

# Quick Review

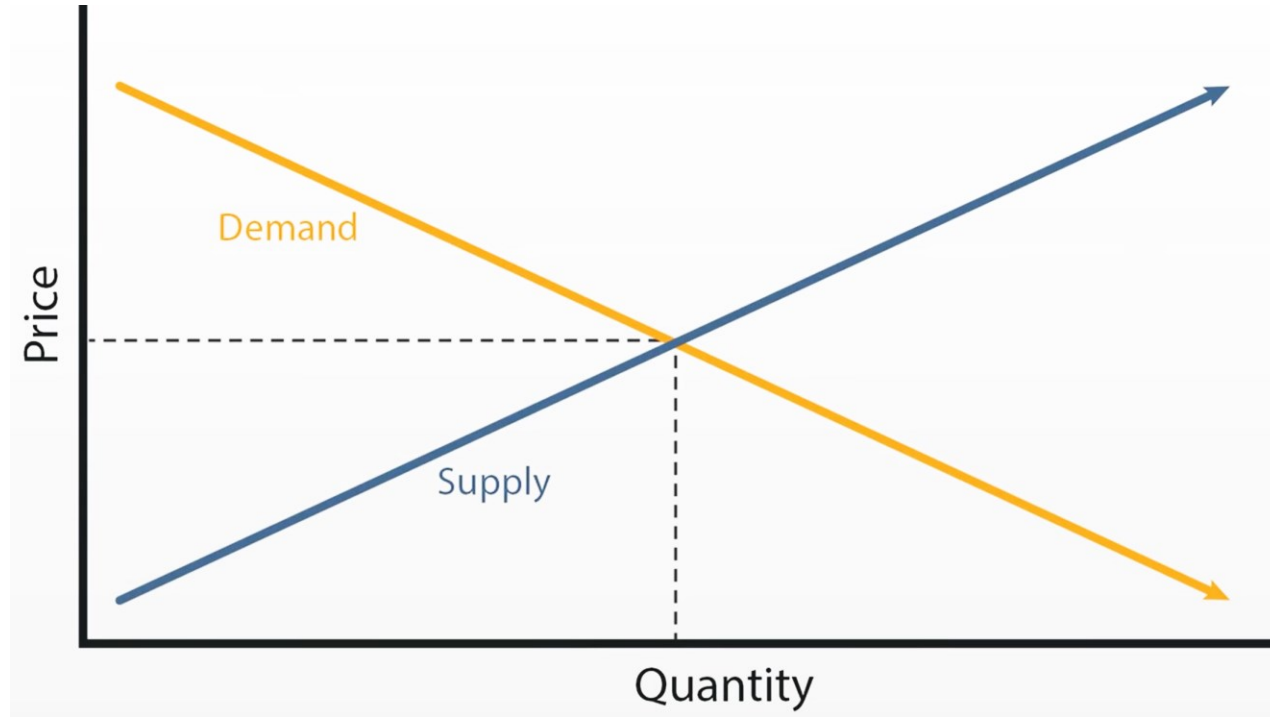
- Agglomeration is the external economies of scale that come when firms and people locate near one another together in cities and industrial clusters.
- 3 types of agglomeration economies:
  1. Cost advantages
  2. Labor market advantages
  3. Knowledge spillovers
- There are also agglomeration dis-economies caused by longer commuting time and insufficient land spaces

# The Demand and Supply for Housing and Urban Space

RE420: URBAN AND REGIONAL ECONOMICS

# Demand for Housing

# Econ 101: Demand & Supply Curves

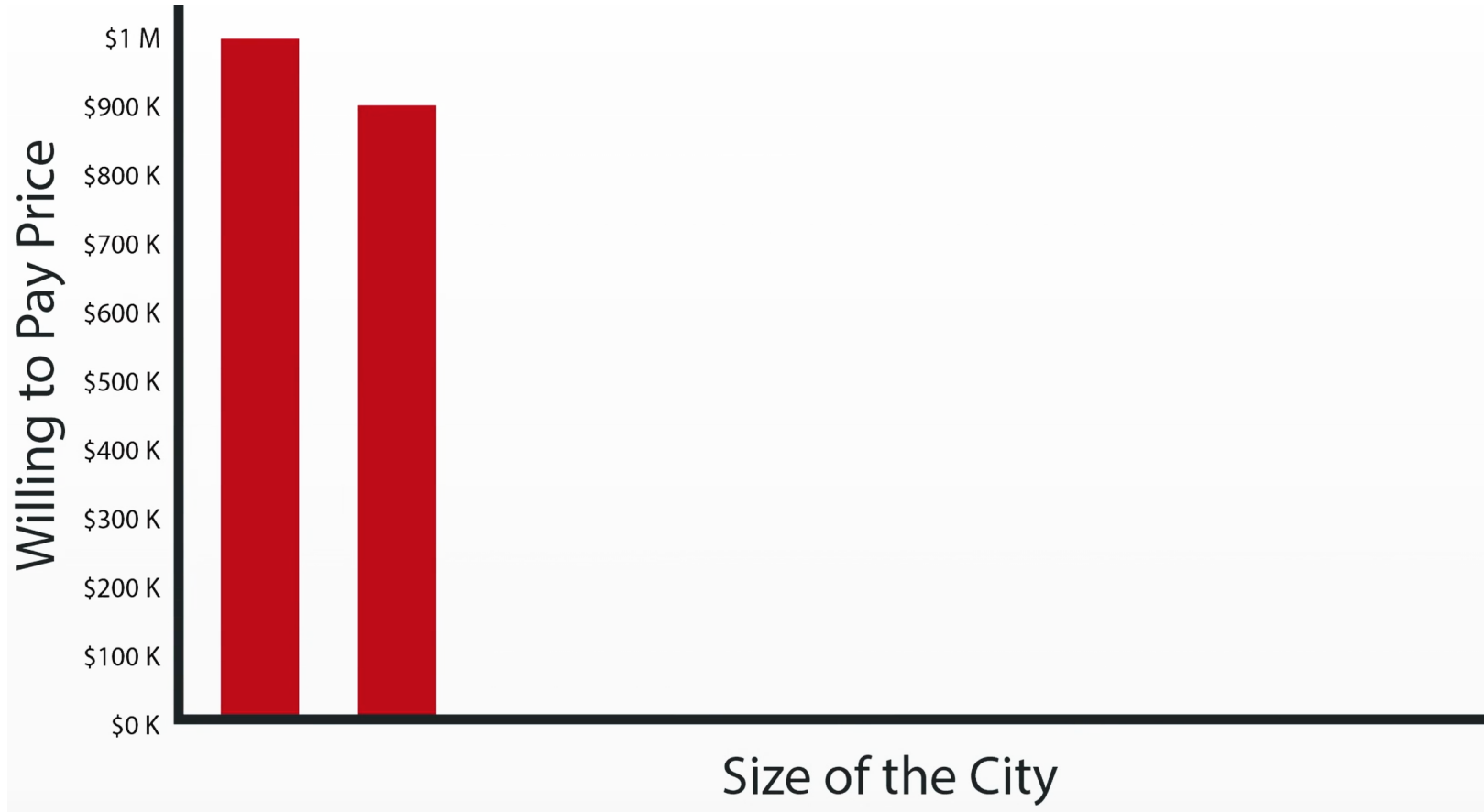


# Assumptions

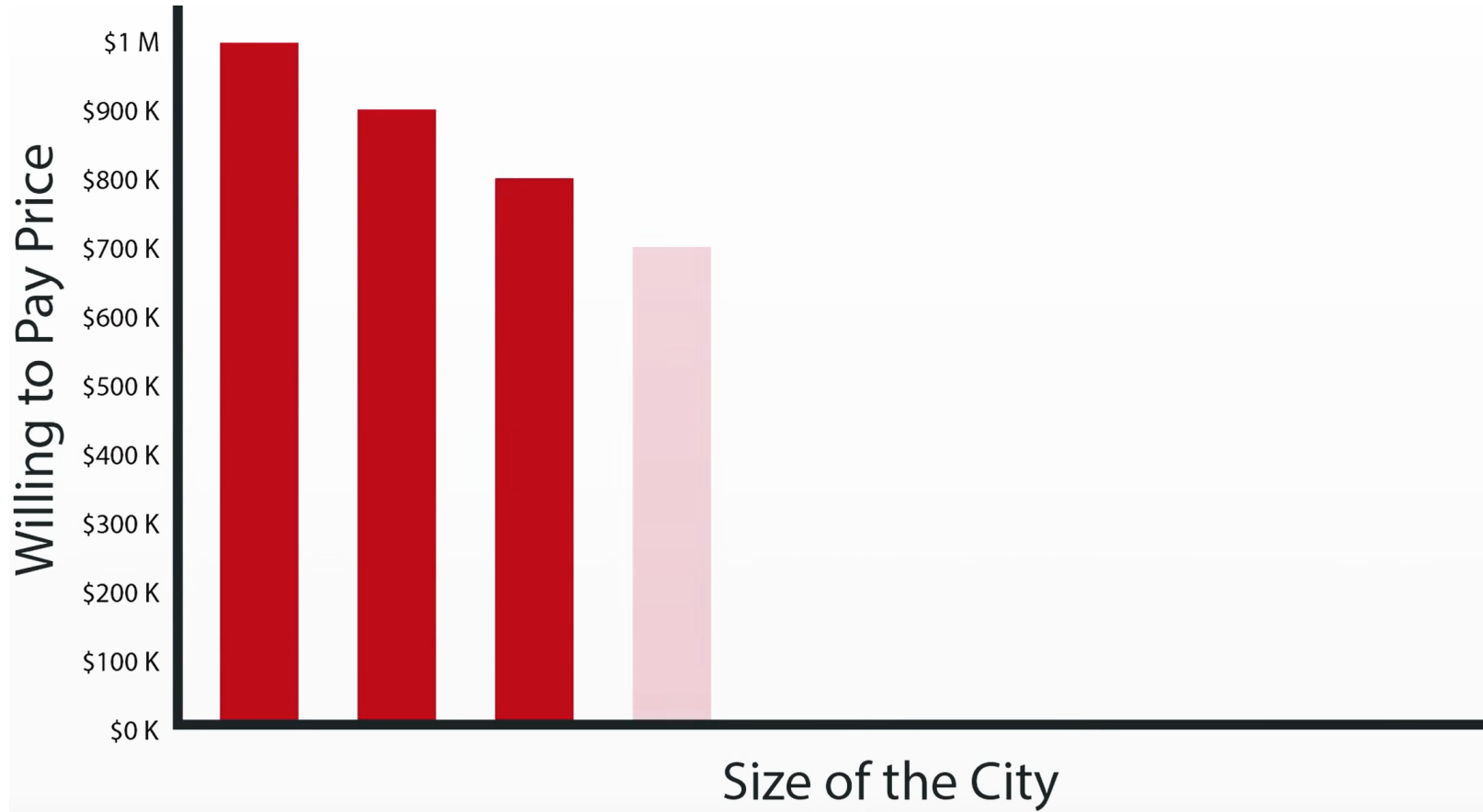
- Everyone in the city faces the same house
- Everyone in the city faces the same community
- Infinite number of people who might potentially live in the city
- Wages and non-wage benefits/costs (amenities) do not vary by the size of the city
  - That is, ignore agglomeration economies/dis-economies

