

# How HUD and NAHB Created the U.S. Housing Crisis

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The views presented are the Authors' only and do not represent the views of the Federal Reserve System.

# Two Methods to Make Houses

- Traditional method (very old method)
  - Highly skilled workers
  - Sometimes called “stick” production; construction site has sticks extending upward
- Factory production
  - Homes made just like other durable goods, like cars and such
- Imagine automobiles being made with traditional methods
  - Toyota could build a Camry over six-month period in your driveway

# History: Surge of Factory Production

- Over 1960s, factory production of single-family homes (SFH) increased from 10% to 60% of total SFH construction (total=factory production + stick-built construction).
- Share was increasing. Would we see 70%? 80%?
- Factory production was much more efficient, leading to much lower prices. Large number of low-income Americans were now becoming homeowners.

# History: Monopolies (HUD/NAHB) Sabotage Factory-Built Industry

- With their survival in doubt, monopolies in the traditional building sector (also called stick-built housing), including HUD and NAHB, erected barriers and restrictions on factory producers, causing the industry to collapse, creating the housing crisis
- Today's factory-built home industry is a shell of what it was, about 10% of SFH
- In words of Henry Simons, “monopolies sabotaged the industry”

# History: How Monopolies Sabotage Factory Producers: I

- In the late 1960s, HUD introduces massive subsidies
  - Those purchasing stick-built homes can receive mortgages as low as 1%
  - Purchasers of factory-built homes not eligible
  - In early 1970s, each year more than 400,000 stick-built homes purchased with subsidies

# History: How Monopolies Sabotage Factory Producers: II

- HUD introduced national building code for factory producers
  - HUD code had strict energy, fire requirements
  - In the areas where factory producers competed with traditional (stick) industry, HUD code much stronger than local code. Many local areas had no building code!
  - So factory producers put at tremendous disadvantage

# History: How Monopolies Sabotage Factory Producers: III

- HUD code had features that were simply to sabotage
  - Some factory-built homes were required to have a permanent chassis attached to their bottoms (see pictures below)

# History: How Monopolies Sabotage Factory Producers: IV

- HUD building code acts as national zoning ordinance
  - Because HUD code required permanent chassis, this impacted how factory-built homes were treated in local zoning ordinances across the country. Led to their exclusion.



# History: How Monopolies Sabotaged Industry

- The history just summarized was difficult to figure out
- Monopolies produced lots of misinformation to confuse/cover up their sabotage
- In fact, this history of sabotage is not known!

# History: Consequences of Sabotage

- Housing costs = cost of structure + cost of land
- In most locations, cost of structure makes up a very large share of housing costs
- Factory production dramatically reduces structure cost
- Hence, using factory-built homes would reduce housing costs by 2/3 and more, greatly easing housing crisis

# Outline: Sections

- (1) Define housing crisis
- (2) Discuss what we mean by “monopoly”
  - Standard monopoly (Cournot monopoly): raises prices
  - Henry Simons, Thurman Arnold’s monopoly: sabotages rivals
    - In process of enriching themselves, monopolies destroy rivals, typically those producing goods for low-income Americans
  - Economists use Cournot model to estimate costs of monopoly, completely missing sabotage and its huge costs

# Outline

- (3) Terminology
- (4) Statistics on factory production
- (5) Benefits of factory production
- (6) Monopoly blocking of factory production: Overview
- (7) History of monopolies blocking modular [3+]
- (8) History blocking modular [1&2] (modular [1&2] homes)

# Outline

- (9) Factory-built housing industry fights back, to no avail
- (10) What is the cost of monopoly?
- (11) Conclusion: What to do?

