs
  - Anti Defamation League (ADL) viral video: trading-off moderation in Twitter and migration to other (hateful, small) environments

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Content Moderation, Content (Un)safety, Migration (to other platforms)

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- → What incentives do the platforms have to self-regulate
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+ Empirical evidence through Musk's acquisition of Twitter

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- Endogenous composition ~ migration
  - Users' trade-off: network size, quality vs (un)safe content
  - Platform's trade-off: participation vs unsafe content

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#### 2. Policy:

- Incentives misalignment between platform & regulator (min unsafe content)
- Imposing a minimal content moderation intensity (policy):
  - i. W Large network effects: always superfluous
  - ii. w Mid to small network effects: can be useful

# Roadmap

- Theoretical Model
  - Characterization of the Equilibrium
  - Optimal Regulation

II. Empirical Evidence

# **THEORY**

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Rk: No outside option!

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 Average content unsafety Price of ads

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

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3. Agents derive the corresponding payoffs from the composition of the social network

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

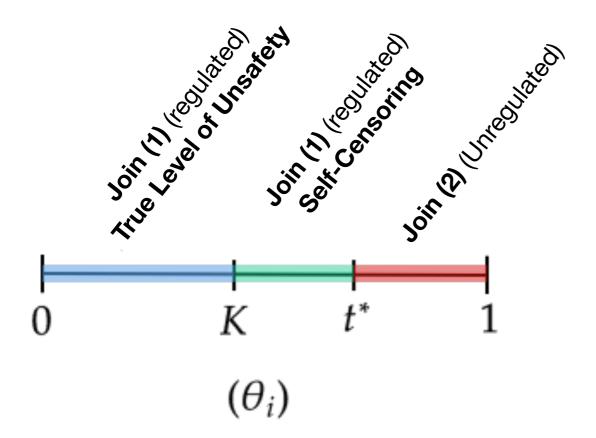
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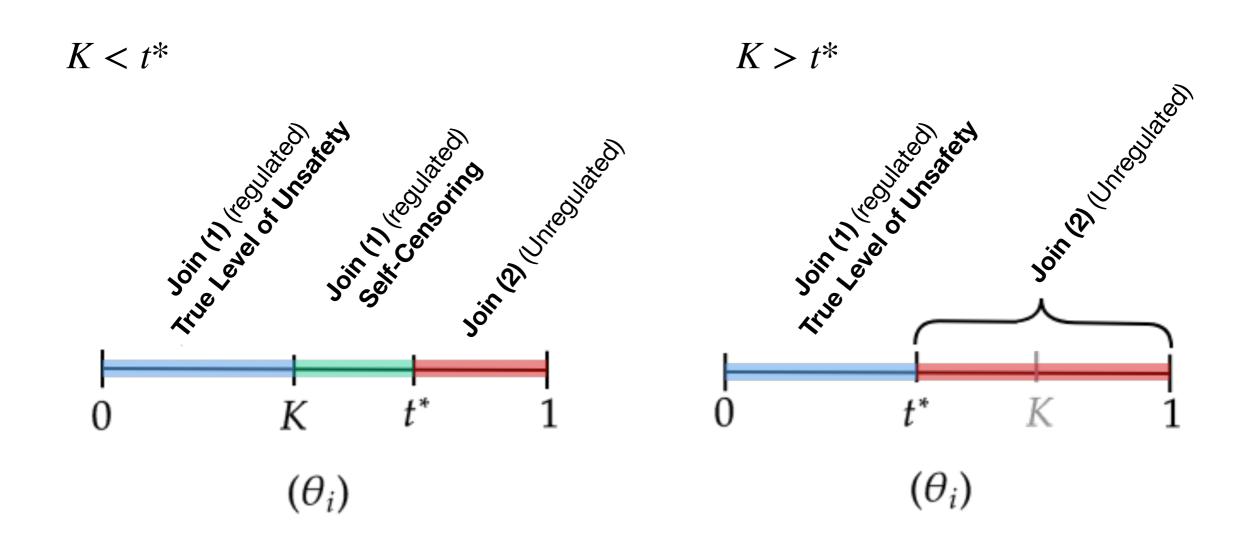
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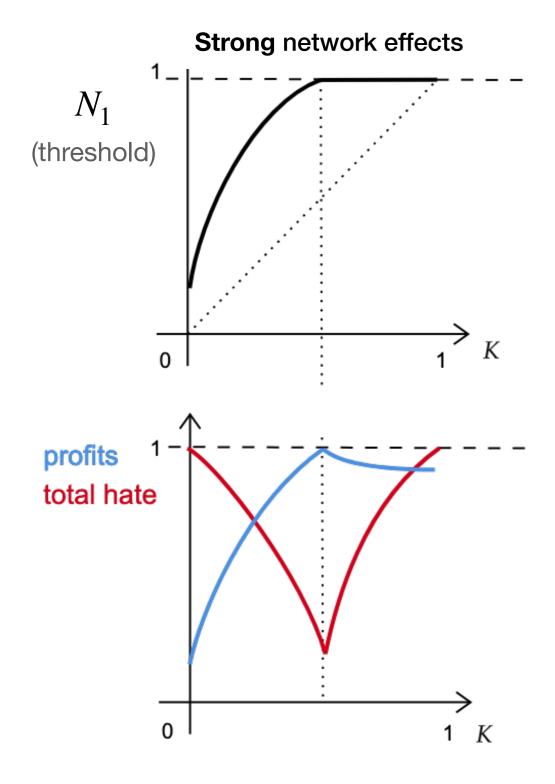
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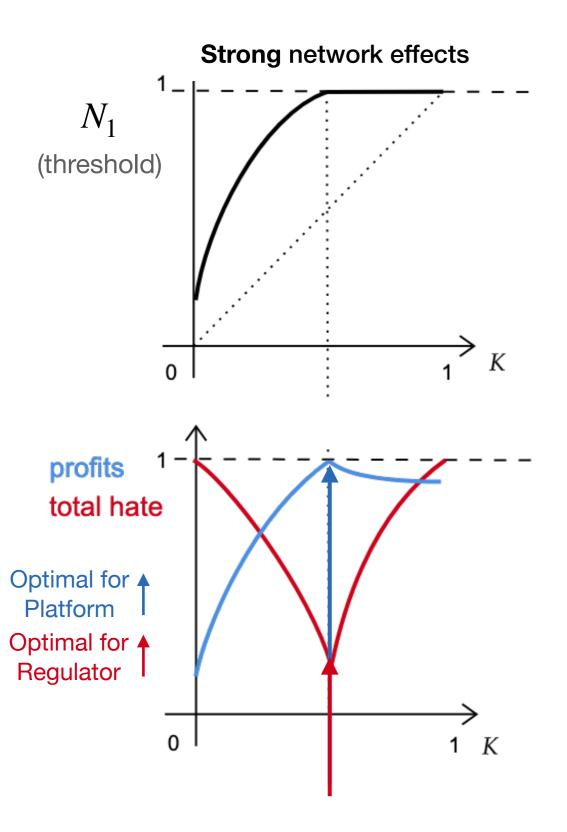


