

# Suburban Productivity Shocks and Restrictive Zoning

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# What distortions are created by zoning laws when cities face productivity shocks outside of downtown?

1. Zoning is pervasive in US metropolitan areas.
    - Initially, it separated residential areas from harmful polluting industry. Now, it provides certainty over future home values and local (endogenous) amenities.
    - Important implications for the elasticity of housing supply and therefore housing prices.
  2. Within a metropolitan area, employment is not concentrated in one Central Business District (CBD).
    - Traditional urban models assume a single CBD (AMM)
    - This phenomenon has shifted over time
- ⇒ Historical zoning laws may not be appropriate for today's cities.

# The Opening of E-Commerce Fulfillment Centers as a Productivity Shock

The rise of online shopping and the promise of speedy shipping requires a lot of new warehouses.

⇒ Warehousing construction has increased 1,400% since 2010 and now makes up over one third of all commercial construction<sup>1</sup>

Fullfillment centers:

- ⇒ must be close to large MSAs
- ⇒ have large footprints and thus tend to be on the outskirts of any given MSA, where land is cheaper
- ⇒ are a large source of employment

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<sup>1</sup>Dodge Data & Analytics

# Literature

## (Spatial) Misallocation

- Hsieh and Klenow (2009), Behrens et al. (2017), Hsieh and Moretti (2019), Fajgelbaum et al. (2019), Monte et al. (2018)

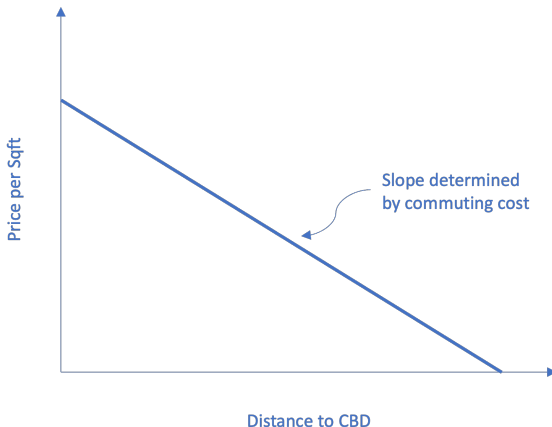
## Land Use Restrictions

- Residential: Fischel (2001), Glaeser and Gyourko (2018), Gyourko et al. (2008), Song (2021)
- Industrial/Commercial: Stull (1974), ...

## The Effects of E-Commerce

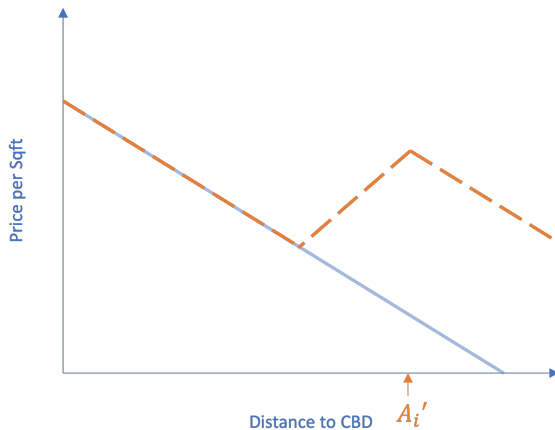
- Relihan (2022), Couture et al. (2021), Dolfen et al. (2023)

# Basic AMM Framework Implies Density Close to the CBD



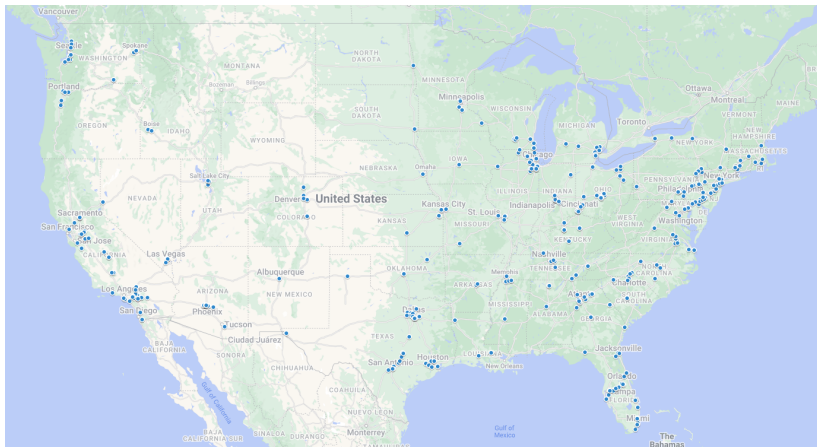
⇒ McMillen and McDonald (1999) find that zoning ordinances largely followed existing uses in a study of Chicago.

