

Growing Like India
-
The Unequal Effects of Service-Led Growth

Tianyu Fan, Michael Peters and Fabrizio Zilibotti

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Motivation

- Services play large and growing role in poor countries today
- Two views:

Expansion of service sector is
a **corollary** of development
(= income effects)



Productivity growth in
services
(= **service-led** growth)

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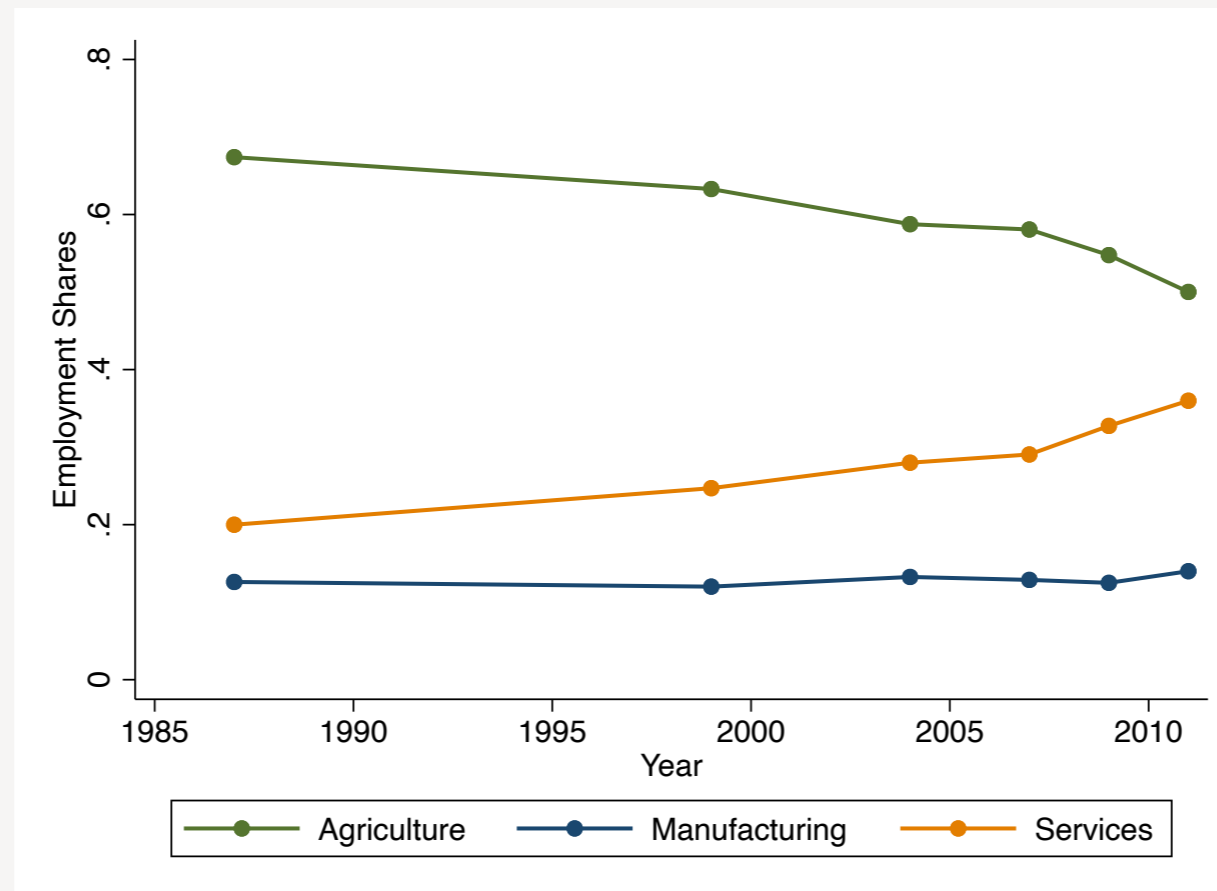


Productivity growth in
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- This paper: Welfare effects of **service-led** growth
 - Focus: **Heterogeneous** effects across **space** and the **income distribution**
 - Approach: Equilibrium Development Accounting
 - Distinguish **demand** from **productivity** using data on employment, expenditure ... and a spatial equilibrium model