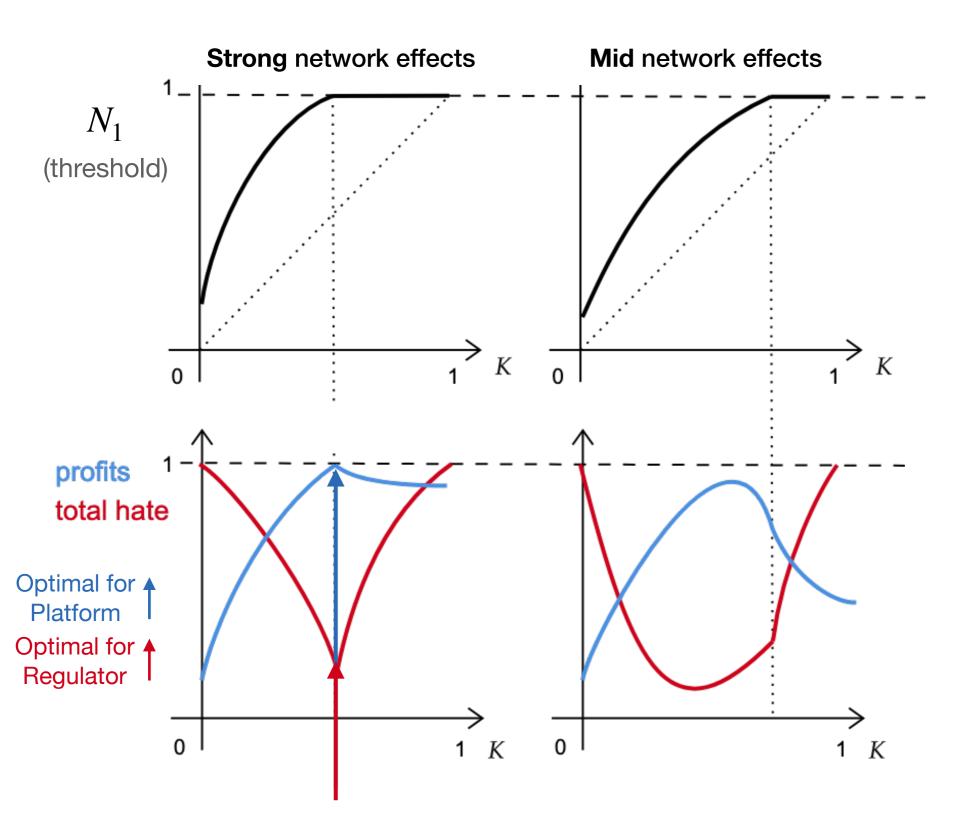
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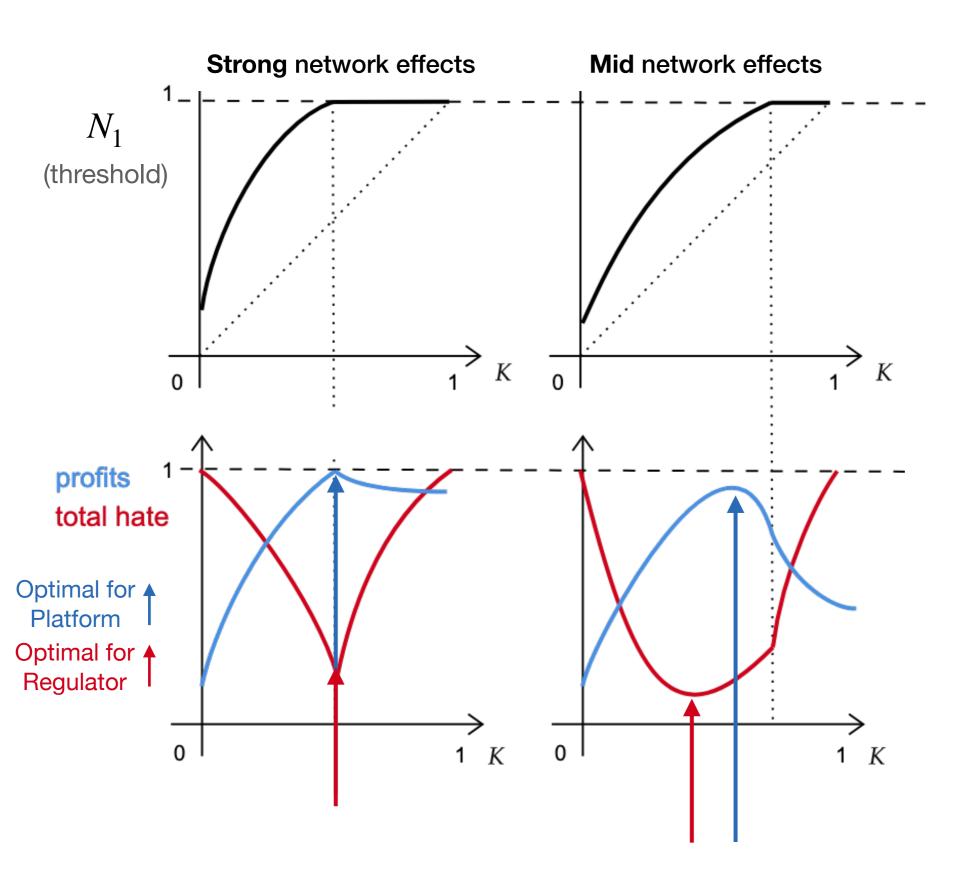
