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Determinants of Housing Prices in Micropolitan Areas

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RESEARCH COLLOQUIUM

2017

PITTSBURG STATE UNIVERSITY



DETERMINANTS OF VARIATIONS IN HOUSING PRICES IN MICROPOLITAN AREAS

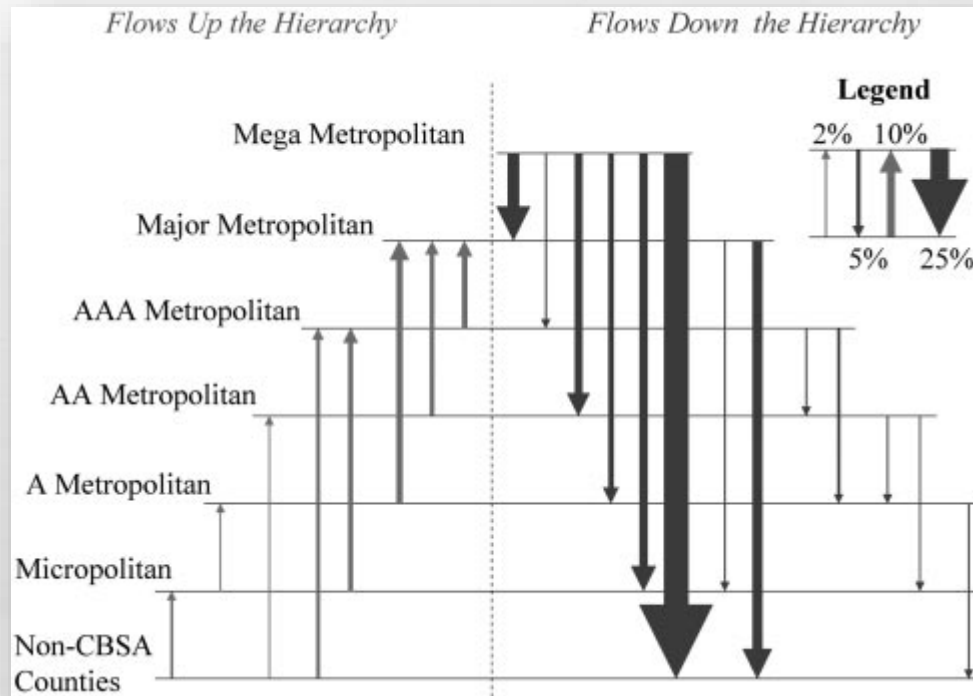
- **MICROPOLITAN AREA: HAVING A POPULATION BETWEEN 10,000 AND 50,000 IN ONE URBAN AREA.**
- **MANY STUDIES HAVE LOOKED INTO HOUSING PRICES AROUND THE WORLD**
- **ATTRACTED MUCH ATTENTION IN RECENT YEARS DUE TO RECESSION**

MIGRATION TRENDS

DEMOGRAPHIC EFFECTIVENESS

MIGRATION UP AND DOWN THE URBAN HIERARCHY AND
ACROSS THE LIFE COURSE

D. A. PLANEA,B, C. J. HENRIEC, AND M. J. PERRYD



PURPOSE AND CONTRIBUTION OF THE STUDY

- **BRIDGE INFORMATION GAP IN STUDIES, REGARDING HOUSE PRICE FLUCTUATION, APPLIED TO MICROPOLITAN AREAS COMPARED TO METROPOLITAN AREAS**
 - **APPLY RESULTS TO PITTSBURG**

LITERATURE REVIEW

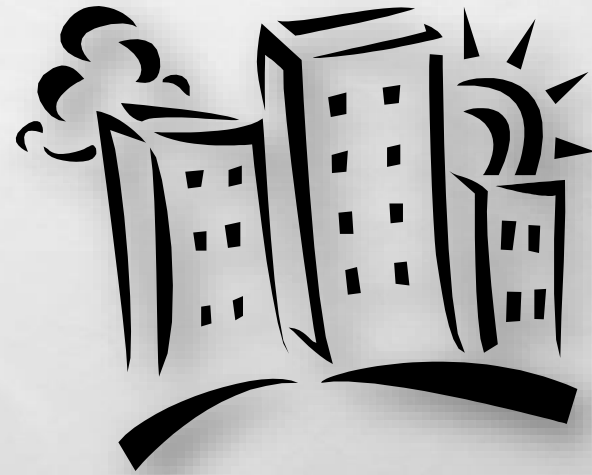
- **WEI-SHONG LIN, ET ALL (2014)**
 - **SOCIOECONOMIC FACTORS**
 - **POPULATION, ELDERLY POPULATION PERCENTAGE, RENT-INCOME RATIO, MORTGAGE RATES, VIOLENT CRIME RATES, AND FORECLOSURE RATE**
- **JOACHIM ZIETZ, ET ALL (2008)**
 - **HOUSE LAYOUT**
 - **HIGH END CONSUMERS DON'T WEIGHT EXCESS FEATURES OF A HOUSE AS HEAVILY AS LOWER END CONSUMERS.**