# SECTION 1:

## Defining Housing Crisis

# Defining Housing Crisis

- Can proceed from perspective of:
  - Households
  - Aggregate industry (construction)

# Housing Crisis from Household Perspective

- Homelessness, repeated homelessness
- Eviction, repeated eviction
- Threat of eviction
- Less significant
  - Unable to pursue opportunities in other areas
  - Spending more than 50% of income on shelter



# Defining Crisis from Household Perspective

Recent study of lifetime incidence of homelessness (Fusaro, Levy, Shaefer 2018)

- Non-hispanic blacks: 16.8%
- Over their lifetime, nearly one in five blacks will experience homelessness

# Housing Crisis from Industry Perspective

An industry faces a crisis if:

- The industry blocks new technology
- The industry is a productivity laggard
- The industry is overrun with monopolies

# We Use Industry Definition

- The housing construction industry is in crisis
- Recent BLS estimates:
  - Looking over the last 30 years, they find no labor productivity growth in single-family home construction
  - In prior decades, productivity growth was negative (though quality of data not as good)

## SECTION 2:

What Do We Mean by “Monopoly?”

# Defining Monopoly

- To study monopoly: need theory/model
- For the last 50 years, economics profession uses the Cournot-model of monopoly (and the Cournot-model of oligopoly)
- Before World War II, a very different model used

# Standard Model of Monopoly (Cournot-Model)

- Learn this in first-year economic courses
- A monopoly is:
  - A single firm controlling a market
  - Run by an entrepreneur
  - Decides how much to raise price

# Standard Model of Duopoly as Well

- A duopoly is:
  - Two firms controlling a market
  - Each run by an entrepreneur
  - Each decides how much to raise (his/her) price
- Model of oligopoly is the same

# New Model of Monopoly (Holmes & Schmitz 1995, 2001; Schmitz 2012, 2016, 2019)

- Monopolies are GROUPS of individuals that organize themselves into concentrations of power to enrich themselves
- In doing so, they often destroy substitutes for their monopoly products. These substitutes are typically low-cost alternatives for the monopoly product, substitutes that would have been purchased by poor Americans.



# New Model of Monopoly, continued

- 1 Holmes, Thomas J., and James A. Schmitz, Jr. “Resistance to New Technology and Trade between Areas.” *Federal Reserve Bank of Minneapolis Quarterly Review* 19.1 (1995): 2-17.
- 2 ——. “A Gain from Trade: From Unproductive to Productive Entrepreneurship.” *Journal of Monetary Economics* 47.2 (2001): 417-446.
- 3 Schmitz Jr, James A. “New and Larger Costs of Monopoly and Tariffs.” *Federal Reserve Bank of Minneapolis Research Department* 468 (July 2012).
- 4 ——. “The Costs of Monopoly: A New View.” *Federal Reserve Bank of Minneapolis Region* (July 2016).
- 5 ——. “Monopolies Inflict Great Harm on Poor Americans.” (2019).

See website: <https://sites.google.com/site/jamesschmitzjr/home>

# New Model of Monopoly Is Really an Old Model

- Model in Holmes and Schmitz (1995, 2001) and Schmitz (2012, 2016, 2019) was standard model before Cournot model embraced in 1950s.
- It was standard for economists and general public
- Monopolies:
  - Are groups of people, who organize themselves into concentrations of power to enrich themselves
  - Raise price
  - But, importantly, destroy rivals and sabotage the system

# Henry Simons, Thurman Arnold Among Those Developing This Model

- Simons was a professor at University of Chicago and considered a leader of that great department of 1930s (along with Frank Knight and Jacob Viner)
- Arnold was Assistant Attorney General for Antitrust in DoJ for FDR, serving 1938-43

# Arnold-Simons Model of Sabotaging-Monopoly

Henry Simons, *Positive Program for Laissez Faire*, 1934

*Monopolies “possess tremendous power for exploiting the community at large and even for sabotaging the system.”*

To read Simons' full pamphlet: [Positive Program for Laissez Faire](#)

# Simons-Arnold Monopoly Sabotages

Thurman W. Arnold, *Labor Against Itself*, 1943

*Whenever a small group of individuals, uncurbed by legal authority, is permitted to dominate any important part of the production or distribution of the necessities of life ... they will become a sort of independent state within a state, making treaties and alliances, expanding their power by waging industrial war, dealing on equal terms with the executive and legislative branches of the government and defying governmental authority if necessary with the self-righteousness of an independent sovereign.*

To read Arnold's full article: [Labor Against Itself](#)