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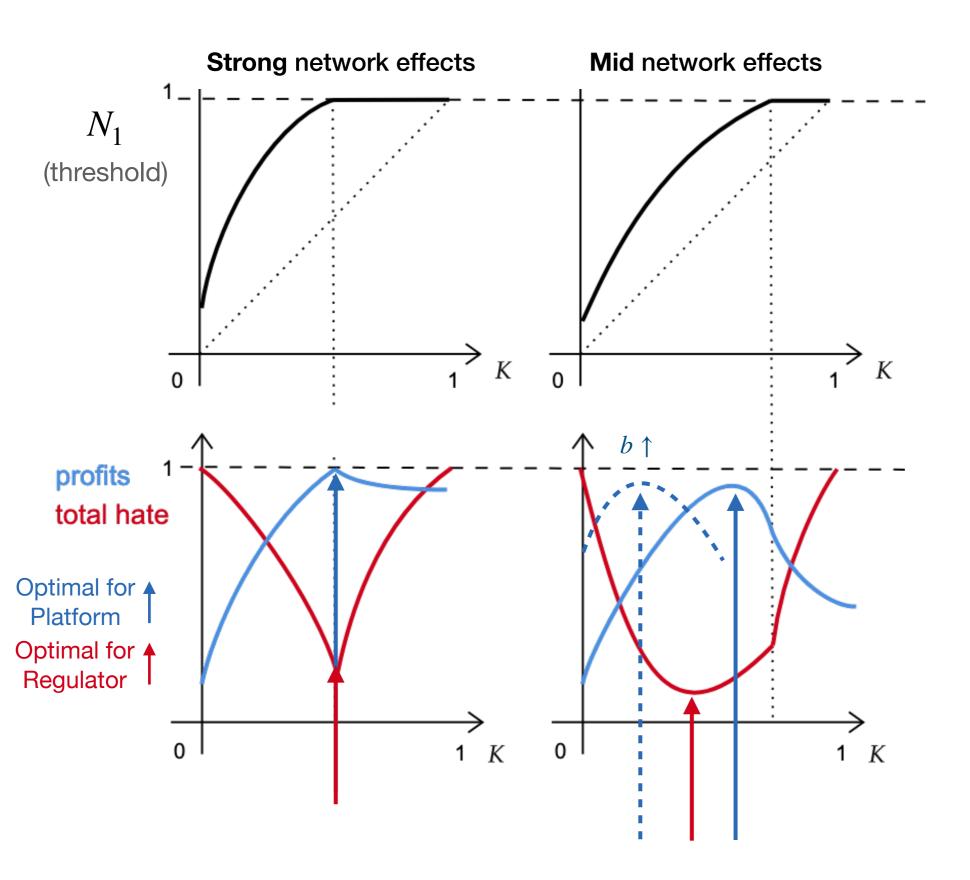


