“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
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applies industry organization theory to the digital economy. In particular, she has
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