

## Hurricane Mitigation: Rational Choice or Market Failure

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In 1992, Hurricane Andrew came close to the worst-case scenario of emergency planners. Insured losses exceeded \$15 billion but could have been four times that amount had the storm hit Miami directly. After the hurricane, it became obvious that the search for ways to limit property damage from future storms must include preemptive mitigation. Mitigation includes actions taken prior to a storm that limits potential damage. Economists would suggest that the most efficient way to achieve an increase in mitigation would be for property owners to perform the mitigation voluntarily. In this way, people who must live with the consequences of their decision must evaluate the cost-to-benefit trade-off themselves. However, policy makers are reluctant to rely on voluntary mitigation because the assumption has been that people ignore the risk that hurricanes pose. If this assumption were true, there would be no additional value attached to property that contained mitigation features.

One obvious form of hurricane mitigation is hurricane shutters. Shutters protect the property by making it less likely for airborne debris to break windows or doors. Once a window is breached, wind pressure builds on the roof from inside the home and property damage increases dramatically. Purchasers of real estate are aware of the existence of these shutters and if voluntary mitigation has value, then homes with shutters would be expected to sell at a premium. To test this hypothesis, real estate sales data were collected from a gulf coast island community that included detailed attributes on each listing, including the existence of storm shutters. Using these data, it was possible to examine the influence of storm shutters on the eventual sale price of the home.

Three key results came from the study. First, homes with shutters do sell at a premium. In fact, the premium very nearly captures the retrofit cost of installing the shutters. This means that the investment in storm shutters can almost be recouped at resale for homes that do not currently have shutters. Second, the size of the premium decreases as the risk to the home decreases. Beachfront homes contain the highest premium while homes farther away from the beach showed decreasing premiums. Homes on the mainland contained no premium, indicating that the negative aesthetic effects of the shutters outweighed the increased safety. Third, recent hurricane activity had no effect on the premium. This result indicates that the market value of shutters is constant rather than varying with recent events.

In conclusion, there appears to be a viable market for hurricane mitigation. If policy makers wish to increase the use of hurricane mitigation, programs that supplement rather than replace the market may indeed be effective. This is not to suggest that initiatives such as enhanced building codes should be abandoned. It does suggest, however, that property owners evaluate the risk rationally and price the added protection accordingly. (JEL D8) *Atlantic Econ. J.*, 29(4): p. 471, Dec. 01. ©All Rights Reserved