Determinants of Rent: Market Level

This presentation explores how urban economics principles determine property income streams. We'll examine how location, transport costs, and land value influence urban rent distribution, and how the space market connects with asset markets and development.

Urban Economics Foundation

Location Value

Land derives value through derived demand. People pay for land because it's necessary to obtain other valuable things.

Residual Nature

Land value is what remains after mobile factors (labor, capital, materials) have been paid their market rates.

Transport Costs

Location influences profitability by determining costs of accessing resources, markets, and labor.

The Residual Theory of Land Value

Production Value

Total revenue from goods or services produced on the site.

Mobile Factors Paid

Labor, capital, and materials must receive market rates or they'll "run away."

Residual Remains

Only what's left after mobile factors are paid is available to the landowner.

Land Value Determined

This residual determines what the land is worth in the market.

Highest and Best Use (HBU)

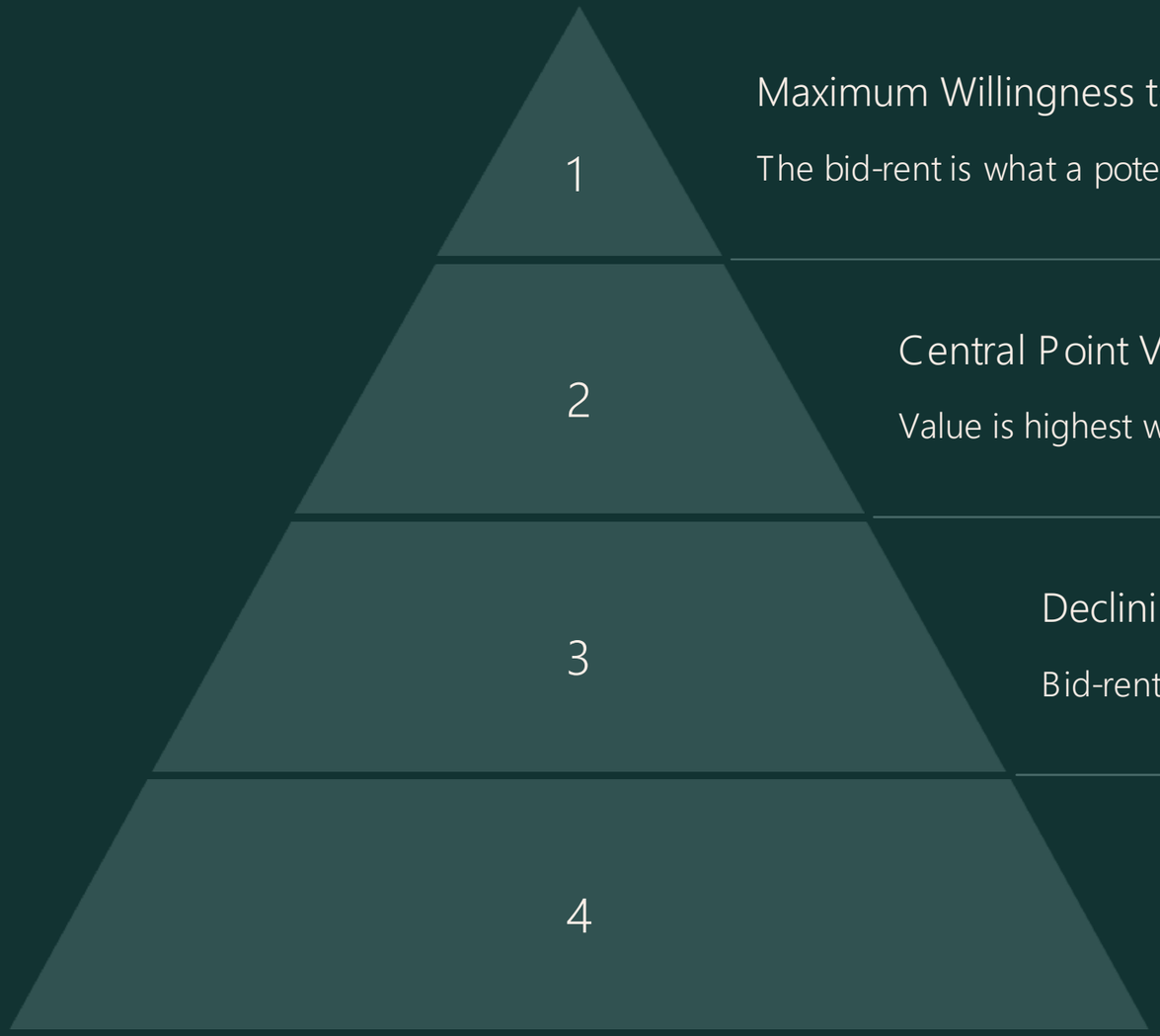
Competitive Markets

In well-functioning markets, competition ensures each site is used for its most productive purpose.

This maximizes the total rent earned by all land, optimizing societal productivity.

Each potential land use has a different residual value it can generate from a particular location.

Bid-Rent Curves



Maximum Willingness to Pay

The bid-rent is what a potential user would pay for a specific location.

Central Point Value

Value is highest where transportation costs are minimized for that use.

Declining with Distance

Bid-rent falls as transportation costs rise with distance from the central point.

Different for Each Use

Each land use has its own bid-rent function (level and slope) based on its sensitivity or location productivity and transport costs.

Transport Costs Shape Cities

Direct Monetary Costs

Fuel, vehicle maintenance, transit fares.

Time Value

Often the most important component, especially for high-income individuals.

Disutility

Stress, discomfort, and inconvenience of travel.