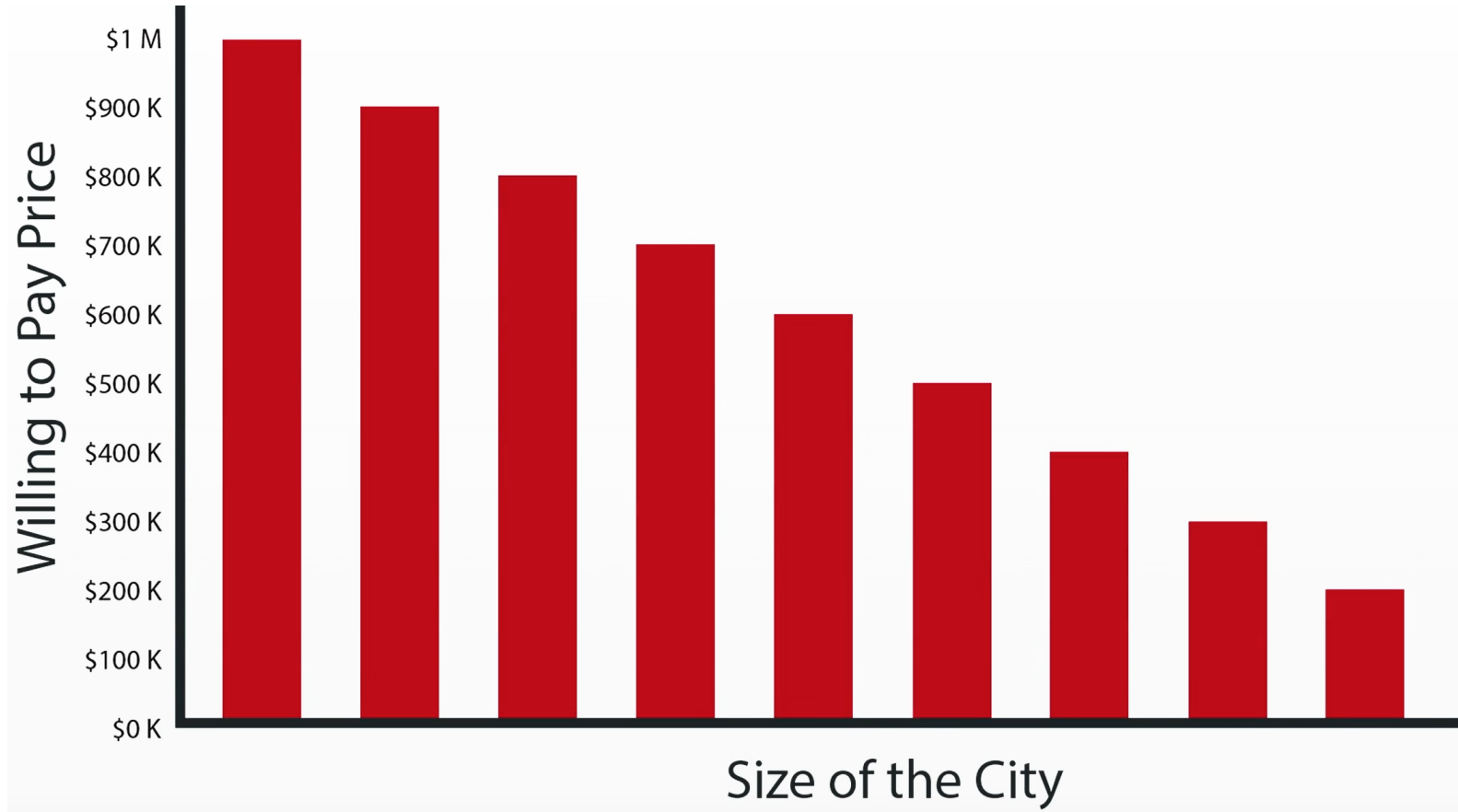


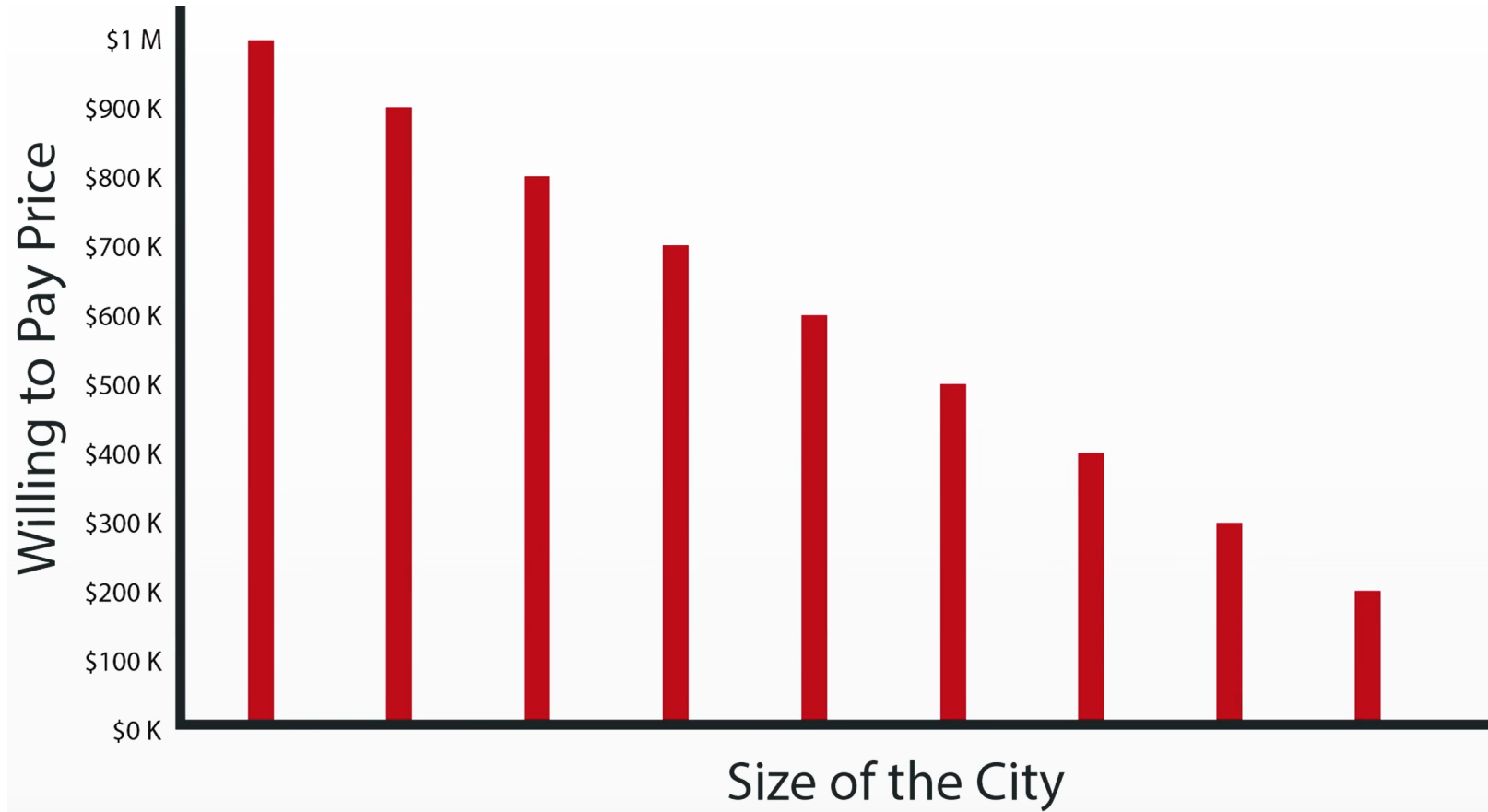


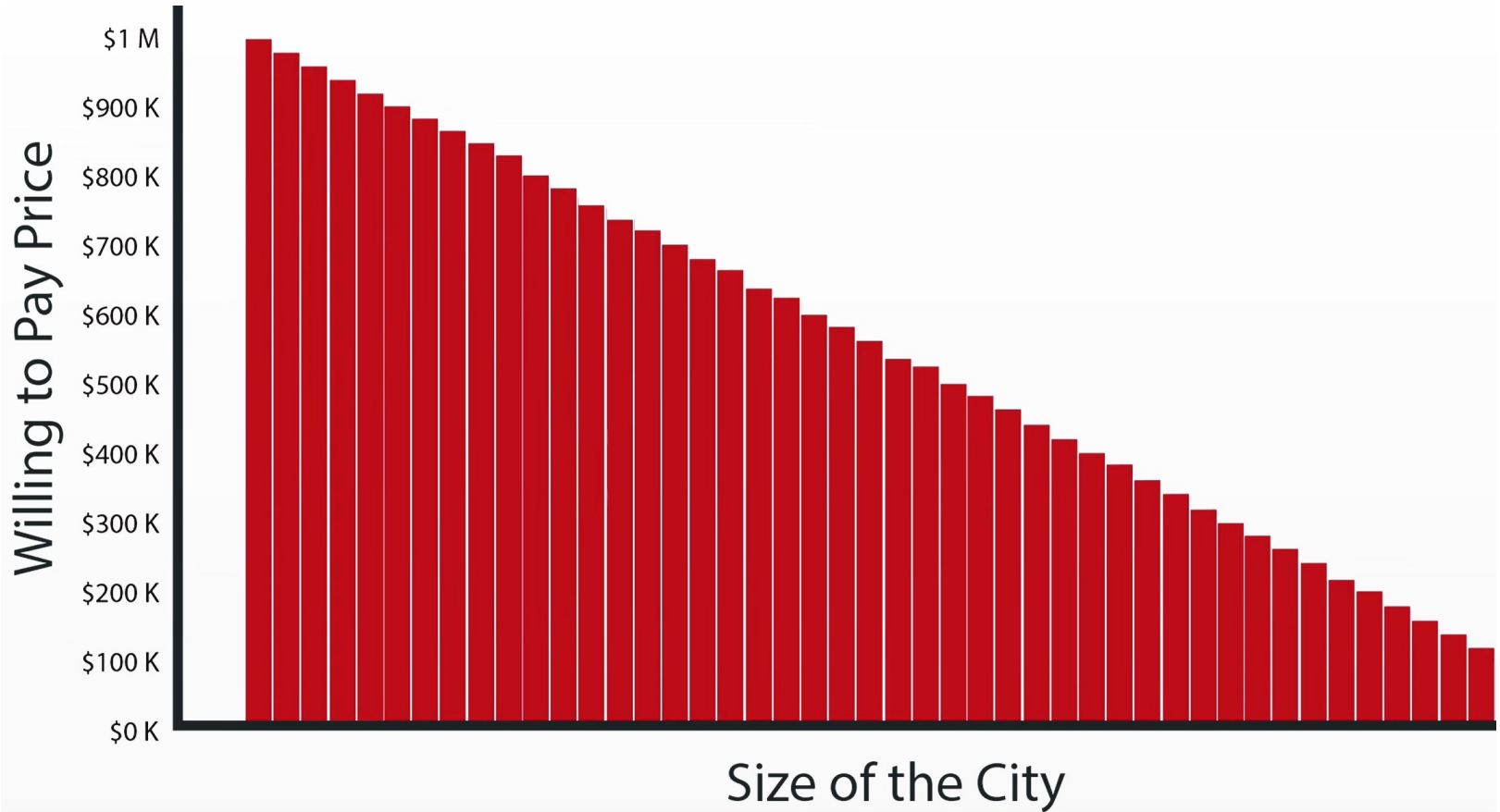


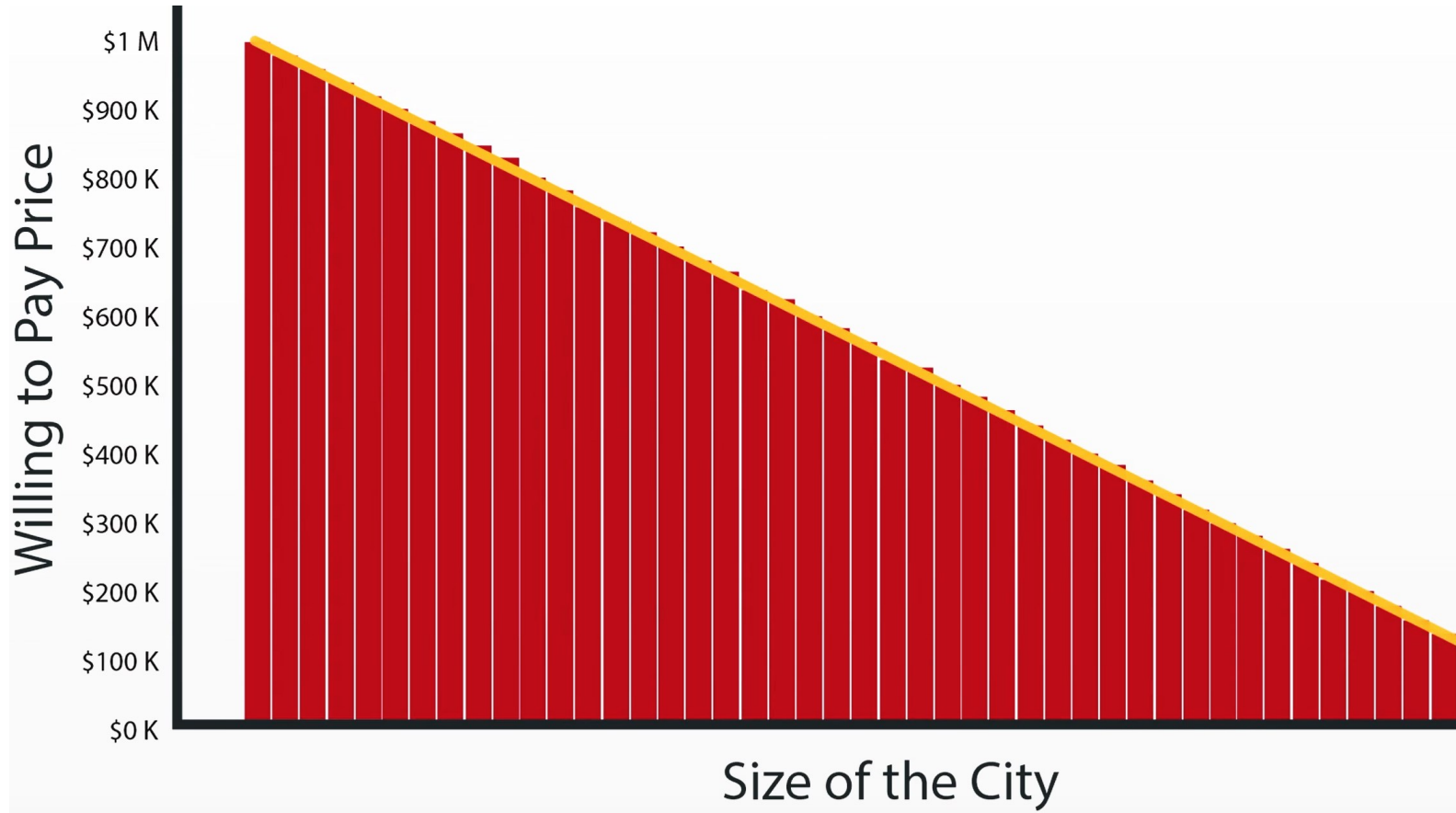


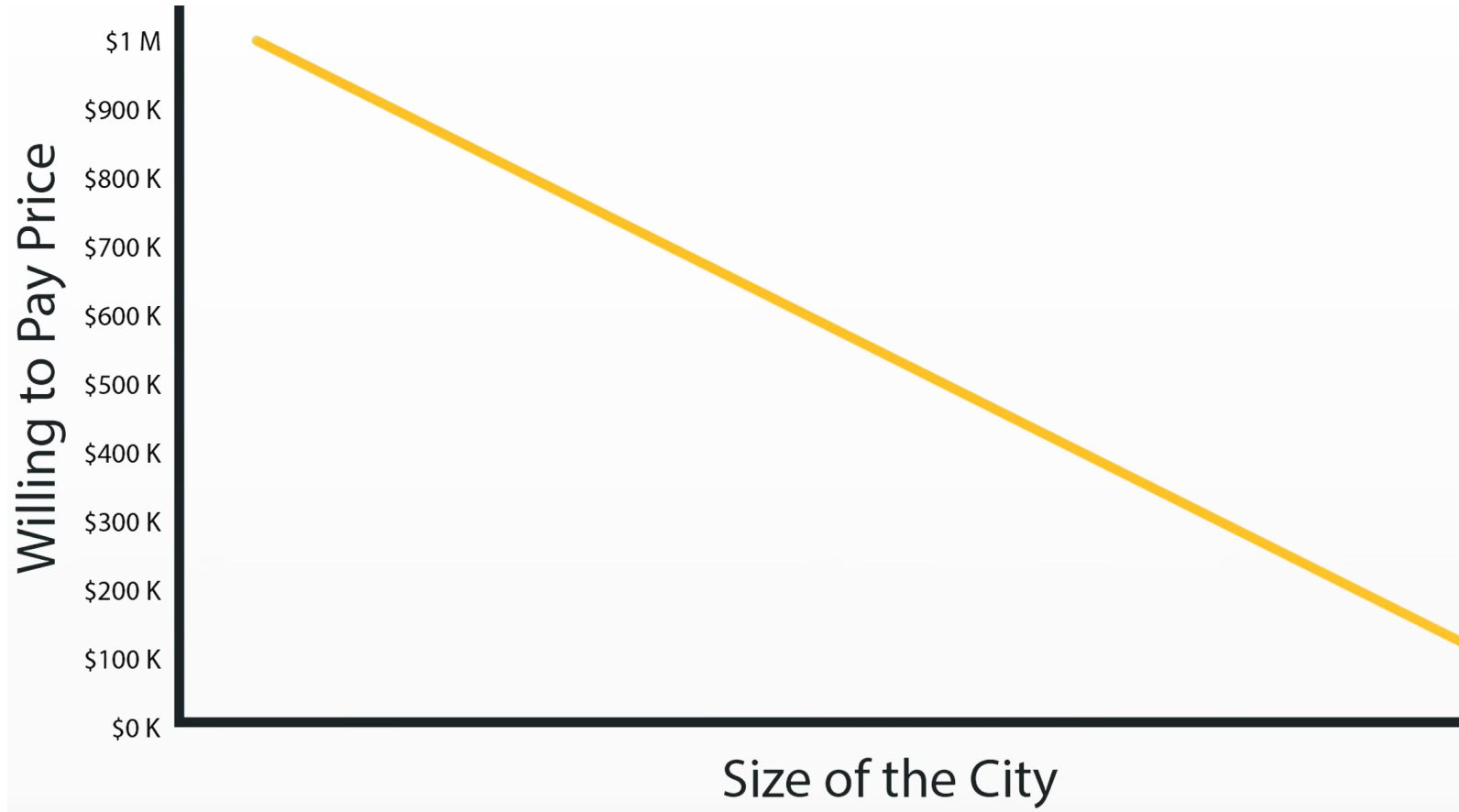


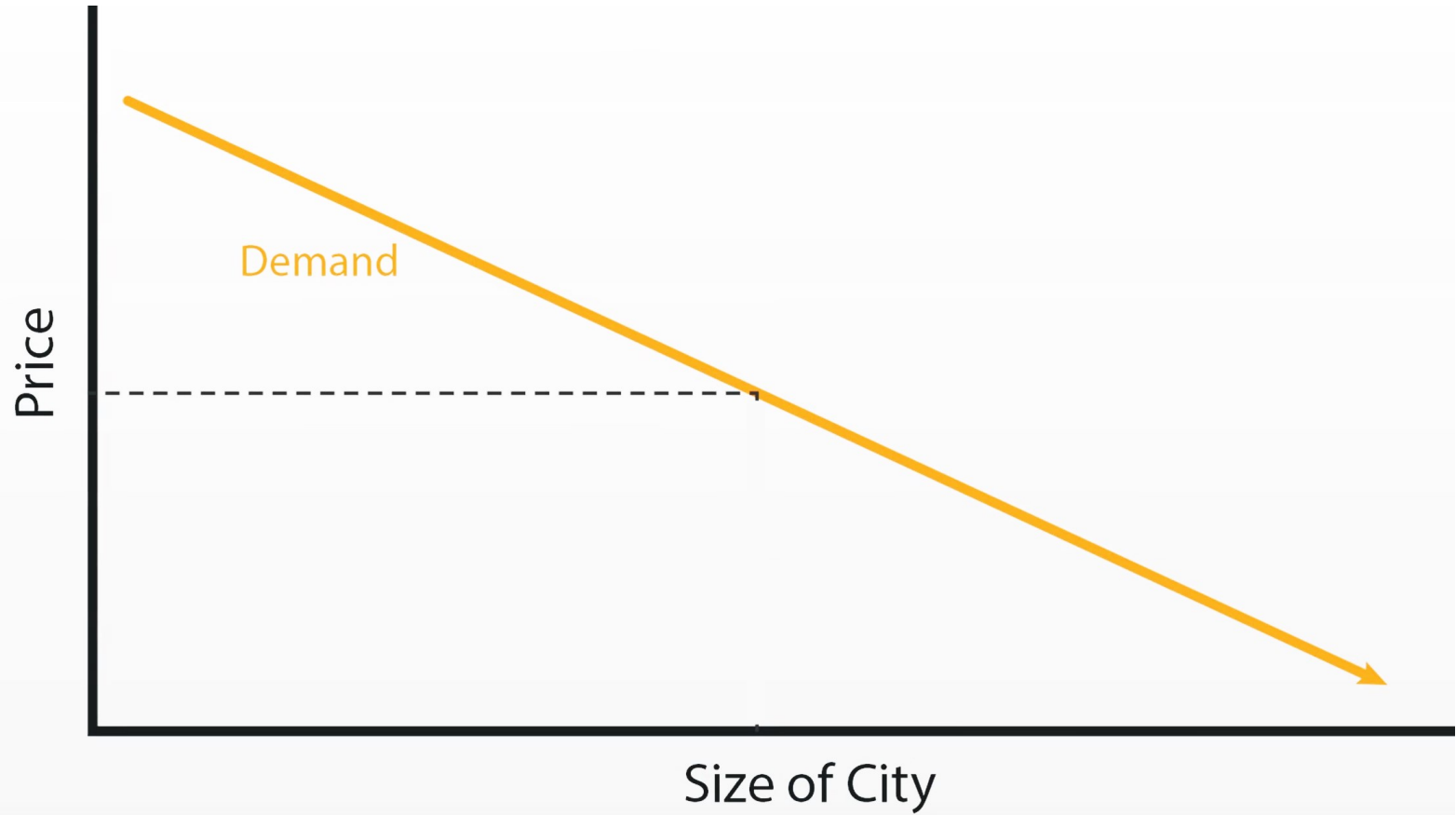


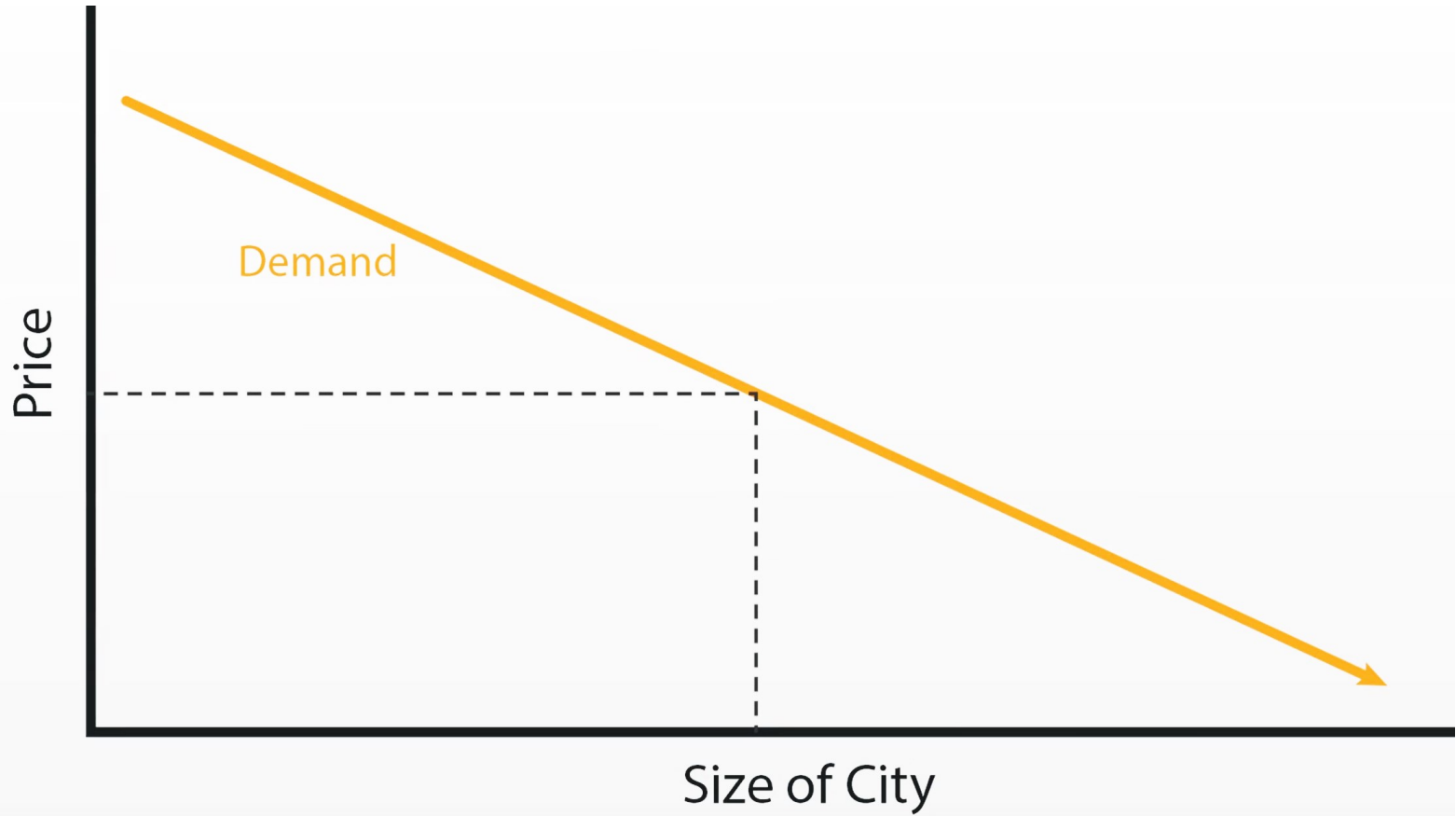




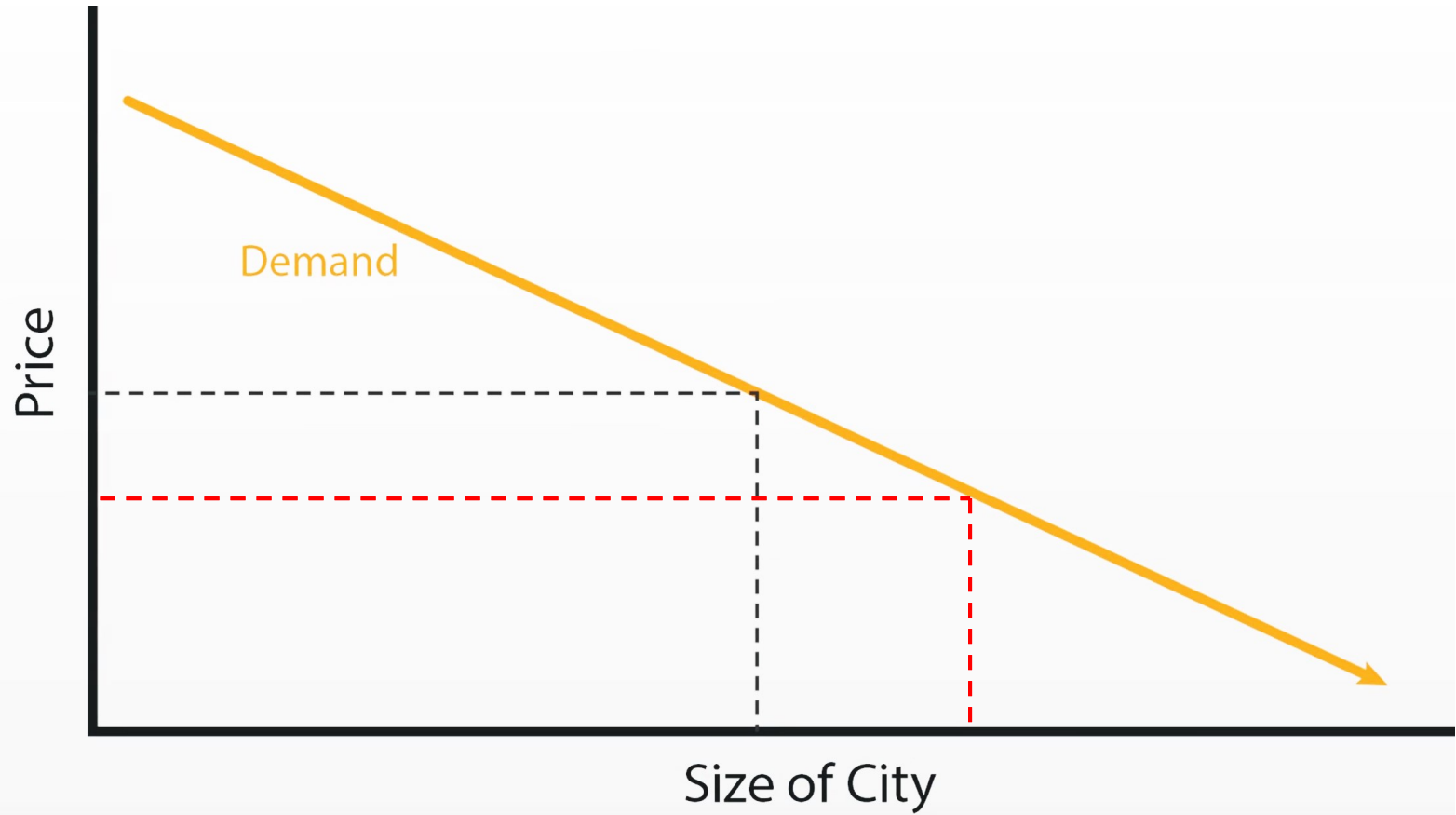


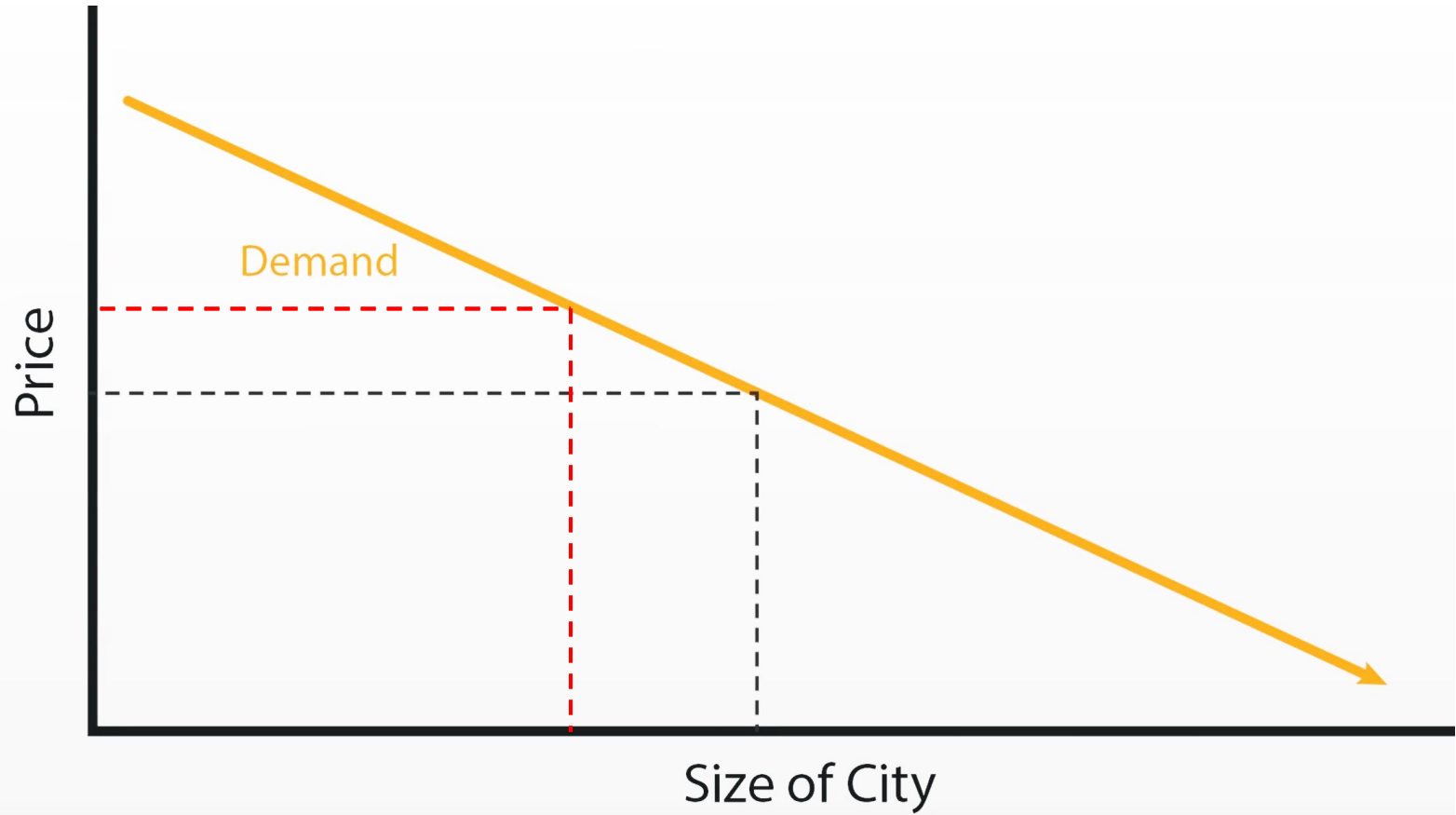










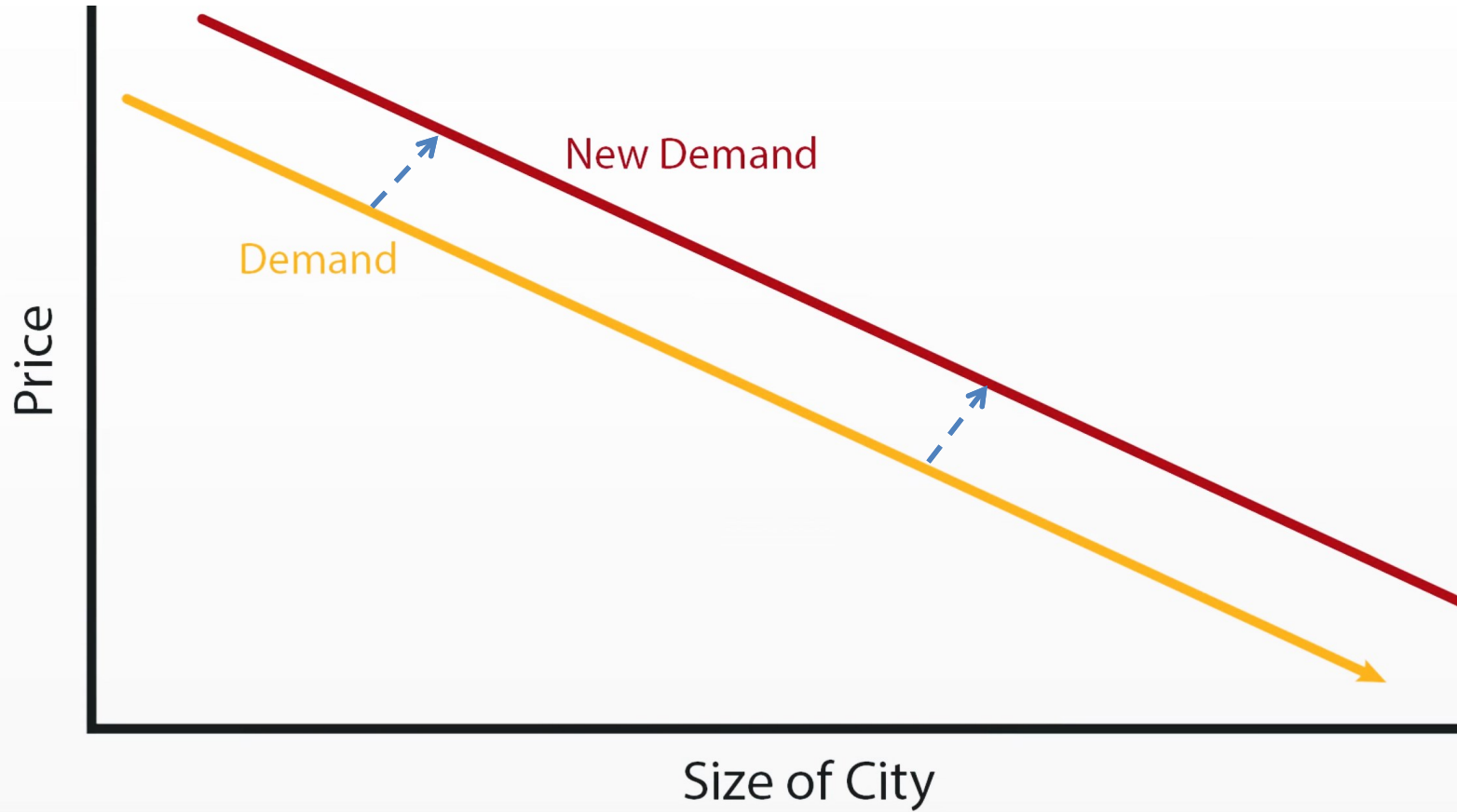


# Factors Shifting the Demand Curve

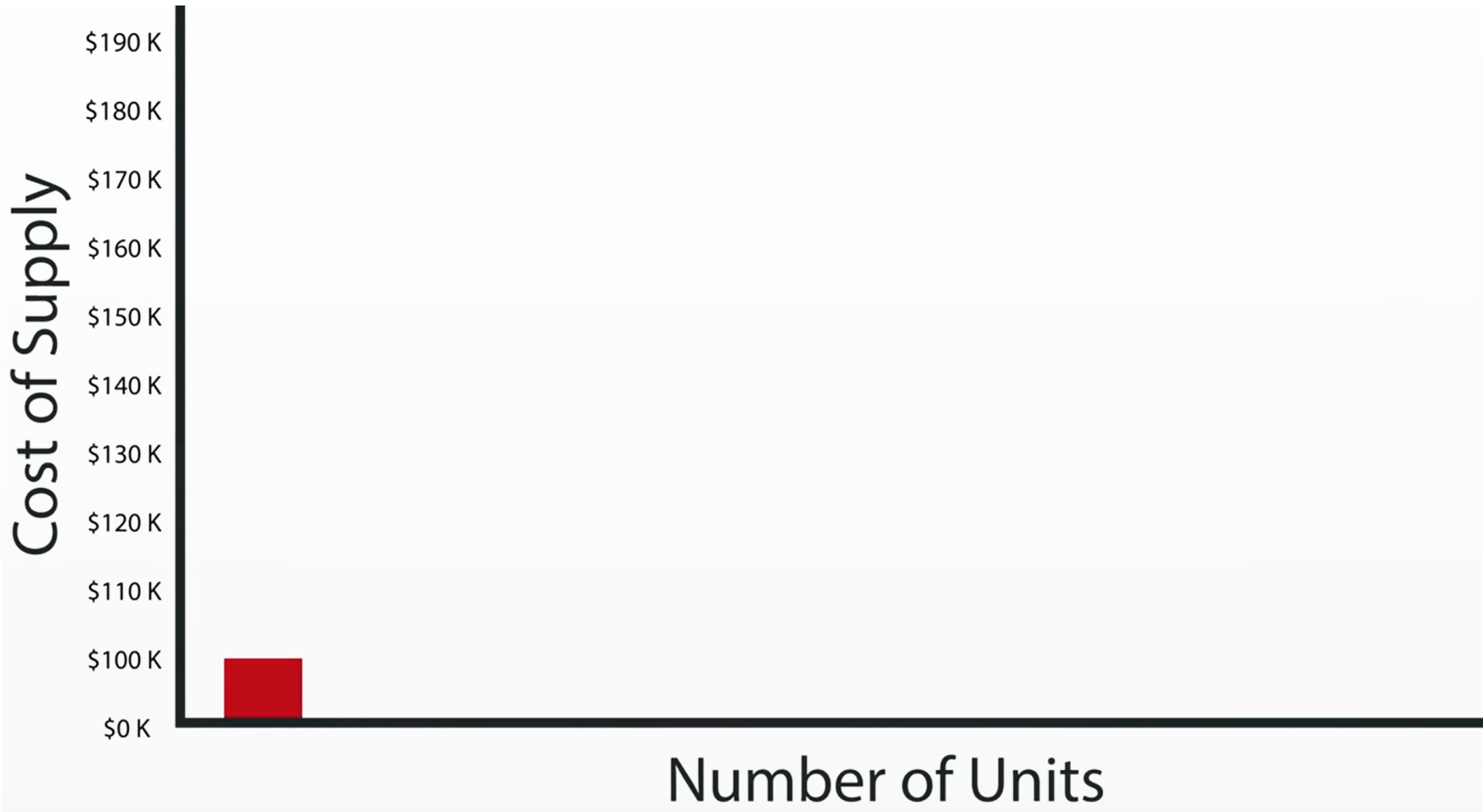
- Note that the demand curve illustrates the relationship **b/w housing prices and demand**
