



Divergence of US User Costs and Rents, 1980-2004

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* All views expressed in this presentation are mine, and do not reflect the views or policies of the Bureau of Labor Statistics or other BLS staff members.



Outline

- Review issues at stake
- Preview of results: a puzzle
- A little theory
- Results
- Conclusions



Relevance to this conference

- Key question: why a house price index?
(and why not)
 - Asset prices and inflation (YES);
monetary policy issues
 - Asset price dynamics and consumption (YES);
forecasting, retirement issues
 - Other reasons ...
 - Use in CPI?? ...



Use in CPI? NO ...

- Consumer price index. (The why question.)
- Tempting to use $p(h)$ when possess a high-quality measure
- But only new house price index (stocks acquired within the period) is theoretically justifiable (non-schizophrenia); trades “within” the consumer are irrelevant; will underestimate consumption expenses (e.g., Diewert, 2003)
- Whether new or extant $p(h)$, neither corresponds to welfare (or actual consumption)
 - Flow of services from housing (and cost of those services)
 - Actual impact on household’s bottom line ($i, \pi(h)$)
 - Consider cost of shelter services consumed by homeowner on newly-desirable property



Except perhaps in User Cost, But ...

- A good existing house price index is required for the other theoretically-valid (COL) measure of consumption of housing: user cost
- This paper argues that the user cost approach (as currently developed) is not good enough for official statistical agencies, would present operational challenges, and would generate much controversy.



User Cost

- concept simple: compute cost of owning a durable good for 1 period:
- purchasing costs, depreciation/maintenance, taxes, sell at end of period. (All items affect 'bottom line.')
- Some argument over details, but basically:

$$c = P \left(i + \delta + \text{"net tax"} - E \frac{\Delta P}{P} \right)$$

- *ex post inappropriate: negative, decision-making, ex ante UC = rents in theory
- *not r, i. (which i? controversy.)
- *forecast approach to $E(\pi)$ (controversy...)



Preview of Results

- Even ex ante user costs are far too volatile to be useful, and diverge markedly from rents for long periods.
- No “arbitrage” possible, though.
- Deficient theory.
- (But useful antidote to popular press misunderstandings.)