The Monocentric City Model

Simplified Reality

A theoretical city with one central point where all jobs are located. All residents commute to this center.

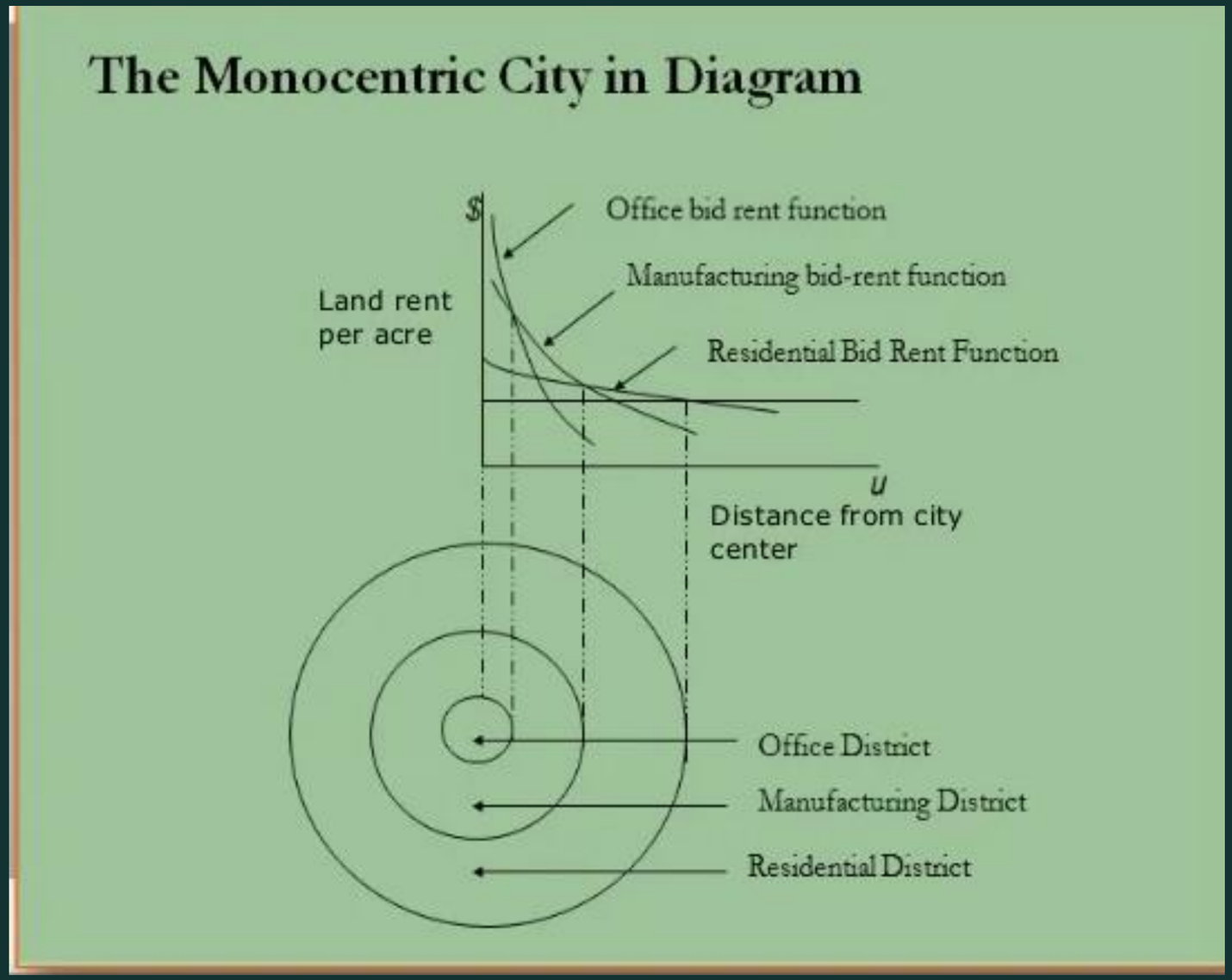
Circular Form

The city extends in a circle from the central business district (CBD) to an agricultural boundary.