  - Given that all else being constant, the price increase (decrease) will make housing demand decrease (increase)
- Which factors beyond price affect housing demand?

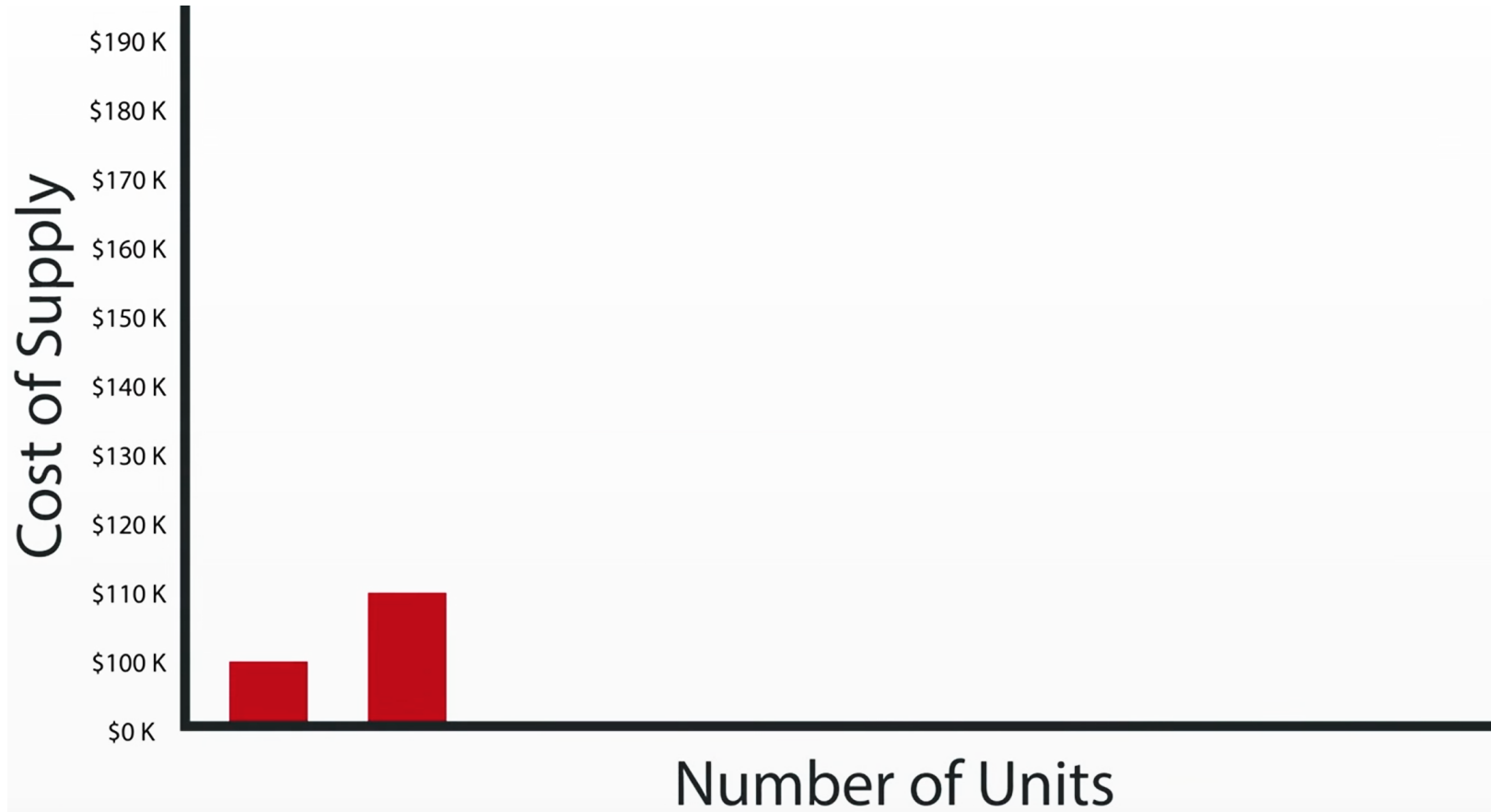
# Factors Shifting the Demand Curve

- Note that the demand curve illustrates the relationship **b/w housing prices and demand**
  - Given that all else being constant, the price increase (decrease) will make housing demand decrease (increase)
- Which factors beyond price affect housing demand?
  - Job opportunities
  - Safety
  - Weather
  - Culture and vibe
- What happens to the demand curve when factors other than price change?
  - The entire demand curve shifts

