Behavioural Science Implications for Tech-based Financial Products and Innovations

• • •

Anisah Ramli, Annabel Gillard, Briana Grubb, Meadhbh Rice

Outline

1. Intro - the problem we're researching

2. Definitions and intersections

    a. Where does Tech intersect with Finance?

3. Existing literature - Finance vs. Tech

4. Regulatory impediments & response to Fintech

5. Discussion/Conclusion

Intro - the problem we're researching

- Finance is heavily regulated and uses well-tested behavioural interventions - e.g. pension enrolment
- Technology is disrupting finance, but the tech sector isn't regulated and is under-researched
- Innovative tech-based financial products and interventions introduce new issues:
  - New/ increased behavioural intervention opportunities - e.g. the unbanked
  - New/ increased risks - e.g. gamification
  - Change in reach and impact - Tech is global

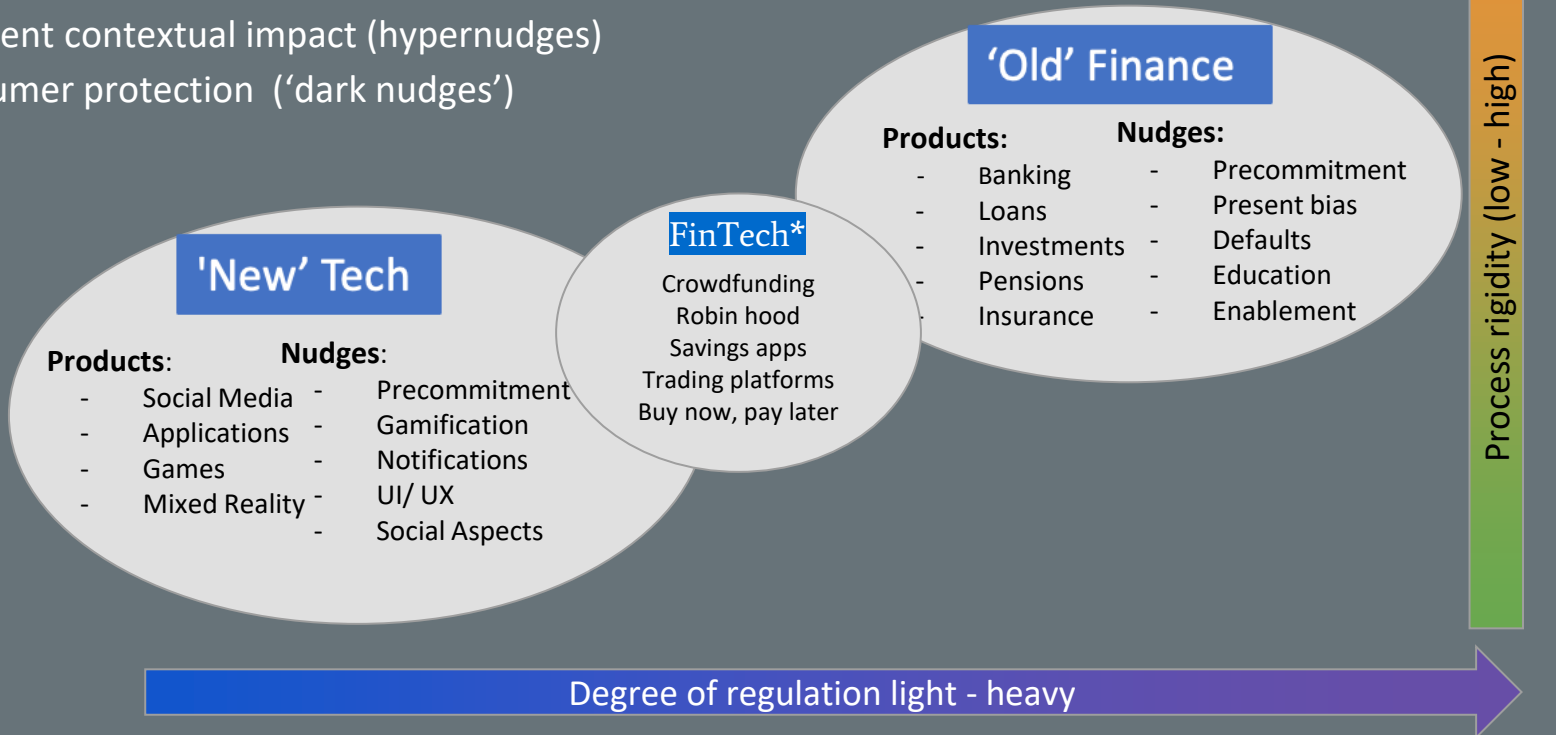Table 1: comparison of tech to finance

Potential Impact	+/-	Understanding	+/-
# interventions	+	Research	-
Benefits	+	Oversight	-
Harms	+		

