



The New Zealand housing market: implications of restricted urban land supply

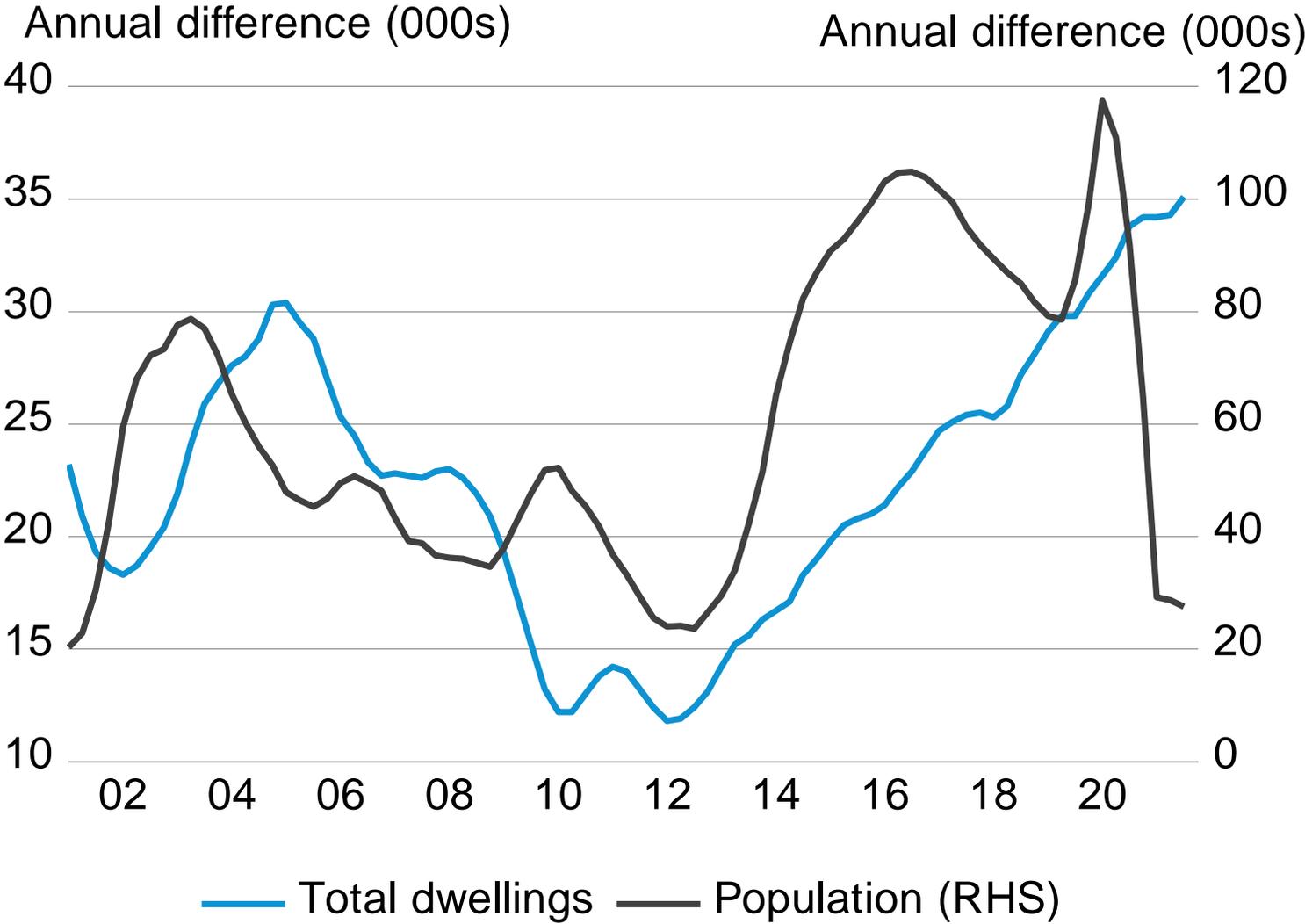
Dominick Stephens

Deputy Secretary, Chief Economic Advisor

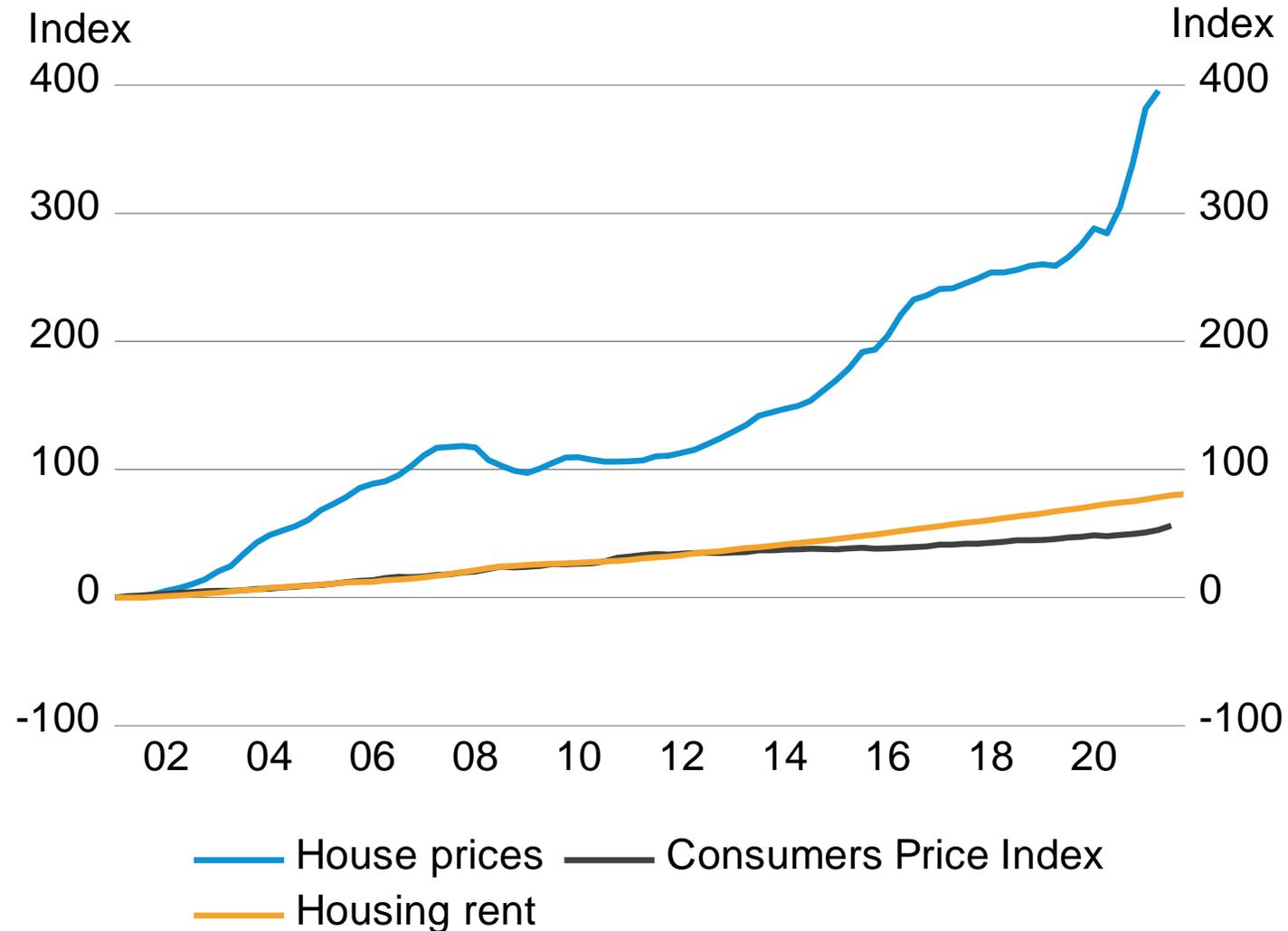
The Treasury

November 2021

Annual additions to dwelling stock, population



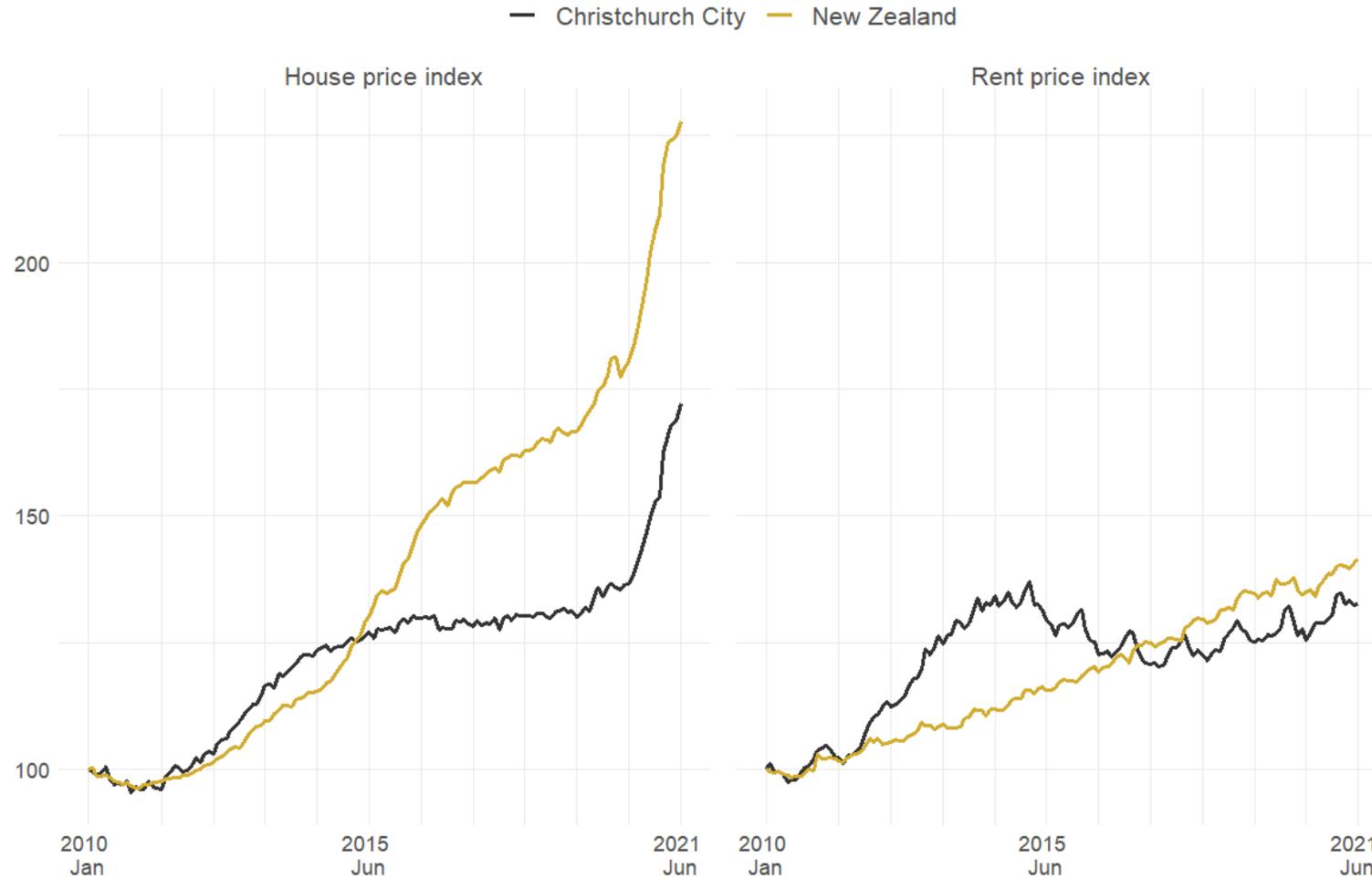