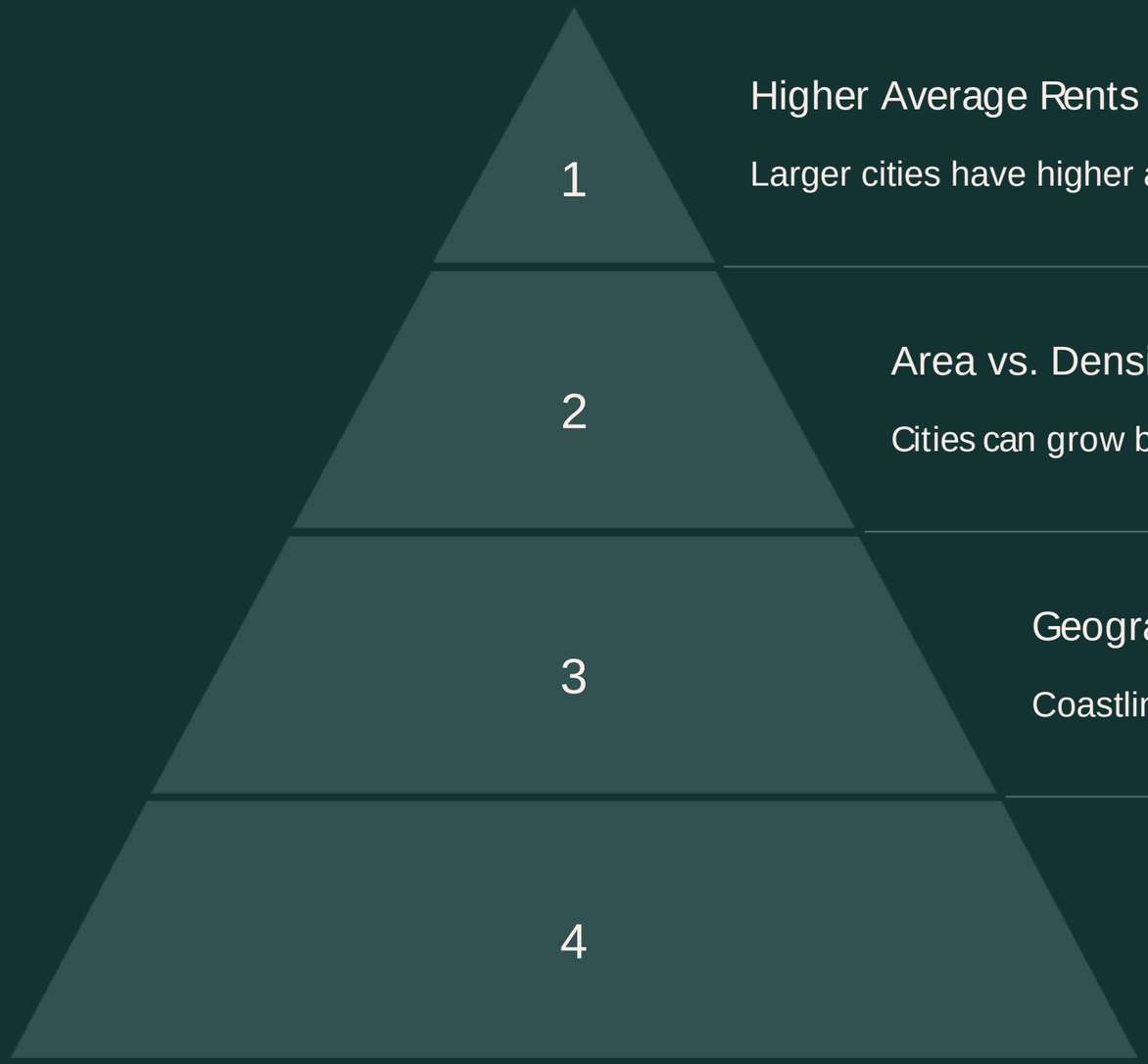
Equilibrium Rents

Housing rents rise toward the center at exactly the rate that transportation costs fall.

Circlopolis: A Model City: old simple model



Population Growth Effects



Higher Average Rents

Larger cities have higher average location rents.

Area vs. Density Growth

Cities can grow by expanding outward or increasing density.

Geographic Constraints

Coastlines, mountains, and lakes limit expansion and increase rents.

Higher Incomes

Larger cities must offer higher incomes to offset higher housing costs.

Growth Pattern Impacts, Ex:

3.8%

Peripheral Rent Growth

Percentage increase at city boundary with 10% population growth.

2.2%

Central Rent Growth

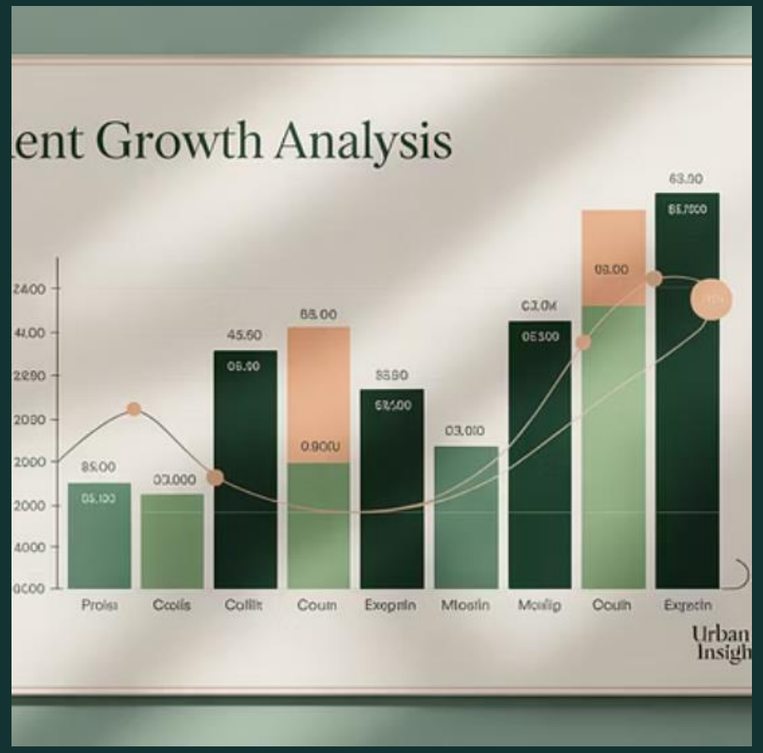
Percentage increase at city center with same population growth.

22%

Density-Driven Growth

Central rent increase when population grows by 50% with fixed area.

The Second Principle



"If a city grows by increasing area rather than density, property rent growth will be relatively greater closer to the periphery; but if a city grows by increasing density instead of area, property rent growth will be relatively greater the closer to the center of the city."

Transportation Cost Effects

Reduced Transport Costs

Improvements in technology and infrastructure reduce per-mile costs and increase value of periphery land.