The impact of these innovations calls for greater understanding

Definitions and intersections

Optimal interventions **may or may not** be relevant for new tech, consider:

- Adaptation
- New opportunities
- Different contextual impact (hypernudges)
- Consumer protection ('dark nudges')

Process rigidity (low - high) →

'Old' Finance

Products:
- Banking
- Loans
- Investments
- Pensions
- Insurance

Nudges:
- Precommitment
- Present bias
- Defaults
- Education
- Enablement

FinTech*

Crowdfunding
Robin hood
Savings apps
Trading platforms
Buy now, pay later

'New' Tech

Products:
- Social Media
- Applications
- Games
- Mixed Reality

Nudges:
- Precommitment
- Gamification
- Notifications
- UI/ UX
- Social Aspects

Degree of regulation light - heavy →

4

*64% average adoption of FinTech across Global 27. Source: EY "Global Fintech Adoption Index", 2019

Where does tech-finance intersect?

A deeper look at the difference between tech and fintech

Finance

ORIGINAL NUDGE

- 'Soft and mild' nudge utilising human cognitive tendencies

- E.g. SMART

Finance + Tech

HYPERNUDGE

- Choice architecture using bigdata, personalised information and computer algorithms

- E.g. BNPL nudges on web-shopping based on past purchasing behaviours, bigdata-driven alerts & popups

Source: Yamazaki, 2020

FINTECH DARK NUDGES

- **Dark patterns:** a set of (deliberate) manipulative practices identified by user experience e.g. consent management
- **Sludge:** making it hard for consumers to take action in their interests;
- **Dark nudges:** which make it easy for consumers to take action that is not in their interests

Source: BIS, 2020

5

Finance + Tech = Fintech

Existing Literature - Finance vs. Tech

Employee savings
- Save More Tomorrow plan [Thaler and Benartzi, 2004]

Stock trading
- Cross-section of average returns (skewness); aggregate stock market returns; trading of financial assets over time [Barberis, 2013]
- Psychological biases (weather, sadness) [Hirshleifer and Shumway, 2013; Lerner et al., 2004]

Tax compliance
- Social norms, framing [Hallsworth et al., 2017]

User behaviour
- Choice architecture (menus, UI) [Thaler and Benartzi, 2004]
- Accuracy reminder nudges [Pennycook et al., 2020]
- Gamification [Koivistoa and Hamariab, 2019]