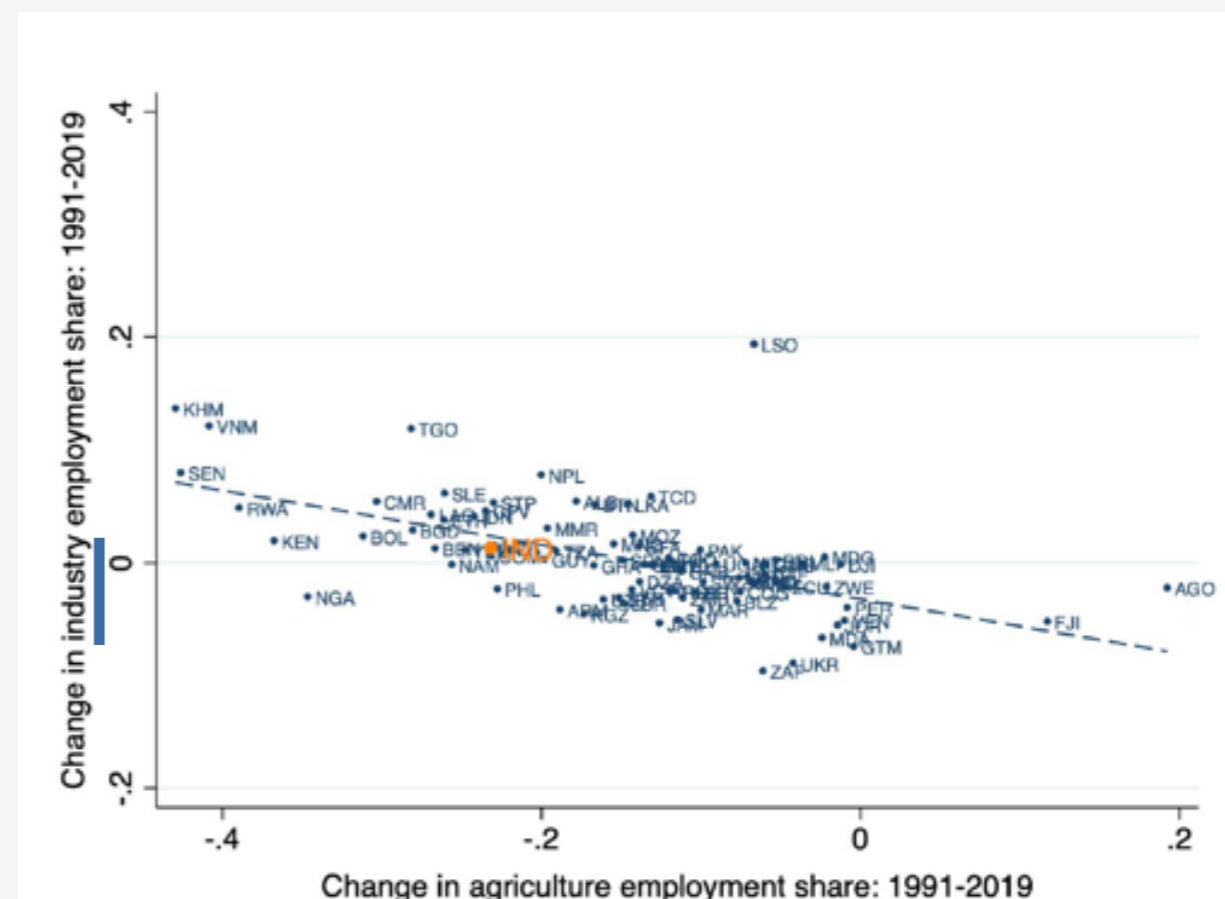
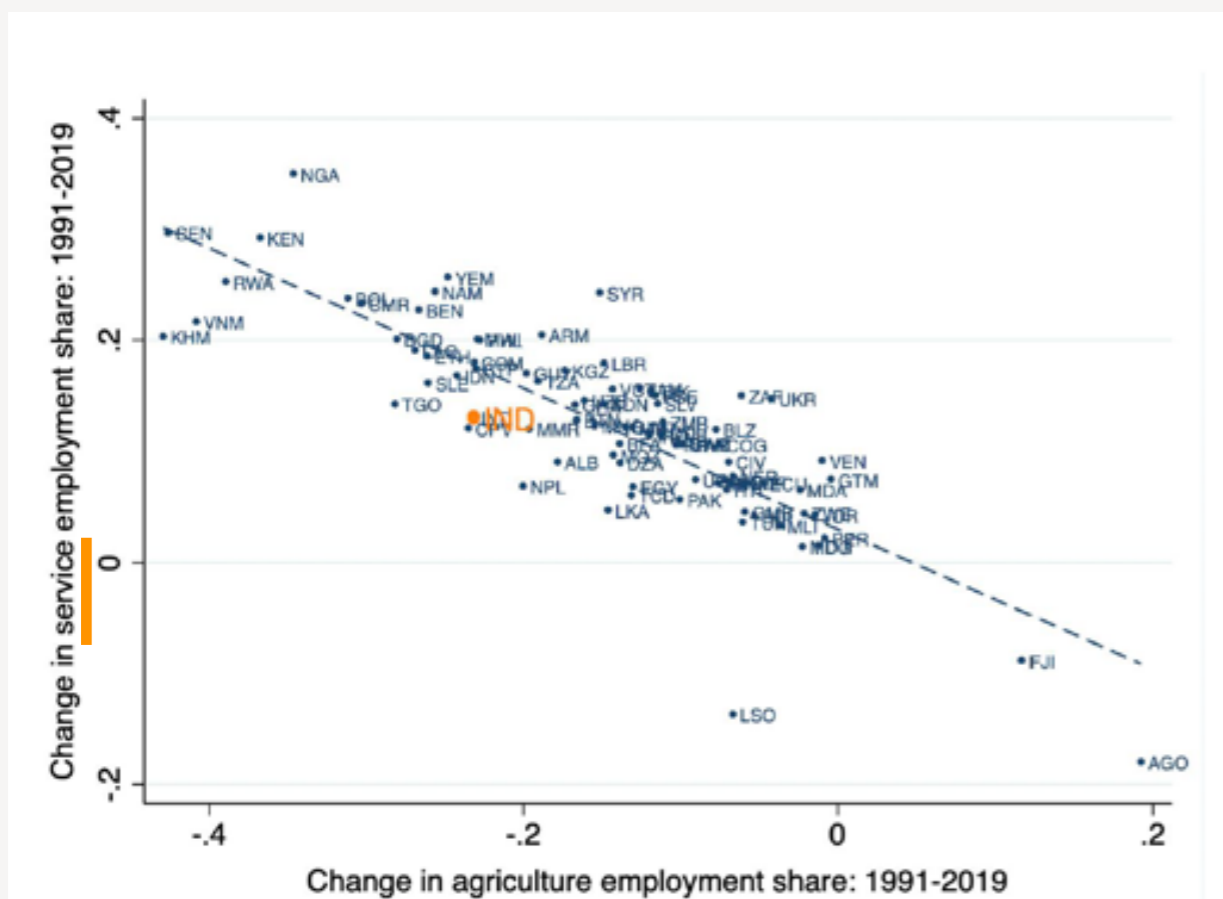
Preview of Results: Service Growth 1987-2011