Flattened Rent Gradients

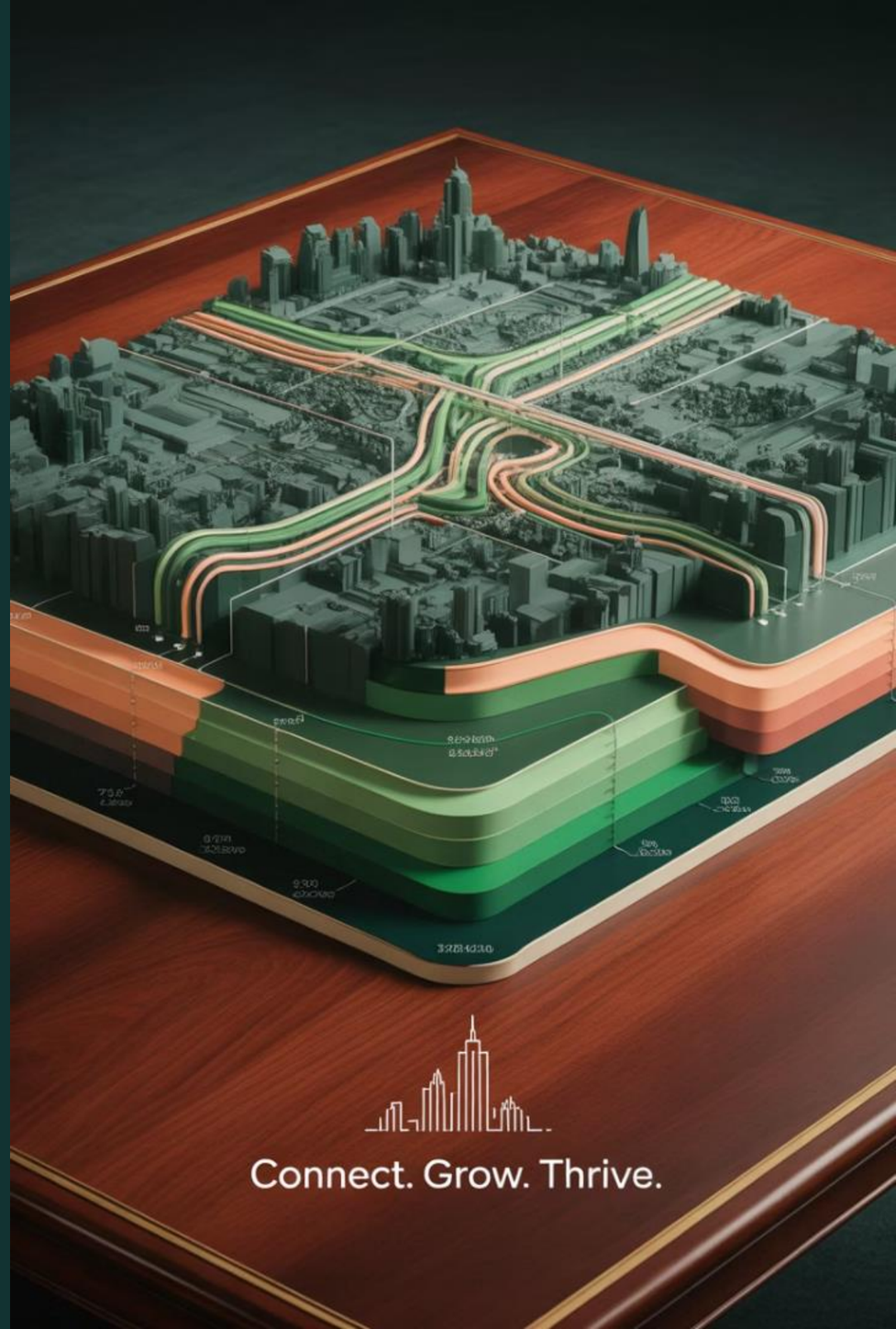
Lower transport costs reduce the premium for central

City Expansion

People may use savings to purchase more land, expanding the city outward.

Central Value Decline

Central location rents may decline in absolute terms.



The Third Principle

Central Value Decline

Declining transport costs always reduce the value of location rent in the center of the city.

Peripheral Ambiguity

Effects on peripheral location rents depend on density changes.

Flattened Gradients

The overall result is a flattening of rent gradients throughout the city.

Income Growth Effects

More Land Consumption

People typically spend additional income on larger lots and more open space.

City Expansion

This spreads the city out spatially, reducing density.

Higher Time Value

Higher incomes increase the value of time, potentially offsetting other effects.

Constrained Cities

If expansion is limited, transport cost effects dominate, steepening rent gradients.

The Fourth Principle

Income E ffect

"Increasing real income per capita will tend to decrease rent rent gradients, with a possible result of absolute reductions in land rent at the center of the city."

However, secondary effects may mitigate or reverse this result, especially in spatially constrained cities.

The balance between spatial expansion and increased value of time determines the final outcome.

Practical Applications

Identify Relevant Centers

The "center" may not be downtown but could be a university campus, highway node, or other focal point.

Consider Supply Constraints

Physical and regulatory constraints affect long-run rent growth potential.

Analyze Growth Patterns

Determine if the area is growing through density increases or spatial expansion.

