Principal-Agent Problems – Key Theory

In many situations, the household or firm making investments in energy-efficiency is not the same one who pays for the energy.

In theory, principals should be able to contract with agents to bring about efficient investment. This may not work in practice, however, if there is asymmetric information. For example, it is difficult for landlords to effectively convey information about energy-efficiency to potential tenants.

Principal-agent problems have been widely discussed in the literature. See, for example, Blumstein, Krieg, and Schipper 1980; Fisher and Rothkopf 1989; DeCanio 1993; Jaffe and Stavins 1994a; Jaffe and Stavins 1994b; Gillingham, Newell, and Palmer, 2009; and Gillingham and Palmer, forthcoming.
Principal-Agent Problems – Empirical Evidence

Murtishaw and Sathaye (2006) and IEA (2007) undertake large-scale accounting exercises, showing that about 30% of energy consumption is potentially affected by principal-agent problems.

Davis (2012) and Gillingham, Harding, Rapson (2012) find that rental-occupied homes in the United States have fewer energy-efficient appliances and less insulation than owner-occupied homes. Both studies find relatively small total impacts (i.e. less than 2% of total energy consumption in rental units).

A related literature examines whether split incentives impact energy usage decisions (Levinson and Neiman, 2004; Maruejols and Young, 2011).

There is scope for applied theory to better articulate these problems in particular contexts. And there is urgent need for more empirical work, particularly outside the U.S. residential sector. Most of this work will likely continue to be observational (not experimental), but data from energy audits and high-frequency consumption data could be exploited much more.