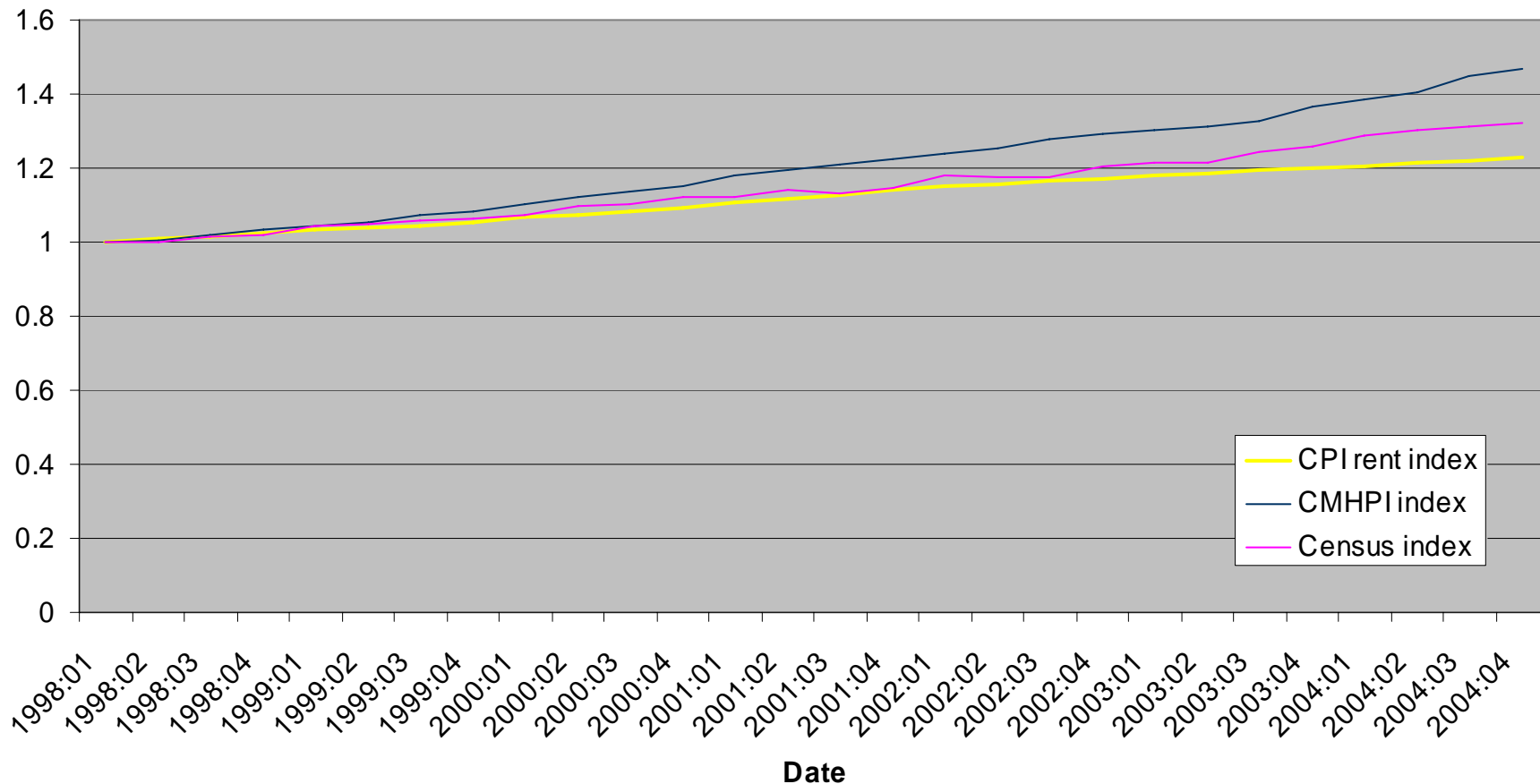
Data (exclusively US)

- CMHPI (~OFHEO), Census $p(h)$: choice matters a lot for trends, not at all for divergence.
- i : 30-yr. mortgage or T-bill, basically little difference.
- Confidential BLS microdata (detached index)
- CES data



Motivation: rent inflation too low?

**Comparison of various measures of cost of housing services:
home prices vs. rents (1998-2004)**





Note re: user costs:

- Over time, grows with $P(h)$ (as do rents).
- But in SR, could amplify fluctuations in $P(h)$.
- Forecasting: average of three models.
Inappropriate to smooth these.
Traditional "avg. over 15 years" is terrible.

$$c = P(h) \left(i + \delta + \text{"net tax"} - E \frac{\Delta P(h)}{P(h)} \right)$$