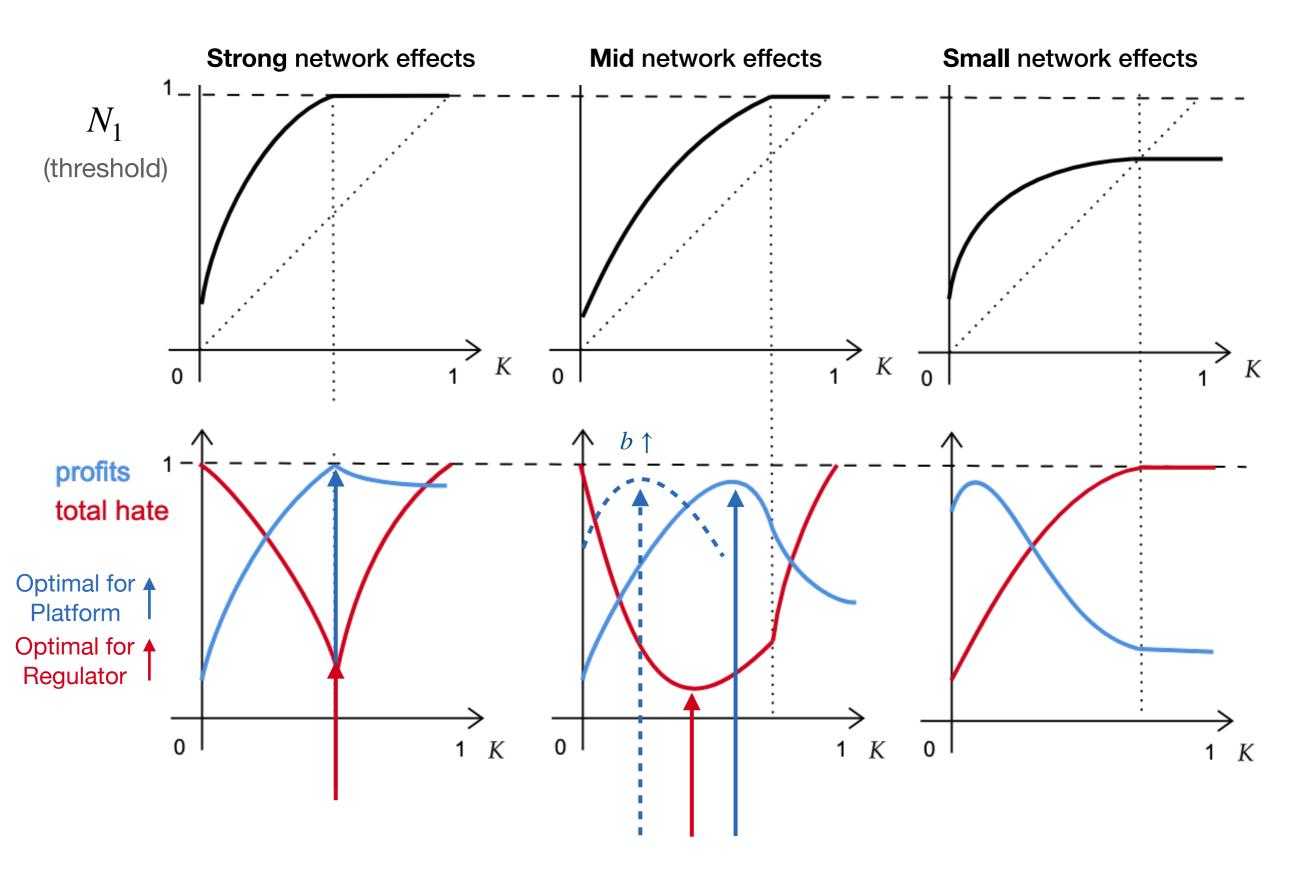


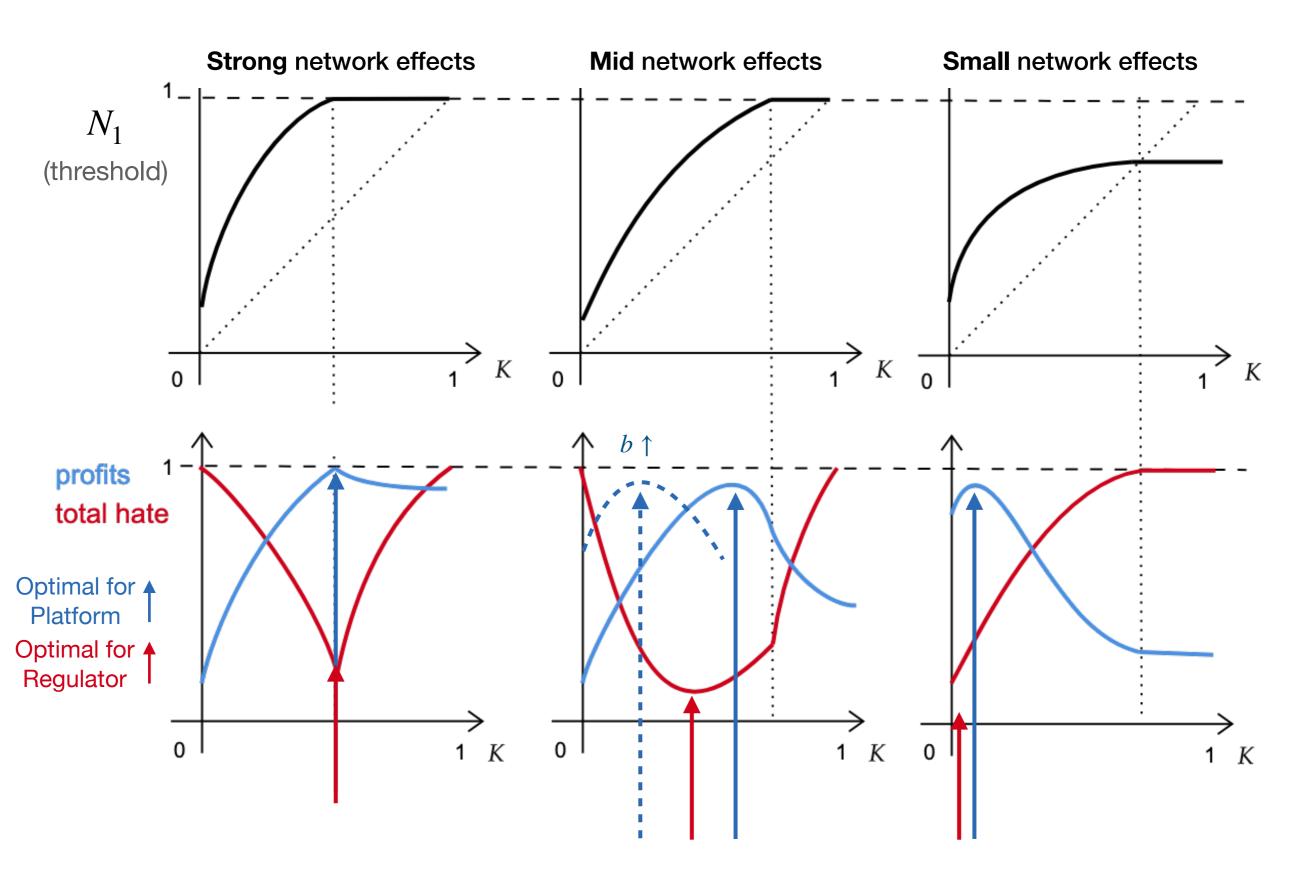




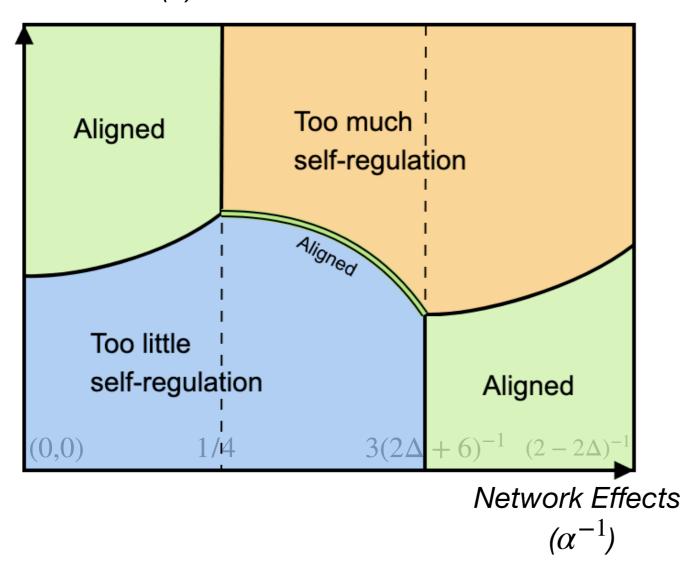