Virtual reality
- Cognitive task performance improvement [Banakou et al., 2018]
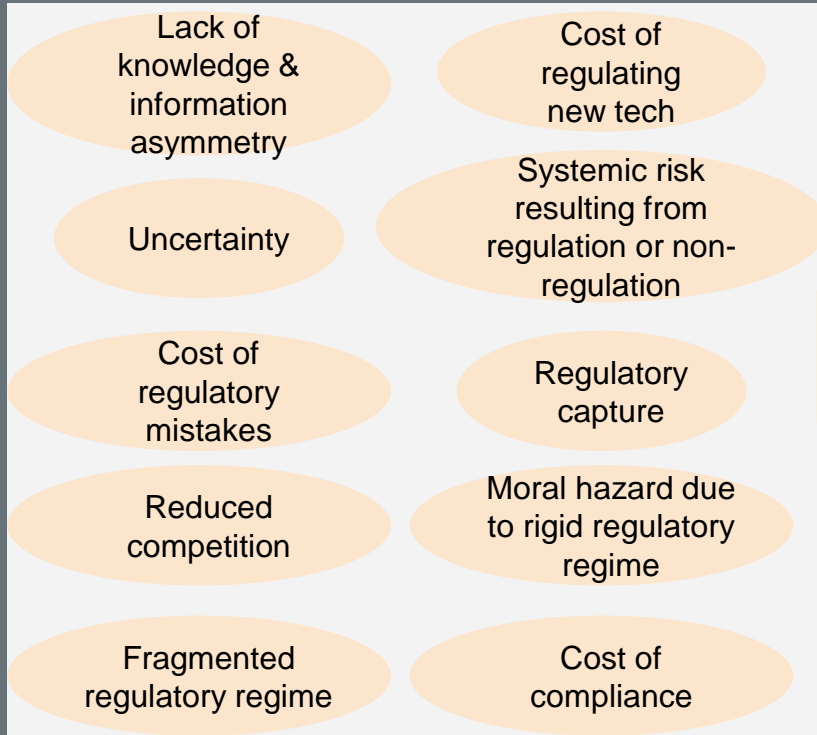
Social media
- Personality trait predictions [Kosinski et al. 2013]
- Psychological targeting [Matz et al., 2017]
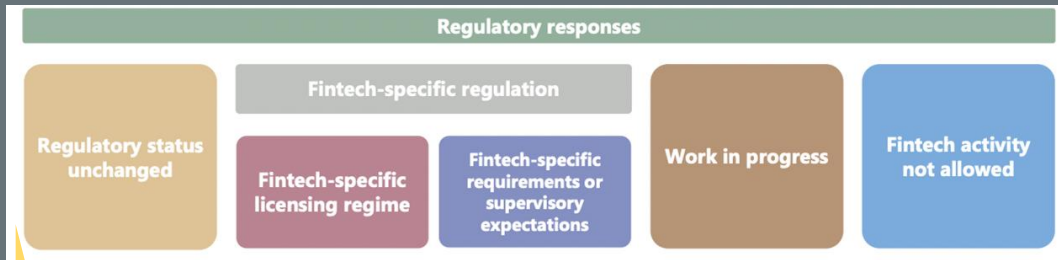
Regulatory impediments & response to fintech

Fintech is evolving at a rate faster than regulators can keep up:
- Different (re)actions from regulators - tighten up (killing innovation) or liberalise entry (systemic risk /consumer effected)

Regulatory impediments

Regulatory responses

Lack of knowledge & information asymmetry

Cost of regulating new tech

Uncertainty

Systemic risk resulting from regulation or non-regulation

Cost of regulatory mistakes

Regulatory capture

Reduced competition

Moral hazard due to rigid regulatory regime

Fragmented regulatory regime

Cost of compliance

Regulatory responses

Regulatory status unchanged

Fintech-specific regulation

Fintech-specific licensing regime

Fintech-specific requirements or supervisory expectations

Work in progress

Fintech activity not allowed

- Using Nudge/Sludge as a Regulatory Tool
  - Disclosure requirements to increase salience
  - Sludge 'filters' fintech players ?
  - Social norms and reputation cascades
  - Sandbox, which may lead to riskwashing

Source: (Cohen & Jabotinsky, 2020)

Discussion/Conclusion

Regulators

- Changing default requirements for fintech players/products ('reverse' dark nudges)

- Signalling of openness to innovation

Finance cos.

- BI already heavily incorporated

- Continued assessment that current nudges are still appropriate with new tech

Tech cos.

- Enhanced scope of personalised BI

- But increased risk of dark nudges/dark patterns

Collaboration across stakeholders to promote beneficial fintech developments

References

https://www.fca.org.uk/insight/future-behavioural-science-ambition-dose-humility

https://doi.org/10.1086/380085

Barberis, Nicholas C. 2013. "Thirty Years of Prospect Theory in Economics: A Review and Assessment." Journal of Economic Perspectives, 27 (1): 173-96.

https://doi.org/10.1111/1540-6261.00556

Lerner JS, Small DA, Loewenstein G. Heart strings and purse strings: Carryover effects of emotions on economic decisions. Psychol Sci. 2004 May;15(5):337-41. doi: 10.1111/j.0956-7976.2004.00679.x. PMID: 15102144.

https://doi.org/10.1016/j.jpubeco.2017.02.003

https://doi.org/10.1177/0956797620939054

https://doi.org/10.1016/j.ijinfomgt.2018.10.013

https://doi.org/10.3389/fpsyg.2018.00917

https://doi.org/10.1073/pnas.1218772110

https://doi.org/10.1073/pnas.1710966114

https://doi.org/10.1007/s40012-021-00331-w