Prices, rents and inflation over twenty years



Christchurch rents and prices after earthquakes

Growth in house prices and rents

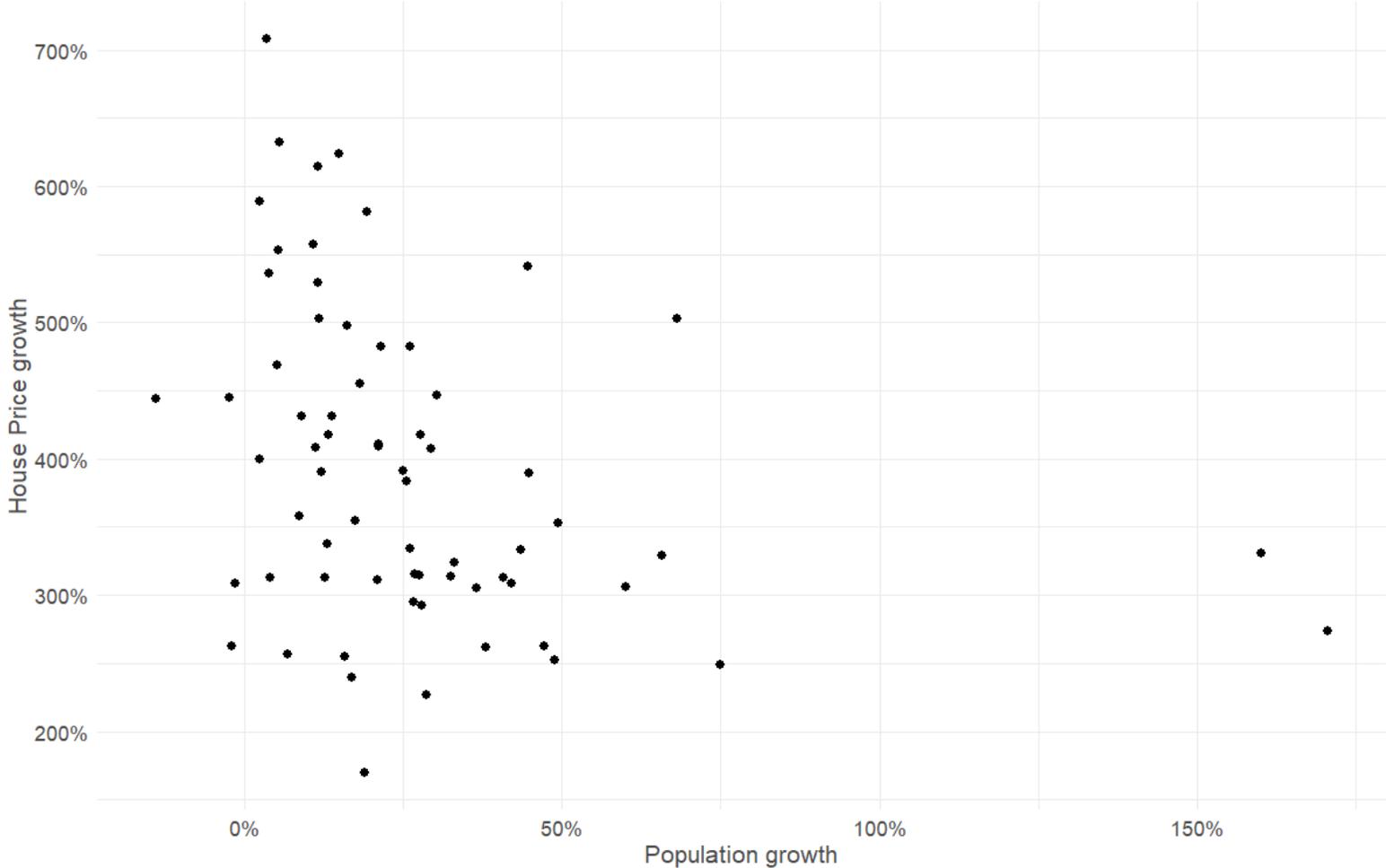
Index=100 in June 2001



House price growth and population growth across New Zealand territorial authorities

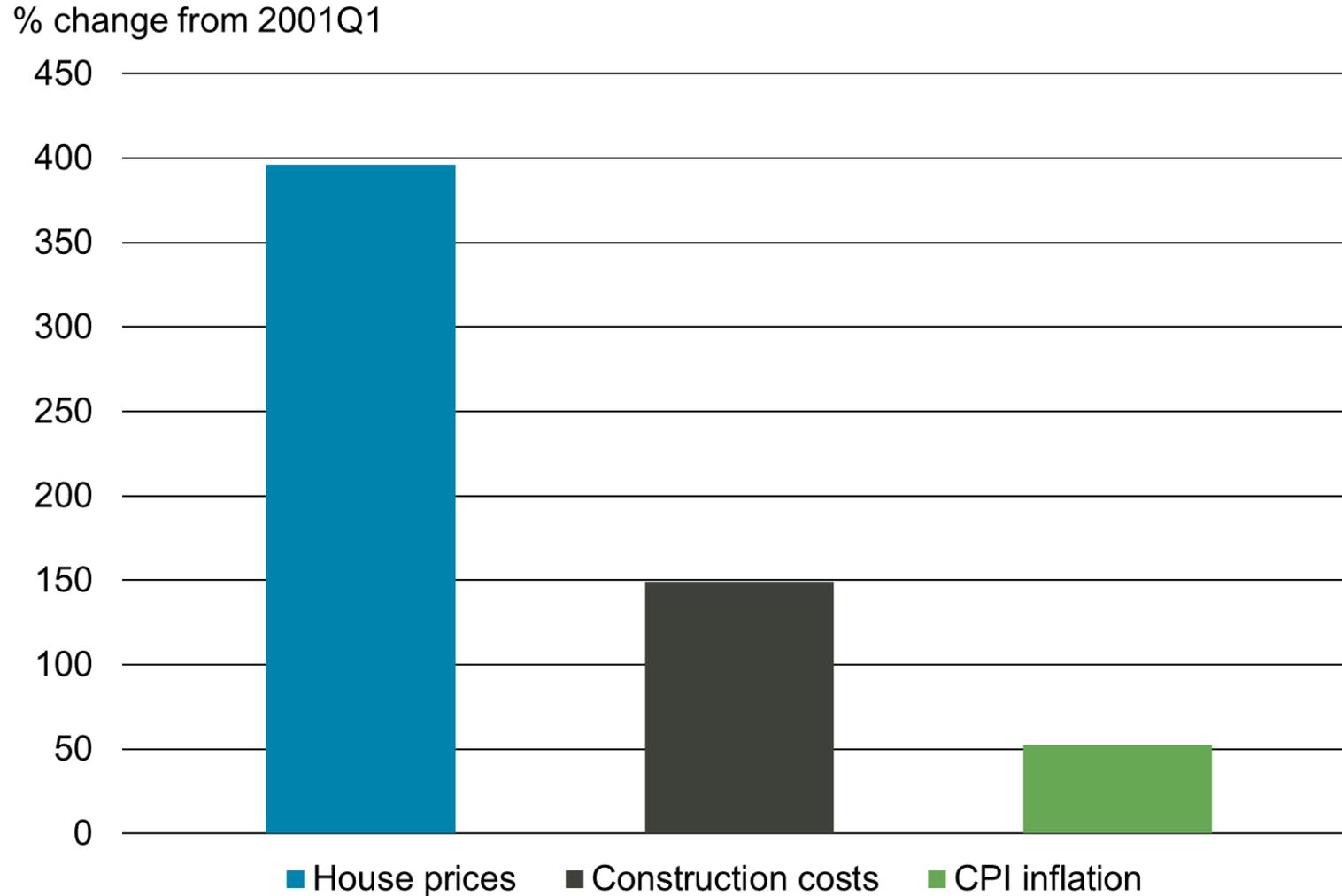
Population growth doesn't explain well long-run price growth