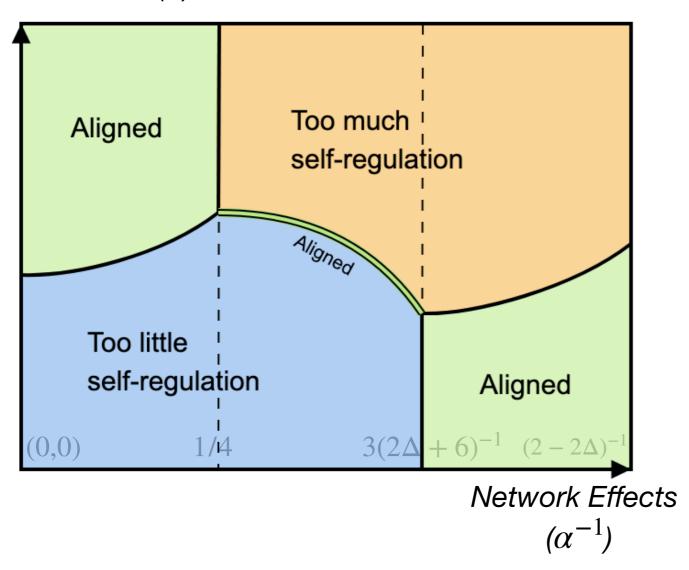




Advertisers aversion to unsafe content (b)