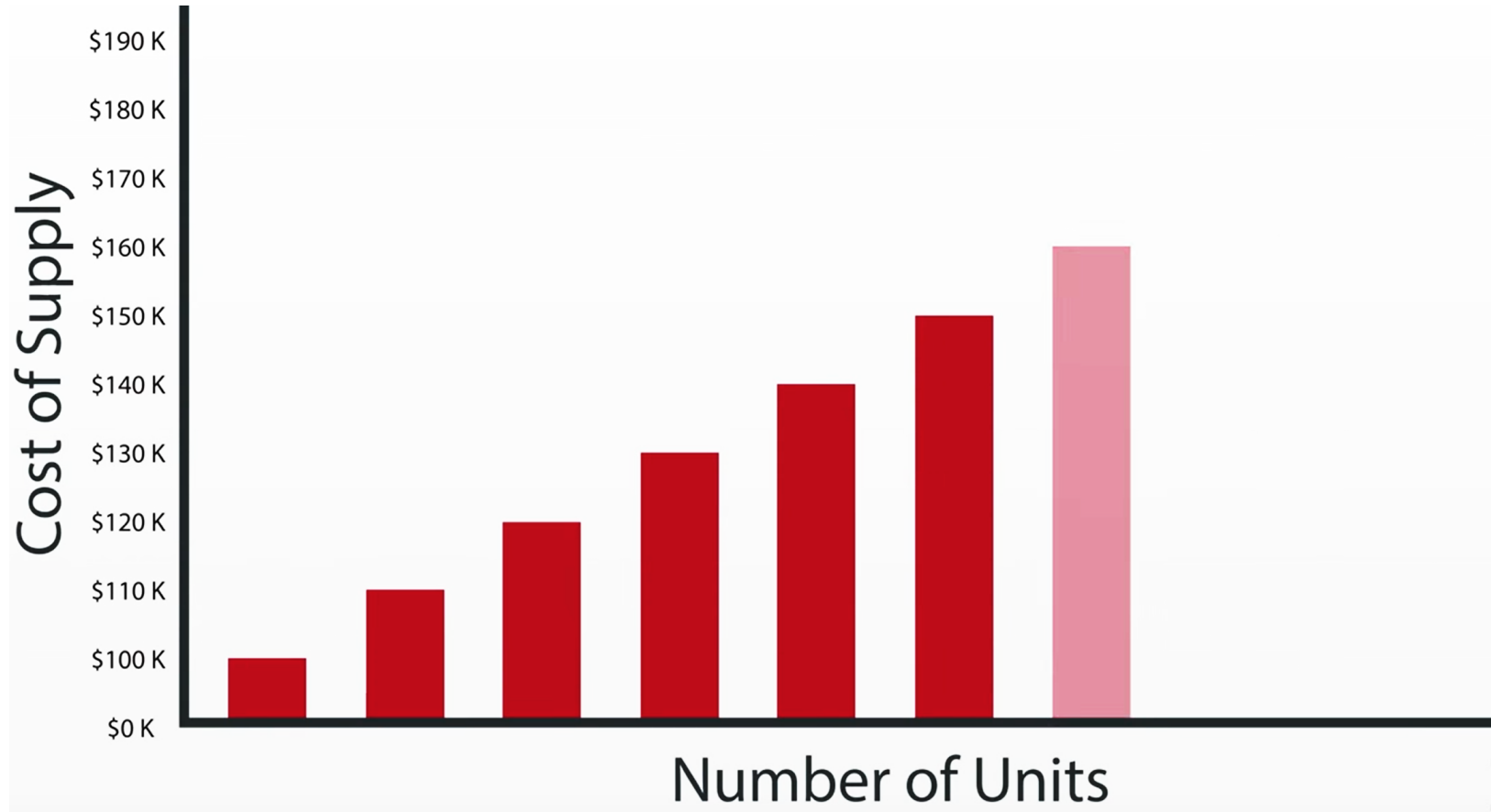


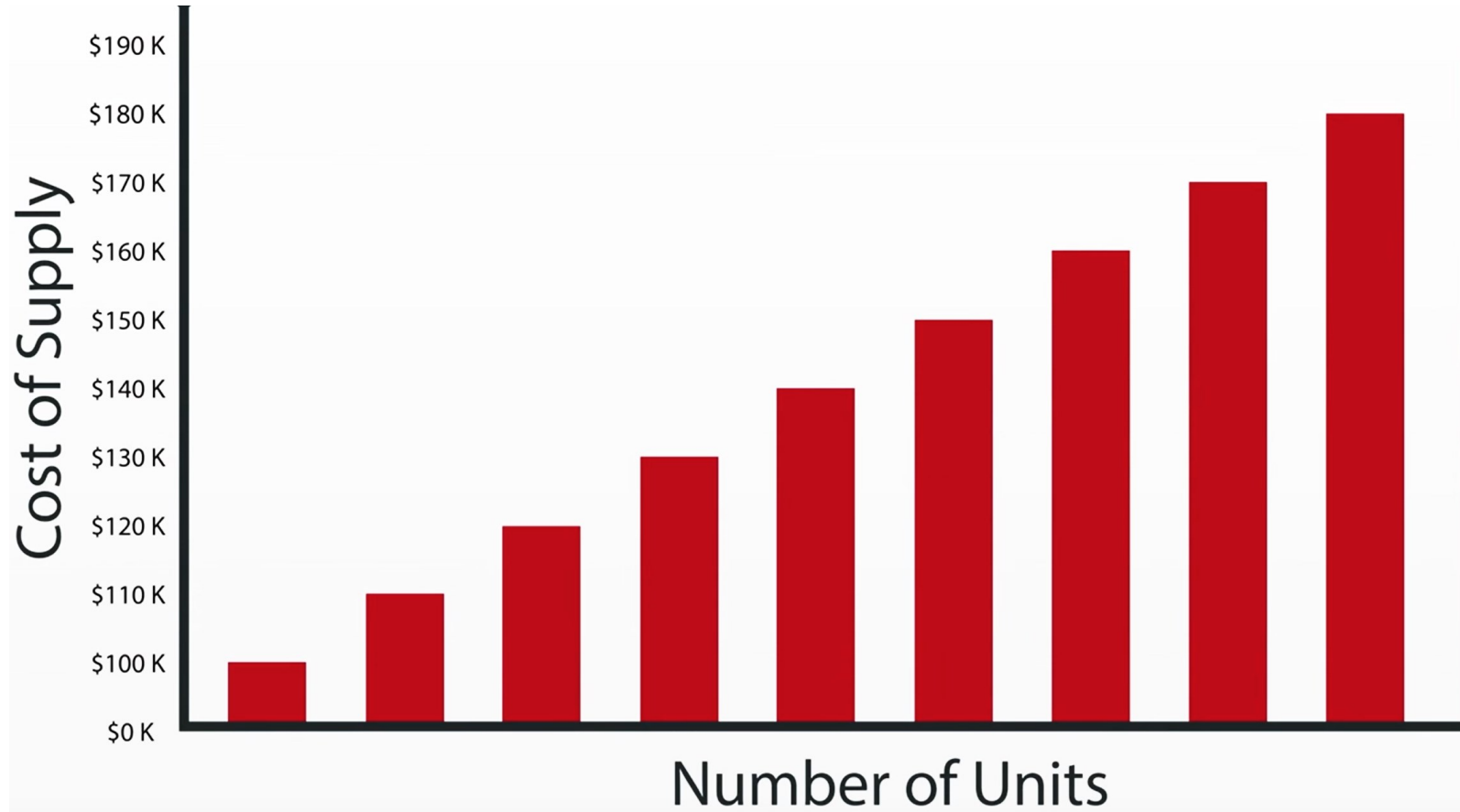
# Supply for Housing

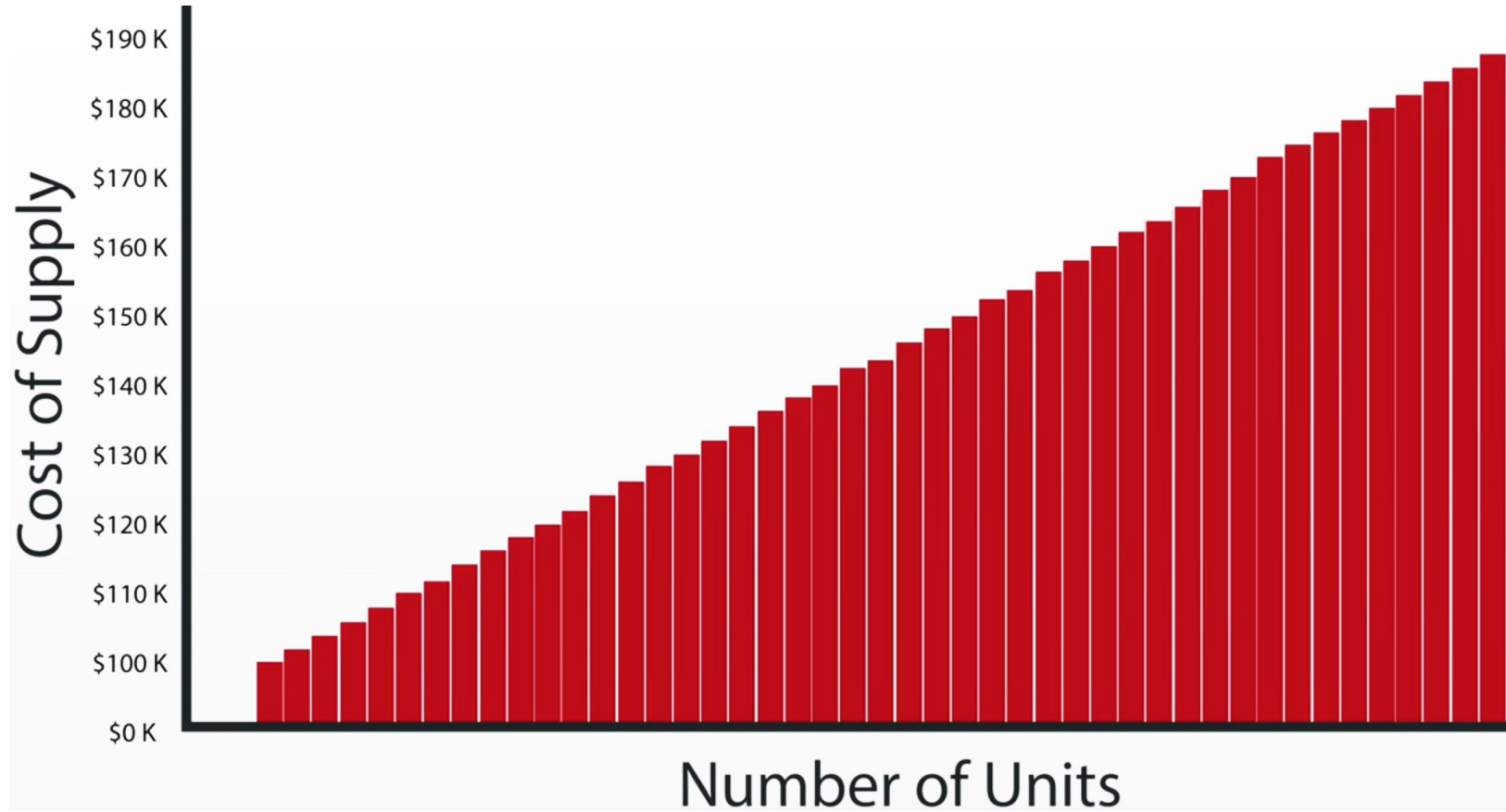


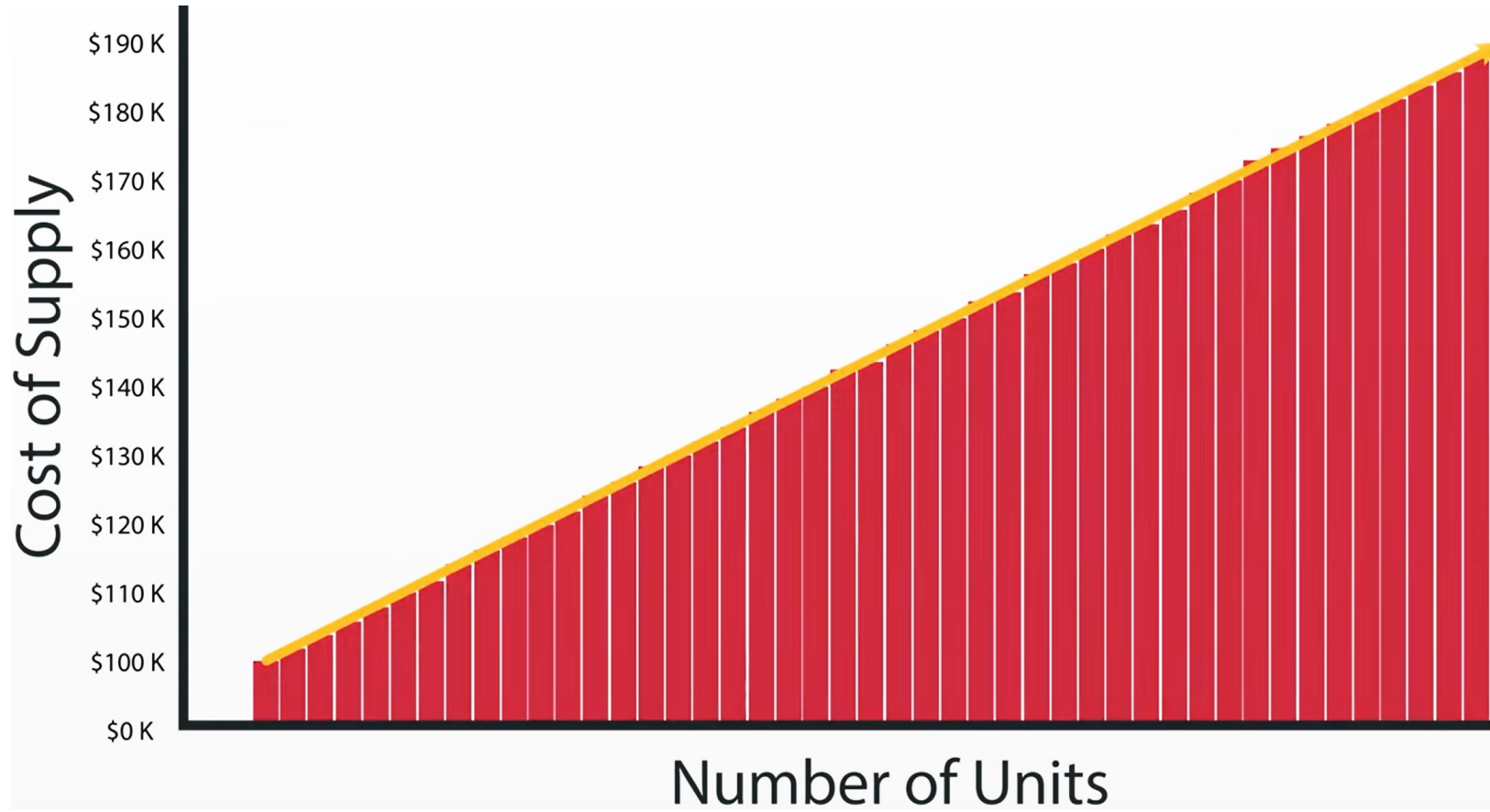


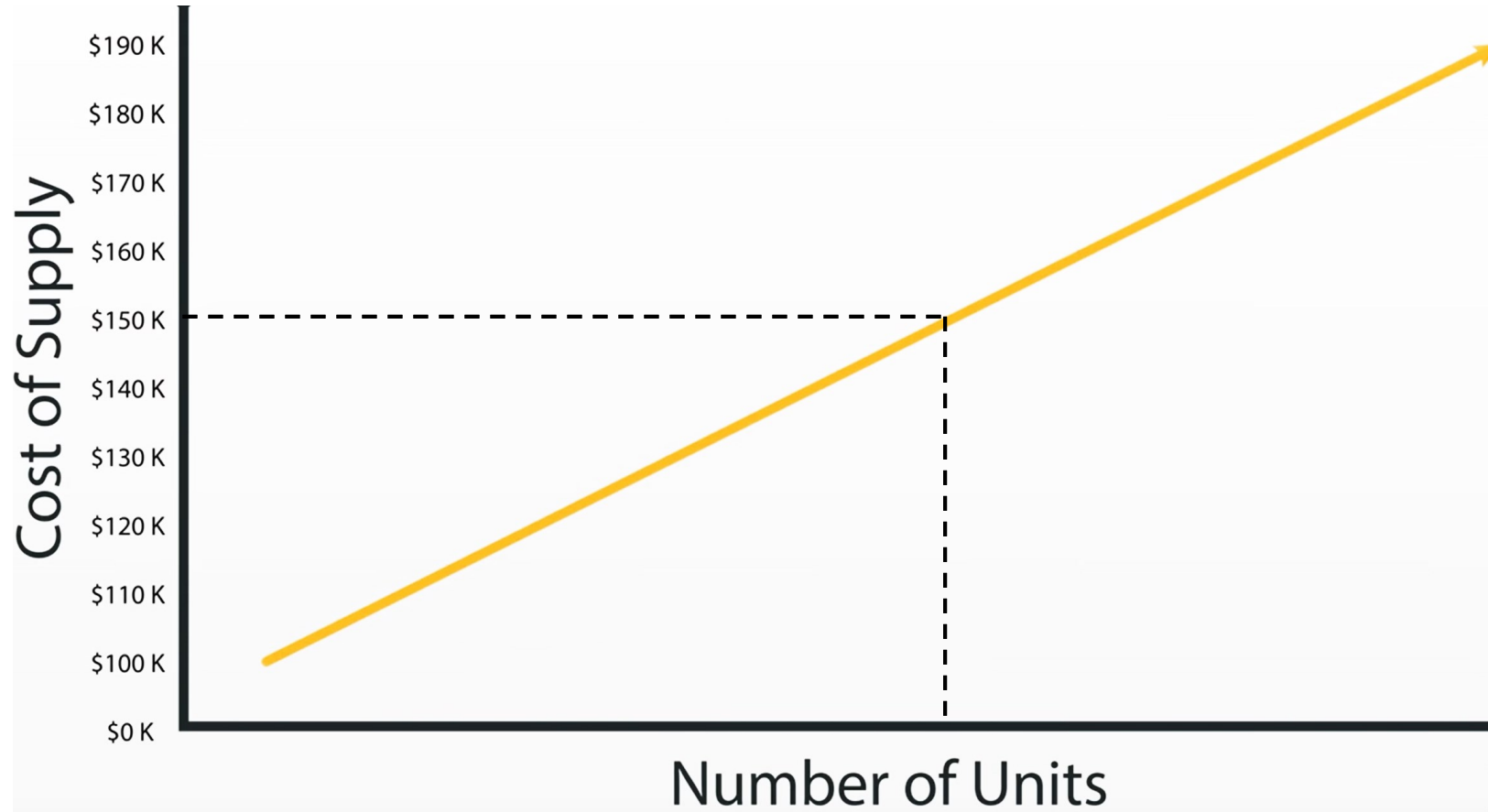


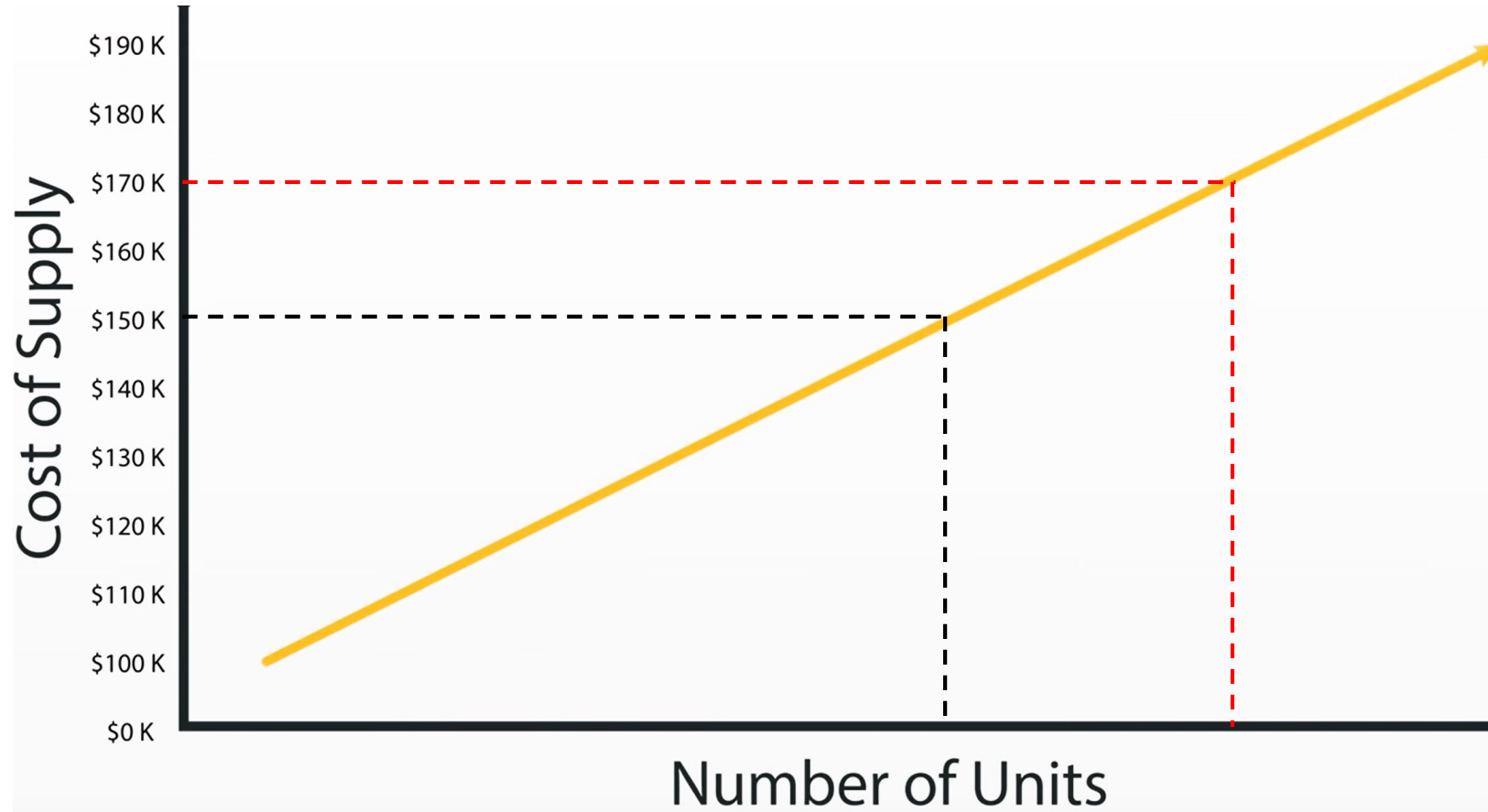


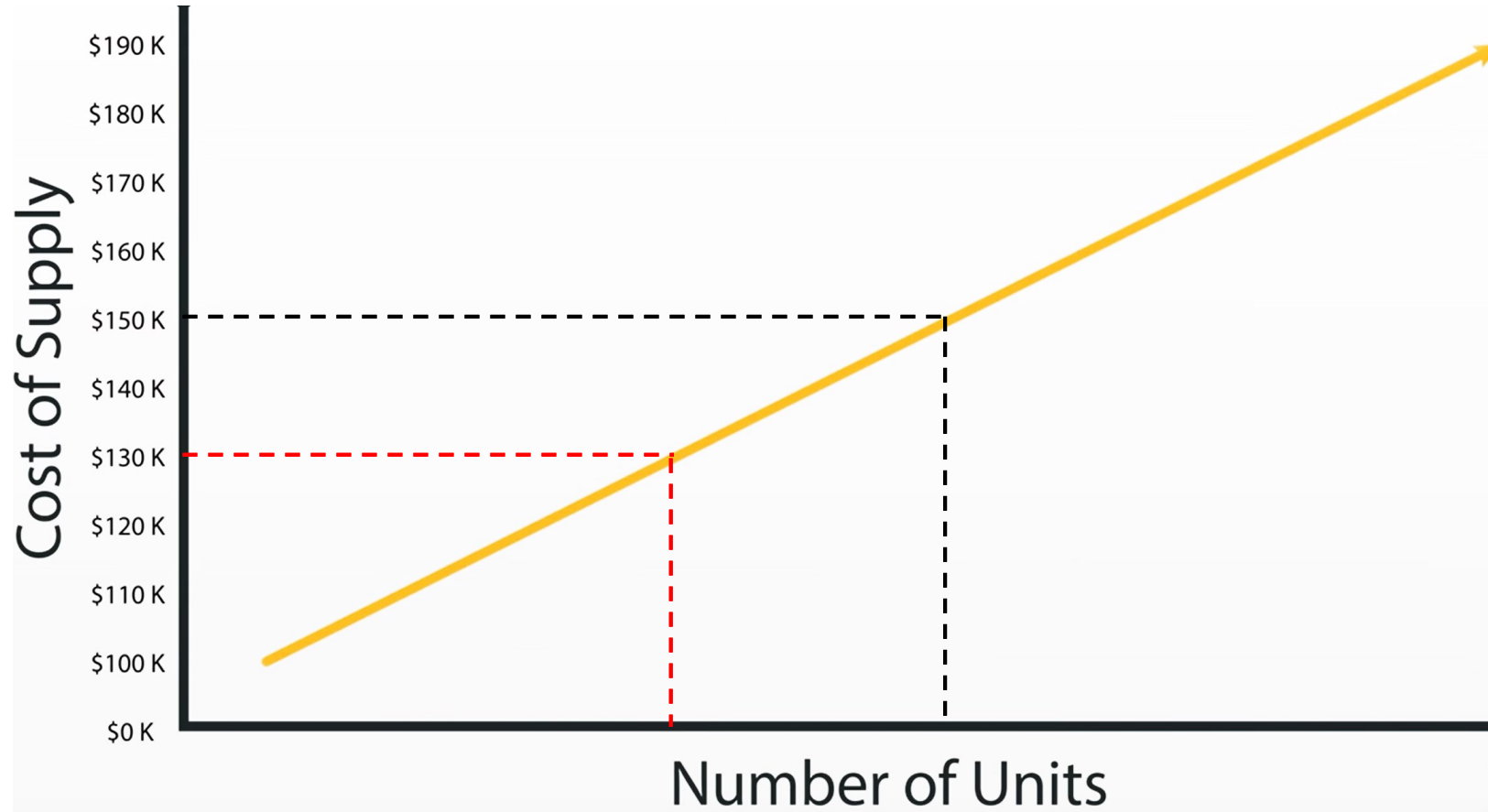












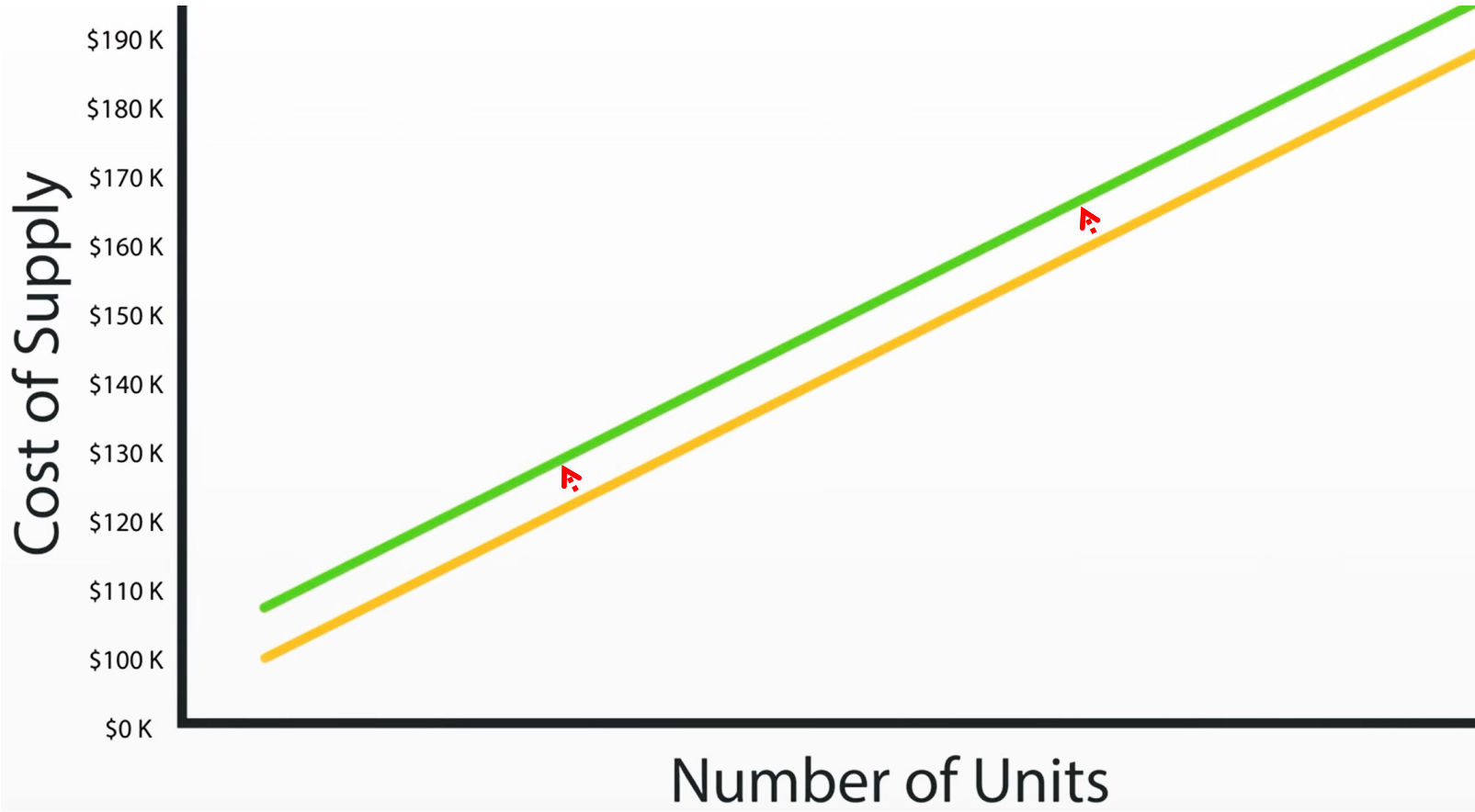
# Factors Shifting the Supply Curve

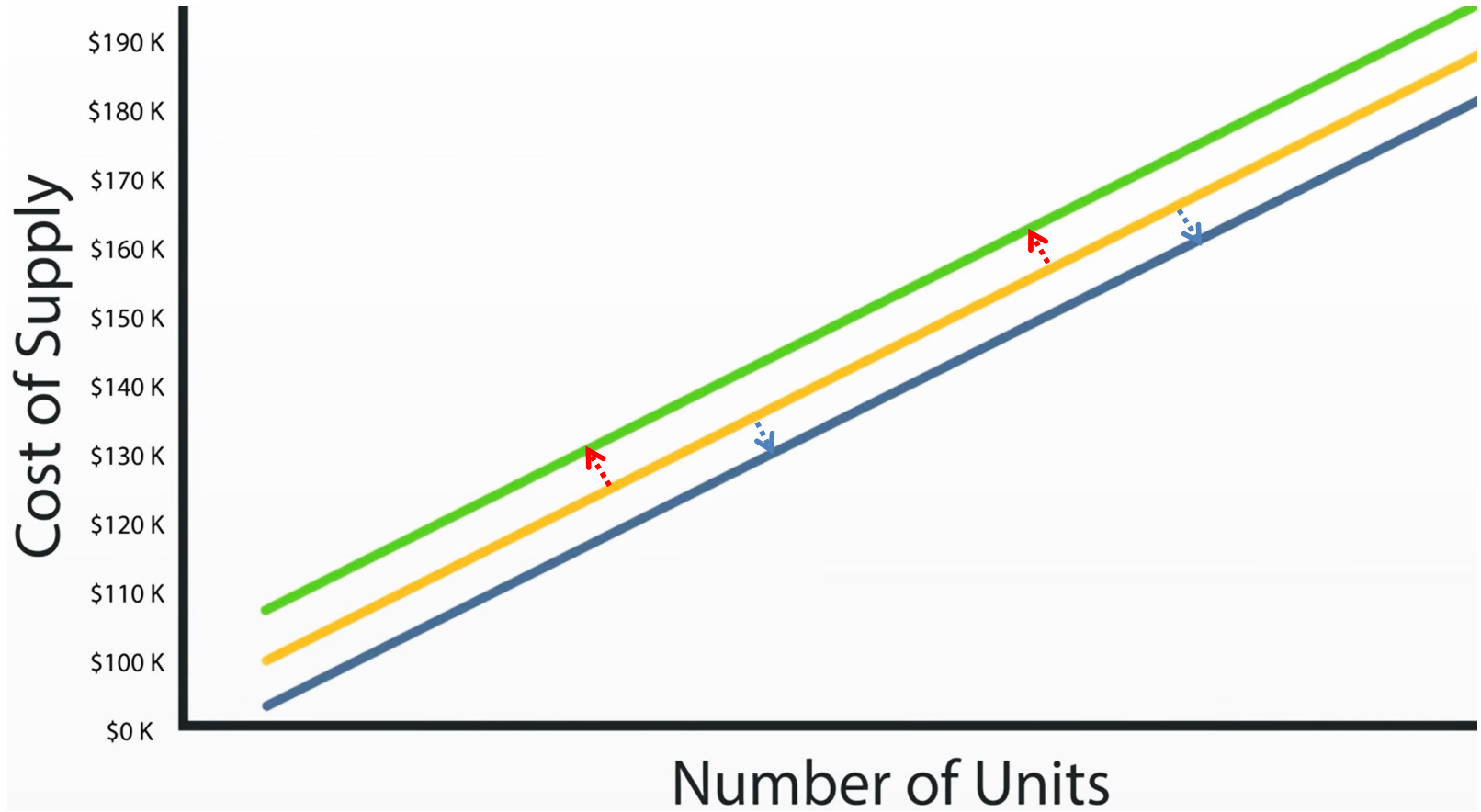
- Note that the supply curve illustrates the relationship **b/w housing prices and supply**
  - Given that all else being constant, the price increase (decrease) will make housing supply increase (decrease)