Growth since June 2001, by Territorial Authority

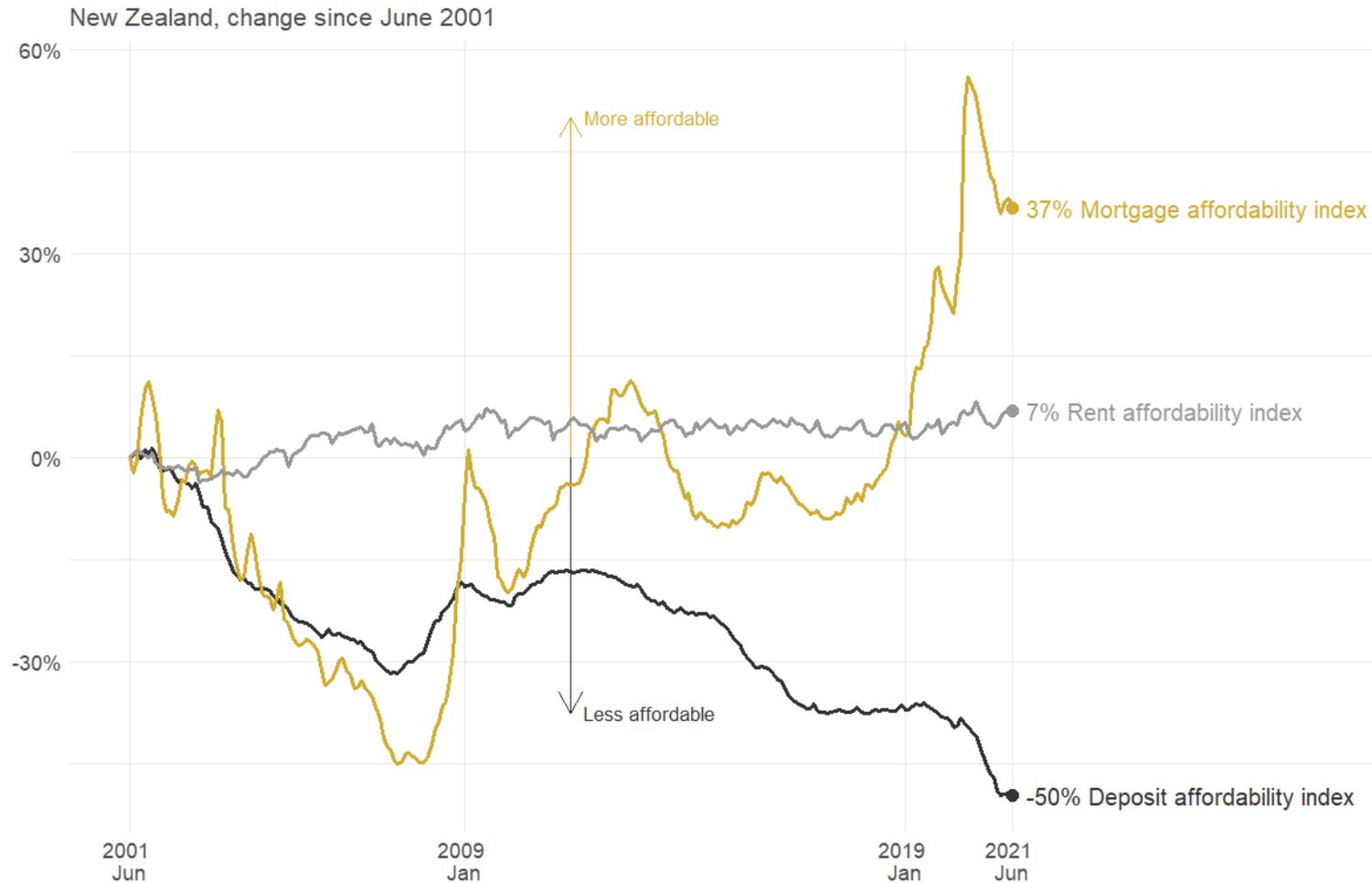


Ministry of Housing and Urban Development calculations using data from Stats NZ and CoreLogic
Price growth shown is quality adjusted 'pure' price change, from House Price Indexes

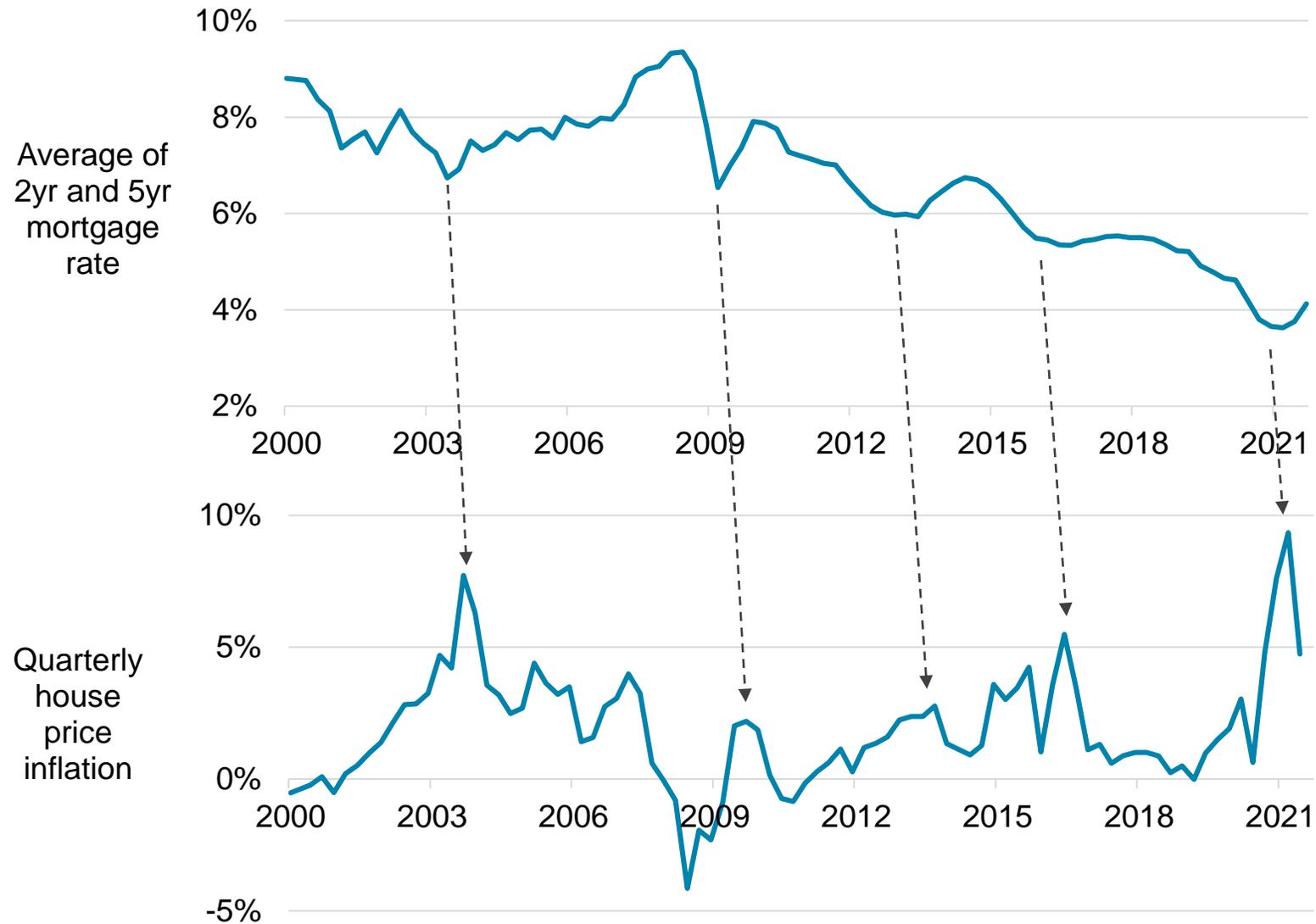
Growth in house prices vs growth in construction costs, 2001 to 2021