# AMM with Suburban Shock and Density Restrictions



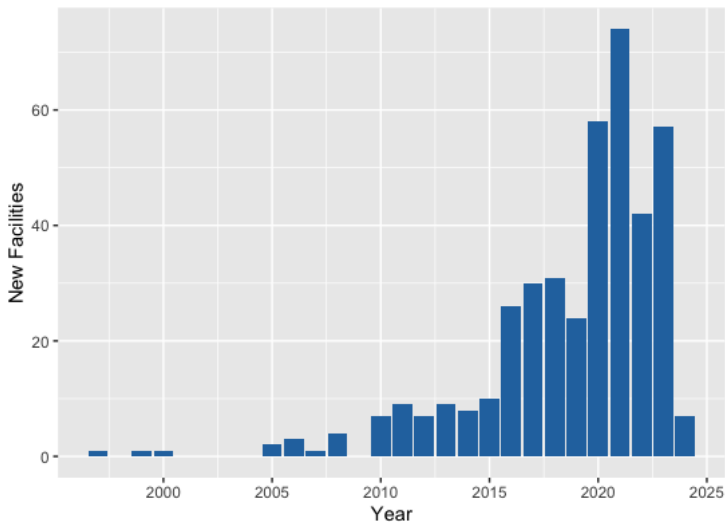
⇒ With zoning in place, households near the shock cannot consume less housing, and so home prices and rents should skyrocket. **But what if amenities change?**

# Amazon Fulfillment Centers



Data source: MWPVL International Inc.

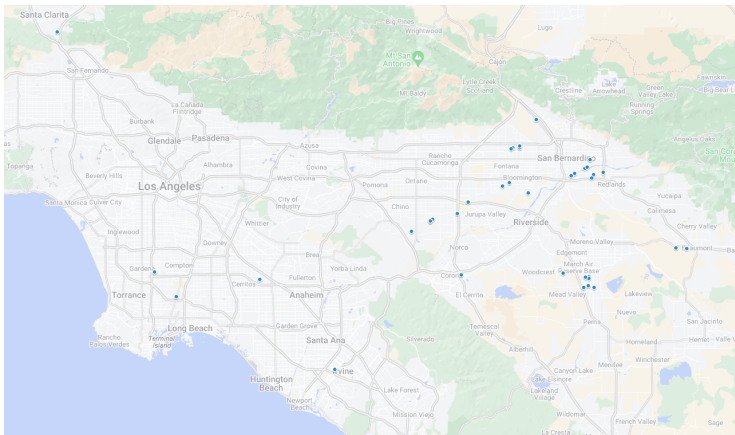
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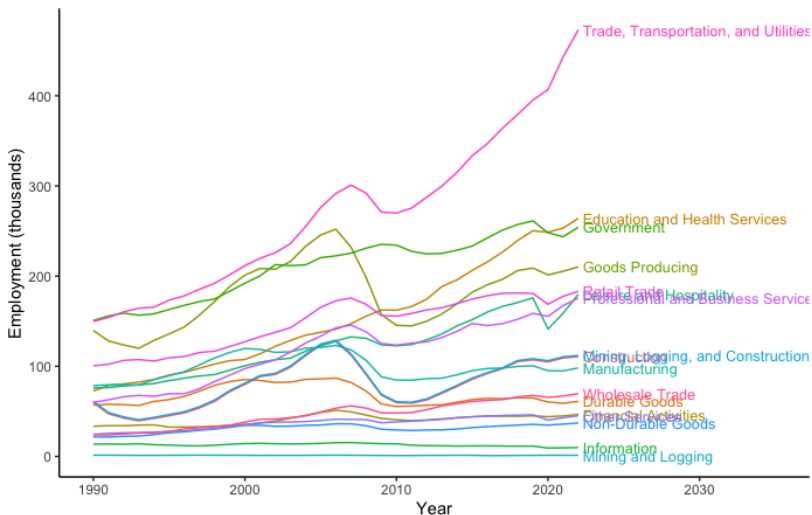
# Greater Los Angeles as an Example



Data source: MWPVL International Inc.

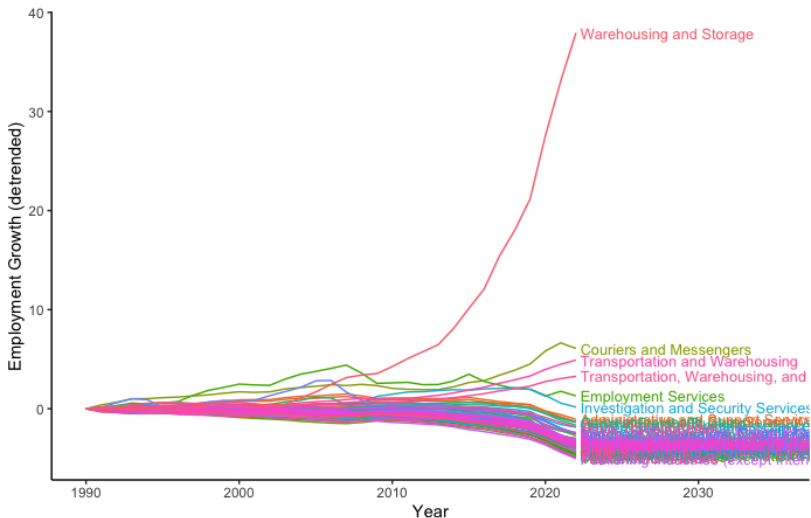
In 2012, Amazon opened its first fulfillment center in the Inland Empire (IE). It has since opened 30 more facilities here.

# Trade and Transport Employment Now Dominates



Data source: BLS Metropolitan Area Employment statistics for the Riverside-San Bernardino-Ontario MSA, by supersector

## Driven by Warehouse Employment Growth



Data source: BLS Metropolitan Area Employment statistics for the Riverside-San Bernardino-Ontario MSA, by industry and supersector

## Next Steps

1. Use wage data to motivate that this is really a productivity shock, not just a shift in employment sectors
2. Explore housing market trends
3. Gather residential zoning information for relevant municipalities
4. Read more into the literature on commercial/industrial land use restrictions