- Which factors beyond price affect housing supply?



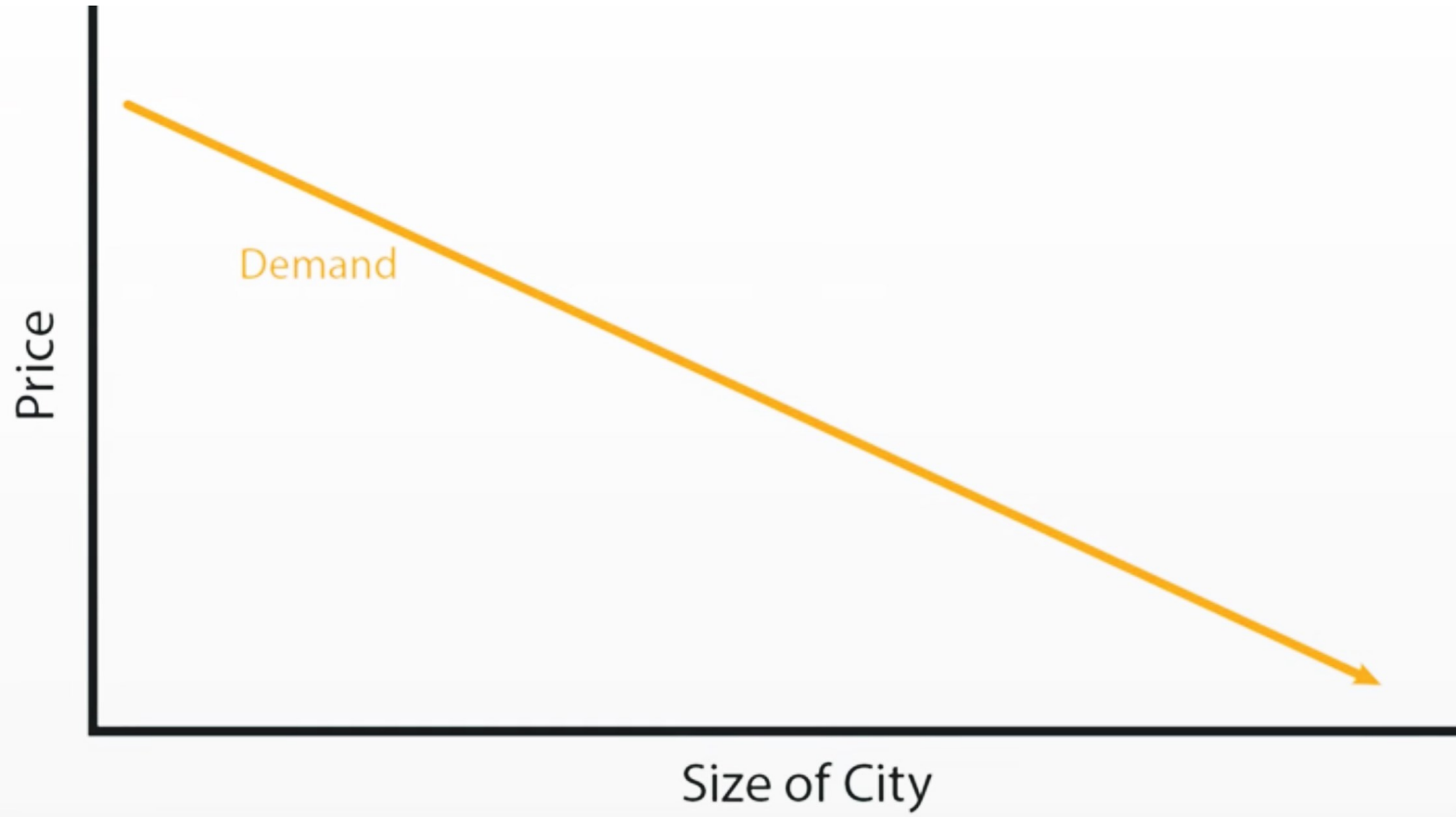
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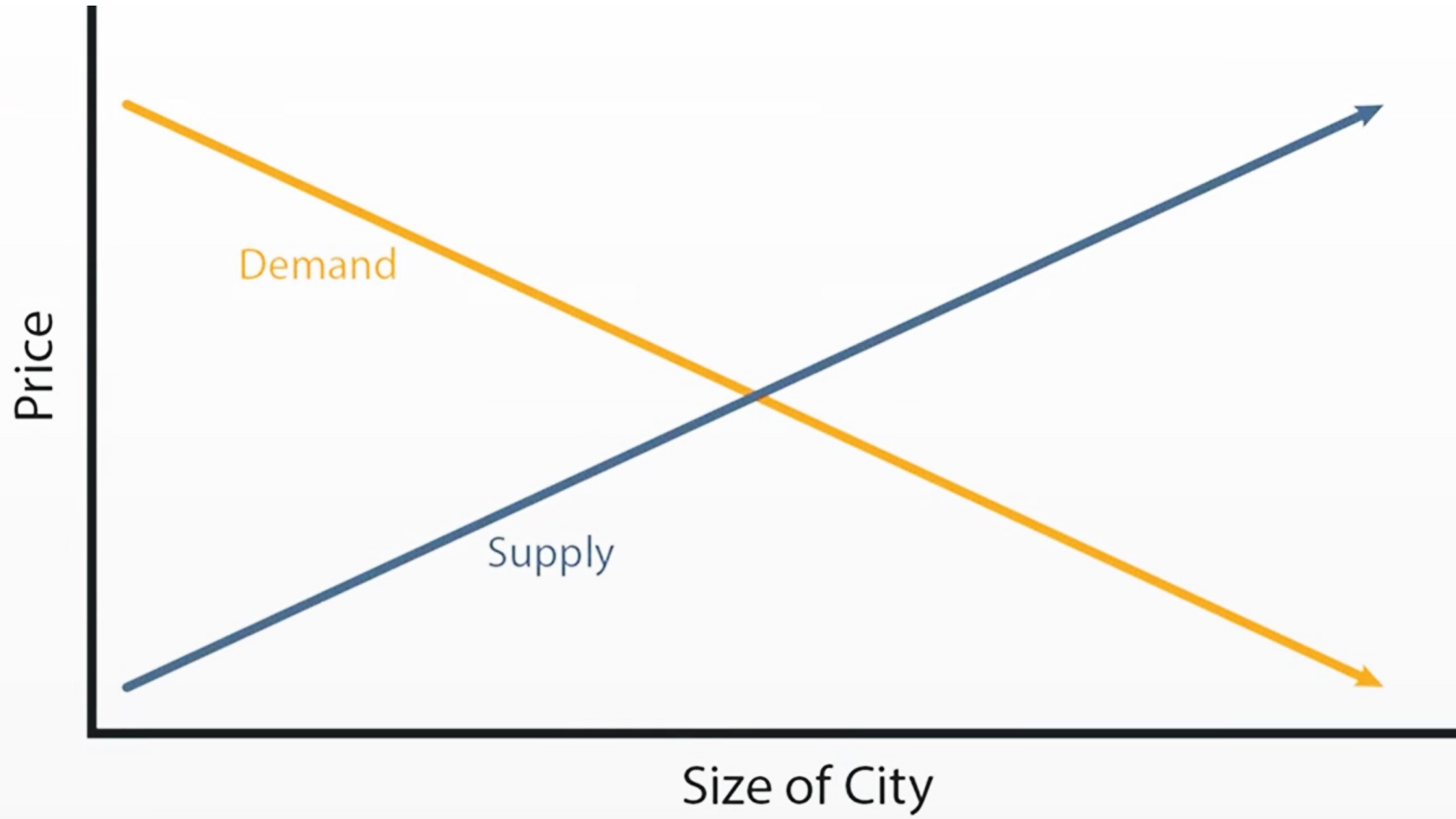
- Note that the supply curve illustrates the relationship **b/w housing prices and supply**
  - Given that all else being constant, the price increase (decrease) will make housing supply increase (decrease)
- Which factors beyond price affect housing supply?
  - Construction cost
  - Zoning policies
  - Economic condition
  - Future expectation
- What happens to the supply curve when factors other than price change?
  - The entire supply curve shifts