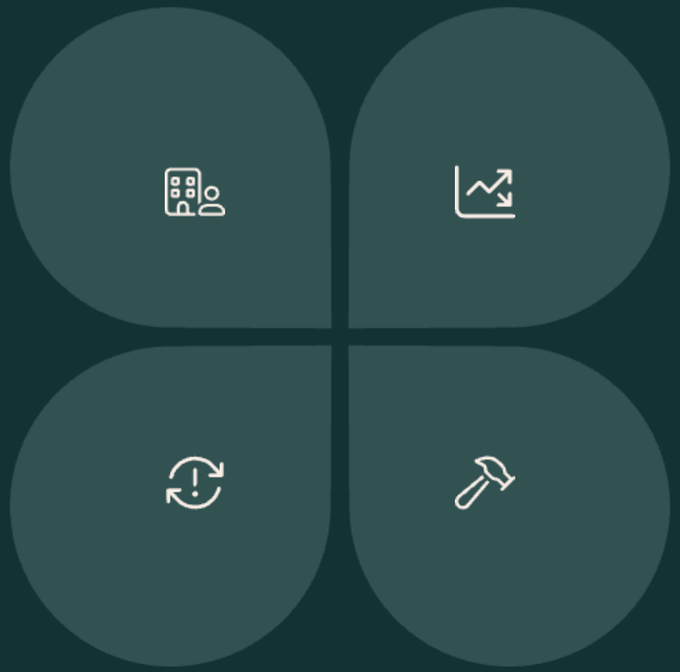
Forecast Property-Specific Impacts

Apply principles to predict how different property types in various locations will perform.

Markets in Equilibrium

Space Market

Where supply and demand for physical space determine rents.



Asset Market

Where property values are determined based on income streams.

Dynamic Linkages

Changes in one market affect the others in a continuous cycle.

Development Industry

Converts financial capital to new physical supply.

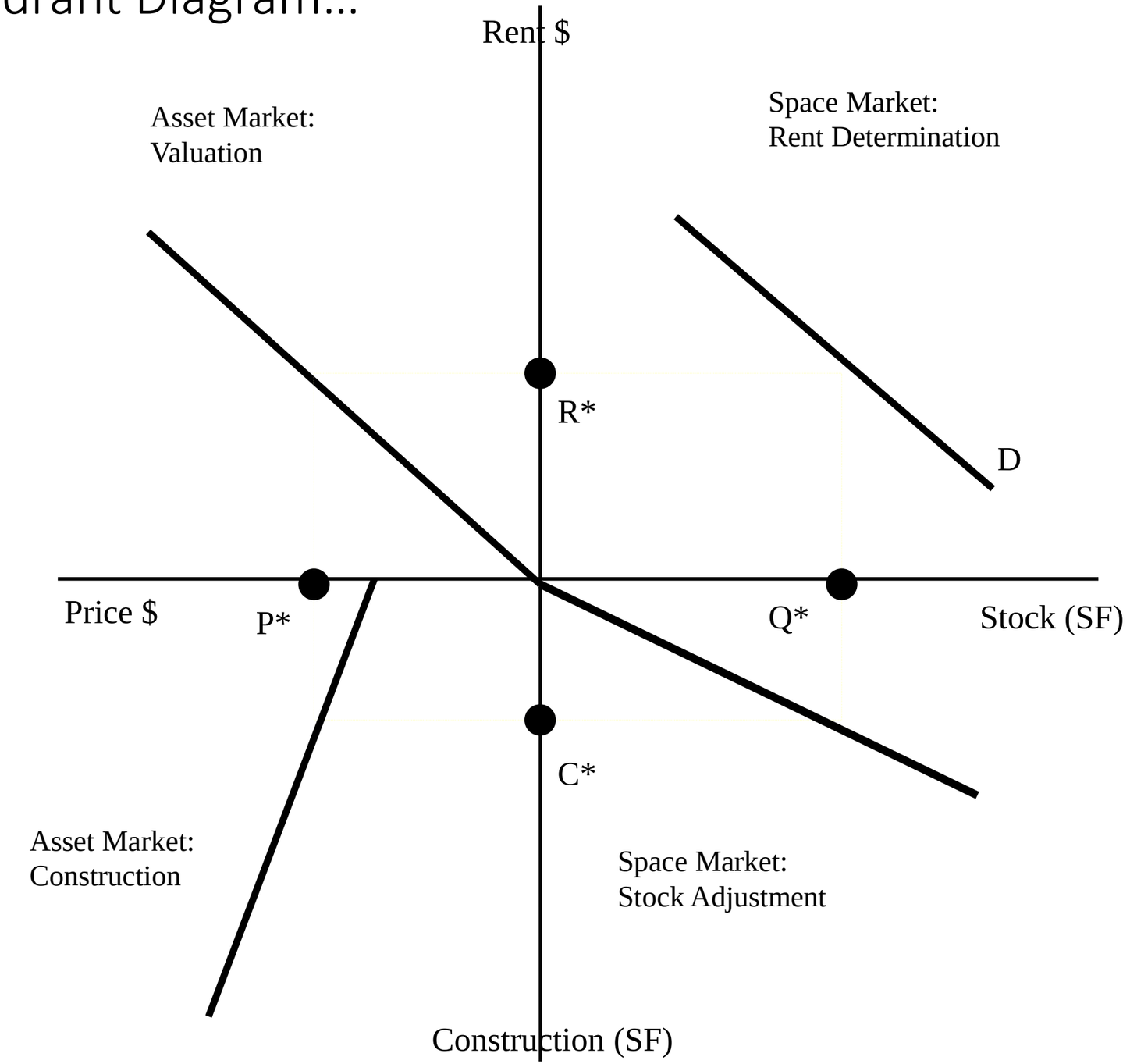
The Quadrant Model

Space Market (NE)	Asset Market (NW)
Stock Adjustment (SE)	Development Industry (SW)

