Cover-up of Vehicle Defects: The Role of Regulator Investigation Announcement

In 2009 and 2010, Toyota recalled more than 8 million vehicles due to a sudden unintended acceleration problem that resulted in 89 deaths and 57 injuries.\(^1\) Although the defect itself was a serious issue, Toyota was criticized mostly for not handling the fault properly, rather than for the fault itself. Specifically, the U.S. government accused Toyota of knowingly hiding the evidence of defects from the regulatory agency, National Highway Traffic Safety Administration (NHTSA), and delaying the recall. The company denied the accusation, and blamed drivers by saying “most of the 48 deaths ... involved drivers who were elderly, had medical issues, were distracted or navigating slippery roads.”\(^2\) However, in 2014, four years of criminal investigation by the Department of Justice revealed that Toyota knew of the problem in 2007, but decided not to report it to NHTSA. As a result, Toyota agreed to pay $1.2 billion to settle the criminal charge.\(^3\)

Toyota is not alone in deliberately hiding safety issues. In 2014, General Motors (GM) recalled 2.6 million vehicles because of a faulty ignition switch that could shut off engines while driving and prevent airbags from deploying. By August 2015, this defect was linked to 124 deaths and 275 injuries, and GM set aside $625 million to settle damages.\(^4\) Similar to the Toyota case, the U.S. government found out that GM was aware of this defect as early as 2004, but GM decided to neither report this problem to NHTSA nor recall the affected vehicles. GM was criminally charged by the Department of Justice for deliberately hiding the product defect, and agreed to pay $900 million to settle the charge.\(^5\)

As evidenced by these scandalous events, many automobile manufacturers can (and do) deliberately hide potential safety issues if they believe that they can get away with these issues without being caught by the regulator. This is possible because the regulator does not investigate all alleged problems due to limited resources and costly inspection.

In this paper, we investigate how the regulator can induce these manufacturers to truthfully report any safety issues as soon as they discover them. Manufacturers often have better information about safety hazards of their products than the regulator or consumers. This is because manufacturers know their products and processes better, and have more resources and knowledge than the regulator to investigate safety problems. Furthermore, manufacturers receive warranty claims from consumers, and a disproportionate number of claims often provide a good indication of a product defect. However, the regulator does not have direct access to those warranty claims. Therefore, the regulator often has to rely on manufacturers’ sharing of such information.

Interestingly, regulatory agencies in different countries employ different approaches in eliciting manufacturers’ cooperation. The United States (U.S.) passed the Transportation Recall Enhancement, Accountability and Documentation (TREAD) Act in 2000, which mandates manufacturers to submit Early Warning Reporting (EWR) data. These data include death, injury, and property damage claims, as well as warranty claims and consumer complaints to manufacturers, and NHTSA makes this information publicly available on its website to provide early warning to consumers. Importantly, in case when NHTSA opens a probe into an alleged defect, an on-going investigation and detailed information about suspected issues are also disclosed to consumers.

By contrast, the United Kingdom (U.K.) has a different policy. The U.K. neither discloses to consumers any information submitted by manufacturers nor announces on-going investigations on alleged defects. In fact, we had a chance to visit the Drivers & Vehicle Safety Agency (DVSA), a U.K. counterpart of NHTSA, and talk to the team in charge of overseeing all vehicle recalls in the U.K. It turns out that DVSA also collects detailed early information from manufacturers but does not disclose this information to consumers unless DVSA opens a formal investigation and concludes that there is a defect. The rationale behind this approach appears that DVSA believes manufacturers will be more cooperative if DVSA does not disclose to consumers every single alleged safety issue that may be a false allegation.
Motivated by the contrasting policies in these two countries, we explore the effects of regulator investigation announcement on product recalls, and aim to gain insights into how regulators can better induce truthful reporting from manufacturers about their safety issues.

We find that both countries’ policies induce manufacturers to cover up a potential defect when the suspected defect is highly likely to exist but could inflict only relatively moderate harm. This is because, for such a case, there is a chance that manufacturers can get away with the cover-up under both countries’ policies. This means neither policy is perfect.

However, the major difference is that the U.S. policy is more likely to induce a cover-up of potential defects with significant harm than the U.K. policy. Specifically, manufacturers under the U.S. policy have an incentive to cover up a potential defect with significant harm if there is only a moderate chance that the defect may actually exist. This is because, under the U.S. policy, revealing an alleged defect with significant harm could significantly reduce the consumer demand, whereas this is not the case under the U.K. policy. In addition, the U.S. regulator may conduct fewer investigations than the U.K. counterpart to avoid unnecessary public warning. Overall, we find that the U.S. policy makes the regulator reluctant to investigate and discourages manufacturers to report potential defects with significant harm, compared to the U.K. policy. The U.S. policy generates higher social welfare only when the suspected defect is highly likely to exist and very harmful, and the expected recall cost is high.

We suggest three policy improvements to better prevent cover-up of potential defects. First, both the U.S. and U.K. regulators could employ a hybrid policy in which they conduct a confidential investigation only when the potential defect could inflict significant harm. Second, the U.S. regulator could allocate more resources to investigations of potential defects with significant harm so as to shorten the investigation period. This would mitigate the impact of investigations on consumer demand. Finally, the U.S. regulator can devise effective methods by which they can accurately communicate the probability that the alleged defect actually exists and by which consumers correctly assess this probability.

We illustrate our results using realistic parameter values that represent Toyota’s sudden unintended acceleration recalls in 2009.