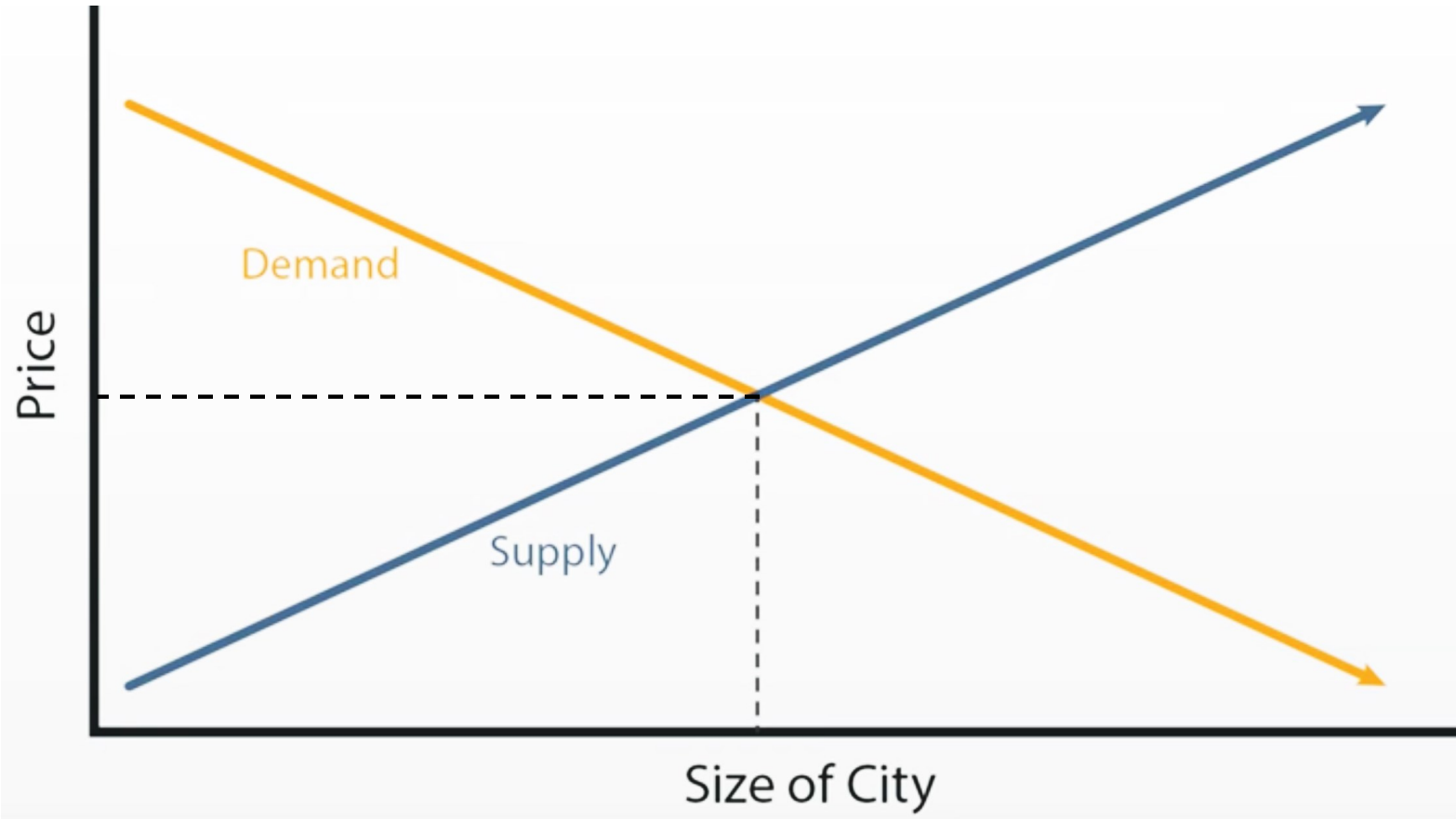


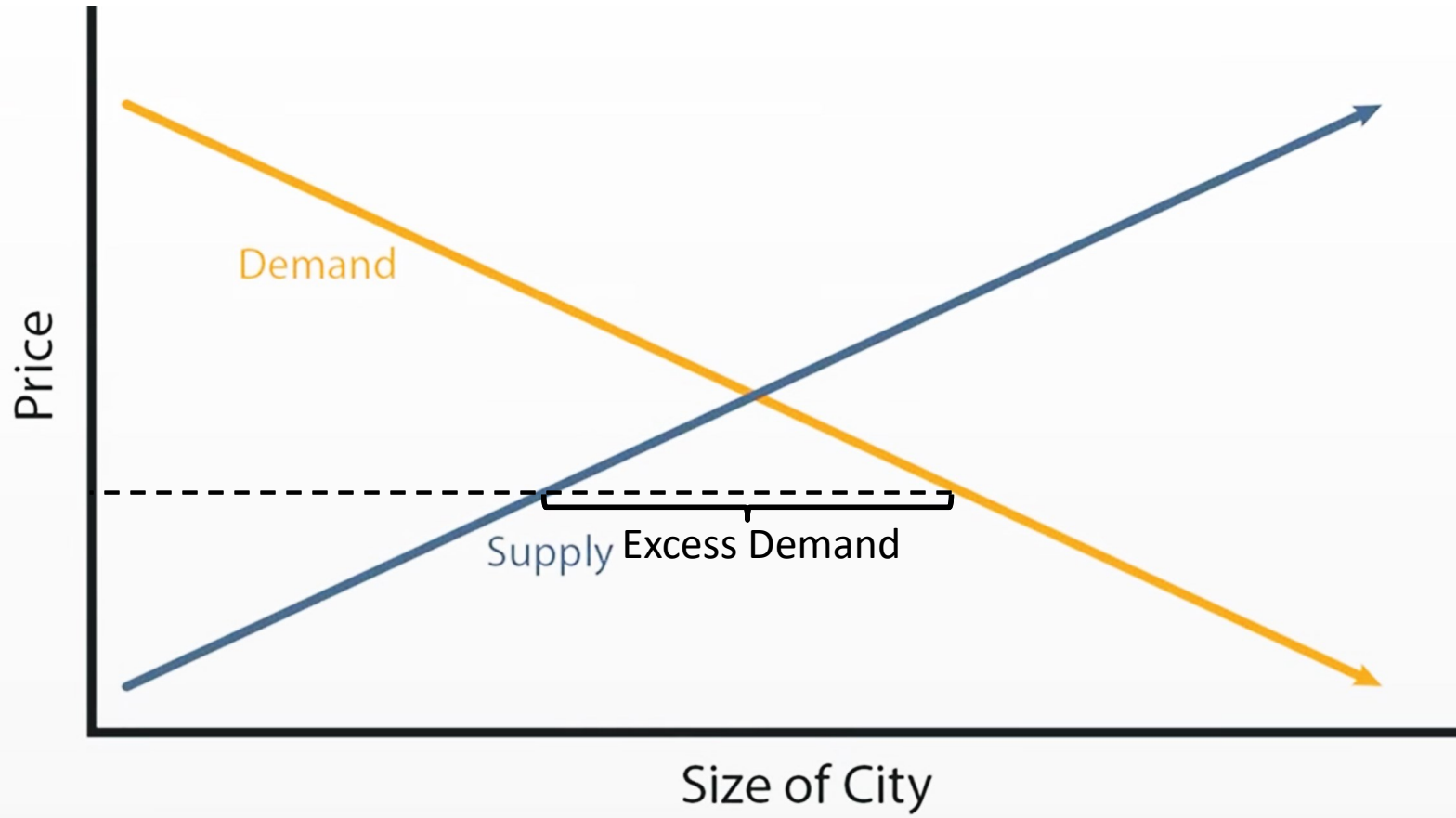


# Demand & Supply for Housing

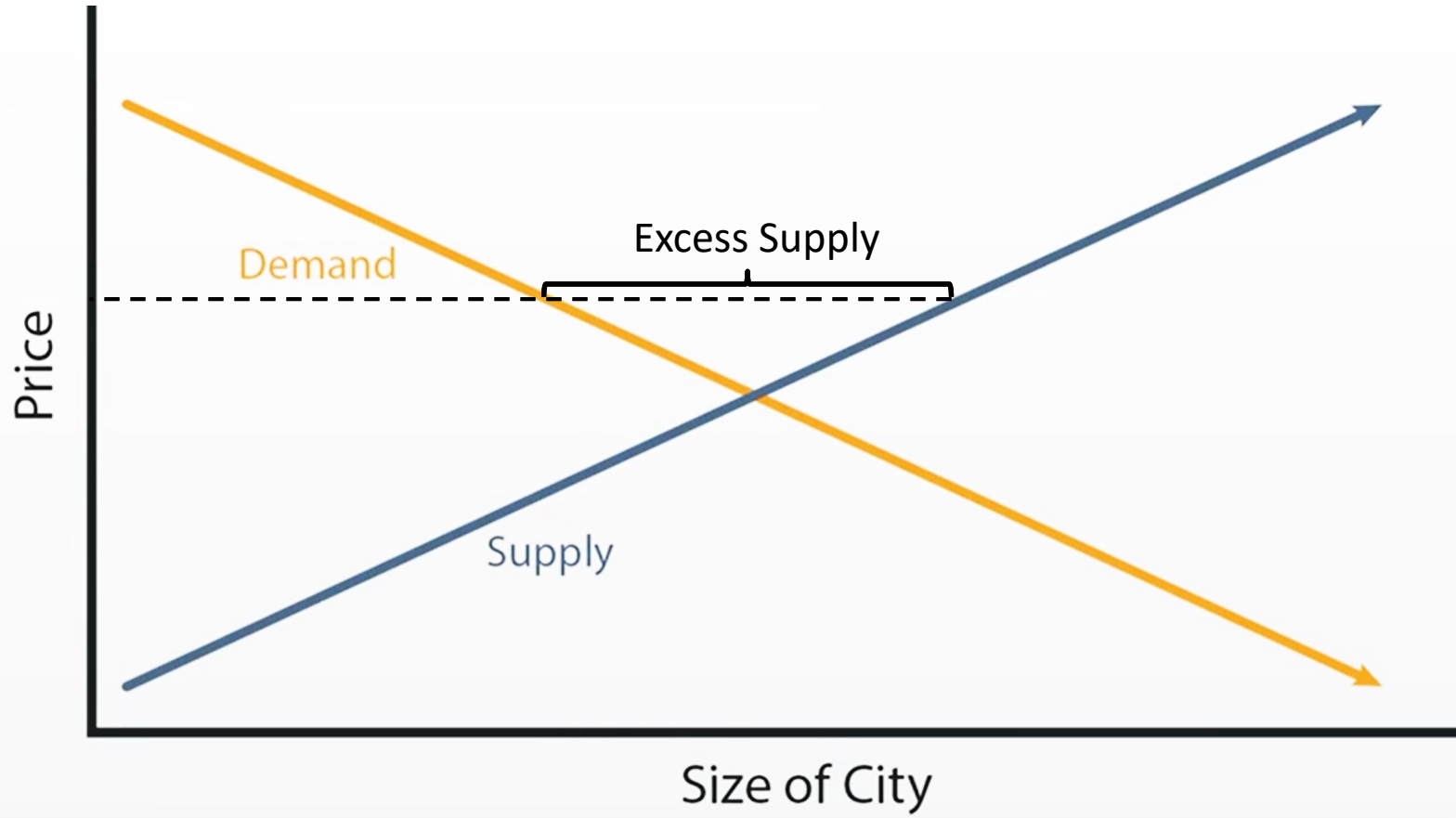


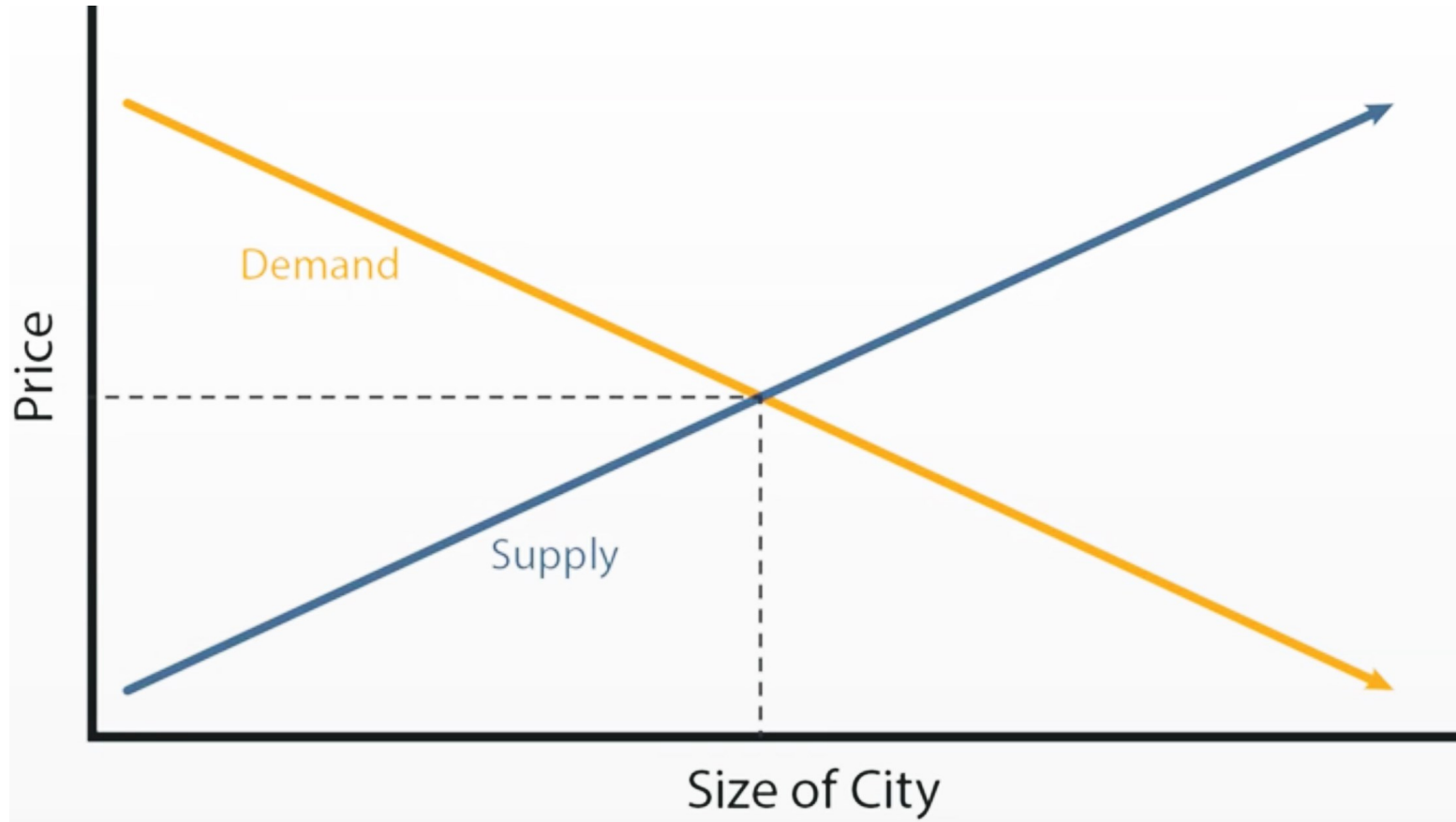


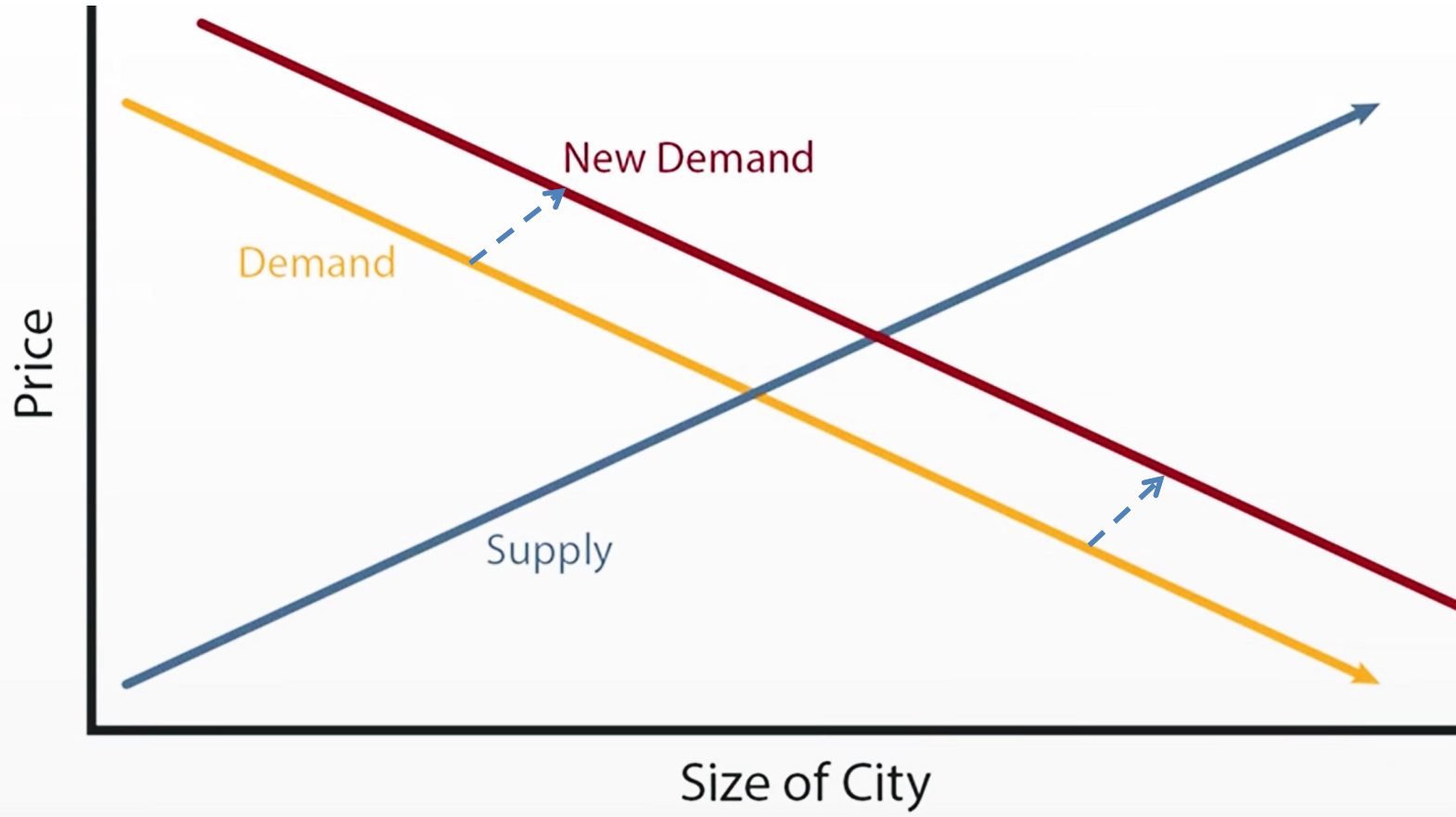


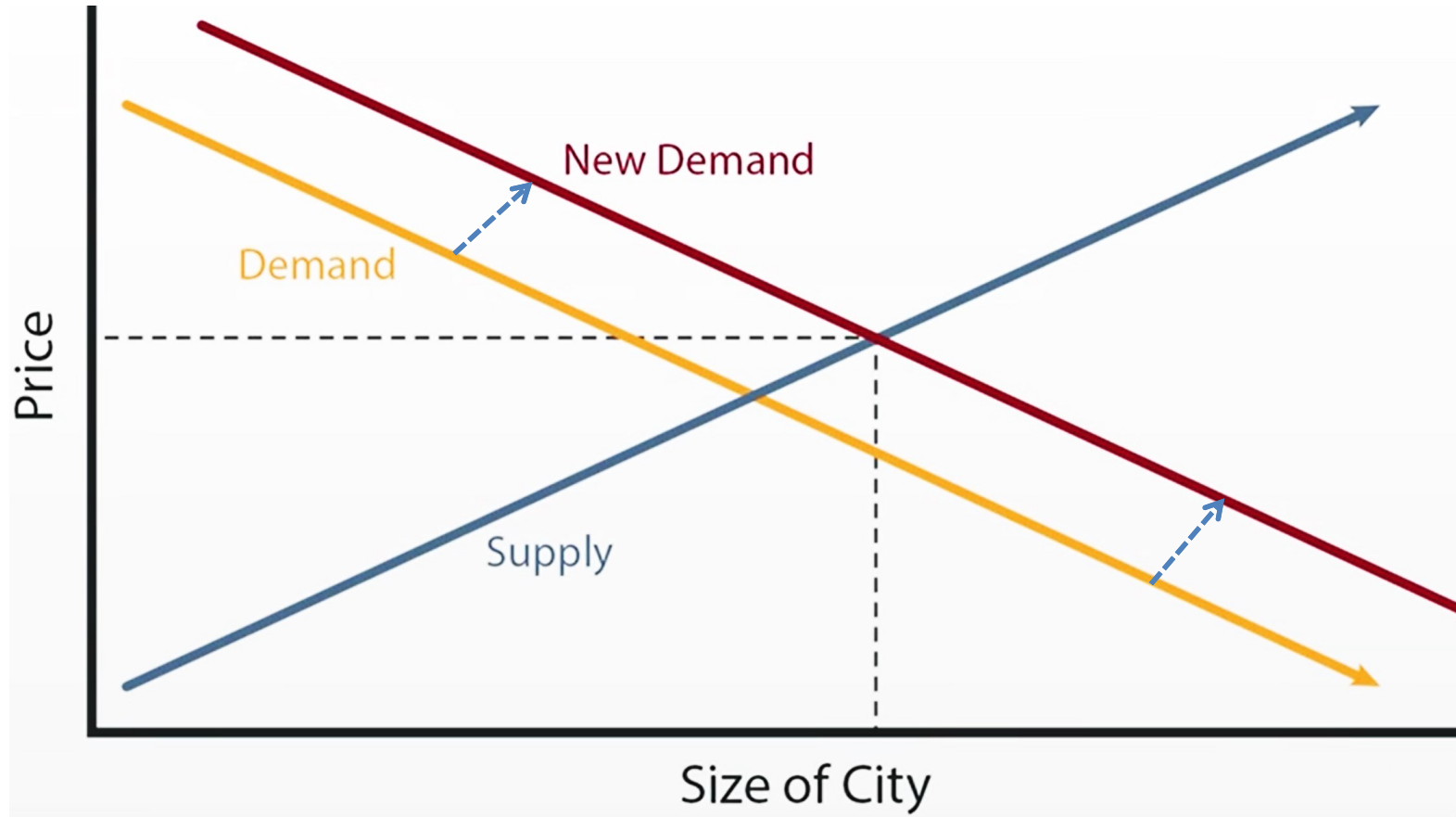












# Practice Question

- Q1. In 2020, WSJ reported that a significant uptick in sales of laptops and iPads, attributing to the boost in remote working and learning due to the COVID-19 pandemic.
  - (a) An upward movement along the demand curve
  - (b) A rightward shift of the demand curve
  - (c) A downward movement along the demand curve
  - (d) A leftward shift of the demand curve

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# Practice Question

- Q2. A sharp rise in the housing price leads many potential homebuyers to choose to rent, and the transactions of home purchases decline.
  - (a) A leftward shift of the demand curve
  - (b) A rightward shift of the demand curve
  - (c) A movement along the demand curve
  - (d) None of the above

# Practice Question

- Q2. A sharp rise in the housing price leads many potential homebuyers to choose to rent, and the transactions of home purchases decline.
  - (a) A leftward shift of the demand curve
  - (b) A rightward shift of the demand curve
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  - (d) None of the above



# Practice Question

- Q3. A sharp drop in the rent price leads many potential homebuyers to choose to rent, and the transactions of home purchases decline.
  - (a) A leftward shift of the demand curve
  - (b) A rightward shift of the demand curve
  - (c) A movement along the demand curve
  - (d) None of the above

# Practice Question

- Q3. A sharp drop in the rent price leads many potential homebuyers to choose to rent, and the transactions of home purchases decline.
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# Elasticity of Housing Supply