HUD Housing Affordability Indices



Interest rates influence house prices



Rental yield should be similar to interest rate

$$\frac{\textit{Rent}}{\textit{Price}} \approx \textit{Interest rate}$$

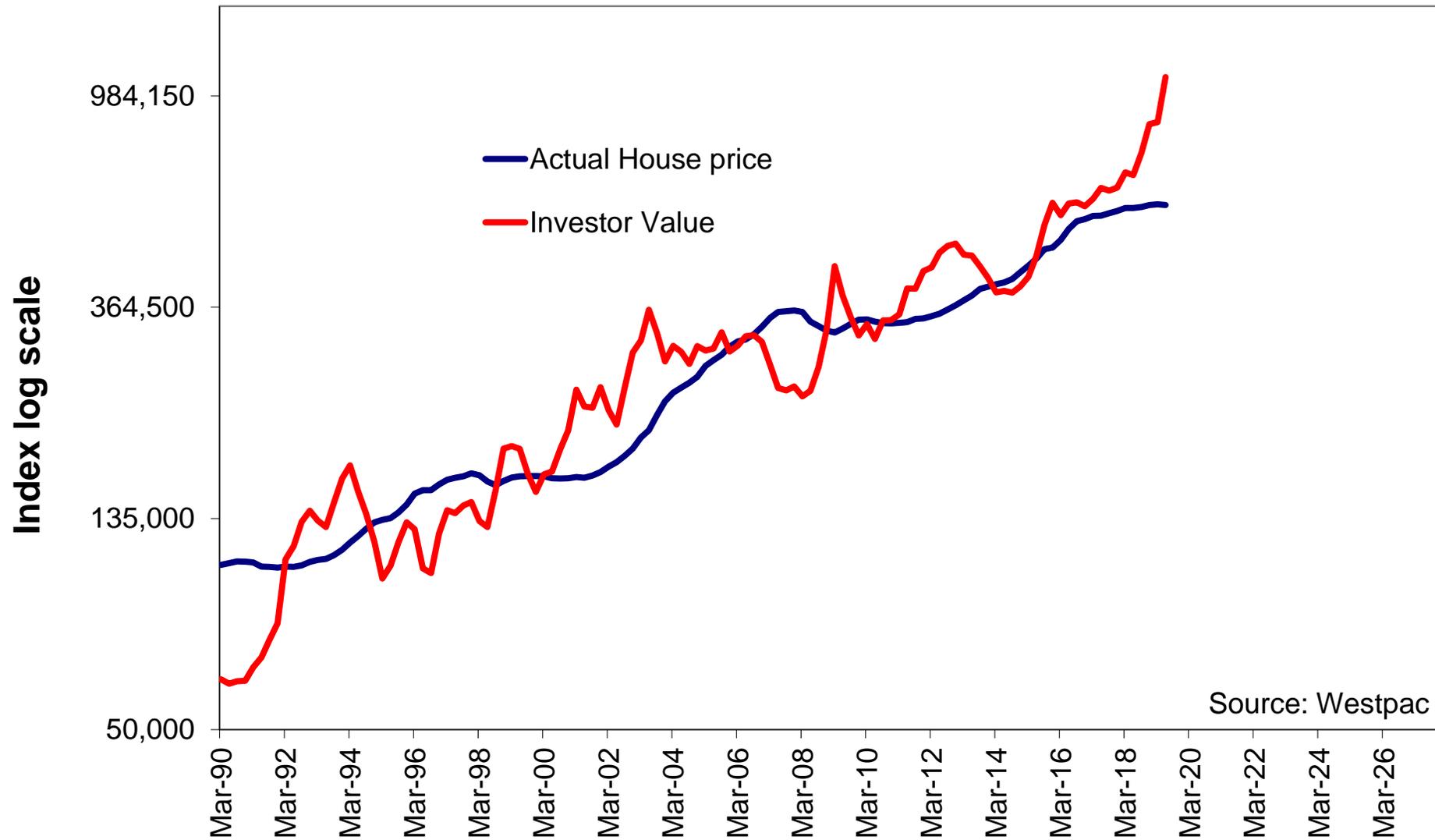
House prices are affected by interest rates

$$Price \approx \frac{Rent}{Interest\ rate}$$

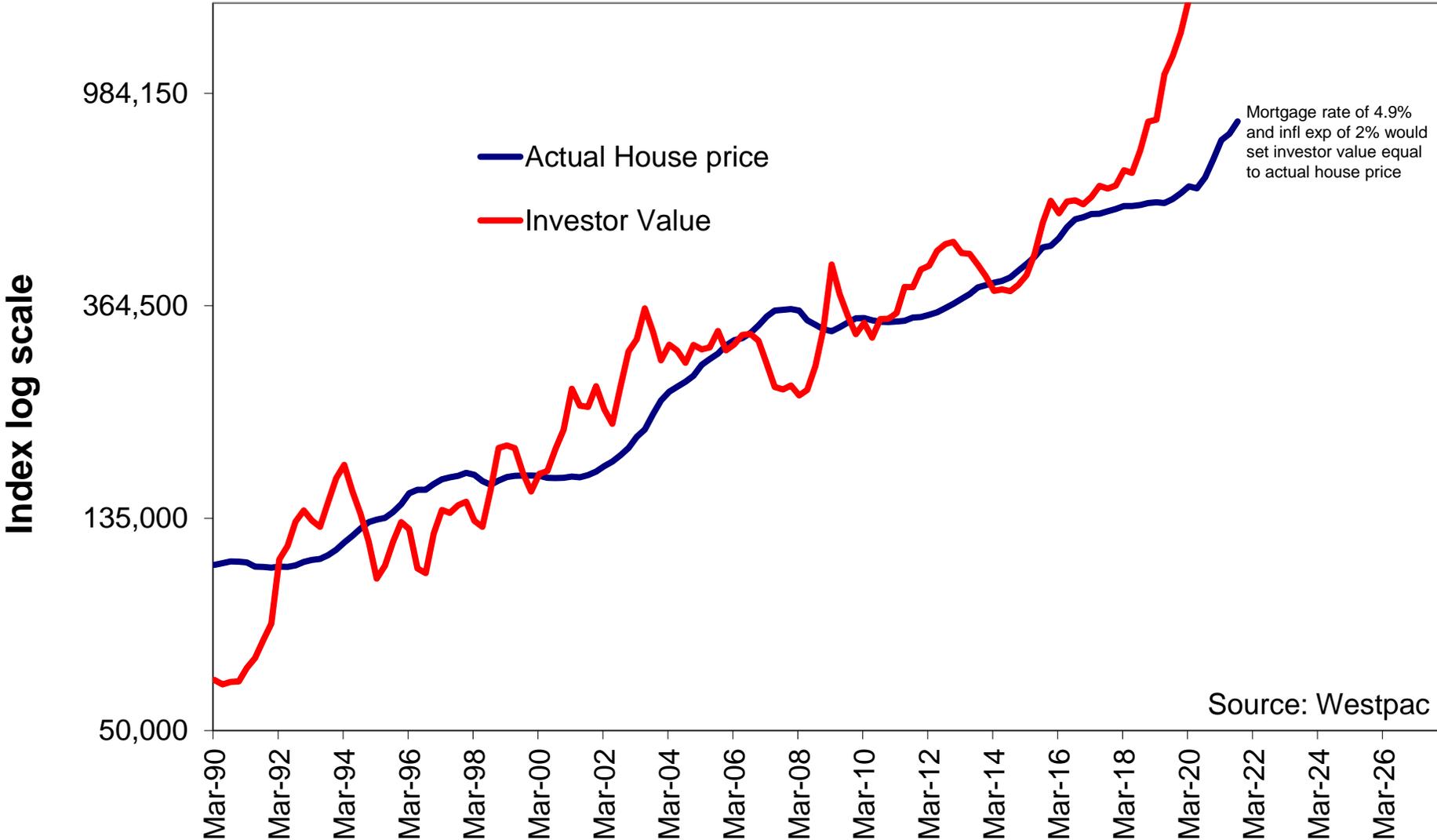
Basic Poterba equation

$$Price = \frac{rent + capital\ gain - maintenance}{interest\ rate}$$

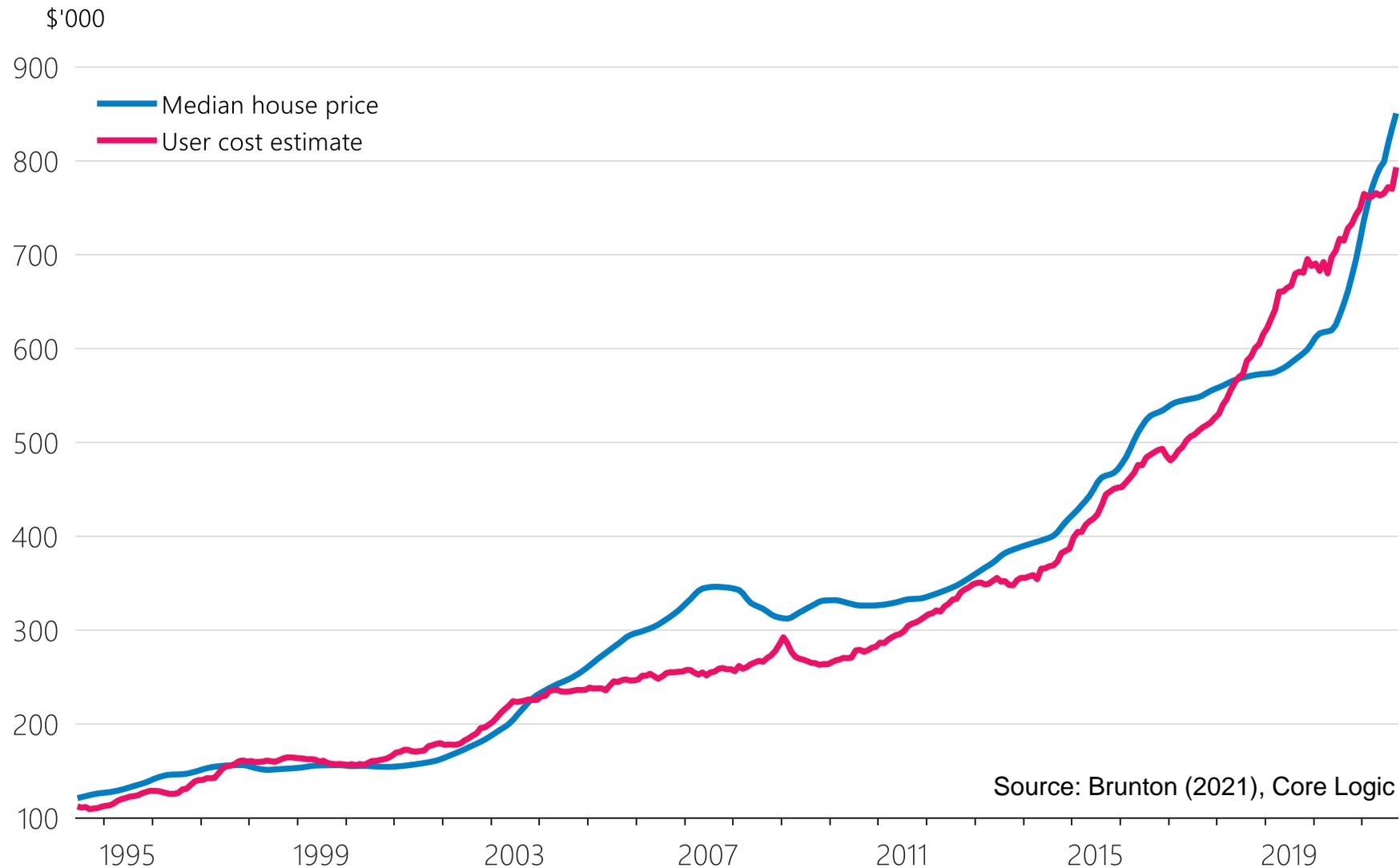
Westpac Investment Value Model to June 2019