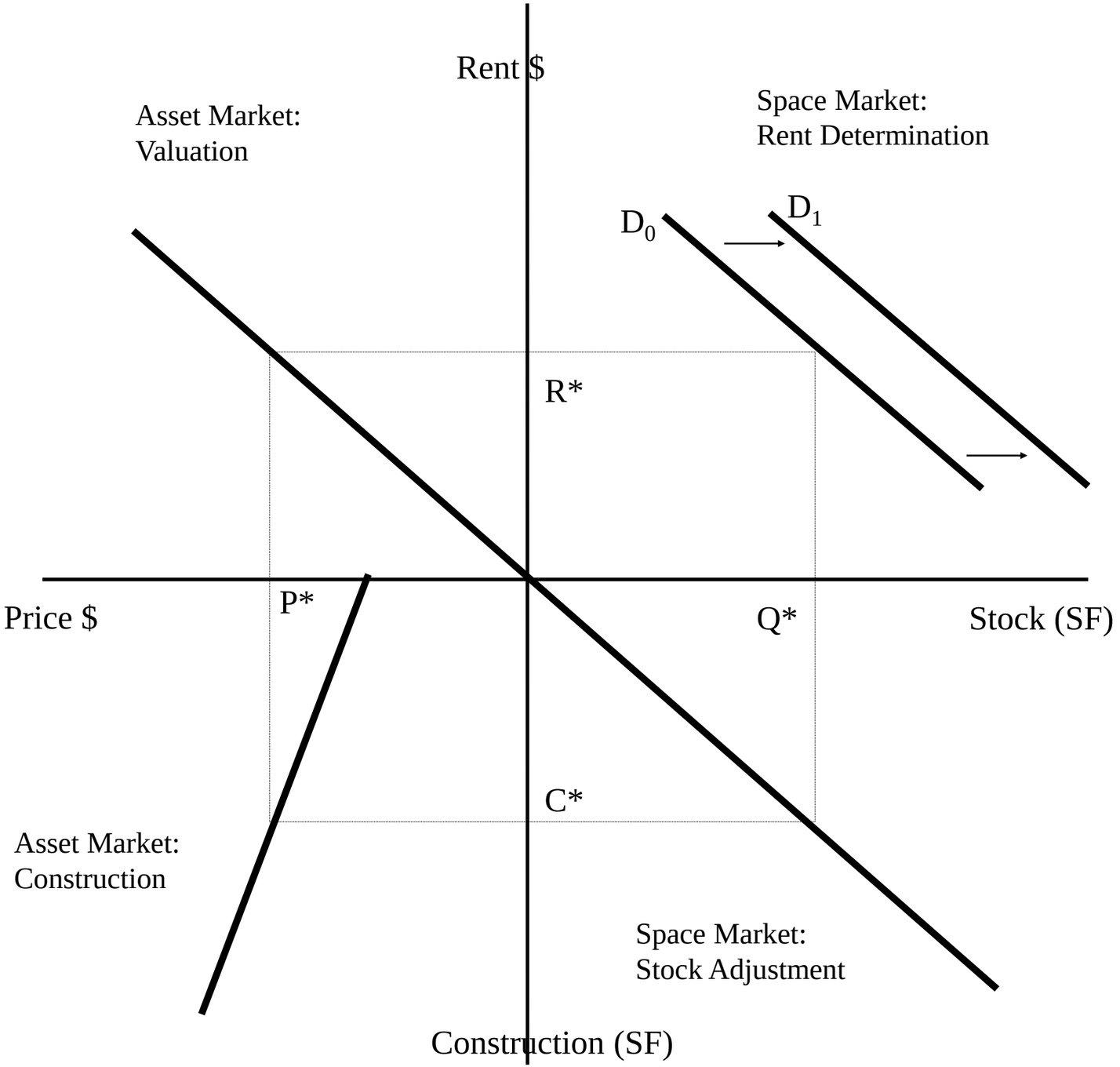
DiPasquale and Wheaton's quadrant model illustrates how four key relationships connect the space market, asset market, development industry. The model shows how rent, property prices, construction rates, and space stock interact in long-run equilibrium.

