

# Land prices and the persistent effects of wealth inequality

Keyvan Eslami, Lara Loewenstein and Thomas Phelan

Federal Reserve Bank of Cleveland and Ryerson University

## Empirical motivation

Rising inequality, falling GDP growth, declining firm entry:

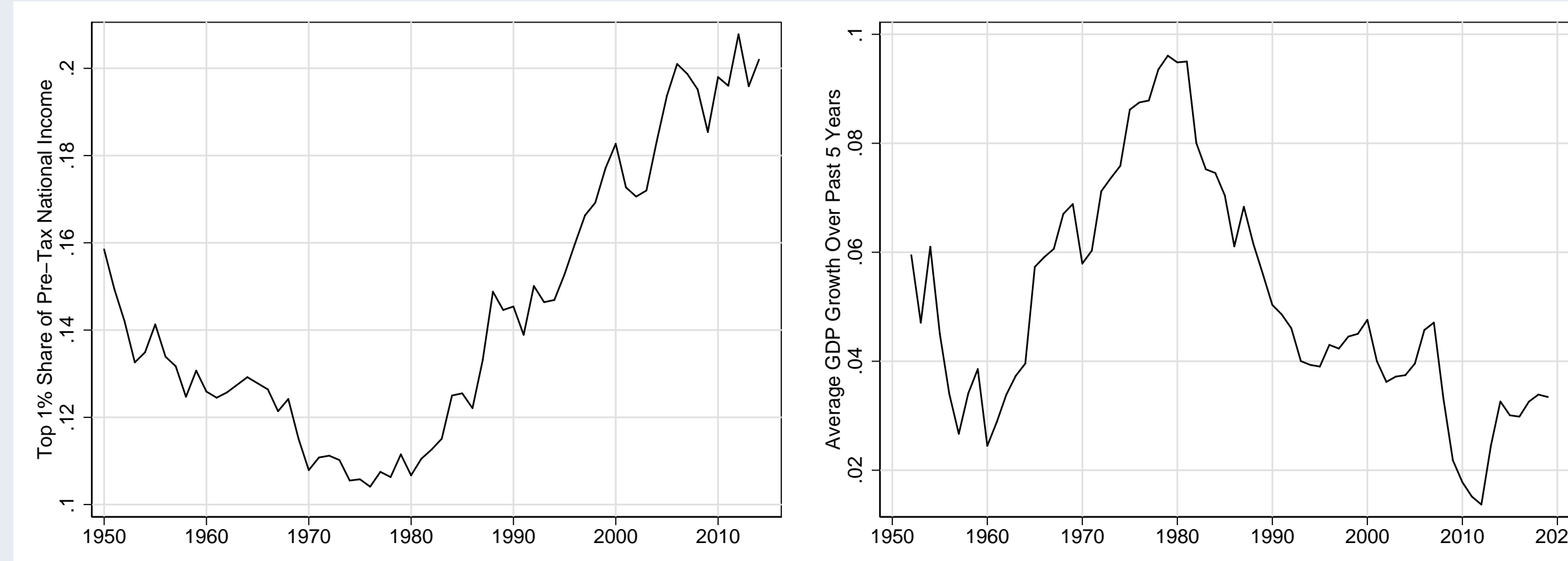


Figure 1: Income Share of Top 1 Percent and 5-Year Average Per Capita GDP Growth. Sources: World Inequality Database and NIPA.

Rising capital share, majority of increase due to housing:

