

“Incentivizing Firm to Invest in Data Security: Can Reputation Play a (Bigger) Role?”

Abstract:

When product quality cannot be observed prior to purchase, reputation concerns—the threat of lost future sales—can create incentives for firms to provide high quality products. Framing data security as a quality investment problem, I embed this reputation mechanism into a probabilistic model of security investment a la Gordon and Loeb (2002). A website that sells a product (of observable quality) has to decide how much to invest in the protection of its customer’s payment data. The consumer cannot observe security prior to purchase and bases his decision to buy on the firm’s reputation. Bad security is revealed post-purchase via the occurrence of breaches. The consumer may punish the firm by leaving when he learns of a breach; this provides the firm with incentives to invest. The observed lack of investment incentives in reality may be explained by a low rate of breach detection and the consumer’s limited liability for fraud losses; both factors undermine his willingness and ability to punish the firm. I consider policies that can improve investment incentives either by strengthening the reputation concerns or by directly addressing the problems of imperfect information and externalities. I caution against how these policies may create countervailing effects on investment incentives and how they may not necessarily raise consumer surplus even when they lead to more investment.

Bio:

Ying Lei is a PhD student at the Toulouse School of Economics, France. Currently, she is also a visiting scholar at the School of Information at UC Berkeley. Her research applies industry organization theory to the digital economy. In particular, she has worked on the topics of information/cyber-security and consumer privacy. Prior to starting her PhD, she obtained a MSc and a MPhil in Economics from the Toulouse School of Economics.