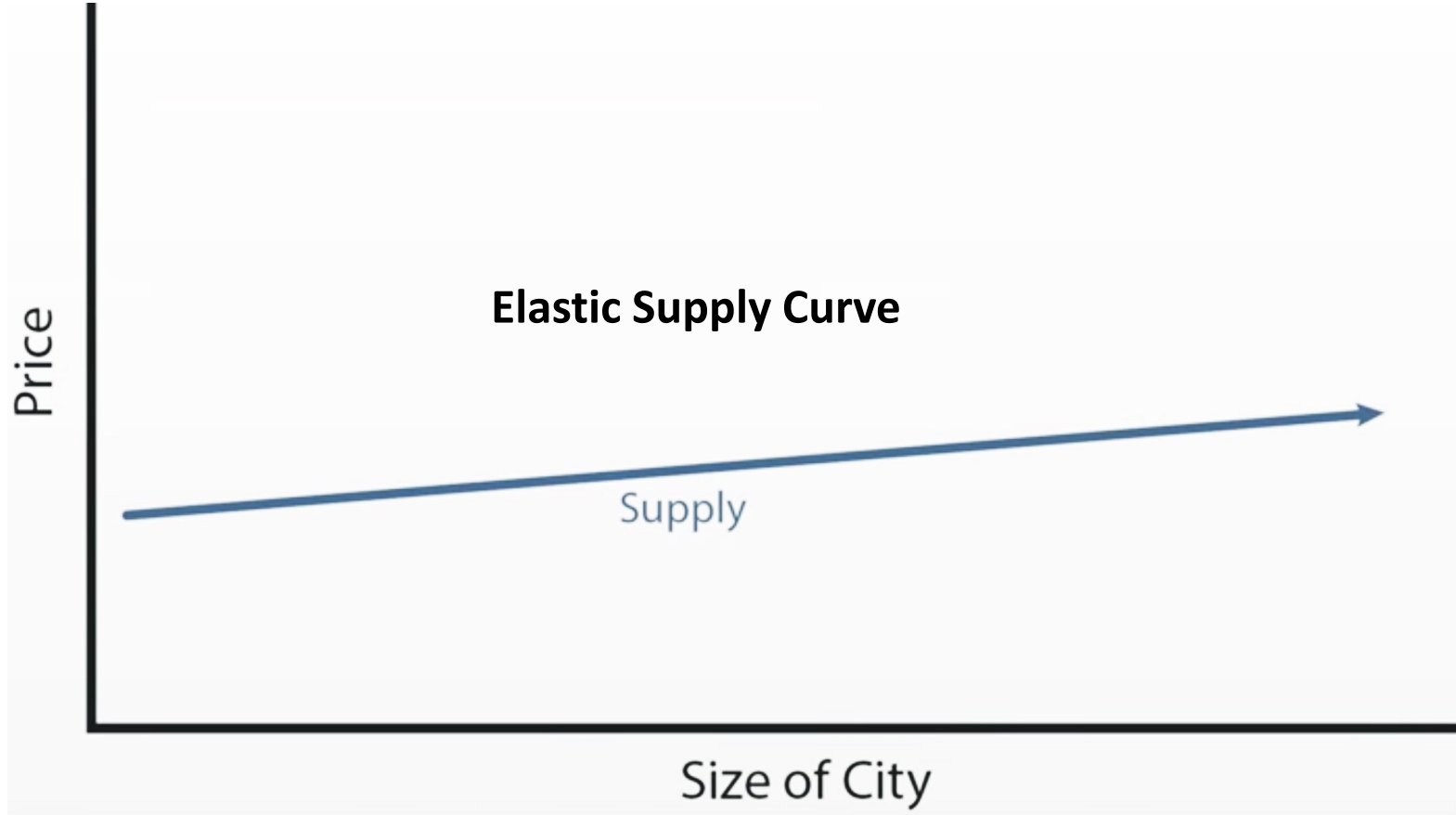
# Housing Supply Elasticity

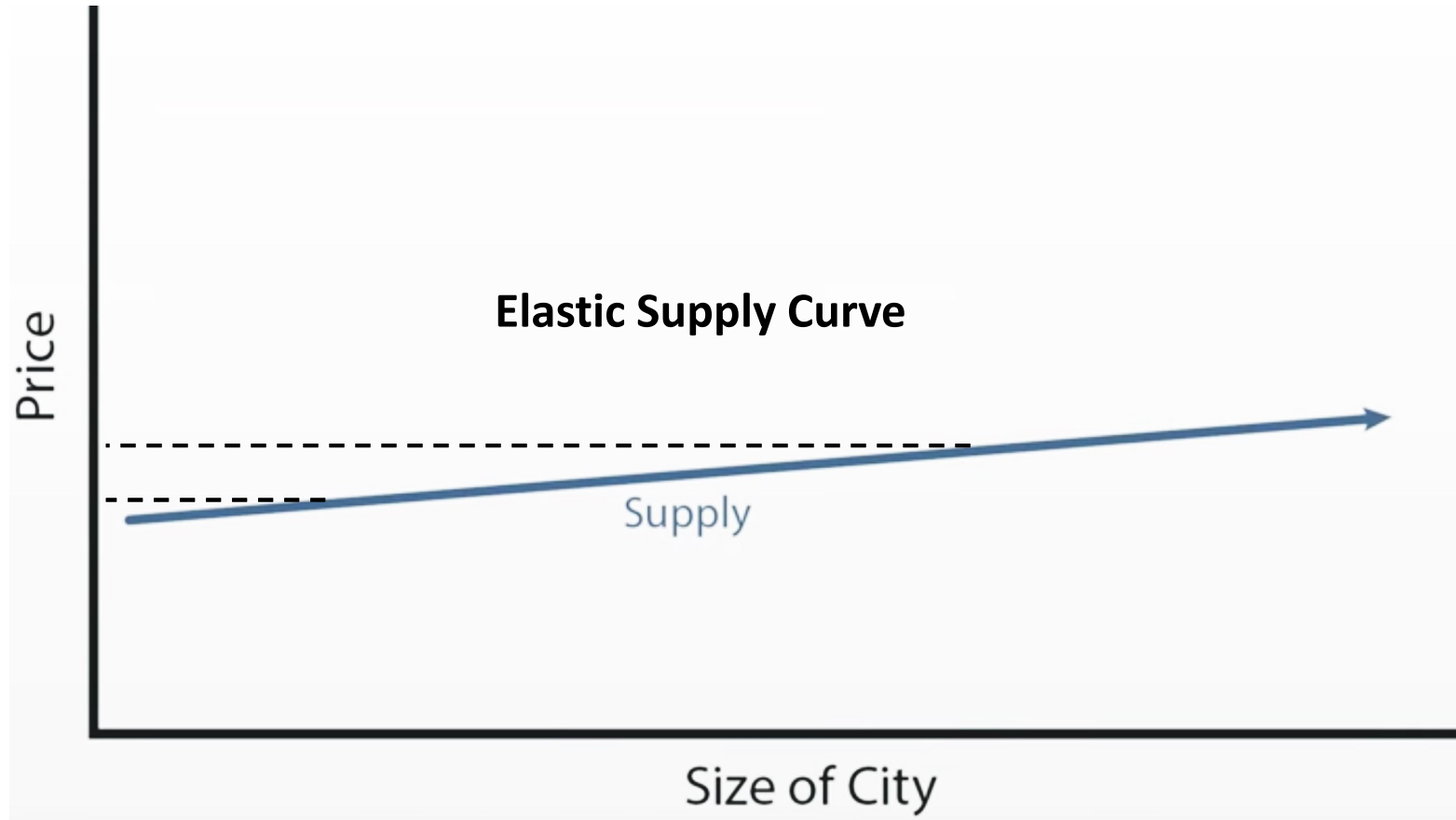
- **The elasticity of supply of housing** refers to how much the quantity supplied of changes when the price changes.

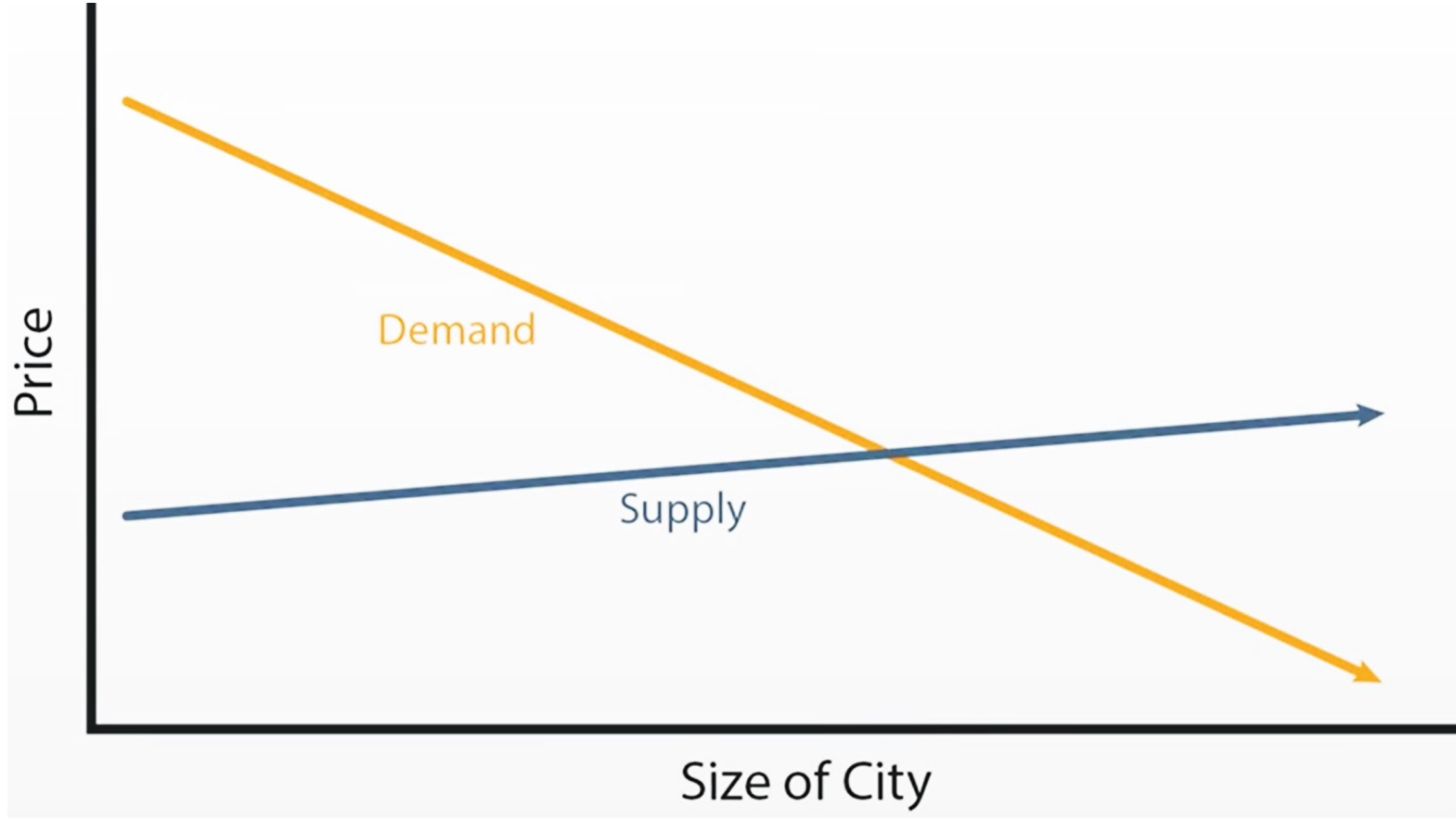
$$\text{Elasticity of Supply} = \frac{\% \text{ Change in Housing Supply}}{\% \text{ Change in Housing Price}}$$

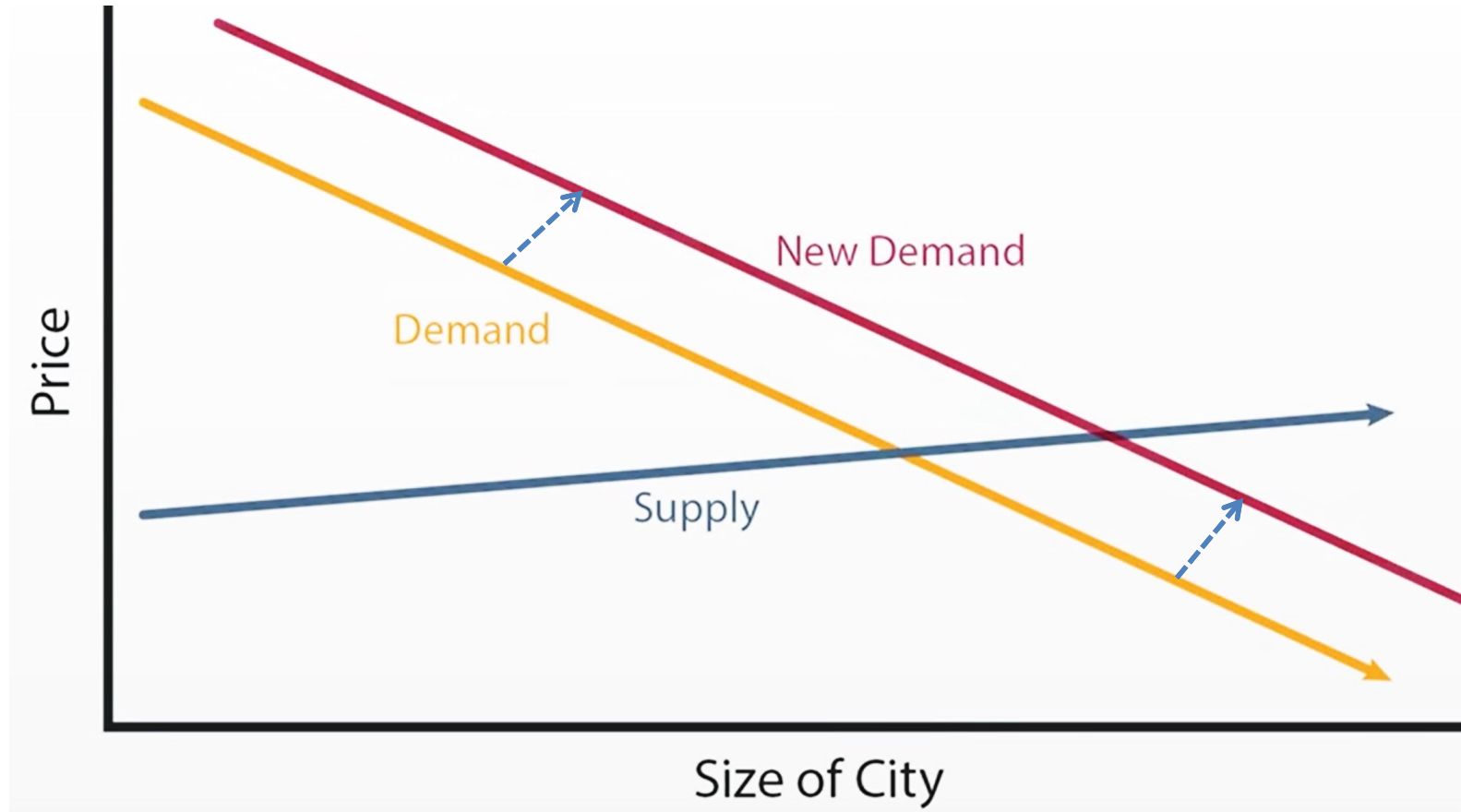
- **The elasticity of demand for housing** refers to how much the quantity demanded of housing changes when the price changes.

$$\text{Elasticity of Demand} = \frac{\% \text{ Change in Housing Demand}}{\% \text{ Change in Housing Price}}$$