Westpac Investment Value Model



RBNZ User Cost Model – owner occupiers



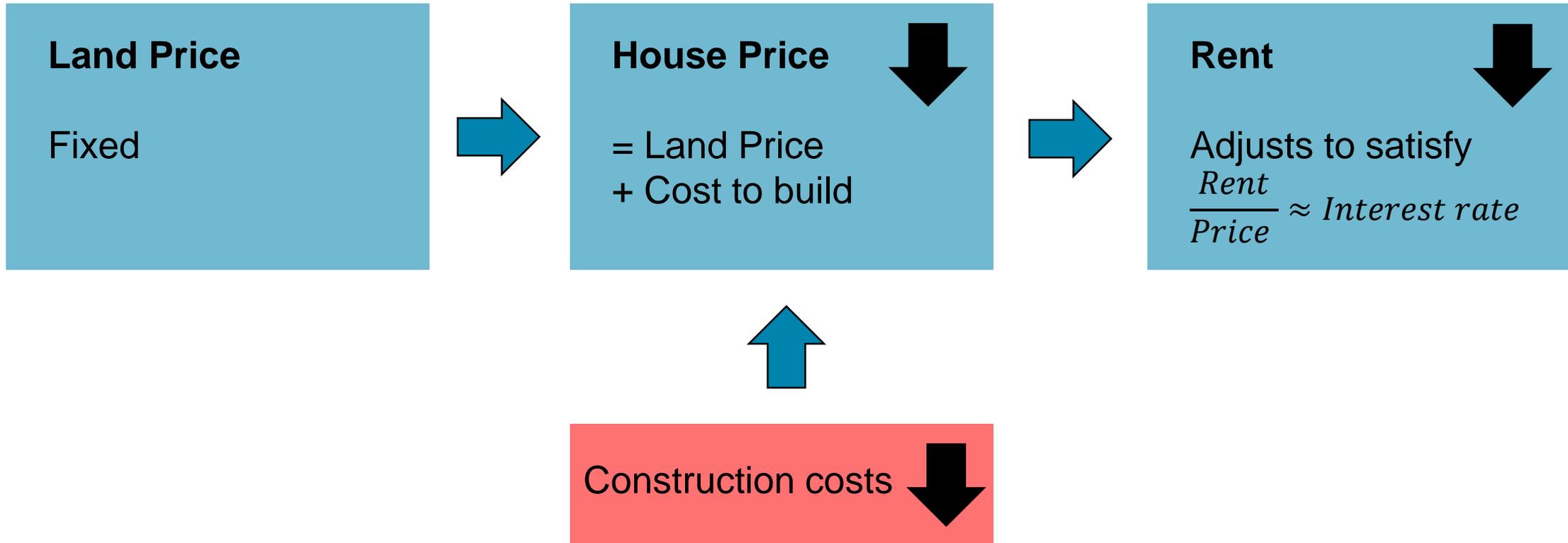
Which adjusts? Prices or rents?

$$Price = \frac{rent + capital\ gain - maintenance}{interest\ rate}$$

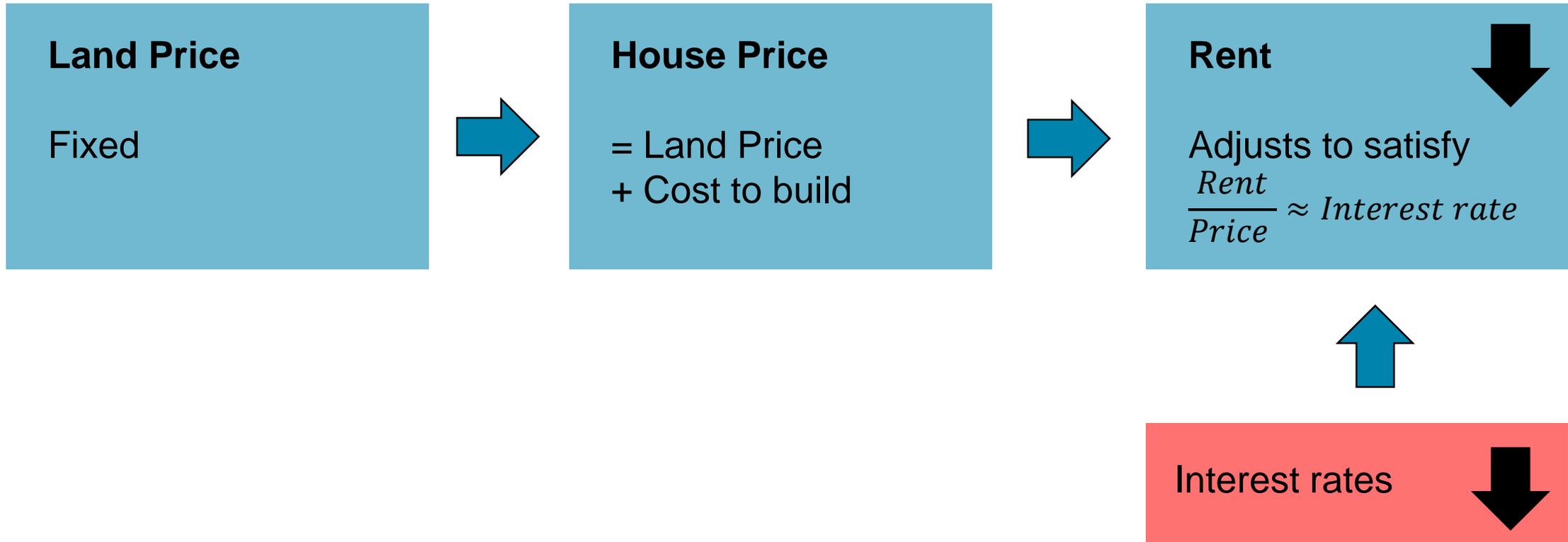
The usual assumption: plentiful land



The usual assumption: plentiful land



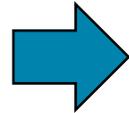
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Fixed land supply