Growth without Industrialization in India



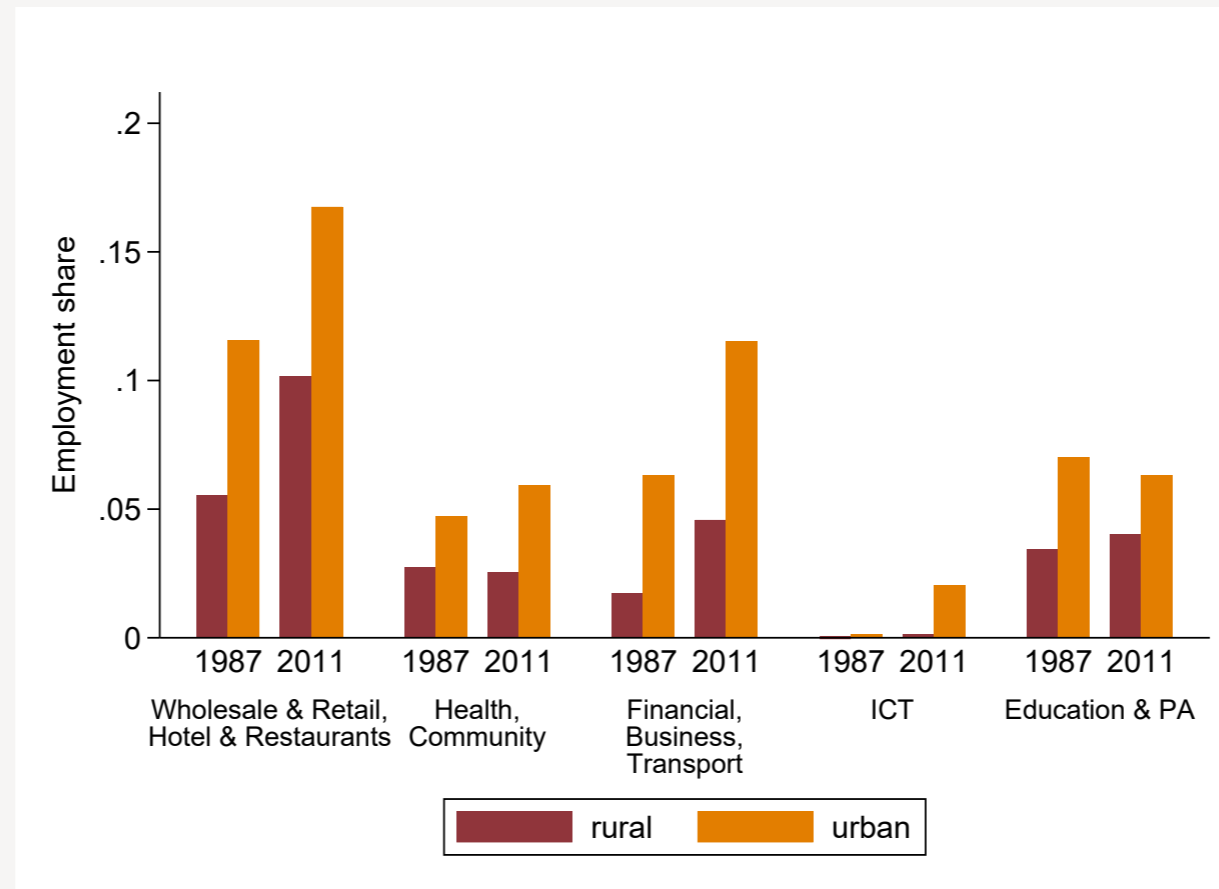
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Growth without Industrialization in the Developing World



