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Title: Loss Aversion and Energy Efficiency Escrows

Abstract: This presentation is about losing. It showcases a recent field experiment that demonstrates how an individual's aversion to losing things can be leveraged to yield better outcomes within a pay-for-performance (PFP) incentive structure. Loss aversion is nothing new to behavioral economists and has played a role in shaping public policy. However, this behavioral anomaly has yet to be applied as a policy tool in energy efficiency until now. Pay-for-performance is an effective incentive structure that many utility companies use today to reduce energy demand. It is straightforward. For every unit of energy an individual uses below an average or established baseline, they are rewarded with an incentive, say \$0.10 for every kWh. This is particularly well-suited for residential households, where AMI metering is continuous and boundaries are well-defined. But what if there was a way to better quantify to consumers what is at stake, to make them fully aware of their potential reward in a manner that leverages loss aversion? This nine-month long field experiment explores this exact question. With the aid of wifi connected power strips that continuously transmit the energy load of 90 students, a baseline level of consumption is established for each student over the period of several months. All the while students have the ability to monitor their own usage with a smartphone app. Next, a financial incentive (\$1) is proffered to each student for every kWh saved, relative to their individual baseline, during a two-month incentive period. One group is presented the incentive as a traditional PFP program, while the other group is presented their maximum award upfront. In other words, the maximum reward to which an individual is entitled (if they used NO energy at all for the incentive period) is set up in an account, called an Energy Efficiency Escrow (EEE). Students then continuously see the balance remaining every time they open their smartphone app. Those individuals, however, cannot access their account until the end of the incentive period, while a dollar is deducted for every unit of energy they use until the incentive period is over. Which group used less energy? Loss aversion theory supports initial experiment results showing that the EEE group used less energy than the PFP group even though both groups had the exact same financial incentive. In other words, by minimizing their losses the EEE group was better incentivized than the PFP group was for maximizing their gains.