Rent

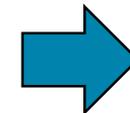
- Income
- Population vs supply of land



House price

Adjusts to satisfy

$$\frac{\textit{Rent}}{\textit{Price}} \approx \textit{Interest rate}$$



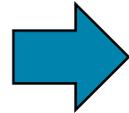
Land price

= House price
- cost to build

Fixed land supply

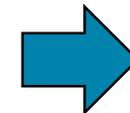
Rent

- Income
- Population vs supply of land



House price

Adjusts to satisfy
 $\frac{Rent}{Price} \approx Interest\ rate$



Land price

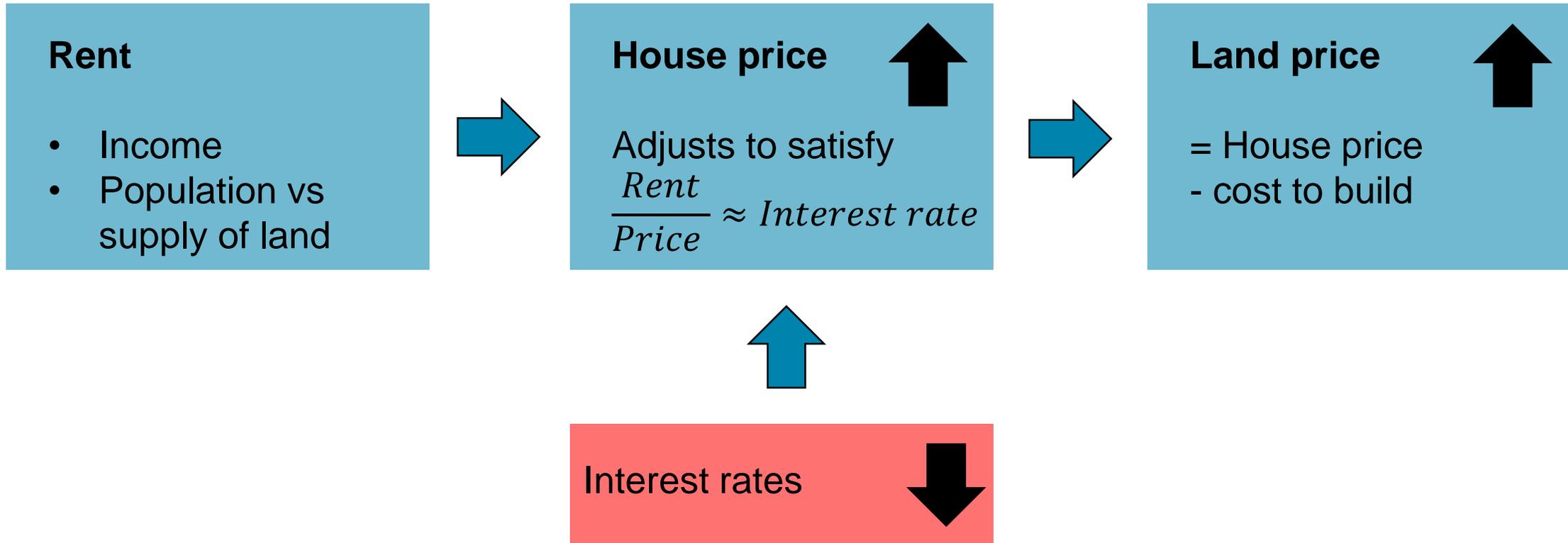
= House price
- cost to build



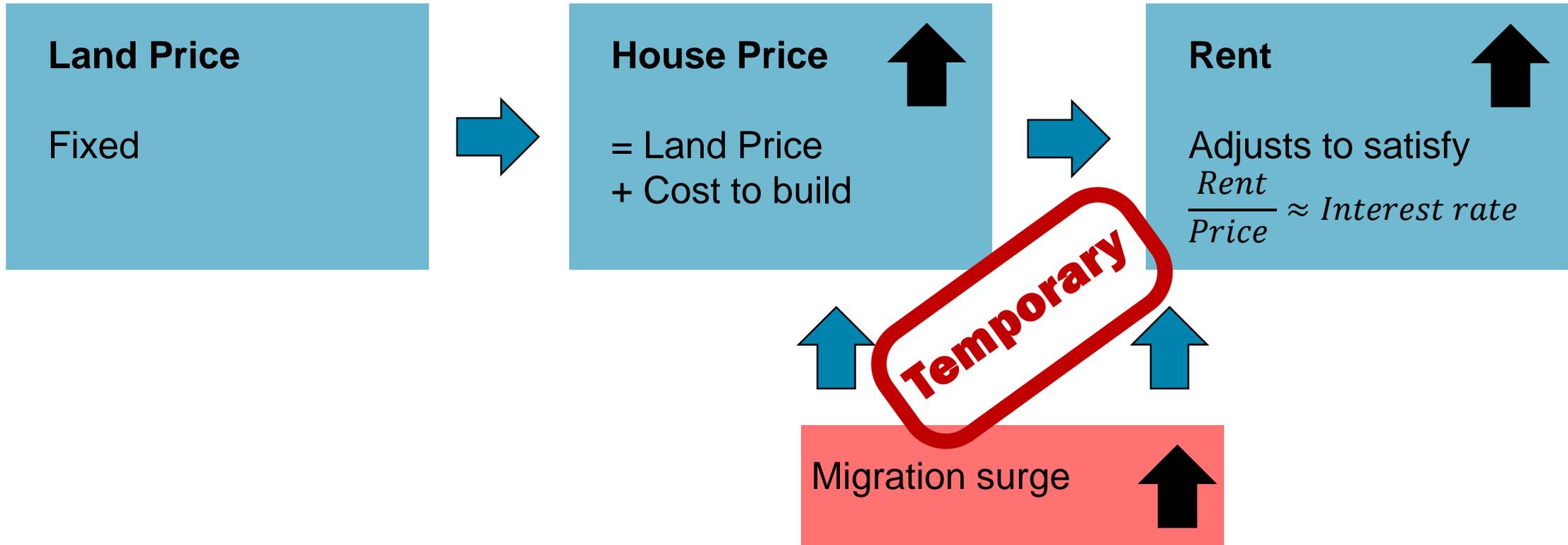
Construction costs



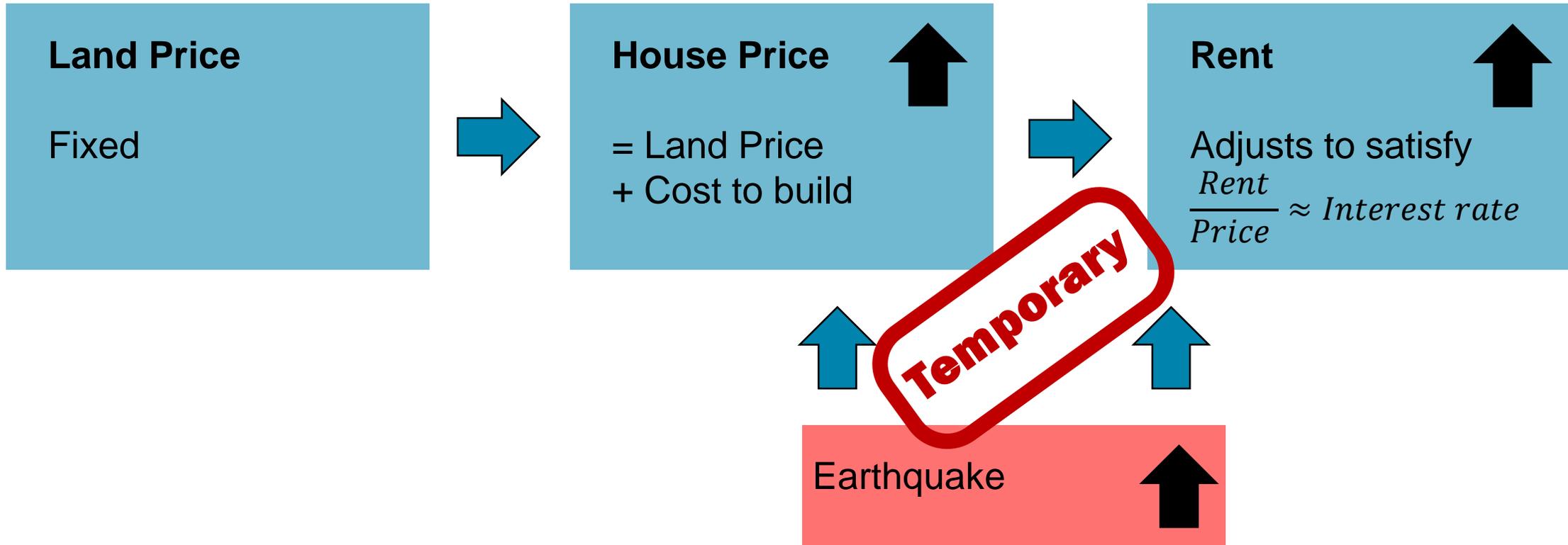
Fixed land supply



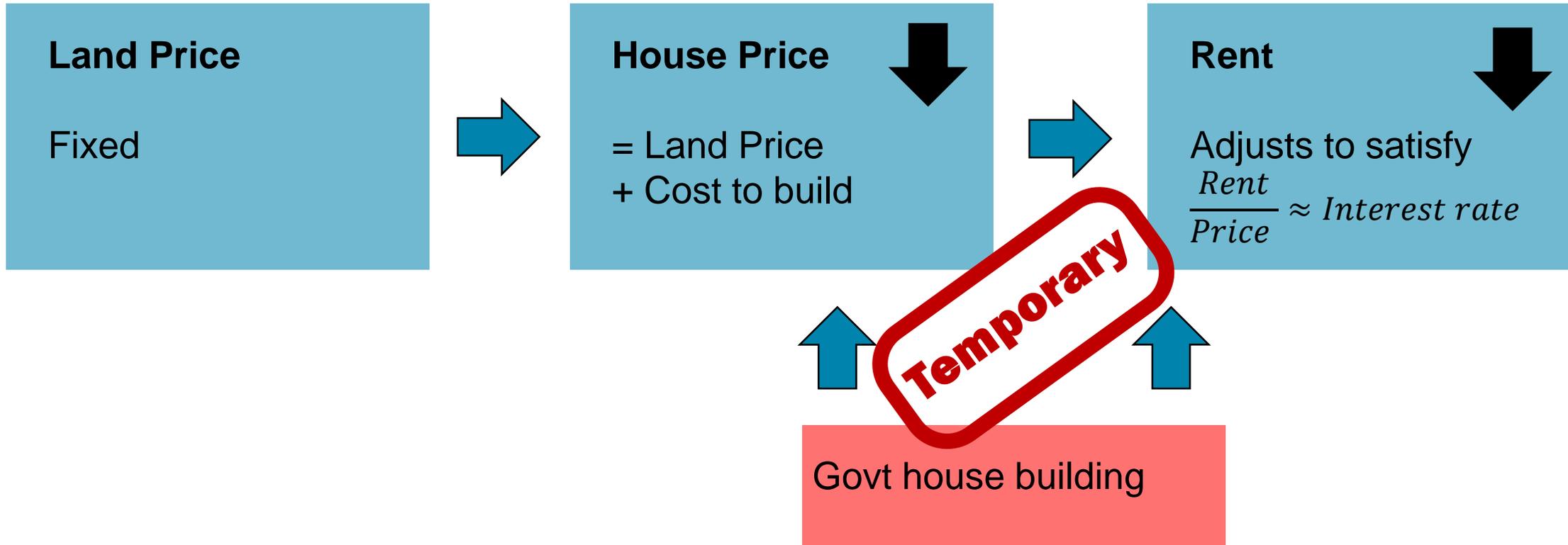
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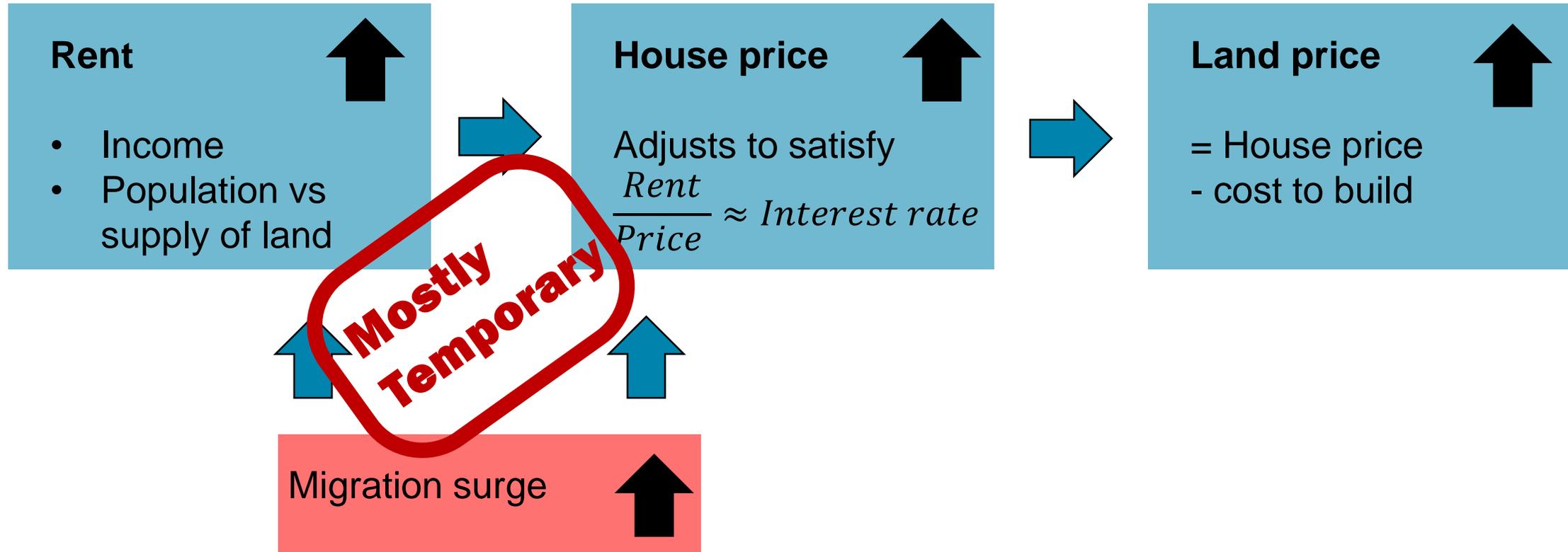
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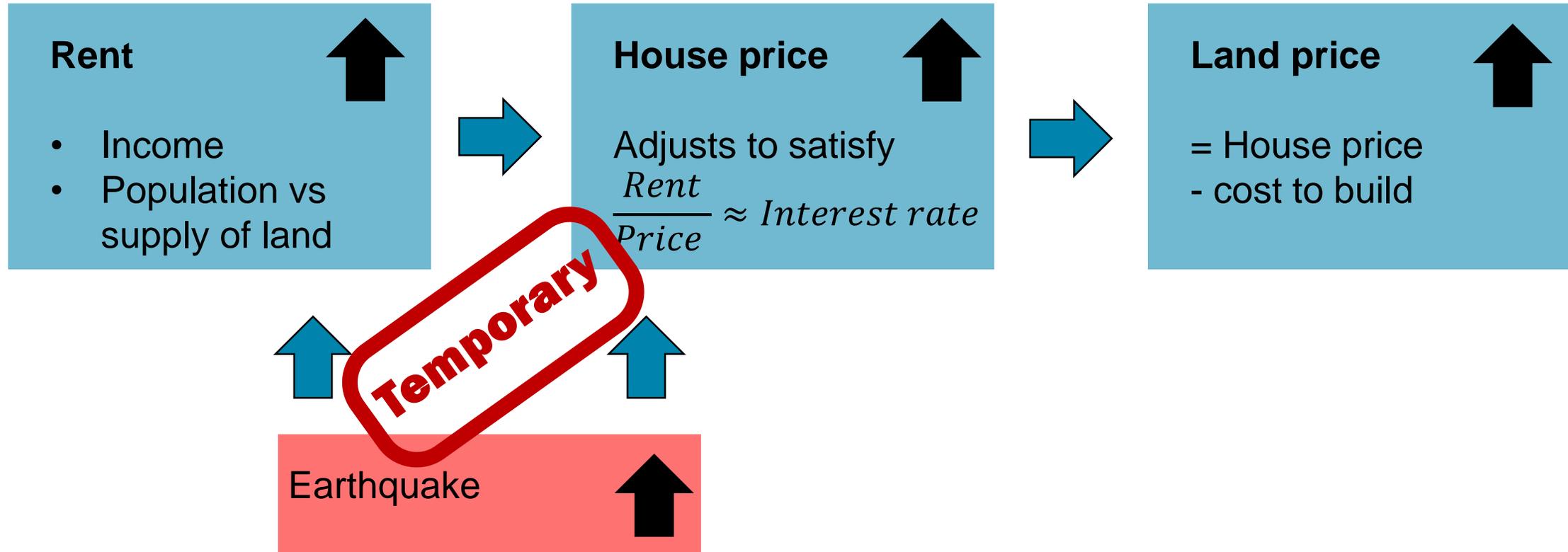
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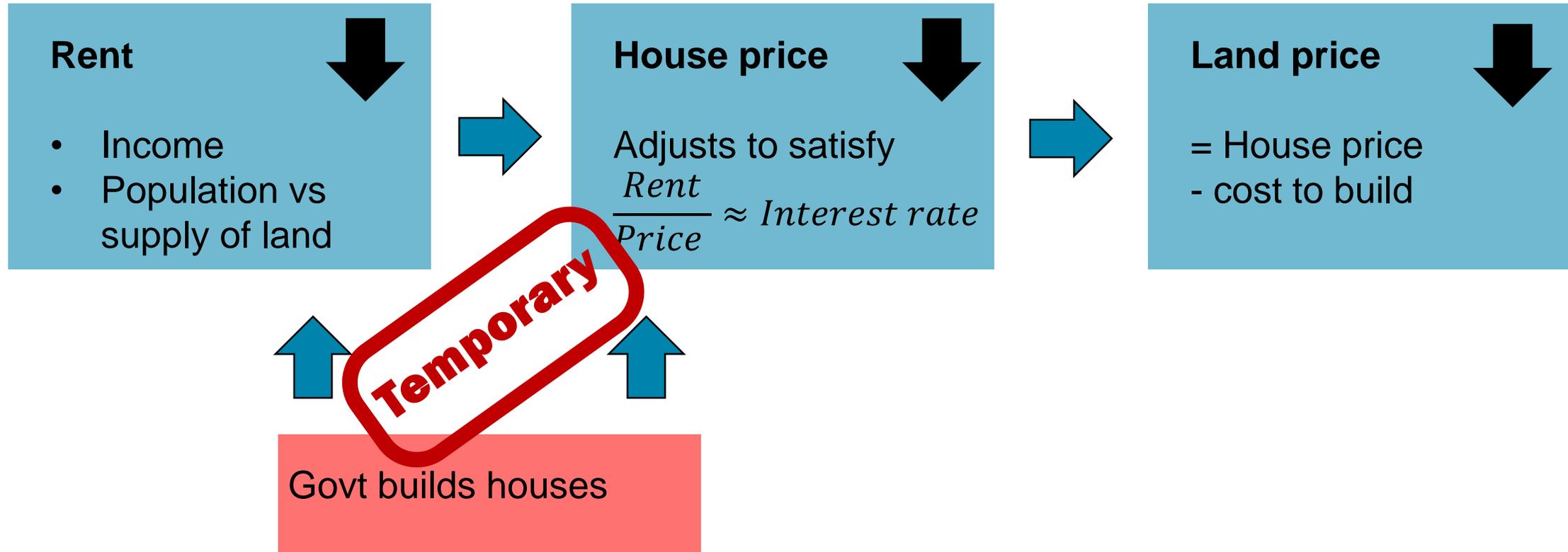
Fixed land supply



Fixed land supply



Fixed land supply



What caused the house price boom?

Theory of house price boom	What should happen	
Physical supply and demand of dwellings	<ul style="list-style-type: none">• Both rents and prices rise (temporarily)• Differences in price inflation across locations	At times, small.
Construction costs	<ul style="list-style-type: none">• Both house prices and rents would rise• House price increase similar to construction cost increase• Price increase mostly in buildings, not land	
Interest rate decline	<ul style="list-style-type: none">• House price to rent ratio increases• House prices rise everywhere• Other asset prices rise	
Constrained urban land supply	<ul style="list-style-type: none">• Interest rates affect prices, not rents.• Rents relatively constant relative to income• Price increase mostly in land, not buildings	

Evidence of constrained urban land supply

Where does New Zealand lie on the continuum?



