

PALMER AND WALLS, “LIMITED ATTENTION AND THE
RESIDENTIAL ENERGY EFFICIENCY GAP”
AND
FOWLIE, GREENSTONE AND WOLFRAM, “DO ENERGY
EFFICIENCY INVESTMENTS DELIVER?”

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Residential Housing and Energy Efficiency

- Residential housing is particularly interesting (and tricky) context for energy efficiency investments
 1. Housing is a particularly long-lived asset
 - Savings horizon may substantially exceed ownership horizon
 - Capital stock has potential for very slow adjustment
 2. Information provision more challenging than in vehicles (fuel economy labels) or durables (energy guide / star)
 - Savings from investments are building-specific
 - Consumer-heterogeneity is more difficult to incorporate

These papers examine the role of information in home energy efficiency decisions

- Even though home energy audits provide important information, they are rare (3% of households)
- Palmer and Walls (2015) examine which households choose to conduct audits
- Fowlie, Greenstone and Wolfram (2015) studies an encouragement to apply, be audited and participate in a federal weatherization program

Limited attention and the energy efficiency gap

- Consumers vary with respect to their “attention” to energy prices and the potential for energy savings
- Approach: Survey households, correlate audits with:
 - demographics,
 - proxies for the potential benefits / costs, and
 - proxies for inattention to energy prices.
- Are “attentive” household more likely to have an audit?

Constructing a measure of inattention

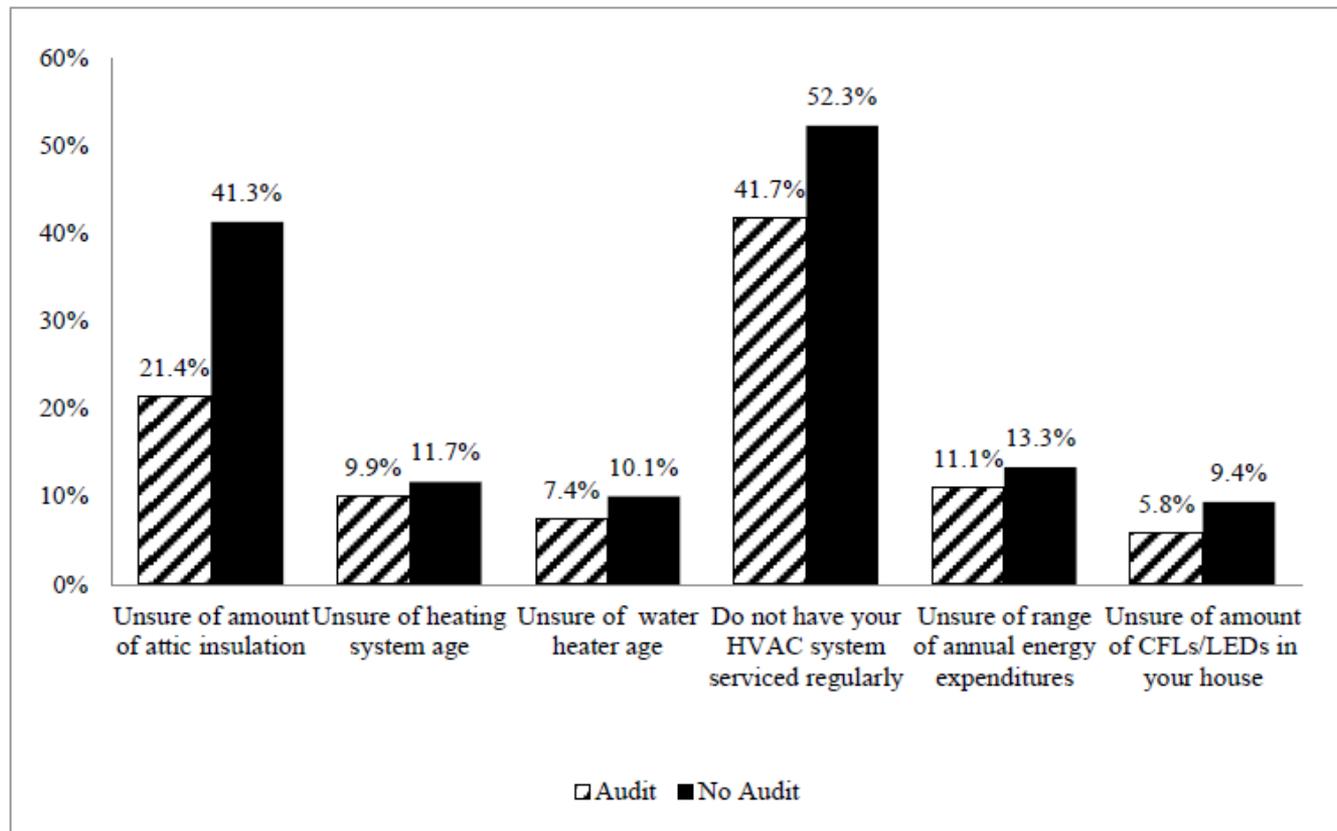


FIGURE S1. AUDIT UPTAKE AND INATTENTIVENESS

Note: Height of the bars represents the percentage of survey respondents.

Source: Palmer and Walls (2015), supplementary materials

Three comments on inattention index

1. Does “I don’t know” reflect inattention or survey engagement?
2. Causality: Would audit recipients be more able to answer questions about their home’s energy efficiency?
3. Budget constraints: Both audits and HVAC service may be desired but not purchased

Do energy efficiency investments deliver?

- Federal weatherization assistance program (WAP) is the largest residential efficiency program in the US.
- Means-tested, actively monitored to prevent fraud / ex-ante negative NPV investments
- This paper examines the effect of a randomly-assigned encouragement intervention in five Michigan counties
 - Stage 1: How does the encouragement affect participation?
 - Stage 2: How does participation affect energy consumption / costs?

Stage 1: Encouragement “works”

| | Application | Efficiency audit | Weatherization complete |
|---------------|------------------------|------------------------|----------------------------|
| Base rate | 0.02** (< 0.01) | 0.01** (< 0.01) | 0.01** (< 0.01) |
| Encouragement | 0.13** (< 0.01) | 0.05** (< 0.01) | 0.05** (< 0.01) |
| Households | 28,889 | 28,889 | 28,889 |

Notes: The unit of observation is a household.

** Significant at the 1 percent level

Source: Fowlie, Greenstone and Wolfram (2015)

Stage 2: Actual savings are a fraction of engineering estimates

| Time Horizon | Real discount rate | | |
|--------------|--------------------|-----------|------------|
| | 3 percent | 6 percent | 10 percent |
| 10 years | \$2,095 | \$1,807 | \$1,509 |
| 15 years | \$2,931 | \$2,385 | \$1,867 |
| 20 years | \$3,653 | \$2,817 | \$2,090 |

Average investment in efficiency measures: \$4,991.

Source: Fowlie, Greenstone and Wolfram (2015)

- Is this driven by overly optimistic engineering estimates? Reflective of the benefits to the encouraged households? Fraud?

Takeaways from these two papers

1. Information does play an important role for investments in home energy efficiency
2. Even with active encouragement, audit rates (and investment rates) are very low
3. Suggestive evidence that both budget constraints and imperfect capitalization are potentially important
4. In addition, engineering estimates may substantially overstate the benefits or understate the costs