# Measuring and Addressing Self-Control Problems:

# Commitment Contracts vs. Piece-Rate Incentives

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**Abstract:**

Voluntary commitment contracts may seem to be a more attractive way to identify and address self-control problems than price-based mechanisms such as taxes and subsidies because a) the take-up of commitment contracts provides apparent "smoking gun" evidence of awareness of present bias and b) commitment contracts should target incentives more directly to those with stronger present bias. However, we provide new theoretical results and evidence from a large-scale field experiment at a fitness center that challenge this perception. First, we contribute to theory on the trade-off between commitment and a desire for flexibility by showing that a modest amount of uncertainty can erode the demand a present-biased person has for *any* penalty-based commitment contract. Moreover, the harms from some commitment contracts are actually increasing in the degree of present bias. Second, we highlight that the discrete choice to take up a commitment contract is a biased and unreliable measure of sophisticated present bias if people have noisy decision processes. Our field experiment offered gym members the opportunity to take-up commitment contracts that incentivized frequent visits to the gym (more-activity), but also simultaneously contracts that incentivized infrequent visits to the gym (less-activity). Take-up of more-activity contracts was strong, but consistent with noisy decision processes, nearly half of those making more-activity contracts also selected less-activity contracts. Third, we show that data on willingness to pay for piece-rate incentives and beliefs about activity can provide an alternative measure of awareness of present bias that is more robust to decision noise. We find a significant positive average perceived valuation for behavior change among the gym members using this new measure. We demonstrate how this approach can be used to provide estimates of the average level of present bias and awareness of present bias in the population. Finally, we test information treatments aimed at de-biasing partially naïve beliefs about gym attendance and identify a treatment that successfully (but partially) reduced overestimates of attendance rates. This de-biasing increased the valuation for behavior change via piece-rate incentives but *decreased* the demand for commitment contracts.