- Macro characteristics
- Rural-urban price differentials (MR Cagney 2017)
- Upzoning premiums (Greenaway-McGrevy 2019)
- House price versus construction cost ratios (Lees 2019)
- Extensive versus intensive land values (Lees 2019)

Policy impacts on depend on land supply

Policy	Ample land	Fixed supply
Reduce construction costs	Reduce house prices and rents	Increase land prices
Boost effective land supply	No effect	Reduce house prices
Capital gains tax	Increase rents	Reduce house prices
Reduce development taxes	Reduce house prices and rents	Increase land prices
Accommodation supplement	Flows to tenants	Landlord capture
Rent-to-buy scheme	Reduce deposit barrier	Reduce deposit barrier
Restrict migration	Small, temporary impact	Small, mostly temp impact
Build houses	Small, temporary impact	Small, temporary impact

Boosting effective land supply

Create land market competition *within the city*

- Land use regulation and zoning
- Enable intensification where demanded
- Improve infrastructure within city
- Building restrictions, heritage zones etc

Create land market competition at the *edge of the city*

- Urban boundaries
- Barriers to development
- Create competition between landowners (eg allow leapfrogging)
- Provide infrastructure

Ensure land market competition *across cities*

Incentives and institutions aligned to growth

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Basic Poterba equation for indebted owner occupier

$$Price = \frac{rent + capital\ gain - maintenance}{interest\ rate}$$

Landlords' tax treatment – better than FHB

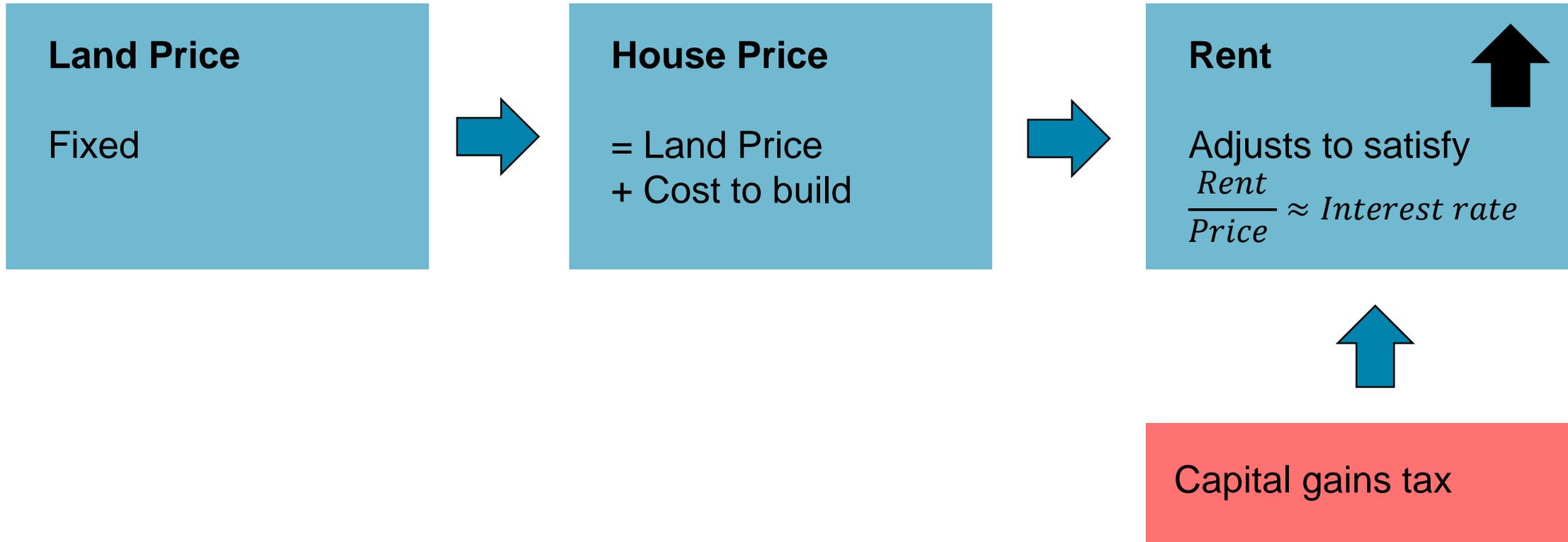
$$Price = \frac{\overset{\text{Taxed}}{\downarrow} \text{rent} + \text{capital gain} - \overset{\text{Tax deductible}}{\downarrow} \text{maintenance}}{\overset{\text{Tax deductible}}{\uparrow} \text{interest rate}}$$

Equity owner occupiers' tax treatment – best of all!

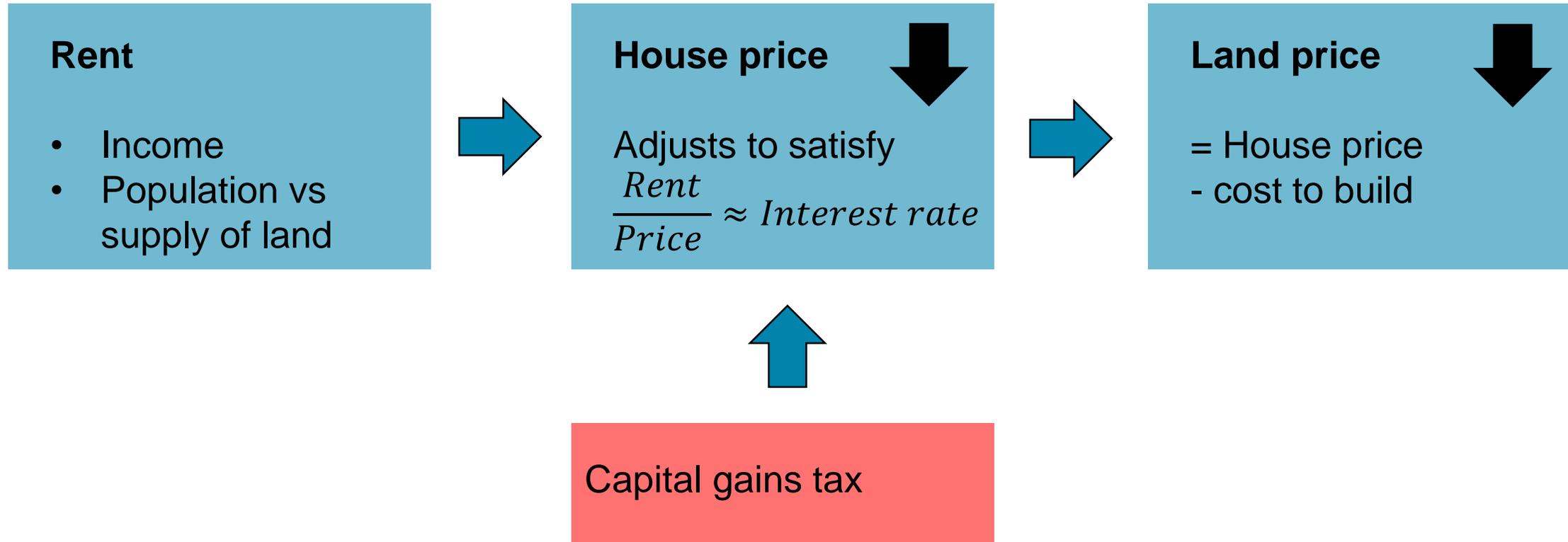
$$Price = \frac{rent + capital\ gain - maintenance}{interest\ rate}$$

↑
Avoid tax

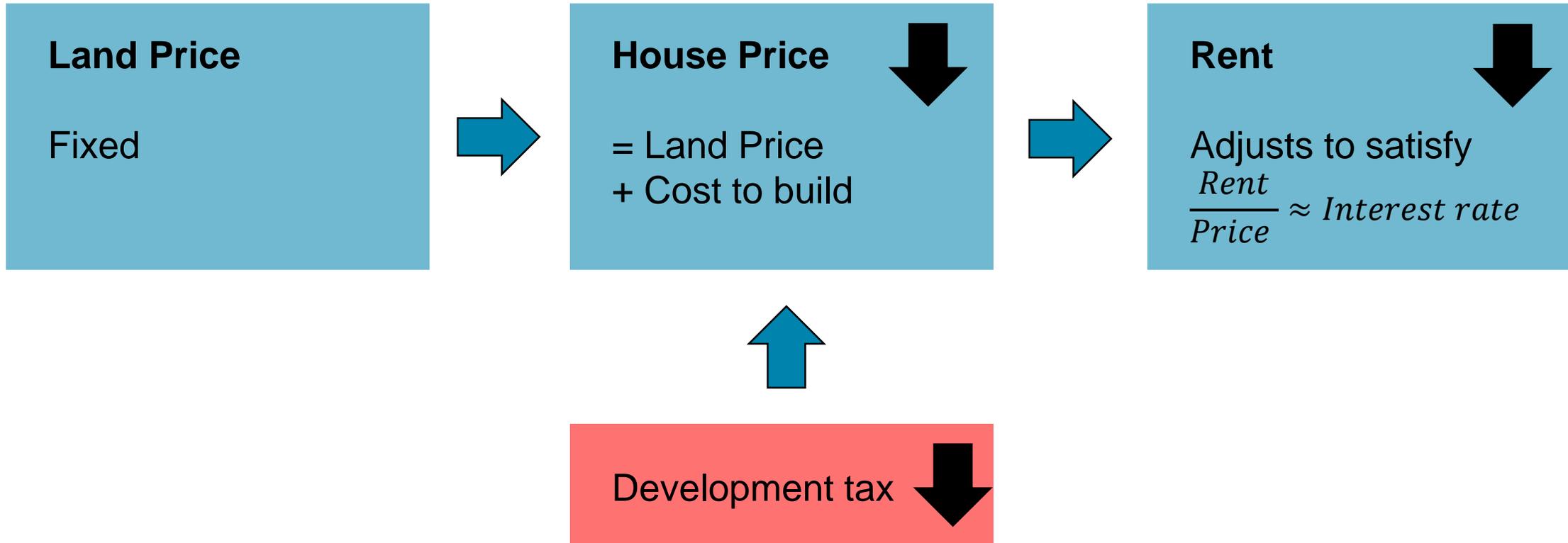
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Key takeaways

- Interest rates are a key driver of house prices
- Supply of *dwellings* less influential
- Effective supply of *land* is key
- Best measure of “price of housing” is rent or user cost of capital, not sticker price
- Under constrained land supply, CGT would affect prices, not rents.