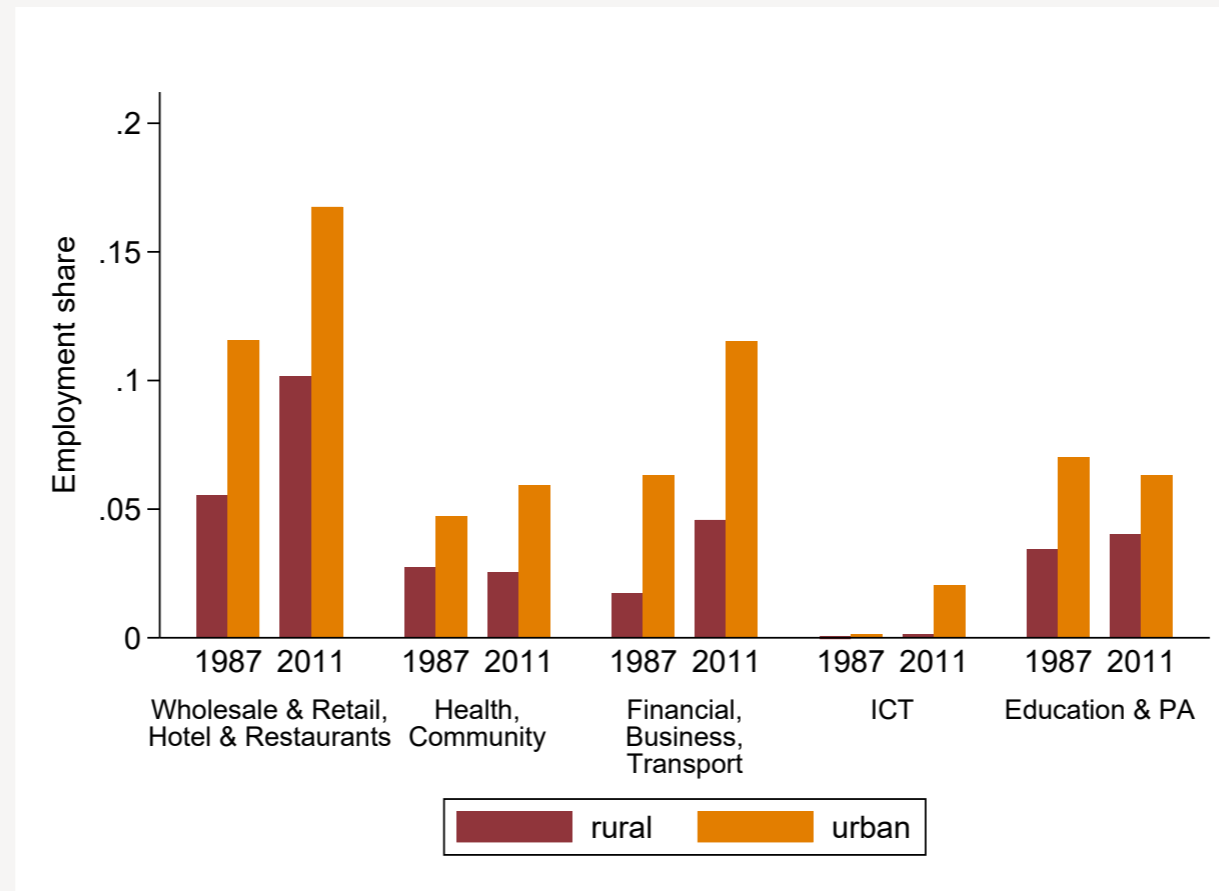
Preview of Results: Service Growth 1987-2011

The Service Sector in India



Preview of Results: Service Growth 1987-2011

The Service Sector in India



Productivity growth in consumer services:

1. **Important** role for rise in living standards
2. Main beneficiaries: **rich consumers in urban locations**

Outline for today's talk

- Theoretical Framework
- Measurement and Estimation
- Quantification of Unequal Welfare Effects

Measuring Productivity in Consumer Services

- Suppose region r produces a **non-tradable** good for local consumers

$$Y_{rt} = x_{rFt}^{\lambda_F} x_{rGt}^{\lambda_G} (\mathcal{A}_{rt} H_{rCS t})^{\lambda_{CS}}$$

