Algorithmic Credit Scoring

and the

Regulation of Consumer Credit Markets

Nikita Aggarwal

University of Oxford, Faculty of Law + Oxford Internet Institute

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Overview

1. Rise of algorithmic credit scoring

2. Impact on consumer credit markets

3. Implications for consumer credit regulation

Algorithmic Credit Scoring

Assessing Creditworthiness using:

1. Alternative Data

+

2. Machine Learning

Impact on Consumer Credit Markets

Impact depends on trade-off *between and within* different normative goals:

1. Efficiency
2. Distributional Fairness
3. Consumer Financial Privacy

Efficiency

Faster, cheaper, more accurate risk assessment (thin-files)

Exploitation of consumer ignorance

Over-reliance on quantitative measurement

Distributional Fairness

Access to credit (thin-files)
Reduce discrimination due to animus
Algorithmic discrimination, Hirshleifer effects, exploitation and rent-seeking

Consumer Privacy, Autonomy

Access to credit supports financial autonomy
Over-reliance on predictions from (group) data diminishes individual autonomy
Re-use of personal data without ‘informed’ consent

Additional Dimensions

+ ML and Big Data as *consumer-helping solutions*?
+ ML and Big Data as *supervisory solutions* (suptech/regtech)?

Empirical Findings

Bartlett et al (2019)

*Algorithmic lending eliminates discrimination in loan origination, relative to face-to-face lending.

*Doesn’t eliminate discrimination in loan *pricing*, but still reduces due to greater competition from FinTech lending platforms.

Fuster et al (2018)

*ML credit scoring increases accuracy of default prediction relative to simple logistic models, and increases access to credit.

*But gains unevenly distributed: (i) accuracy gains accrue disproportionately *less* to Black and Hispanic borrowers; (ii) disparity in *interest rates* between and within groups increases, more for Black and Hispanic.

Jagtiani and Lemieux (2017, 2018)

*Alternative information improved access to credit — for the same risk of default, Lending Club consumers pay smaller spreads.

Implications for Consumer Credit Regulation

3 priorities

1. ML model and product governance
2. Consumer financial privacy
3. Credit information market

ML Governance

* Updated regulatory standards for *ML* model risk management (cf. SR 11-7, MiFID II, GDPR)
    * *Model interpretability, alternative data, vendors*

* AI/ML corporate governance structure for firms, including (human) accountability and liability.
    * *Senior managers and certification regime (UK)*

Consumer Financial Privacy

What is the appropriate level of consumer privacy in credit markets?

Consumer Financial Privacy

* Data protection (GDPR) –vs– consumer credit laws?

* Ethical Considerations?

* Privacy-preserving techniques and user control over data?

Credit Information Market

*Incorporate alternative data and insights:

→ Information sharing arrangements (Lenders <> CRAs)

→ Credit reports

References

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