

The Energy Efficiency Gap in the Rental housing Market: It Takes Both Sides to Build a Bridge

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There is ample evidence that households and organizations paradoxically fail to invest in energy efficiency (EE) measures that would be profitable for them based on net present value calculations.

To explain this phenomenon in the context of rental housing, most of the existing literature investigates investment inefficiencies after a tenant and a landlord have matched and signed a leasing contract. In particular, the literature on split incentives often assumes that when considering investing in EE, a landlord takes her tenant's characteristics as given, but in reality this is rarely the case. The lifetime of EE investments is typically much longer than a tenant's average tenure. Therefore, when landlords make EE investments, they do not have perfect information about current or future tenants' energy consumption. This information asymmetry on the tenant side has not been considered in the literature so far and, as we show in this paper, is also a source of inefficiency whenever landlords pay at least part of a dwelling's energy expenditures. Indeed, about 10% to 30% of rental contracts in developed economies still include at least some portion of the associated energy expenditures. Reasons include costs of the meters and of metering, lack of information, behavioral biases, or landlords' marketing strategies.

To analytically explore the role of informational frictions in the rental housing market, this paper develops a simple theoretical model which allows for information asymmetries on the side of landlords (i.e. dwellings) and of tenants (i.e. energy consumption). The model confirms that when the characteristics of both tenants and landlords are unobservable, EE investment is on average too low compared to a situation without such market frictions. When landlords' characteristics are observable - e.g. through Energy Performance Certificates (EPCs) - matching is efficient in the sense that energy-efficient landlords are matched with high-consumption tenants. However, investment in EE is still suboptimally low when landlords pay some or all of the energy expenditures. Similarly, when tenants' characteristics are observable, but landlords' characteristics are unknown, matching is efficient, but investment in EE is too low unless landlords pay the entire energy expenditures.

Thus, our theoretical model shows that the EE paradox may be attributable not only to the lack of signaling regarding landlord-side information but also to the lack of signaling regarding tenant-side information. Data from an original survey of landlords in Germany provide some empirical support for the relevance of disclosing information about tenants.

Our study confirms that when effective EPCs are in place policies encouraging individual metering go in the right direction, because these enable landlords to exclude energy expenditures from the rent and implement consumption-based billing. However, because various market frictions cause many rental contracts to still include energy expenditures, signaling the tenant type is also needed. In particular, because EE investments are often made when a landlord is searching for a new tenant, tenants should be able to signal their preferences for energy performance. Ideally, tenants

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would be encouraged to show their past energy bills to potential landlords. This could form the basis of an “energy passport” wherein tenants would record their past energy performance and other characteristics relevant to forming a prediction of their future energy use. This would be the tenant-side counterpart to EPCs. In most rental housing markets, landlords already gather some information about potential renters (credit checks in particular). In Germany (where the empirical study was conducted), potential renters are often asked to fill in a voluntary self-descriptive questionnaire including questions about rent payment capacity but also about being a good caretaker and a good neighbor. Further, in many countries, landlord associations have launched “ratemytenant” initiatives in which they gather and share information about their tenants (see for instance the site myrental.com in the USA). These questionnaires and websites could be expanded to include information about energy consumption.