THE EMPIRICAL MODEL

$$\left[\begin{array}{c} \textit{Percent Growth} \\ \textit{in Median} \\ \textit{Imputed Rent} \\ \textit{from 2000 – 2009} \end{array} \right] = \left[\begin{array}{c} \textit{Vector of} \\ \textit{Social} \\ \textit{Variables} \\ \textit{in} \\ \textit{2000} \end{array} \right] + \left[\begin{array}{c} \textit{Vector of} \\ \textit{Economic and} \\ \textit{Productivity} \\ \textit{Variables} \\ \textit{in} \\ \textit{2000} \end{array} \right] + \left[\begin{array}{c} \textit{Vector of} \\ \textit{Fixed Effects} \\ \textit{and} \\ \textit{Other Control} \\ \textit{Variables} \\ \textit{in} \\ \textit{2000} \end{array} \right]$$

DATA

- **2000 CENSUS AND SUBSEQUENT CENSUS ESTIMATES**
- **48 CONTIGUOUS US STATES**
 - **NO HAWAII OR ALASKA**
- **554 MICROPOLITAN AREAS**



THE EMPIRICAL MODEL

ECONOMETRIC STUDY

- **ORDINARY LEAST SQUARES OR LINEAR LEAST SQUARES REGRESSION**
 - **GOAL IS TO MINIMIZE THE SUM OF SQUARES IN THE ERROR TERM**
 - **ERROR TERM IS THE DIFFERENCE IN THE OBSERVED AND ESTIMATED VALUES FOR EACH VARIABLE.**
- **VARIABLES**
 - **26 SIGNIFICANT AT 5%**
 - **1 SIGNIFICANT AT 10% (5.38%)**

CONTROL VARIABLES

- **9 CENSUS DIVISIONS**

- **NEW ENGLAND**
- **MIDDLE ATLANTIC**
- **EAST NORTH CENTRAL**
- **WEST NORTH CENTRAL**
- **SOUTH ATLANTIC**

- **EAST SOUTH CENTRAL**
- **WEST SOUTH CENTRAL**
- **MOUNTAIN**
- **PACIFIC**

THE EMPIRICAL MODEL FINDINGS

- **SIGNIFICANT VARIABLES (+)**

- **EDUCATION**
- **HEALTHCARE/HIGHWAY EXP**
- **PER CAPITA ENVIR/HOUSING EXP**
- **NATURAL AMENITY SCALE**
- **% AGRICULTURAL EMPLOYMENT**
- **% MANUFACTURING EMPLOYMENT**
- **% AGE 50-64**

- **SIGNIFICANT VARIABLES (-)**

- **% AGE 64+**
- **OLD HOUSING STOCK**
- **DISTANCE TO NEXT CITY**
- **PER CAPITA COUNTY EXP
EDUCATION**
- **% GOVERNMENT EMPLOYMENT**
- **AVERAGE WAGES**

THE EMPIRICAL MODEL

PITTSBURG RELATIVE PERFORMANCE

- **MEDIAN GROSS IMPUTED RENT HAS INCREASED 140% COMPARED TO METROPOLITAN AVERAGE OF 115%**
 - **PITTSBURG HAS SIGNIFICANTLY OLDER HOUSES**
 - **% IS HIGHER TO BE EMPLOYED BY THE GOVERNMENT**
 - **ITS AVERAGE WAGES ARE LESS**
 - **HAVE MORE EDUCATED PEOPLE**
 - **CLOSER TO THE NEXT MAJOR CITY**
- **CAUSE OF ACCELERATED GROWTH IN MGIR**
 - **DEPLETED HOUSING SUPPLY**

SUGGESTIONS

- **DEPLETED PITTSBURG HOUSING MARKET**
 - **ABOUT 50% BUILT BEFORE 1960, 20% MORE THAN MICRO AVERAGE**
 - **45% BUILT FROM 1960 – 2000, 20% LESS THAN MICRO AVERAGE**
- **REGULATORY ENVIRONMENT**
 - **REGULATORY ELEMENTS ACCOUNT FOR 25% OF NEW HOUSING COSTS NATIONWIDE**
 - **RESTRUCTURE REGULATORY ENVIRONMENT**
- **FINDINGS ARE CONSISTENT WITH ARTICLE LOCATED IN THE JOPLIN REGIONAL BUSINESS JOURNAL MARCH 17-23 ADDITION TITLED “PITTSBURG HOUSING CRISIS REQUIRES TEAM EFFORT”**

QUESTIONS