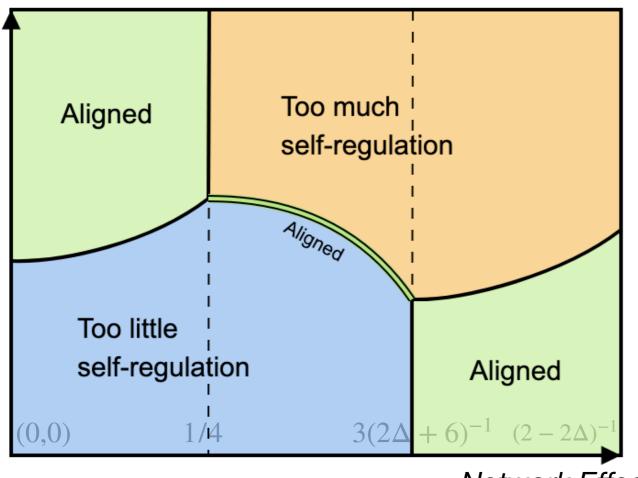


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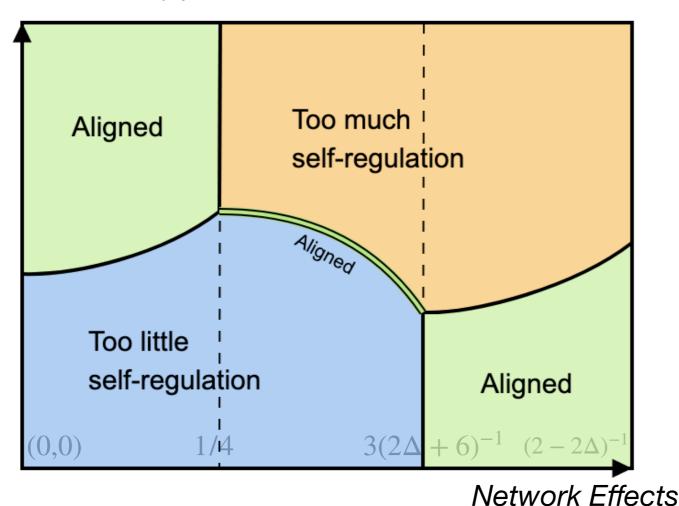
Network Effects  $(\alpha^{-1})$ 

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The regulator can impose a minimum content moderation level, and it would be beneficial: there won't be too much migration

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#### **Blue Area:**

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Orange Area: the policy wouldn't bind as the minimum content imposed is higher than the optimal for the platform

(We saw this in the DSA)

## **EMPIRICS**

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- Computed "toxicity" levels of a sample of >100k
   of them using a extremely good Google API
   (Perspective)

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#### **Example**

In terms of *toxicity*:

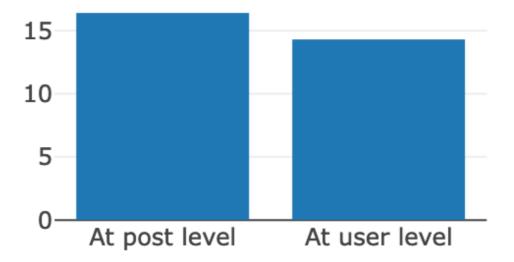
"You are great hahaha" > "You are great"

"Son of a bitch" > "Son of a bitch hahaha"

"Diff-in-diff" 1 month before and after Musk's acquisition

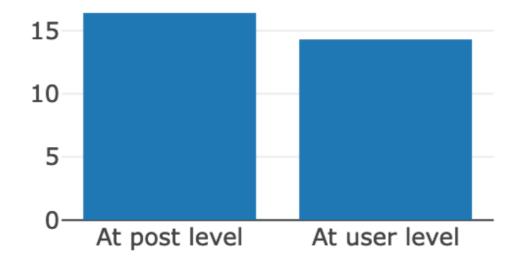
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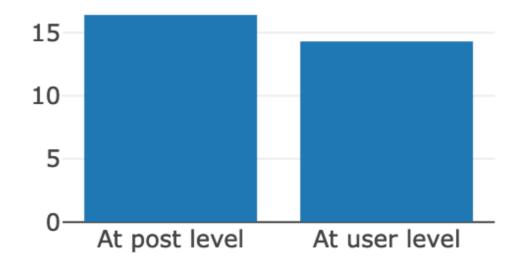
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Telegram users' unsafe content descends less after Musk's acquisition