# Costs of Monopoly: Cournot-Model

- Definition of cost (DWL)
- Using Cournot model as measuring device, economists find very small costs of monopoly
- That monopoly has small costs is widespread consensus among economists today
- In fact, the whole issue of “costs of monopoly” is rarely discussed

# Costs of Monopoly: Sabotaging-Model

(Studies before WWII)

- The sabotaging model was used before World War II
- Many studies find that monopolies inflict very large losses—on the low-income
  - Arnold, DoJ vs. AMA  
AMA sabotaging doctors forming medical groups to serve low-income Federal workers in Washington, DC
  - Arnold, colleagues document how monopolies in construction sabotage factory-built homes (purchased by low-income Americans)

# Costs of Monopoly: Sabotaging

(Studies last couple of decades)

- Over last 20 years, many colleagues and I have used this model to measure costs of monopoly (for some references, see Schmitz 2012, 2016). See new studies, Schmitz (2019).
- We have found very large losses



## SECTION 3:

# Terminology

# Definition of Factory-Produced Homes

- Panelized/kit homes
  - Panels (perhaps 100) assembled on site
- Modular homes
  - Fully-constructed modules delivered to site. A house may be composed of one, two, or more modules.

# Two Types of Modular Homes

- Modular [1&2]
  - Homes made of one or two modules
- Modular [3+]
  - Homes made of three or more modules

# Great Prejudice Against Modular [1&2]

- When modular [1&2] homes introduced in 1940s, they were a threat to stick-home builders
- Stick-home builders have mounted many different campaigns to destroy markets to modular [1&2]
- One method is misinformation/deceit. They call modular [1&2] homes “trailers.” Another name that conjures prejudice is calling modular [1&2] homes “mobile” homes.

# Great Prejudice Against Modular [1&2]

- With the introduction of modular [1&2] homes in the late 1940s, monopolies in traditional industry successfully argued they were trailers.
- Trailers were primitive forms of shelter moved from town to town by poor looking for work during the Great Depression. They were zoned out of many localities.
- Modular [1&2] homes are not trailers, but are permanently sited.
- But great prejudice has remained, abetted, over and over, by monopolies in traditional construction.

# Terminology for Modular [1&2]

- They are sometimes called mobile homes
- Some of them are called manufactured homes
- To avoid confusion, and to attempt to limit the deceit of monopolies, we call them modular [1&2] homes

# Modular [1&2] Homes Are of High Quality

- Two pictures of modular [1&2] homes

### Example of Manufactured Home



Next Step: Affordable Housing Done Right, available at: <https://nextstepus.org/smartmh/>



**Example of Manufactured Home**



\*Nevada Housing Division-Manufactured Housing, available at: [www.mhd.nv.org](http://www.mhd.nv.org)

## SECTION 4:

# Statistics on Housing Production; Factory Output Crashes

# Notes on Housing Statistics (Units)

- Total Production (SFH) = Stick + Modular [1&2] + Modular [3+] + Panelized
- Census Housing Starts = Stick + Modular [3+] + Panelized
  - Note: Modular [1&2] homes not included
- Modular [1&2] home shipments
  - Available from 1948
- Total Production = Housing Starts + Modular [1&2] Shipments

# Factory Production (Units)

- Factory production = Modular [1&2] + Modular [3+] + Panelized
- Modular [3+] and panelized homes are:
  - Available 1948-1972 (Trade Association)
  - Available 1992 onward (Census Characteristics of New Housing)
- Modular [1&2] homes, again, available from 1948 onward
- Hence, only have units of factory production from 1948 to 1972 and from 1992 onward. 20 year gap
- Same is true, of course, for units of stick production

