Utilities Included: Split Incentives in Commercial Electricity Contracts

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Separating the party who pays for energy from the one making decisions about electricity use has long been cited as creating incentives for energy over-consumption or underinvestment in energy efficiency in both the commercial and residential sectors. In the U.S., roughly 20 percent of commercial building occupants rent space with electricity bundled into their monthly rent. Under this contract structure commercial tenants face zero marginal cost of consuming electricity, creating an incentive to over-consume. The remaining 80 percent of tenants pay their own monthly utility bills, which will dampen the incentive for building owners to invest in energy efficiency if owners cannot capitalize on a rent premium for energy efficiency upgrades.

In this paper, we estimate an important component of the change in electricity use from switching commercial customers on electricity-inclusive rent contracts to tenant-paid utility contracts, a distinction we refer to as "contract type". We do this by evaluating how the relationship between electricity use and temperature (the temperature response gradient, or "TRG") differs by contract type. We illustrate how the structure of the rental contract may create two distinct split incentives, one on the intensive and another on the extensive margin of demand for energy services, which lead to different empirical predictions relating to the TRG.

When considering the intensive margin, the TRG will be less steep under a tenant-paid than an electricity-inclusive, or "owner-paid" contract. This occurs because, for a given level of energy efficiency capital, firms on a tenant-paid contract pay a positive marginal price for electricity use while those on an owner-paid contract face a marginal price of zero. The second split incentive relates to owner incentives to invest in energy efficient durables. Under a tenant-pay contract, owners have little incentive to invest. Since (all else equal) lower investment in energy efficiency leads to a steeper TRG, firms located in buildings on tenant-pay contracts should exhibit a steeper TRG relative to owner pay contracts. We refer to this as the extensive margin effect. These two split incentives impact the TRG in opposite directions in relation to contract type, allowing us to empirically test which split incentive (if any) dominates in our setting.

Our results indicate heterogeneous impacts of a tenant-paid contract, with a negative and significant effect of the tenant-paid contract type on consumption observable only in the top decile of firm size. Therefore, the intensive margin effect dominates among the largest firms. For the largest decile of firms, switching from an owner-paid to tenant-paid utility contract would reduce electricity use by roughly 3 percent over the course of a year and up to 14 percent in the summer months. The annual savings among large consumers are comparable to popular energy conservation measures such as home energy reports, which produce average savings of approximately 2 percent.

Among the smallest 90 percent of firms, neither of the two split incentives dominate: the effect of a tenant-paid contract is statistically insignificant. This heterogeneous response by firm size is consistent with a setting in which the bill savings from changing consumption do not cover the adjustment costs for small firms, and is in line with recent quasi-experimental evidence from the residential sector.

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