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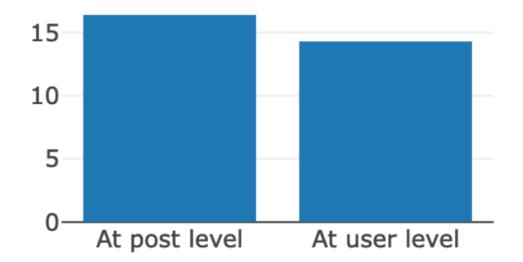
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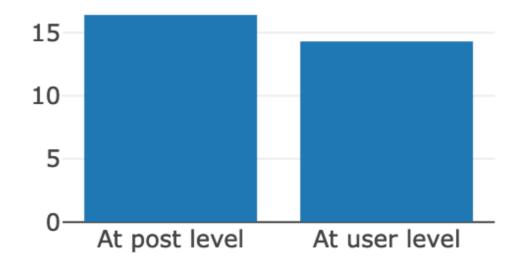
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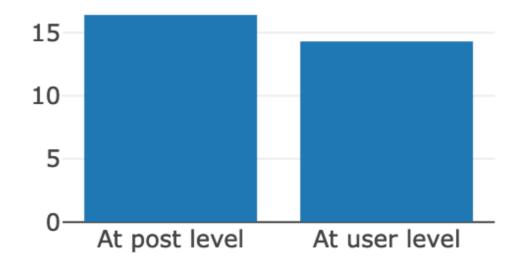


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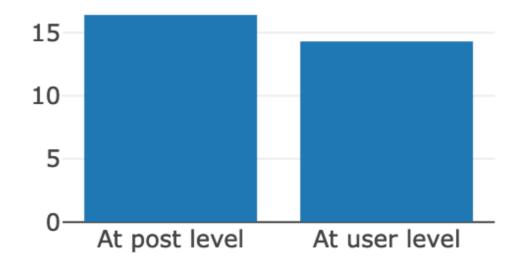


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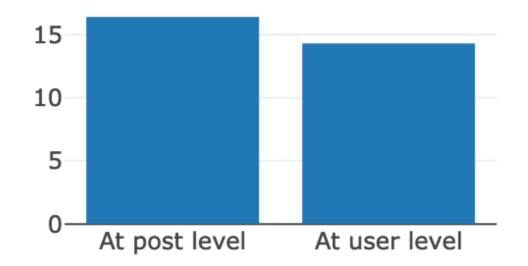


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- Activity
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  - Telegram users in both highest and lowest percentiles of unsafe content

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Difficult model to extend (low analytical tractability)

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  - Match (some) users from Telegram to Twitter

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### Not shown today: Monopolist model

- If a monopoly faces entry
  - ▶ ↓ strictness of moderation just enough to deter entry
  - min (unsafe content) = max (profits) at that point
  - There is no need of regulation

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  - ▶ ↓ strictness of moderation just enough to deter entry
  - min (unsafe content) = max (profits) at that point
  - There is no need of regulation

#### **Most Importantly:**

- A policy (e.g. a stronger version of the DSA) can have unintended effects due to migration to non-regulated platforms
  - → greatly depends on the network effects, advertisers' aversion to unsafe content, and quality of the outside platform

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# Most Importantly: Merry Christmas!

# **Appendix**

# Literature

## Literature

- · Closest Paper: Madio & Quinn (2023).
  - Rich ads model, but exogenous creation of content.
  - Focuses in the monopolist + pricing of ads.

· Liu et al (2021) focuses on the (imperfect) technology

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#### **Empirical Side**

- Jiménez Durán (2022), Jiménez Durán, Müller & Schwarz (2022)
- Some CS Literature: Schmitz, Muric, et al. (2022 and 2023)

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  - there is a rational for stricter policy if this is the case
  - but could end up "throwing to the lions" to
    - "median" users