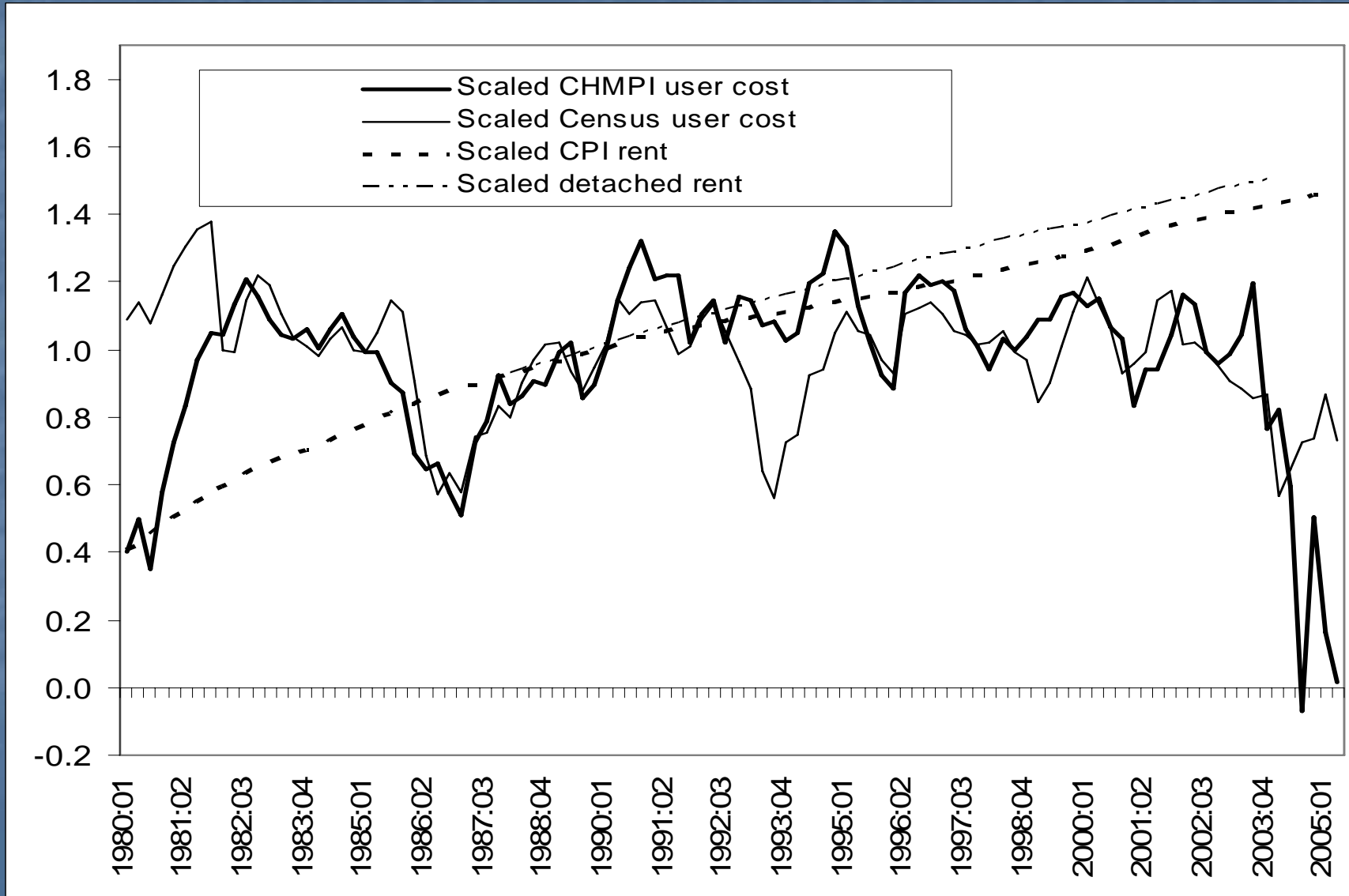


Rents and User Costs

- In the presence of landlords who are risk-neutral, no transactions costs, etc.,
rent = (ex ante) user cost
- Argument is straightforward:
competition driving profits to zero,
user cost = cost facing a landlord.
(Imagine i falls, landlord costs fall; imagine $E\pi(h)$ rises, then need not “gouge” tenants as much.
- Lots of detached rental units in US, so margin is (in theory) large.



Bottom line results (normalized series):