\mathcal{A}_{rt} : CS productivity

- Equilibrium Prices:

$$P_{rt} \propto p_{rFt}^{\lambda_F} p_{rGt}^{\lambda_G} w_{rt}^{\lambda_{CS}} \mathcal{A}_{rt}^{-\lambda_{CS}}$$

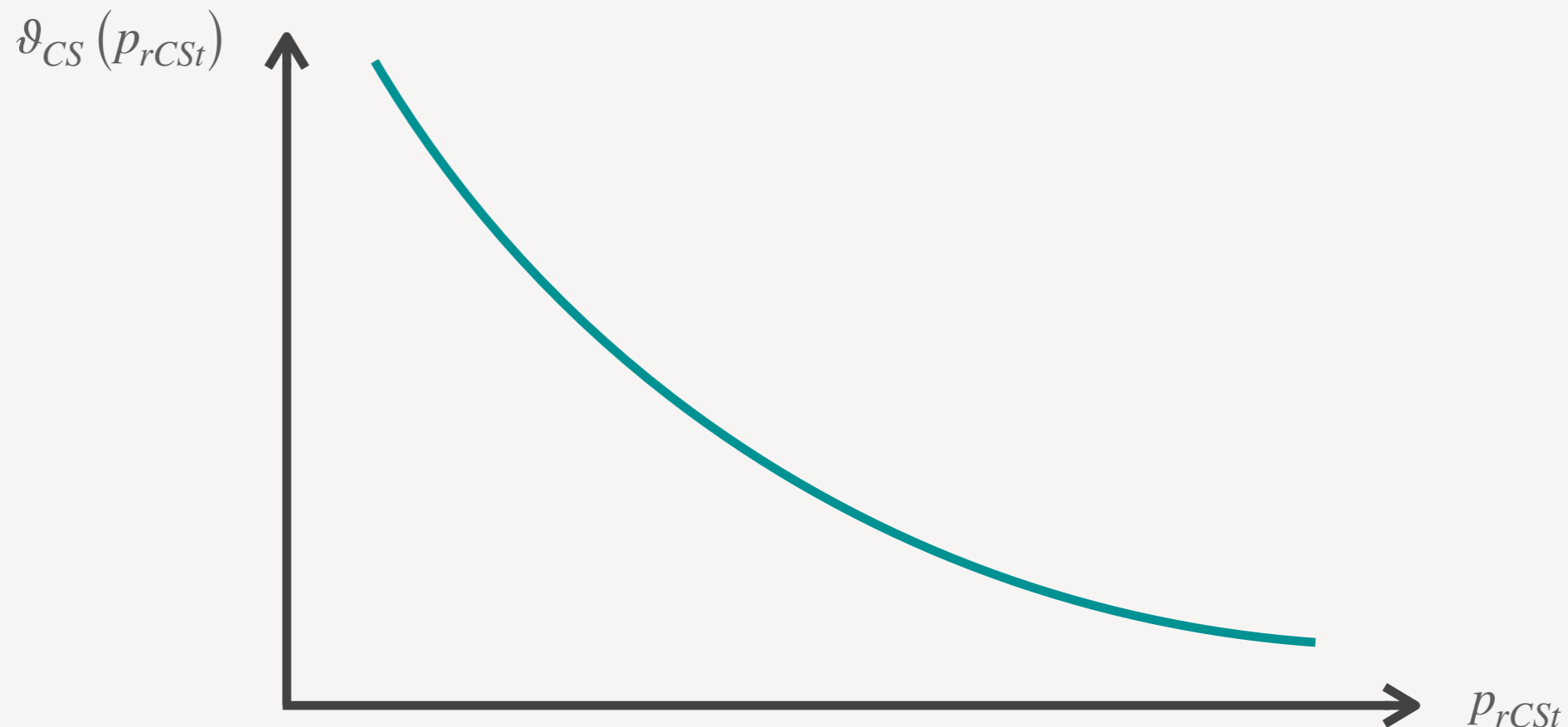
- Problems:
 - Unobserved local prices
 - Input-output matrix (λ_j)
 - Unobserved quality differences

Inversion of demand system

- Idea: observe consumers' **spending shares** on CS value added
- Suppose preferences were **homothetic**:

