Background

• Massive growth in the warehousing industry within major metropolitan areas
• Subsequent expansion of warehousing-related environmental impacts
• Lack of environmental justice inquiries on the location of warehouses

Literature Review

I. Restructuring of the warehousing industry

• More specialized in new services including transshipping, packaging, etc.
• Serving more geographically dispersed markets
• Making more frequent deliveries in response to demand from retail businesses which reduce inventory
• Introduction of automated warehousing systems
• Increased sizes of warehouses

II. Changing environment for the warehousing industry

• Improved transportation accessibility throughout major metropolitan areas
• Growing land rent and stronger competition over land in the city cores
• Reduced land availability in central areas
• Government interventions including local public policies and regulations
• Increasing awareness of warehousing related externalities among local residents

III. Explanations for the environmental justice problem in warehousing location

• Warehousing developers prefer places with cheap land and low-wage labor, where poor or minority people are usually concentrated
• Disadvantaged populations are less empowered to prevent the development of undesirable land uses, including warehouses in their backyards
• The housing market dynamics and discriminatory public policies such as zoning ordinances constrain the choices of poor and minority residents

Research Approach: Multivariate regression model

\[ Y_i = f(PC_i, CV_i) \]

, where \( Y \) = warehousing location, \( PC \) = population characteristics variables, and \( CV \) = control variables.
## Data and Results

<table>
<thead>
<tr>
<th></th>
<th>Los Angeles CSA</th>
<th>San Francisco CSA</th>
<th>Sacramento CSA</th>
<th>San Diego MSA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross Domestic Product (million dollars)</strong></td>
<td>1,119,674</td>
<td>758,951</td>
<td>124,587</td>
<td>220,573</td>
</tr>
<tr>
<td><strong>Population size</strong></td>
<td>18,388,091</td>
<td>8,493,558</td>
<td>2,488,779</td>
<td>3,223,096</td>
</tr>
<tr>
<td><strong>Employment size</strong></td>
<td>7,830,378</td>
<td>4,154,975</td>
<td>964,351</td>
<td>1,366,899</td>
</tr>
<tr>
<td><strong>Commodity Flow size (million dollars)</strong></td>
<td>1,007,523</td>
<td>421,043</td>
<td>74,932</td>
<td>128,374</td>
</tr>
</tbody>
</table>

**TABLE 1 Statistics on economic sizes of the Los Angeles, San Francisco, Sacramento and San Diego regions**

The relationship between warehousing location and socioeconomic status is mixed.

Control variables, especially industrial connection variables, are found highly critical as a whole in estimating the distribution of warehouses.

### Summary of multivariate regression results

- Generally consistent evidence on the disproportionate distribution of warehouses in minority neighborhoods across four regions, supporting the hypothesis that environmental inequity exists in the location of warehouses.
- The relationship between warehousing location and socioeconomic status is mixed.
- Control variables, especially industrial connection variables, are found highly critical as a whole in estimating the distribution of warehouses.