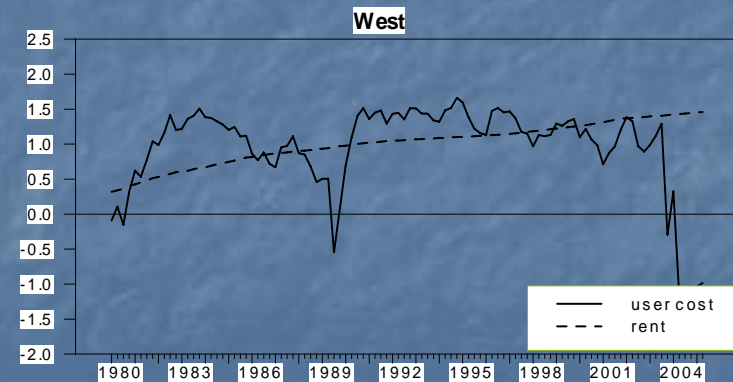
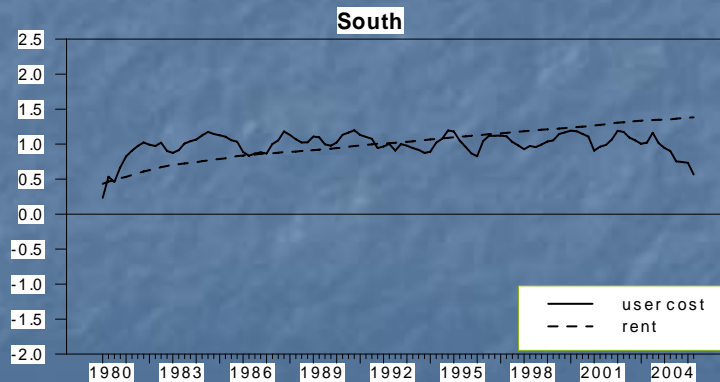
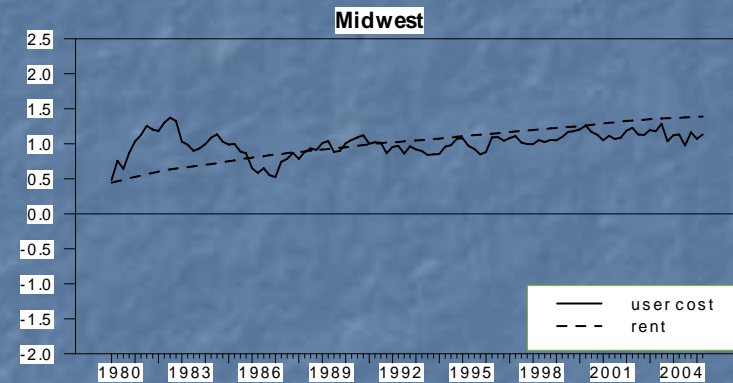
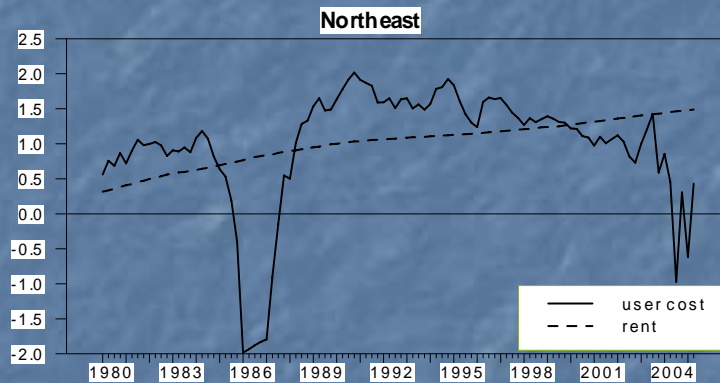




By Census region:

Log Rents vs Log User Costs

(Normalized so that each series average = 1)





Regression analysis: rents and user costs

- Regress rent inflation on lags, inflation in user cost determinants, vacancy rates, inflation in utilities.
- Results: Only weak evidence that rents respond to user cost determinants (even vacancy rate response is weak); puzzling.
- Further evidence of divergence.