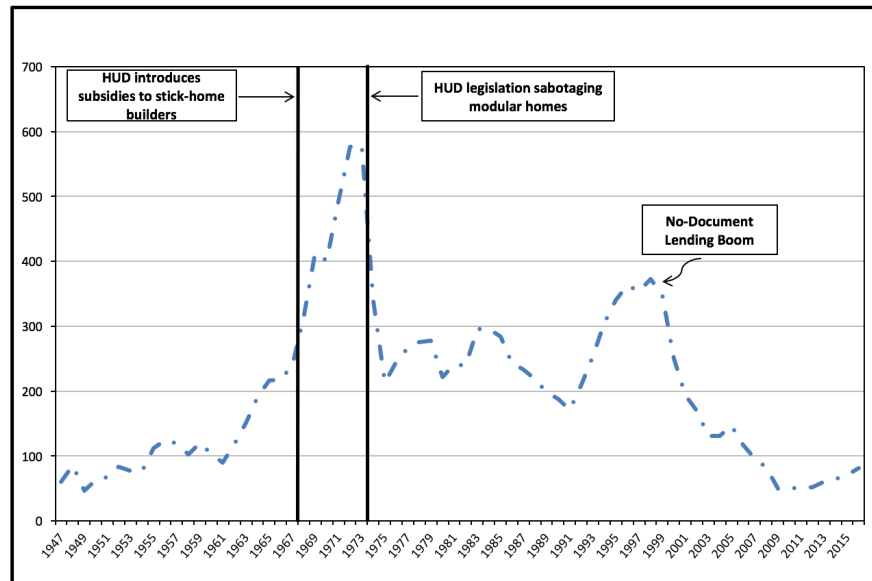
# Census of Manufactures Data on Factory Production

- Census only breaks out factory producers into 4-digit SICs in 1972 (three of them)
- Modular [1&2] homes, Prefabricated wood buildings (includes modular [3+] and panelized), Prefabricated metal buildings (includes modular [3+] and panelized)
- Usual CM variables (e.g. employment) reported
- Units are not reported

# Shipments of Modular [1&2] Homes

- Figure 1: Shipments (in units) of modular [1&2] homes
  - Notice surge in 1960s, collapse in early 1970s
  - Increase in late 1990s a no-doc lending boom (preceded 2008 collapse in stick mortgage market by decade)

### Shipments of Modular [1&2] Homes (Units, 000s)



NB: (1) These homes are not in the statistics on housing starts or building permits.  
 (2) Notice lending boom roughly a decade before the real estate lending boom.

\*Data from the U.S. Census Bureau – Shipments of New Manufactured Homes, retrievable at <https://www.census.gov/data/tables/time-series/econ/mhs/shipments.html>. Data prior to 1959 for manufactured homes are available from the Historical Statistics of the United States, Millennial Edition, Part Dc, Series Dc637-652.

# Factory Production as Share of Total

- Figure 2: Factory-produced homes as share of total (total=factory-produced + stick-built)
- Figure coming a few pages hence



# Factory Production as Share of Total

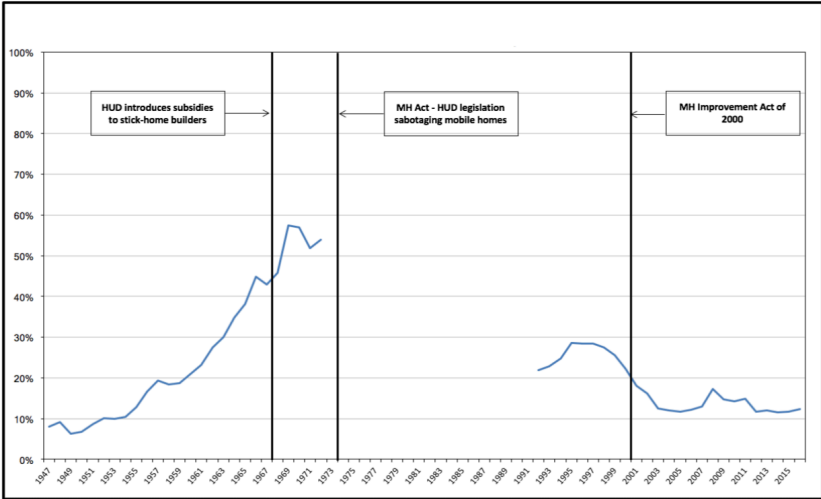
- Factory share approaches 60% in early 1970s
- This despite large HUD subsidy program started in 1968
  - Buyers of stick-built homes can obtain subsidized mortgage for as low as 1%
  - Annually, 400,000 stick-built homes purchased with subsidy
- Factory share would have shot through 70% without subsidy