$$\vartheta_{CS}(p_{rCS_t}, y_{rt}) = \vartheta_{CS}(p_{rCS_t})$$

$$p_{rCS_t} \equiv \mathcal{A}_{rt}^{-1} w_{rt}$$

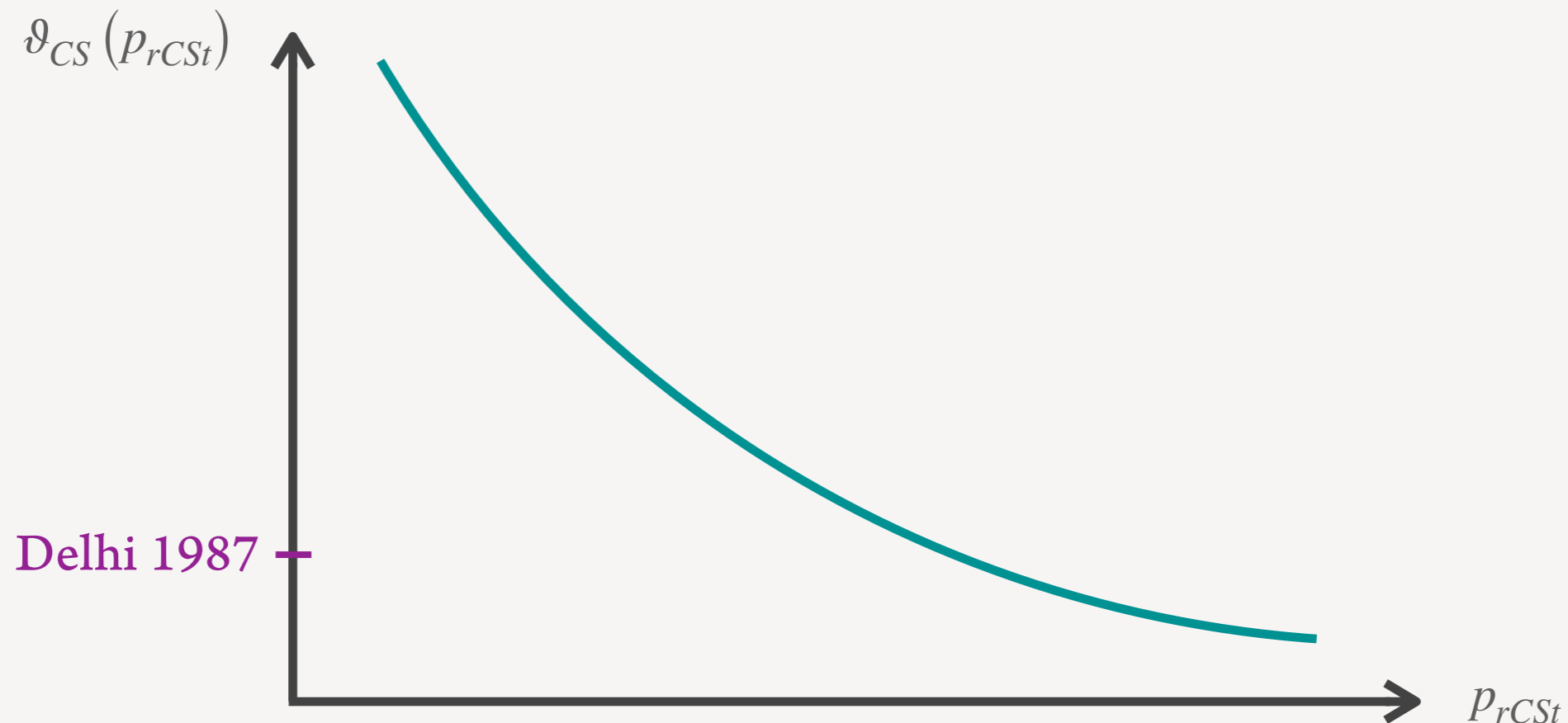