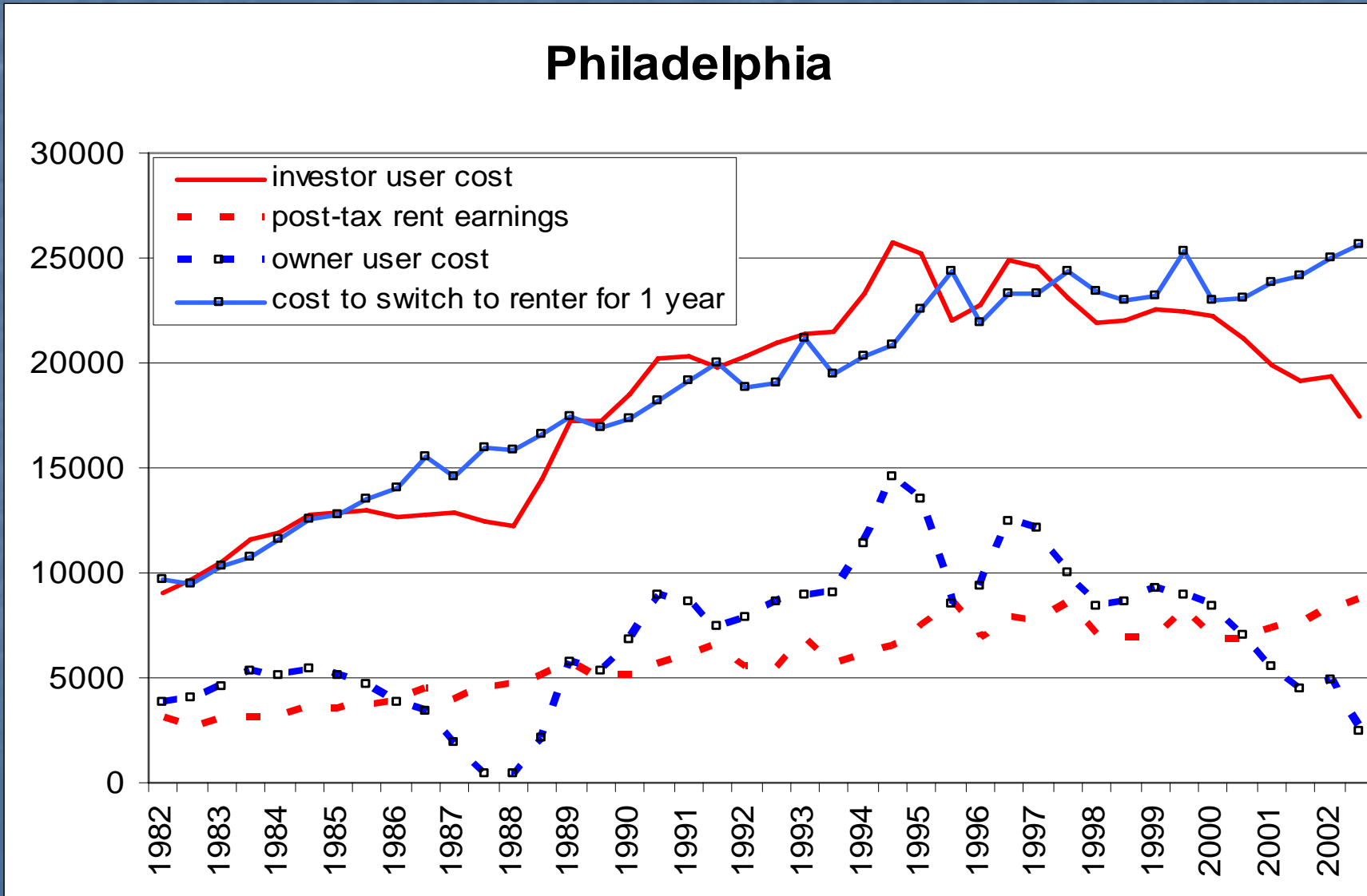


Discussion

- Huge divergences (in theory, measures are equal). (bigger in coastal cities: land?)
- ...but, (CE data), no “arbitrage” possible, due to transactions costs (see next slide) – inaction region (cf. to frictionless theory)
- Divergences persist for long periods.
- Enormously volatile (can't use in CPI).
- → Little reason to be confident in theory.
- But antidote to popular press accounts: In fact, lately user costs have actually been below rents, so press not even correct about sign of the “error.” (low cost explains increase in homeownership.)