# Factory Production as Share of Total

- Remember we have 20-year gap in factory production (in units), 1972-1992
- But factory share clearly crashed in early 1970s
  - Modular [1&2] home shipments crashed
  - Employment in 4-digit producing-factory-built-home SICs fell significantly

### Factory-Produced Homes as Share of Total Production of Single-Family Homes

Total Production=Stick-Built Construction + Factory Production



\*Data from the U.S. Census Bureau – Shipments of New Manufactured Homes. Data prior to 1959 for manufactured homes are available from the Historical Statistics of the United States, Millennial Edition, Part De, Series Dc637-652. Single-family (one) unit housing starts (both attached and unattached) following 1959 are available from the U.S. Census Bureau – New Residential Construction. Not seasonally adjusted data are used. Previous data are available from David Saskind, "Housing Starts: Background and Derivation of Estimates 1945-1982", Construction Review, 1982. Data for modular home production up to 1969 are from the National Association of Home Manufacturers based on their own surveys and professional surveys. For the remaining three years, data are from "Modular Housing, 1972: Statistics & Specifics" by John A. Reidelbach (Modco, 1972), Page 127. From 1992 onward, the data are equal to the sum of the "Modular" and "Other" categories from "2016 Characteristics of New Housing."

## SECTION 5:

# Benefits of Factory Production

# Factory Much More Efficient

Stick-built production, as compared to factory:

- Uses much more labor and much higher-skilled labor
- Work outside: weather, theft, ...
- Much greater waste of materials (cutting, lean production,...)
- Much greater time to build
- In some areas (rural, small towns) must build one house at a time (Levitt techniques not economical)

# Unrecognized but Extremely Important Benefit

- Because factory workers are semi-skilled, they can be trained in a few weeks
- Training of high-skilled workers in stick production (like carpenters) obviously requires years rather than weeks
- Makes recovery from prolonged housing construction recession particularly difficult, as many workers have left industry

# Shortage of Skilled Workers Stalls Recovery

- Today in many areas around the country, stick builders are having great difficulty finding skilled workers
- Many skilled workers moved, left the profession, or both
- This has meant home-building is stalled in some areas
- Some locations, in their “affordable housing plans,” have provisions for training skilled construction workers

## SECTION 6:

# Monopolies Block Factory-Built Housing: Overview



# Factory-Produced Homes Blocked for 100 Years

- Before WWII, monopolies blocked modular [3+], panelized
- Who blocked? Perfect storm: those blocking include
  - Small builders, craft unions, specialized building material producers, building code inspectors, local politicians who were supported by these groups
  - Coalitions among these groups were typically too much for factory producers to fight

# Monopolies Blocking Before WWII: Chicago

- Judge Keensaw Mountain Landis describes Chicago construction industry in 1920 as in “state of chaos”
- Chaos results from fighting among construction monopolies
- Landis agrees to arbitrate disputes, leading to brief period with factory-built homes permitted in Chicago (see advertisement)
- But actual delivery of factory-built homes likely blocked. Still blocked today in Chicago.



# Blocking After WWII Ends

Thurman Arnold continues his arguments that monopolies block low-cost housing

Arnold, Thurman. "Why We Have a Housing Mess." *Look* (April 1, 1947): 21.



