Policy Choices to Promote and Support Energy Efficiency in Housing Buildings

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What is DINAMIC?

- A demanding acronym that means: 
  *Development of Notaries’ Information on Property Markets*

- DINAMIC is a subsidiary of the French Notaries High Council.

- Missions: DINAMIC is the entity in charge of R & D around the notaries’ databases on property transactions.

- We are not specialists of green housing, we are statisticians.

- We have data on EPCs in our databases and try to measure the “green value” of housing units (see below).
Three shared objectives:
- Reduce total energy consumption
- Reduce GHG emission
- Increase share of renewable energy
- Example: The 2020 climate and energy package in EU (20-20-20 targets).

To be combined with national / regional objectives (economic growth, employment, trade balance, local champions, political parties, etc.)

Three main sectors share final energy consumption
- EU 2010: transport (32%), households (27%), industry (25%); next come services (13%).

Domestic energy uses
- Depend on climate and wealth: space heating 40% in USA, 66% in UK.
Why EE Housing Policy is a Headache

- Long life expectancy of buildings: dealing with new housing not enough
  - One-year production often less then 1% of stock, demolition less than 0.1%.

- High cost of investment and payback period too long (and random) for owners (and lenders)
  - The cheaper energy price, the longer payback period.

- Public and private (households) budgets under constraints.

- Multiple cases single/multi-family # single owner/condominium # owner occupied/rental # private/public ownership.

- Differences between individuals and companies
  - Rationality (time horizon, preference for present)
  - Demolition / reconstruction can be less costly but is an option for investors only.

- Interference with several local (urban planning) and regional / federal /national laws (condominium, rental and tax).
Policy Choices: Carrot or Stick?

- Legislative normative and informative instruments
  - Requirements for energy performance in National Building Codes (thermal regulation); increase prices
  - Implementation of certification systems (energy efficiency class system)
  - Progressive energy pricing, associated with compulsory individual meters in multi-family buildings (French law applicable in 2015).

- White certificates
  - Energy savings certificates (ESC), EE portfolio standards (EEPS)
  - Comparable to emission trading (= green tag)
  - Energy producers/suppliers/distributors required to assist their customers to take energy-efficiency measures; Receive tradable certificates (UK, Italy, France) when they reach their target, purchased by those who do not.

- Informational and educational measures
  - Promotion of EE usage through campaigns
  - Exemplary role of public housing: 800,000 "energy-hungry” French HLM to be thermally renovated until 2020.
Policy Choices: Lift Obstacles in Other Laws

- **Rental law:** Why renovate if tenants benefit from a cheaper utility bill and lessor may not increase rents?
  - In Germany, rent increase allowed = 11% of EE retrofit cost (tenant may refuse), approx. 12 years payback.

- **Tax law:** investment cost deductible from rental income? Losses deductible against other income? Possibly carried forward?

- **Condominium law**
  - Must define who pays what (upkeep of and repairs to common areas and utility networks);
  - Majority rules for major renovation works often too high (down from 2/3 to ½ in new French law – lessors often refuse);
  - Provision for works (savings schemes);

- **Mortgage law:** is lending to home-owners’ associations possible?

- **Urban planning:** is adding floors allowed (maximum legal density)?
Financing: Promote Innovation

- Financial incentive systems
  - Specific or general (for any kind of renovation) grants, tax credit, or soft loans

- Third party investment / financing
  - On-bill financing (USA): loan to utility customer (tied to utility service) administered by a utility company or a State Energy office;
  - Energy Service Company (ESCO): performs an analysis of the property, designs an energy efficient solution, installs the required elements, and maintains the system to ensure energy savings during the payback period; can be commercial, non-profit, semi-public (France).

- The ultimate argument: EE is rewarded by the market
  - “Green value”: Impact on property value of energy efficiency and other environment-friendly features (access to public transportation, etc.),
  - Uses a standard hedonic price regression model (an econometric model linking the price of a house to its characteristics – as used to calculate house price indexes).
E.C. Study: Up to 11% in Vienna

Figure 17: Effect of one-letter or equivalent improvement in EPC rating across European property markets (95% confidence interval shown; see also notes in the text)
Concluding Remarks

- In addition to taking constraining (thus unpopular) measures, governments must facilitate energy efficient construction and retrofit of housing buildings by
  - Adapting legislation,
  - Proposing relevant financial incentives ("split incentives" for income properties, where the interests of building owners and tenants are not aligned),
  - Supporting financial innovation.

- Importance of disseminating "culture" of energy efficiency:
  - Media campaigns,
  - Evidence from markets: comparisons of utility bills and property values.
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