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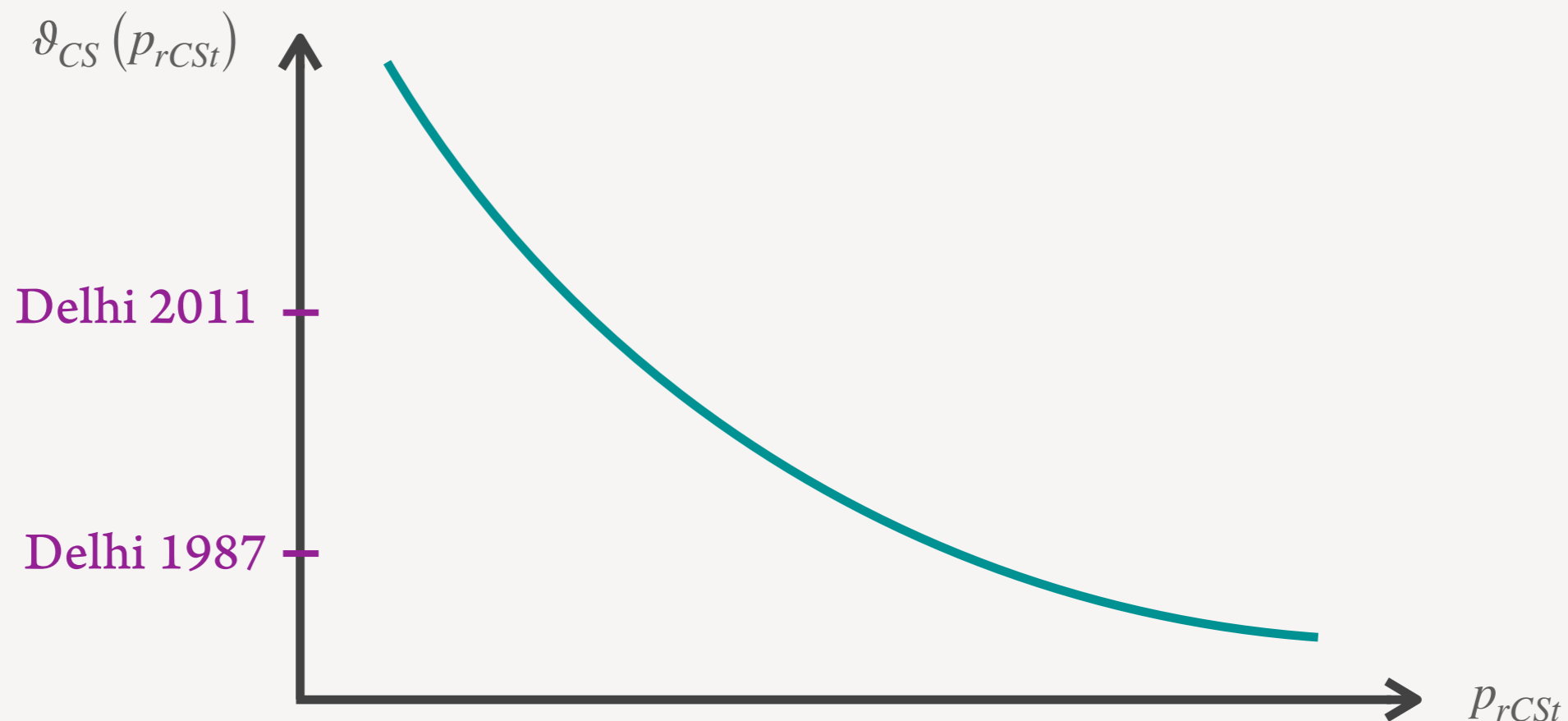


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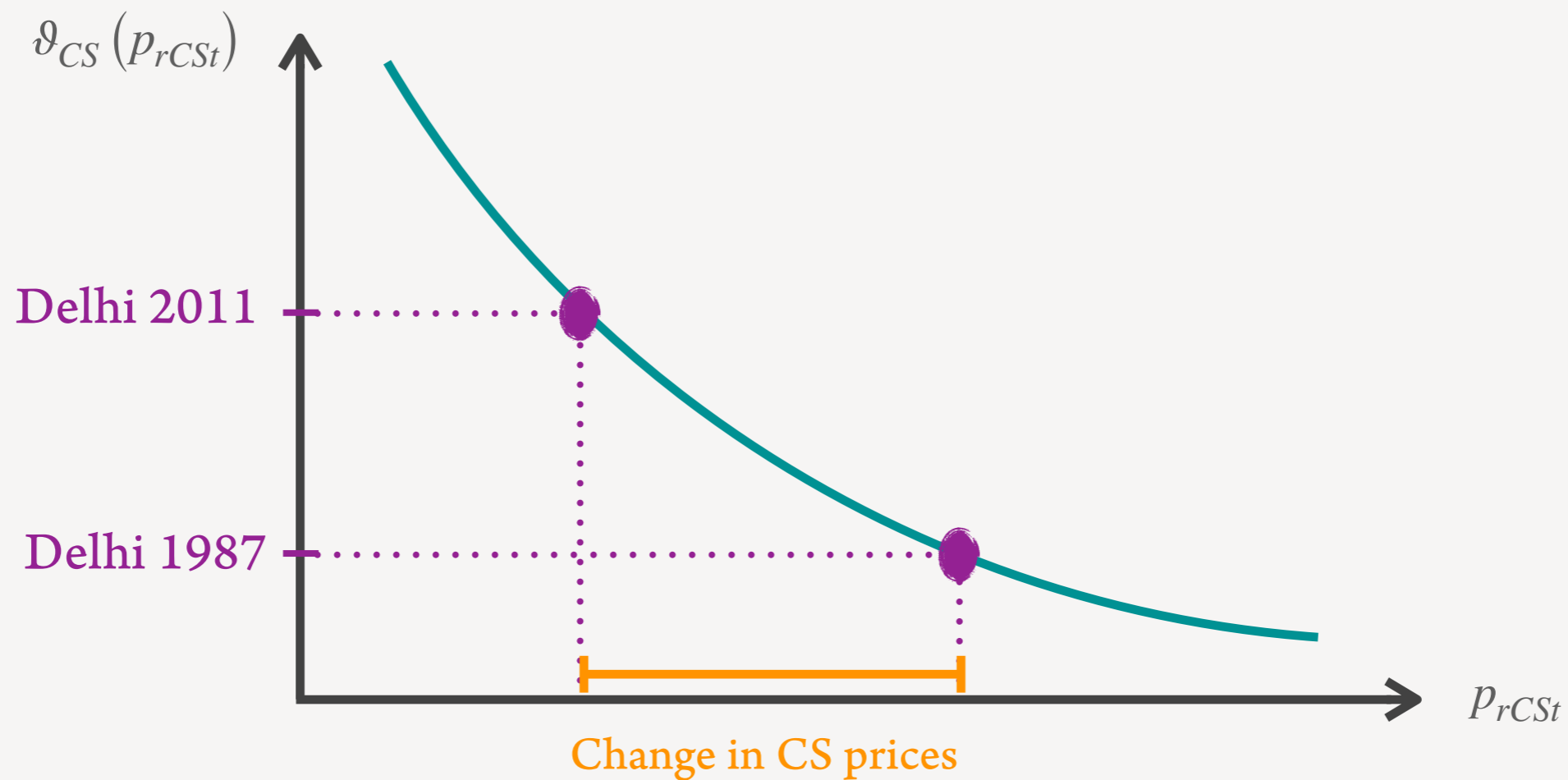