“This Pacific war veteran and his family are homeless because we have let rackets, chiseling and labor feather-bedding block the production of low-cost houses”

\**Look* (April 1, 1947): p.21

## SECTION 7:

Monopolies Block Modular [3+]

# Blocking Modular [3+]

- The same groups and coalitions mentioned above have operated throughout the post-WWII period
- Modular [3+] homes continue to be blocked in all the major US cities

More slides to be added

## SECTION 8:

# Monopolies Block Modular [1&2] Homes



# Blocking of Modular [1&2] Homes, 1950-68

- These homes introduced late 1940s
- Who blocks these homes?
  - Some of the same coalitions as before WWII
  - But new coalitions develop. As these homes are more likely to be placed in small towns and rural areas, coalitions between local builders and local zoning groups develop
  - National Association of Home Builders develops into strong group opposing them

# Blocking of Modular [1&2] Homes, 1950-68, Methods

## Linking modular [1&2] homes with trailers

- Trailers were primitive shelters that were used by poor families seeking work during the Great Depression. Towed these shelters from town to town.
- Shelters were banned from many localities
- Small builders joined with local zoning boards to claim modular [1&2] homes were trailers
- Modular [1&2] homes are not trailers but tactic successful

# Blocking of Modular [1&2] Homes, 1968-Present, Subsidies

- When local blocking methods began to fail in late 1960s, NAHB turns to HUD to save small builders
- In 1968, HUD introduces a very generous subsidy scheme for households purchasing stick-built homes

# Blocking of Modular [1&2] Homes, 1974-Present, HUD Code

- HUD instrumental in passing legislation creating national building code for modular [1&2] homes, HUD code
- Very strict energy and fire provisions
- Code treated modular [1&2] homes like vehicles
  - Modular [1&2] homes required to have permanent chassis

# Permanent Chassis Requirement

- Modular [1&2] homes cannot remove chassis once home delivered to its permanent housing site
- Even homes placed on foundation
- Even homes placed on foundation with basement (see pictures)

## Chassis Inside Basement of Manufactured Home



*\*Manufactured Housing Research Alliance, 2000.*

## Metal Chassis Above Basement



# Impacts of HUD Code

- In areas where modular [1&2] homes and stick builders had greatest competition, modular [1&2] producers dramatically hurt
- Many of these areas have no local building code



# Impacts of HUD Code: Increase Production Costs

- Energy code stricter than most local codes
- Fire code is similar
- Permanent chassis obviously adds production cost

# Impacts of HUD Code: Reduces Value of Home

- With permanent chassis, homes cannot be stacked
- Similarly, costs of placing home on foundation increase, and chassis sits in the house

# Impacts of HUD Code: Increases Financing Costs

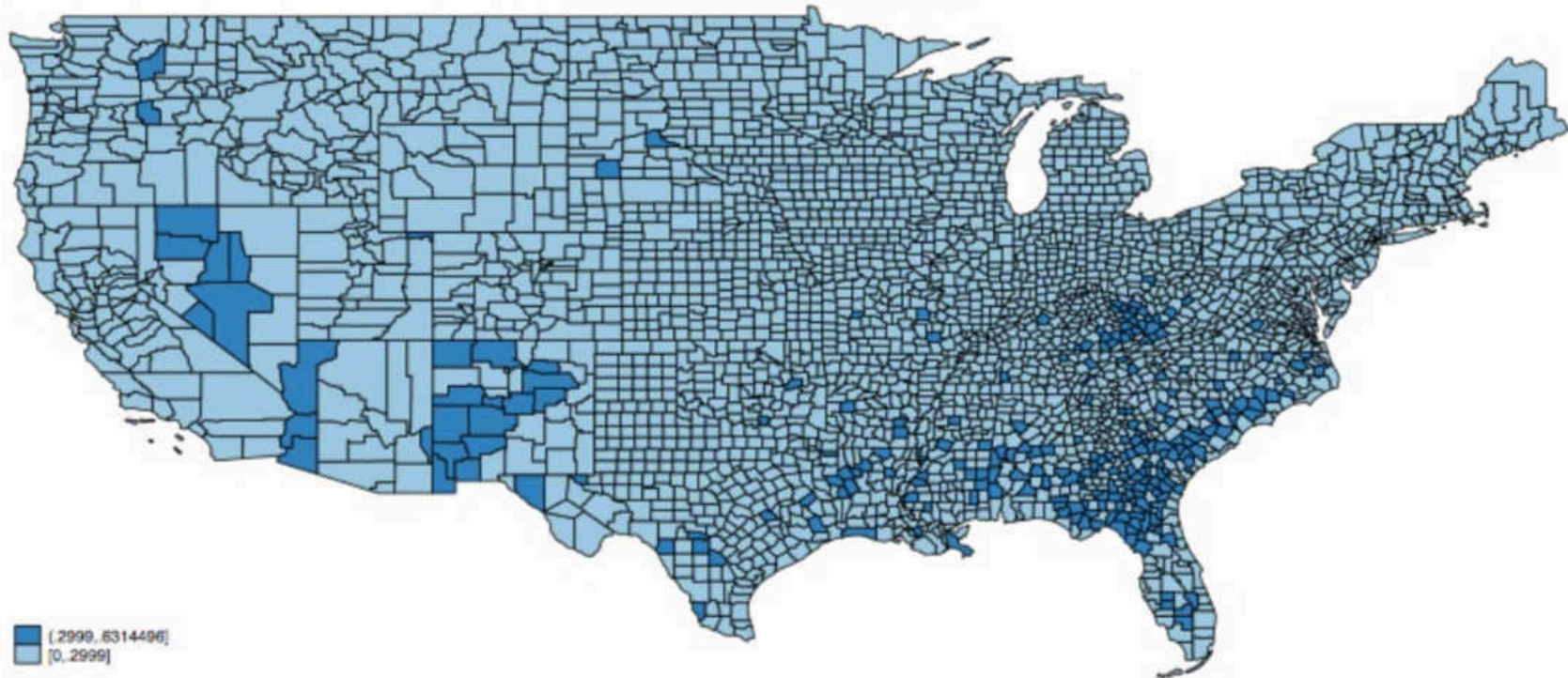
Since HUD code treats modular [1&2] home as vehicle, financed as a car