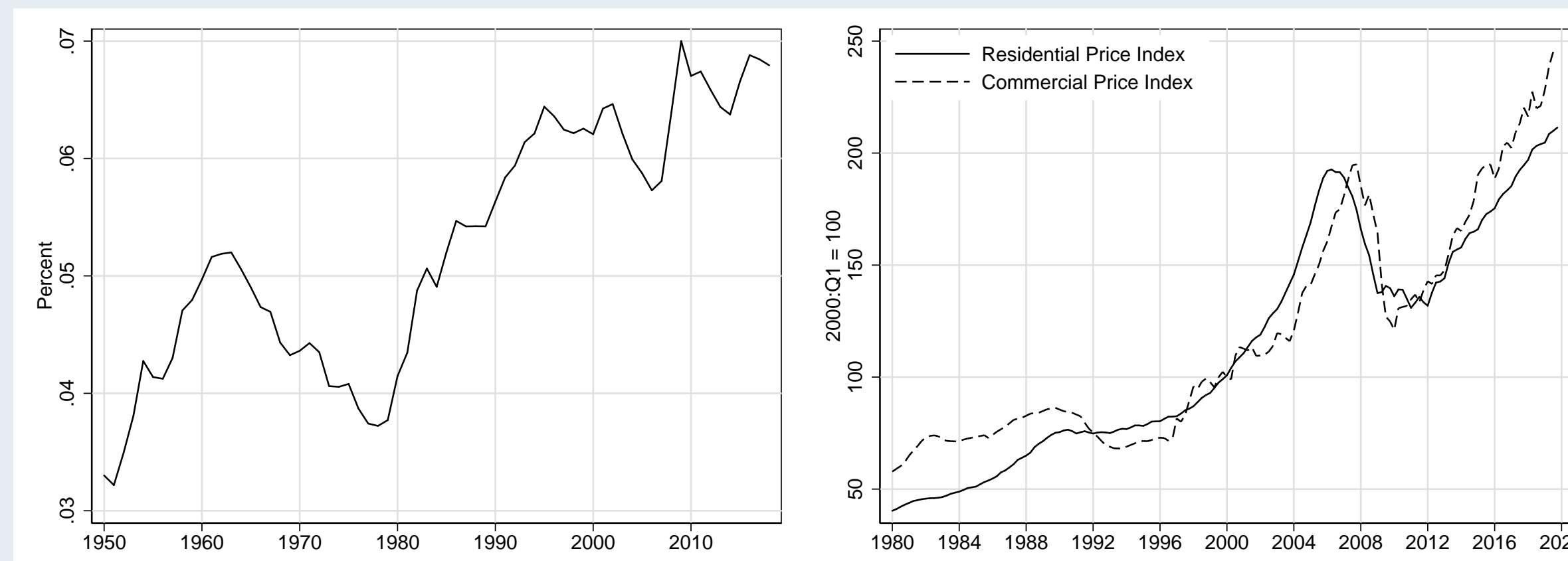


Figure 2: Share of National Income From Housing and Real Estate Price Indices Note: methodology of [1]. Source: NIPA.

## Theoretical question

Can increased inequality *cause* low growth and higher importance of housing?

## This paper

Build parsimonious endogenous growth in which:

- Land necessary for both housing and R&D.
- Inequality affects allocation of land between sectors.

## Consumer problem

Consumers care about consumption  $c_1$  and housing  $c_2$ .

Preferences:

$$\int_0^{\infty} e^{-\rho t} [\alpha \ln c_{1t} + (1 - \alpha) \ln c_{2t}] dt$$

Impose restriction  $c_2 \geq \underline{\mu}$ . Implication:

- Preferences non-homothetic.
- Expenditure shares non-constant in cross-section (as in data).
- Inequality affects demand for housing.

## Production

Similar to [2] augmented with land, non-homotheticities and inequality.

Inputs: land  $l$ , labor  $L$ ,  $x := (x_i)_{i \in [0, A]}$  = intermediate inputs, capital.

Technology:

- Final consumption:

$$F^C(L, x) = L^\gamma \int_0^A x_i^{1-\gamma} di$$

- Production of “blueprints”:

$$F^R(l) = \delta_R A l.$$

- Housing:

$$F^h(l) = \delta_h l.$$

- Production of intermediate producers:

$$x_i(k) = \eta^{-1} k.$$

## Balanced growth path

An allocation in which consumption, wages and land prices grow at constant rates.

Characterized as follows:

- Markets clear, marginal products equated across sectors.
- Consumption growth consistent with optimal savings decision.

## Main Theorem

Initial distribution of wealth permanently affects growth, and higher inequality lowers growth.

## Intuition for result

Land fixed so land price and consumption grow at same rate.

Expenditure shares:

- non-constant in cross-section;
- constant over time.

Everyone becomes richer at the same rate but land also becomes more expensive.

⇒ effect of non-homotheticities permanent.

## Conclusion

Simple but novel mechanism.

*If fixed factor enters consumption and production + preferences non-homothetic, inequality can have permanent effects on growth*

## References

- [1] Thomas Piketty and Gabriel Zucman. Capital is Back: Wealth-Income Ratios in Rich Countries 1700–2010 \*. *The Quarterly Journal of Economics*, 129(3):1255–1310, August 2014.
- [2] Paul M. Romer. Endogenous Technological Change. *Journal of Political Economy*, 98(5):S71–S102, 1990.