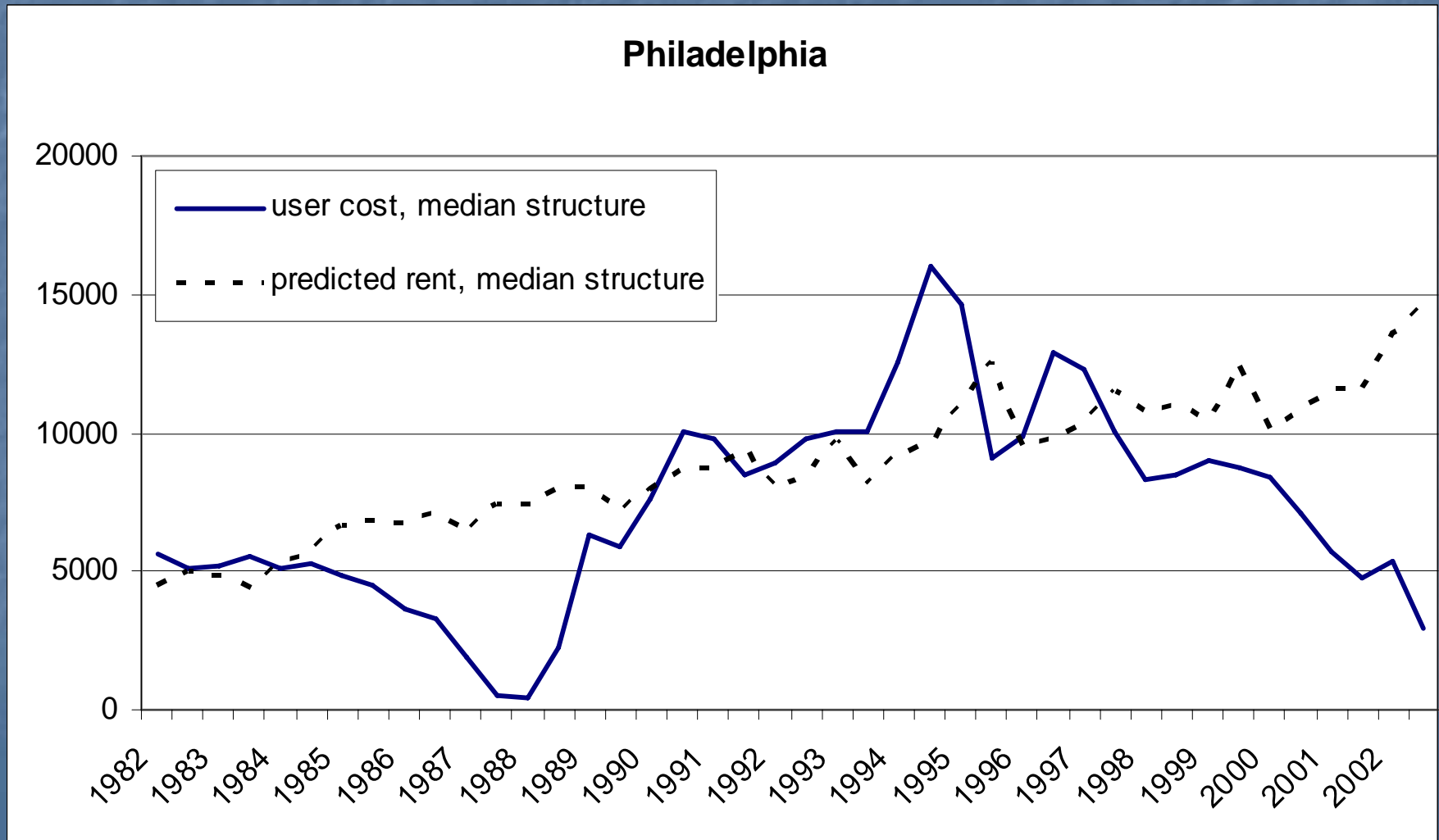


Philadelphia example: no "1-yr-arbitrage"





User cost and predicted rent, median structure, Philadelphia (Garner and Verbrugge, 2006)





Conclusions

- Rents diverge from user costs significantly (i.e., 'equivalent' measures are not equivalent); transactions costs are of first-order importance.
- Need a fundamentals-based forecast?
(no established theory)
Reverse-engineered forecast is lousy.
- User costs are theoretically appealing, but empirically not ready for government work; frictionless theory inadequate, extant measures too volatile and too controversial; explicitly includes financial aspects, which may be out-of-scope.
- Measuring consumption services? Find market prices of those actual services (uncontaminated with financial).
- BLS research: "location, location, location" is a reliable guide to 'predicting' rent inflation.