# Impacts of HUD Code: Acts as National Zoning Ordinance

- Since HUD code treats modular [1&2] home as vehicle, it's zoned out of many local areas
- Zoned out of most of Midwest, Northeast

# Ratio of Modular [1&2] Homes over Single-Family Homes (Including Modular [1&2])

Counties exceeding 30%



\*Data from U.S. Census Bureau American Community Survey.

## SECTION 9:

Factory-Built Housing Industry Fought  
Sabotage, to no Avail

Slides to be added

## SECTION 10:

What Is the Cost of These Monopolies?



# Two Types of Costs

- Costs to overall society
- Costs disproportionately hurting poor

# Costs to Society I: Losses from Slow Recoveries

By using stick production methods, a severe downturn (like 2008) leads to a very long recovery

# Costs to Society II: What Are Losses from Segmented Markets?

- Modular [1&2] homes sold as cars
- Stick-built homes sold as real estate
- Huge spreads

# What Are Costs to Low-Income of not Allowing Factory Production?

- Losses associated with more expensive housing (renting)
- Losses from elimination of “inexpensive” homes (home ownership thought to be important)

# Losses from More Expensive Housing

- Homelessness, eviction related to high housing costs
- Low-income spend lots of *time* trying to avoid eviction, spend *time* searching for housing if eviction looks probable, not to mention time use if evicted/homeless
- Cheaper housing alleviates some of these problems

# Calculating These Particular Losses

- Extend household production model to include these uses of time: avoiding eviction, etc.
- Calibrate and estimate
- Seems like an important contribution (ask Richard)

# What Are the Losses from Elimination of “Lower-End” Homes?

- Saving to buy \$200,000 home very different from \$50,000
- If allow factory-built homes, home ownership of low-income will increase
- Wealth will increase

# Extend Rios-Rull and Sanchez-Marcos Model

- Model with different home sizes
- Calibrate to U.S. economy
- Now insert another house type at the bottom
- Calculate welfare gains
- Seems like an important contribution (ask Victor)



# Conclusion: Monopolies Cause “Crises” in Many Industries

- “Dental crisis” result of monopolies blocking non-dental professionals
- “Housing crisis” result of monopolies in construction sabotaging factory-built housing, which low-income Americans could afford
- “Legal crisis” experienced by the poor results from lawyers blocking independent practice of paralegals
- OEM (cars, farm equipment) try to squash independent repair industry ([repair.org](http://repair.org))