Using the 4QM to help understand “boom & bust” cycles…

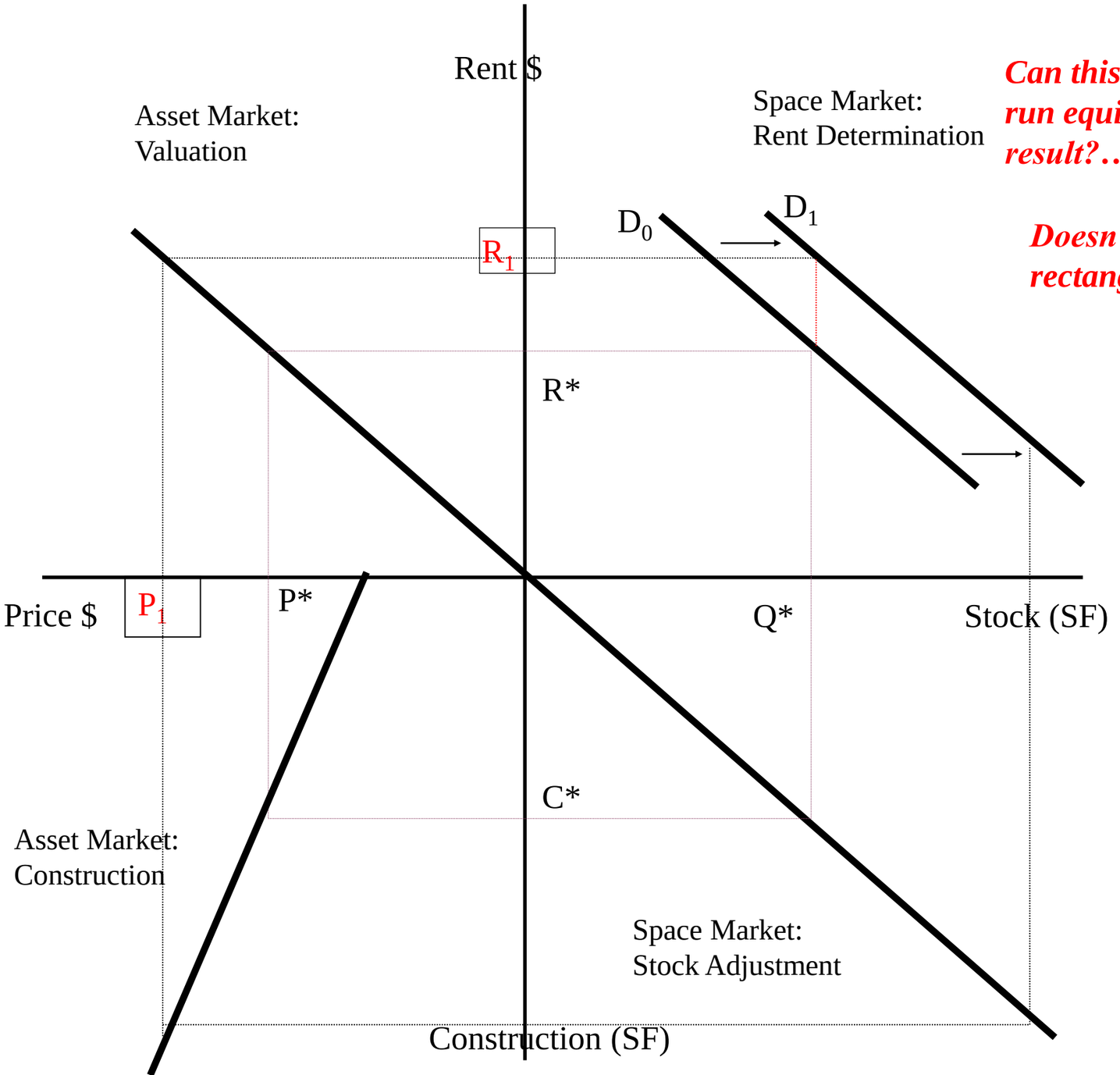
4-Quadrant Diagram…



Effect of Demand Growth in Space Market:



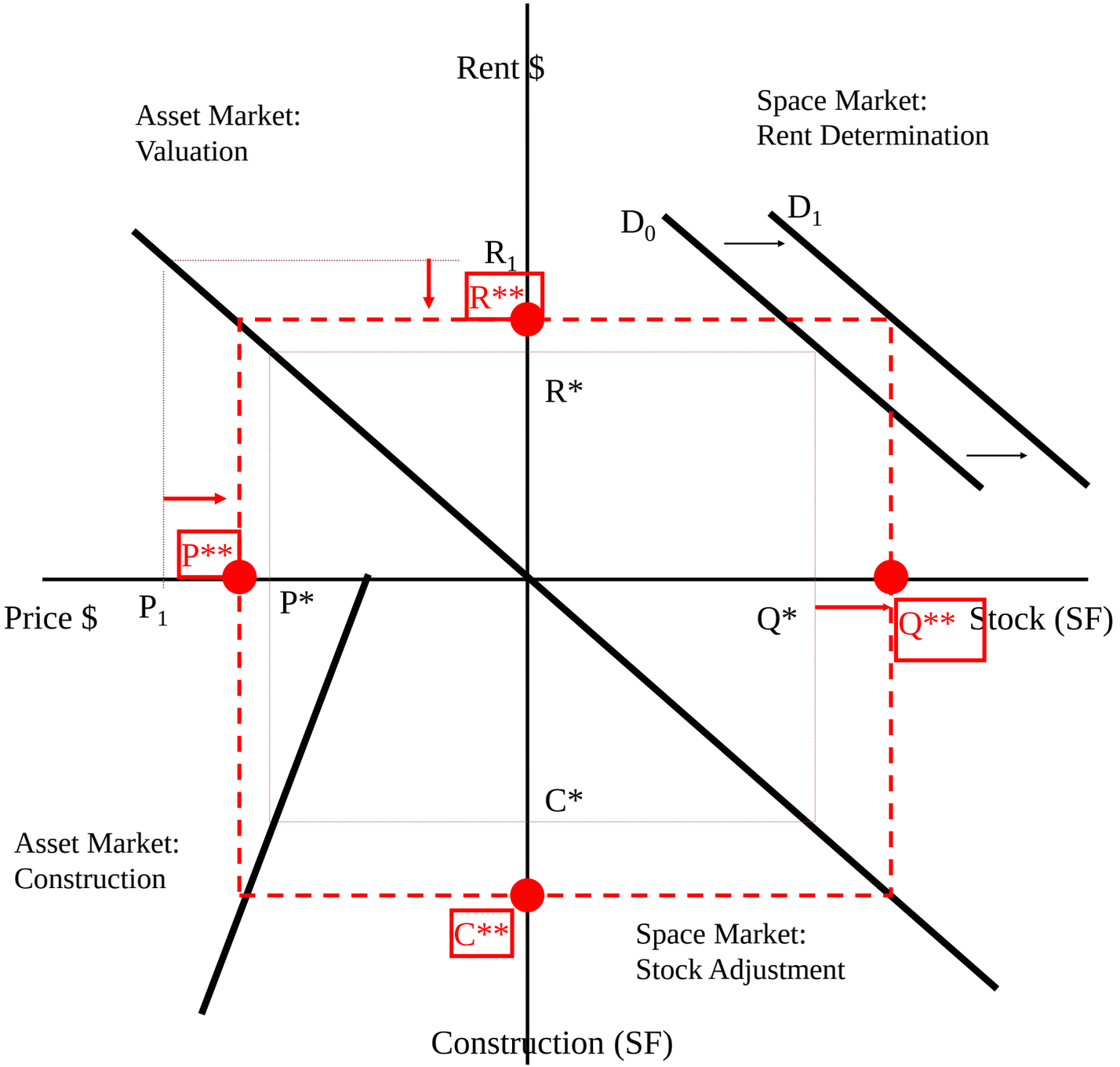
Effect of Demand Growth in Space Market: ***First phase…***