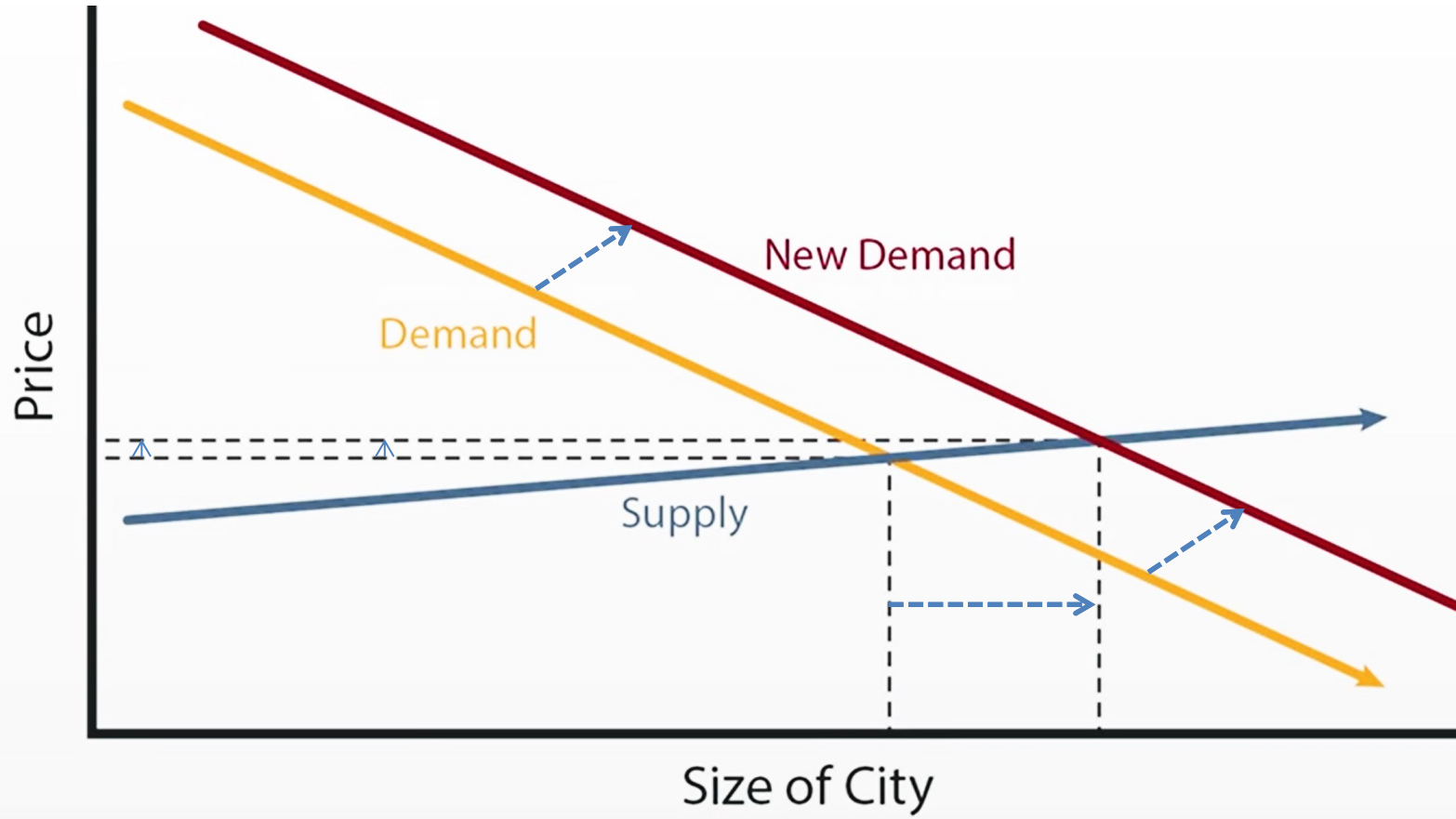


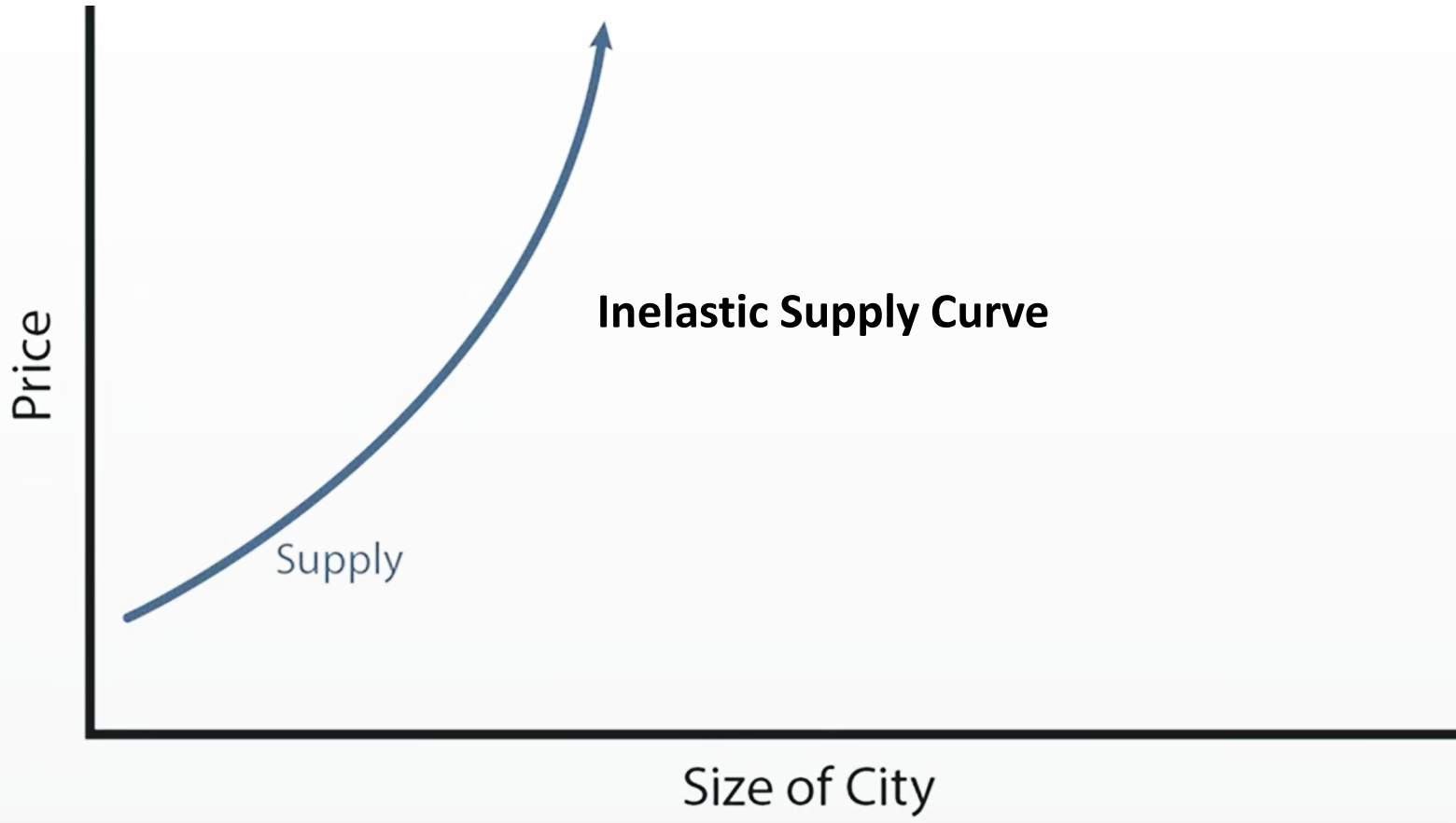


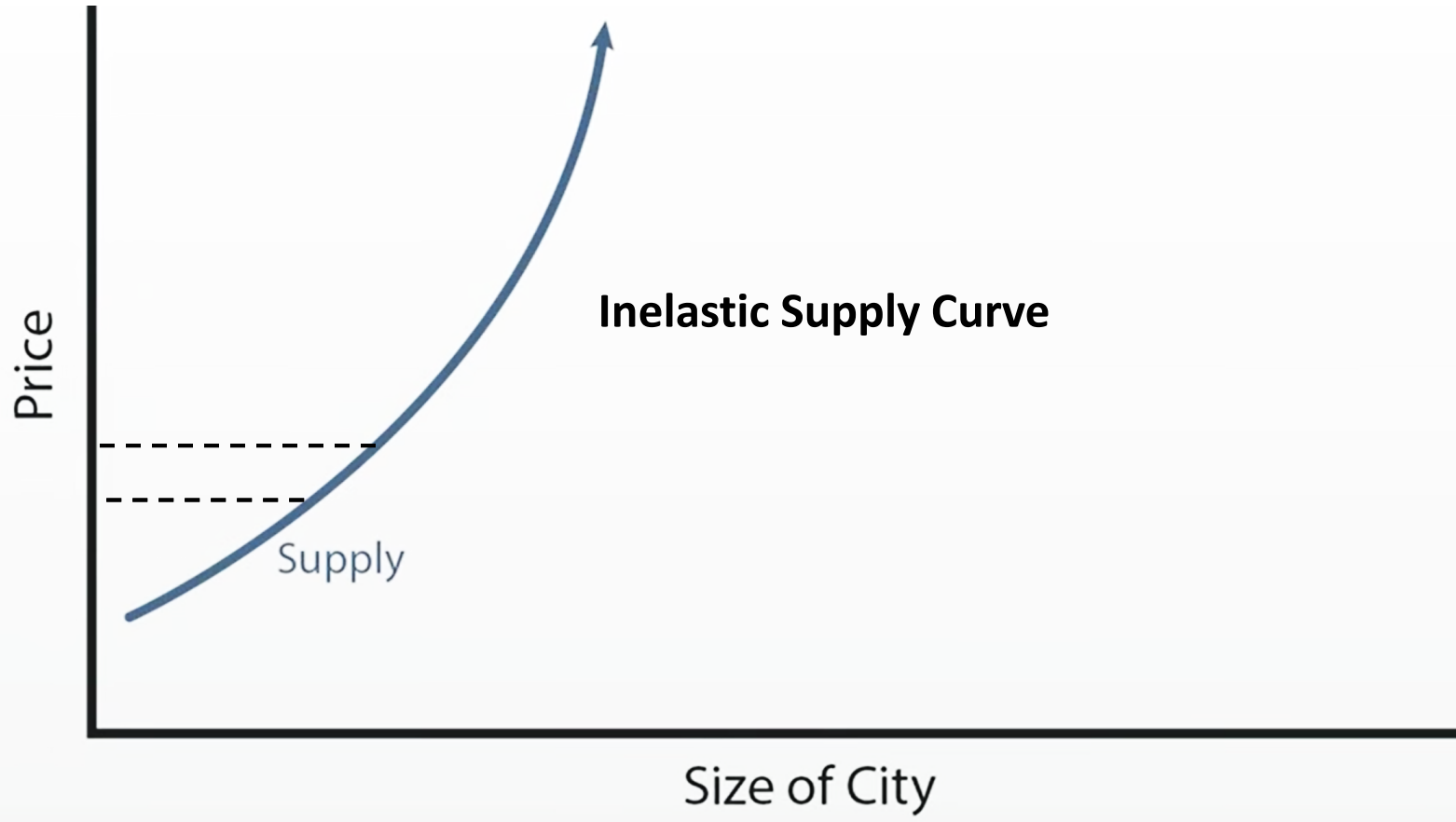


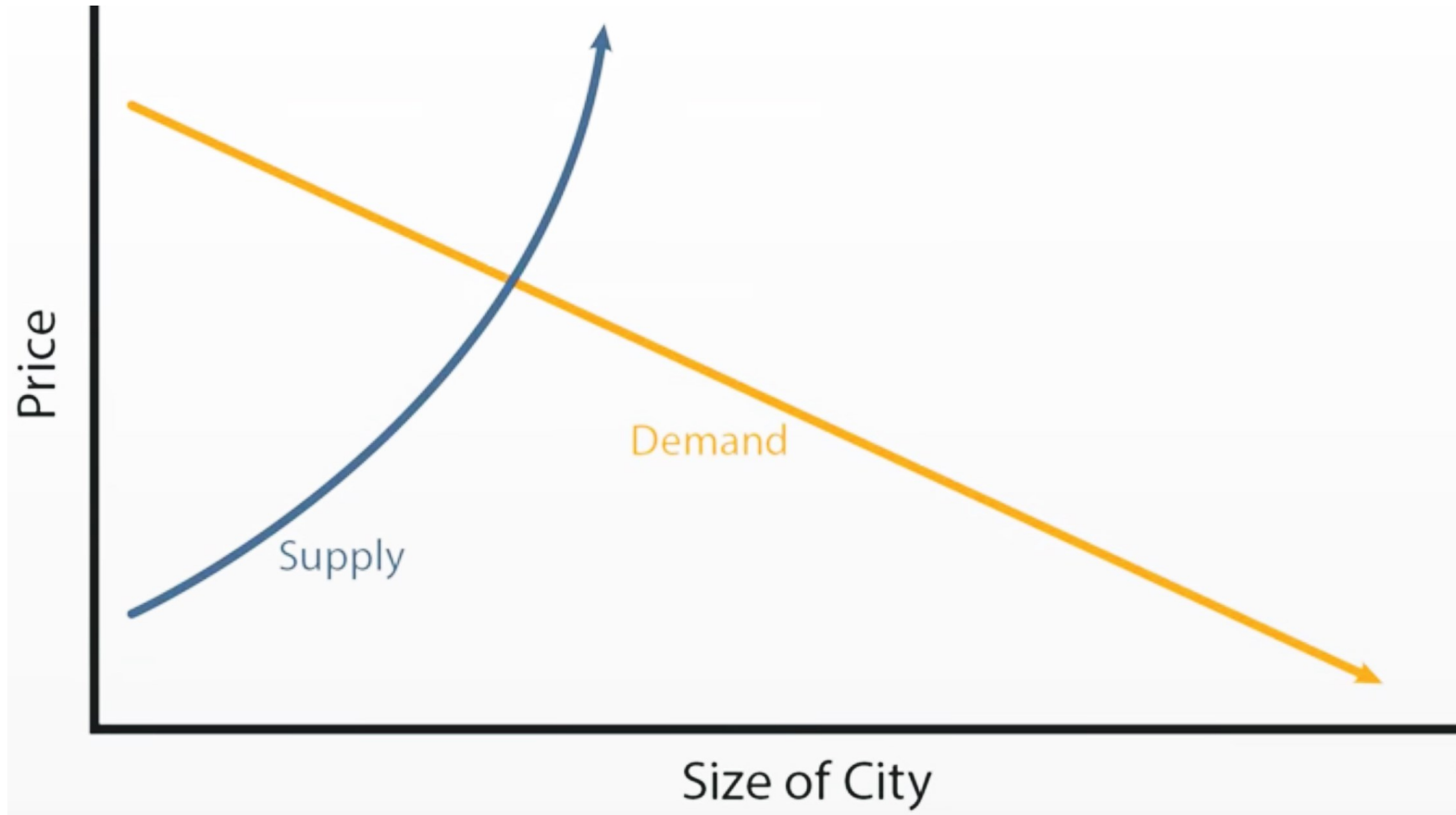


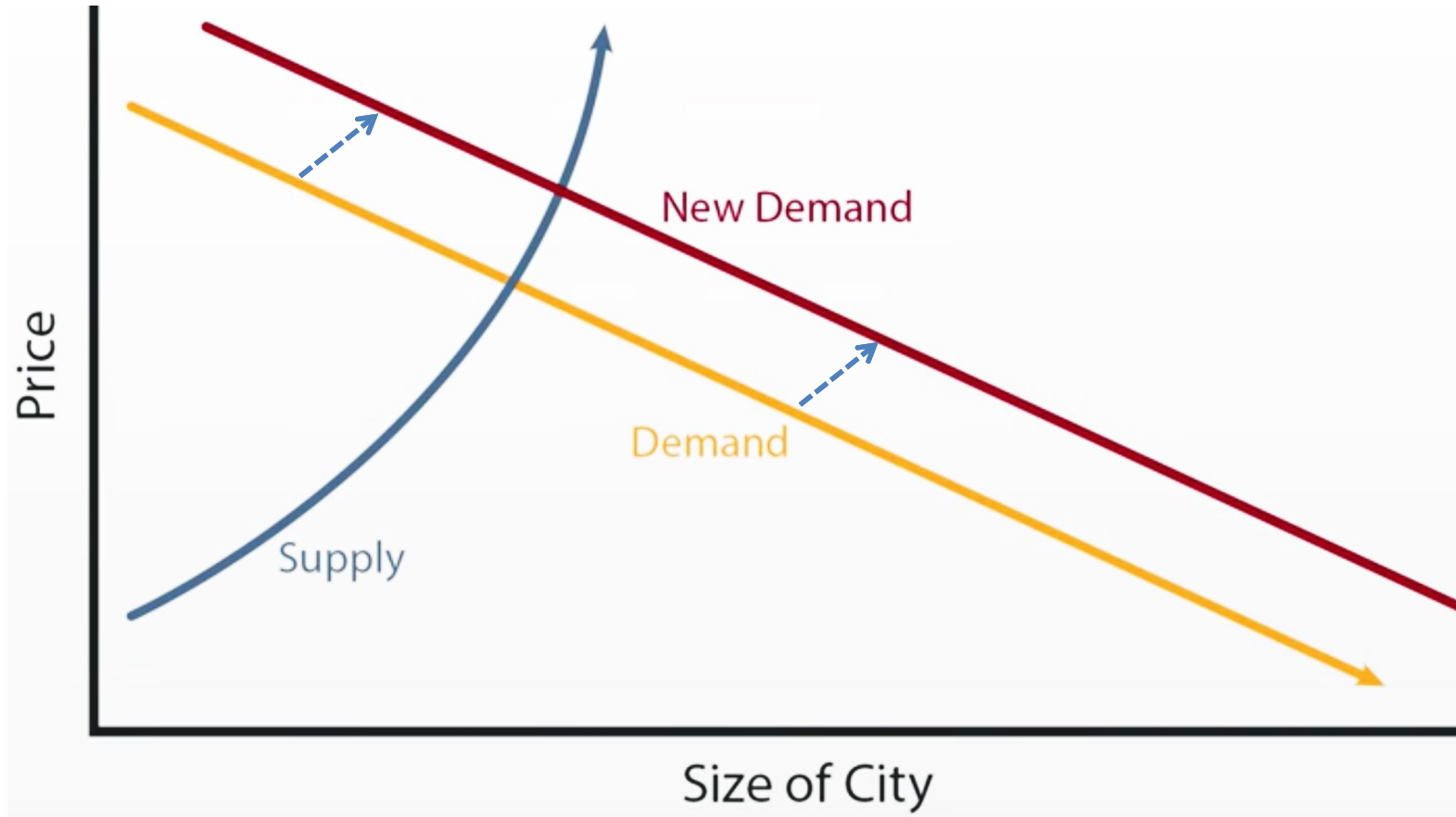


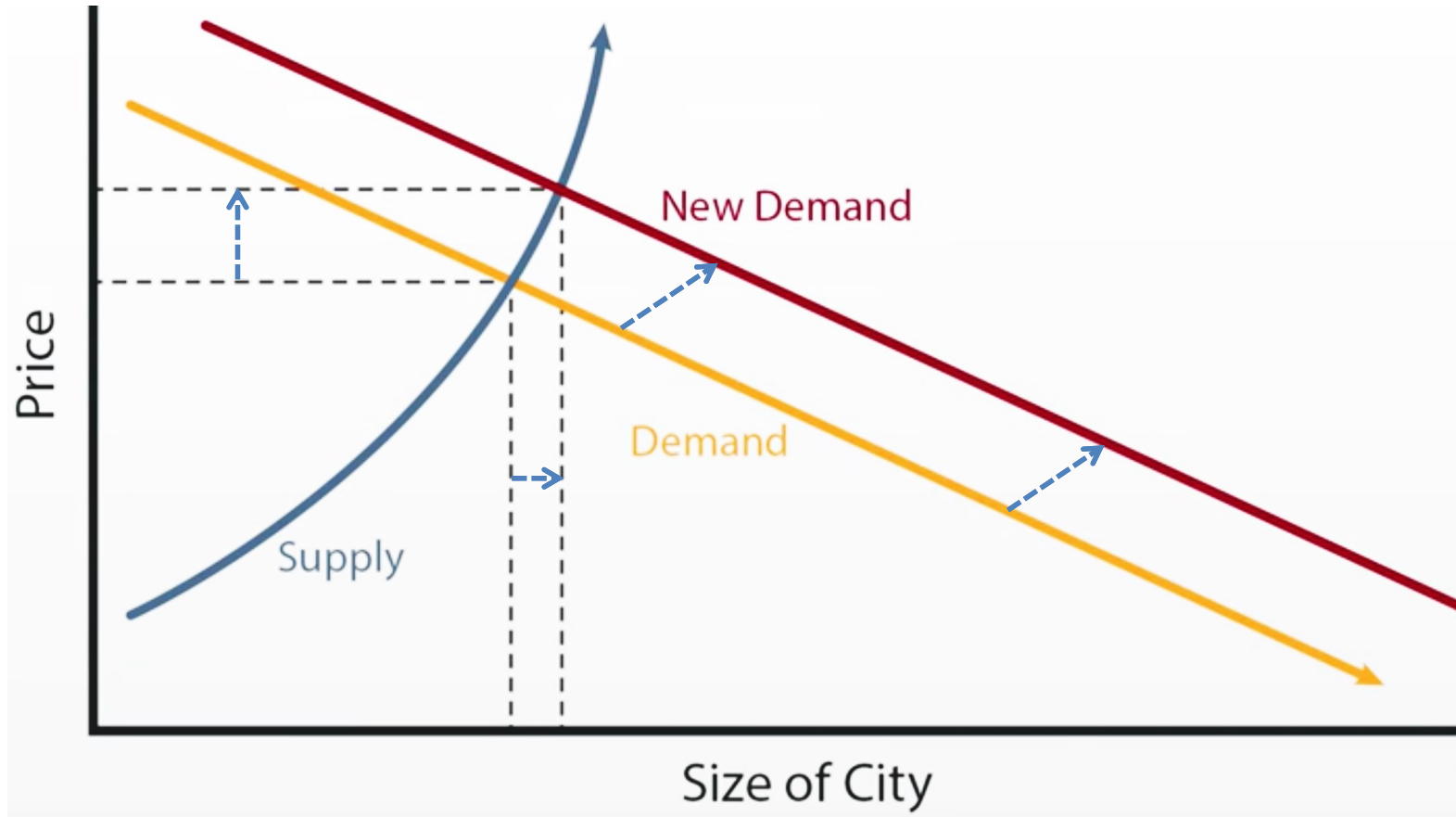












# What determines supply elasticity?

- What factors determine the supply elasticity
  - Local land use regulations
  - Number of competitors
  - Construction cost
  - Economic condition
  - Construction technology
  - Time horizon (long-run vs. short-run)
  - Topography

# How topography affects housing supply elasticity?

**Saiz (2010), "The Geographic Determinants of Housing Supply",  
Quarterly Journal of Economics 125(3), pp. 1253-1296**

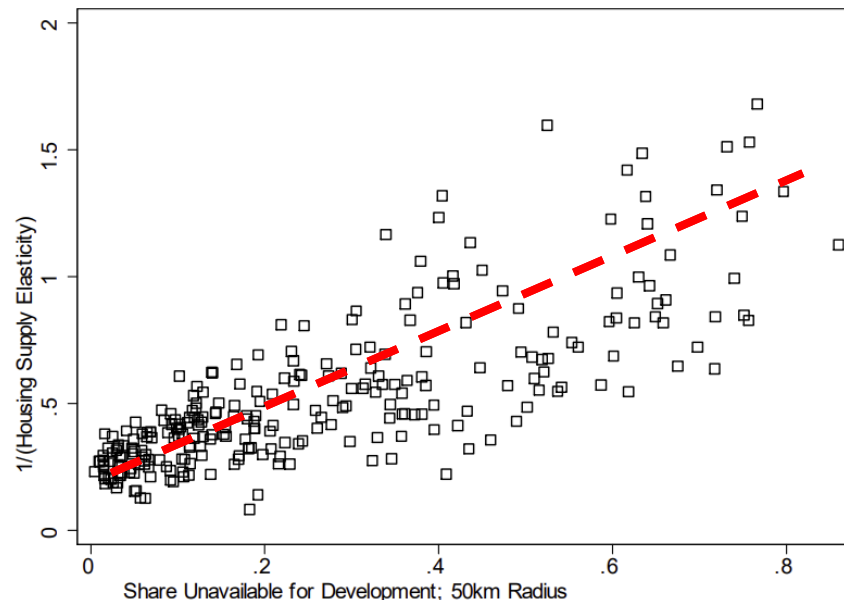
- Housing supply in a region may be more inelastic if parts of the region are unamenable for building due to topography (water, steep-sloped terrain)
- For each MSA, draw a circle of radius 50 km from the city center, and compute the fraction of land that is:
  - Water (ocean, wetlands, or river)
  - On steep terrain (a block group where over half the land has slope above 15%)



# How topography affects housing supply elasticity?

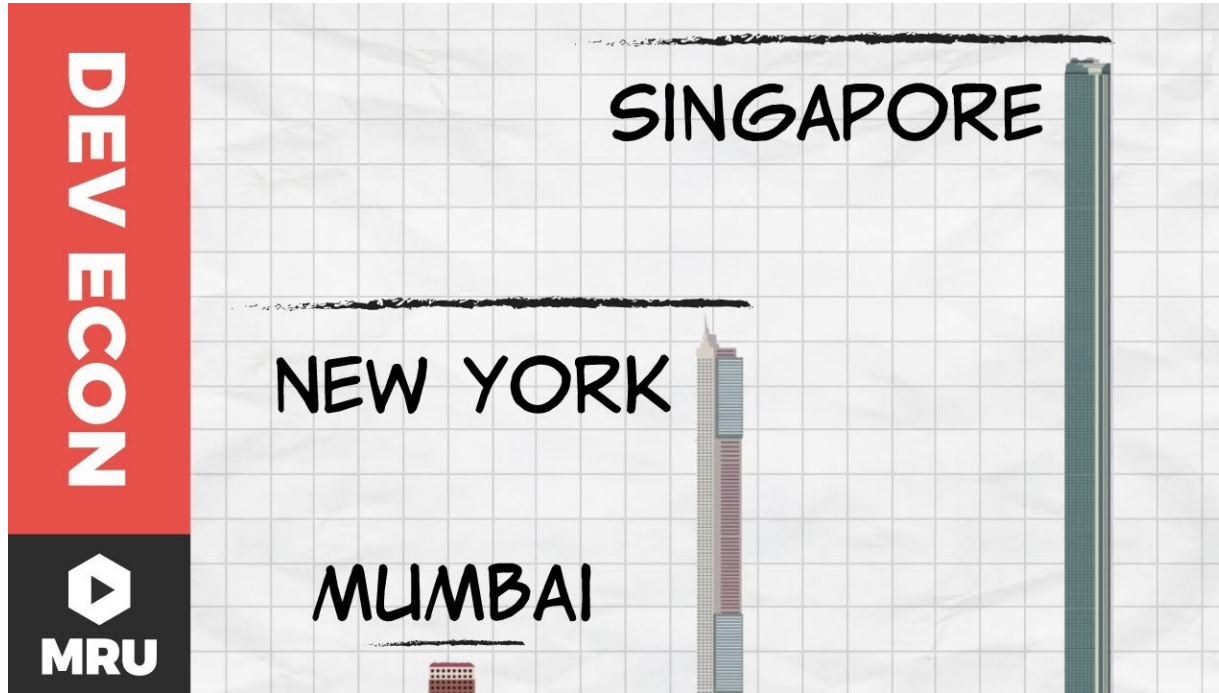
**Saiz (2010), "The Geographic Determinants of Housing Supply",  
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	MSA	Elasticity	Unavailable Land
1	Miami, FL	0.60	77%
2	Los Angeles, CA	0.63	52%
3	Ft. Lauderdale, FL	0.65	76%
4	San Francisco, CA	0.66	73%
5	San Diego, CA	0.67	63%
265	Terra Haute, IN	6.51	5%
266	Alexandria, LA	7.15	19%
267	Columbia, MO	7.84	6%
268	St. Joseph, MO	7.94	6%
269	Pine Bluff, AR	12.15	18%



# Video Clip

## Skyscrapers and Slums: What's Driving Mumbai's Housing Crisis? (8:19)



# Key Takeaways

- Understand the demand and supply curves for housing
- Understand the movement along the curve vs. the shift of the curve
- Understand factors that shift the demand and supply for housing
- Understand the elasticity of housing supply
- Understand factors influence the supply elasticity in the housing market
- Understand potential issues caused if the housing supply is too inelastic
- Optional Readings:
  - Saiz, A. (2010). The Geographic Determinants of Housing Supply. *Quarterly Journal of Economics*, 125(3), 1253-1296.