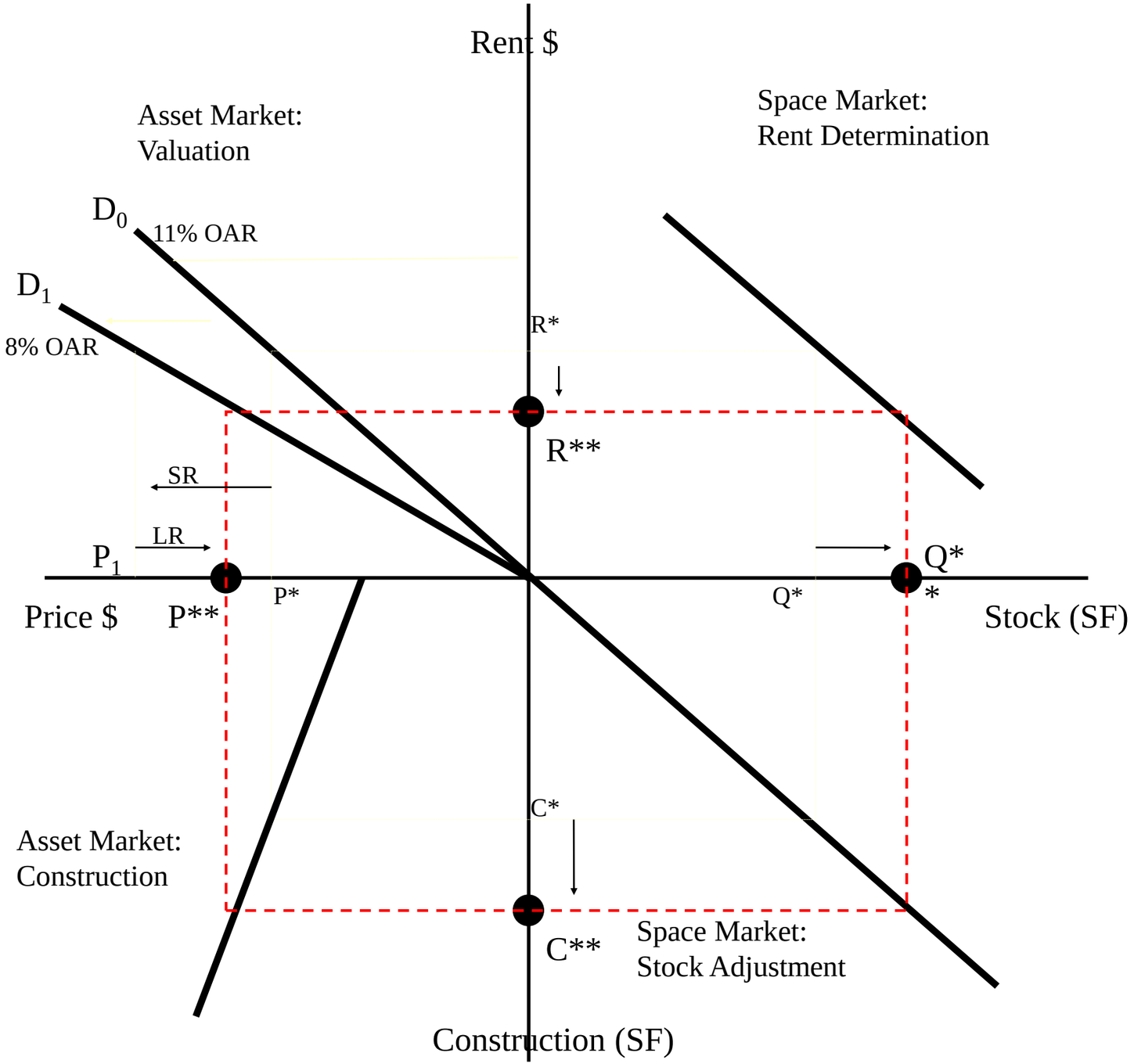
Can this be a long-run equilibrium result?…

Doesn't form a rectangle.

Effect of Demand Growth in Space Market: ***LR Equilibrium…***



Effect of More Relative Demand for Real Estate in the Asset Market…



Boom and Bust Cycles

1

Demand Increase

Higher space demand temporarily pushes rents above long-run equilibrium.

2

Price Response

Higher rents increase property values, attracting investment capital.

3

Supply Expansion

New construction increases space supply over time.

4

Market Correction

Additional supply brings rents back toward long-run equilibrium levels.

Key Takeaways

Location Determines Value

Land value is primarily determined by location and its ability to minimize transportation costs.

Market Equilibrium

Competitive markets allocate land to its highest and best use, maximizing productivity.

Urban Growth Patterns

Population, income, and transportation cost changes affect city size and rent distribution.

Interconnected Markets

Space, asset, and development markets form a dynamic system that shapes the built environment.