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$$d \ln \mathcal{A}_{rt} = d \ln w_{rt} - d \ln p_{rCS_t}$$

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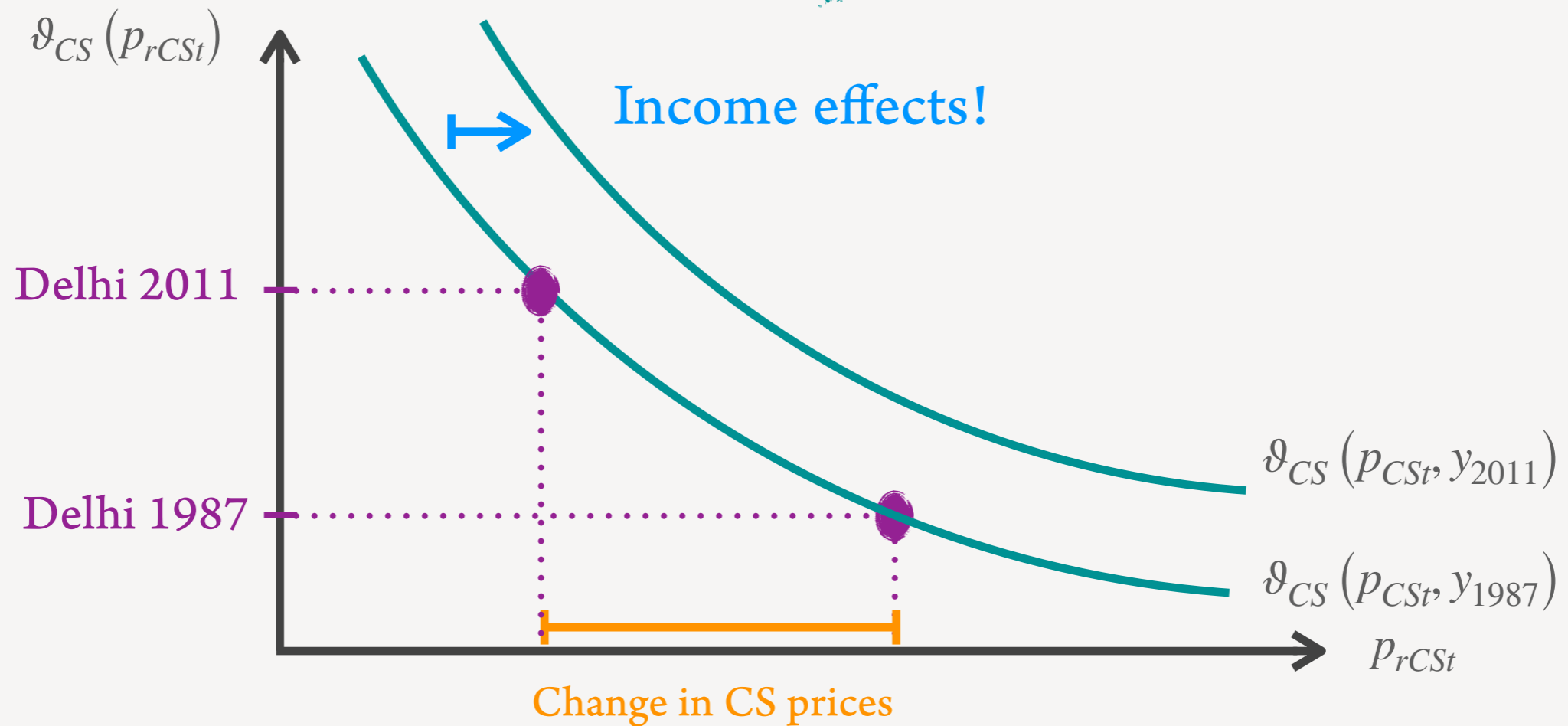
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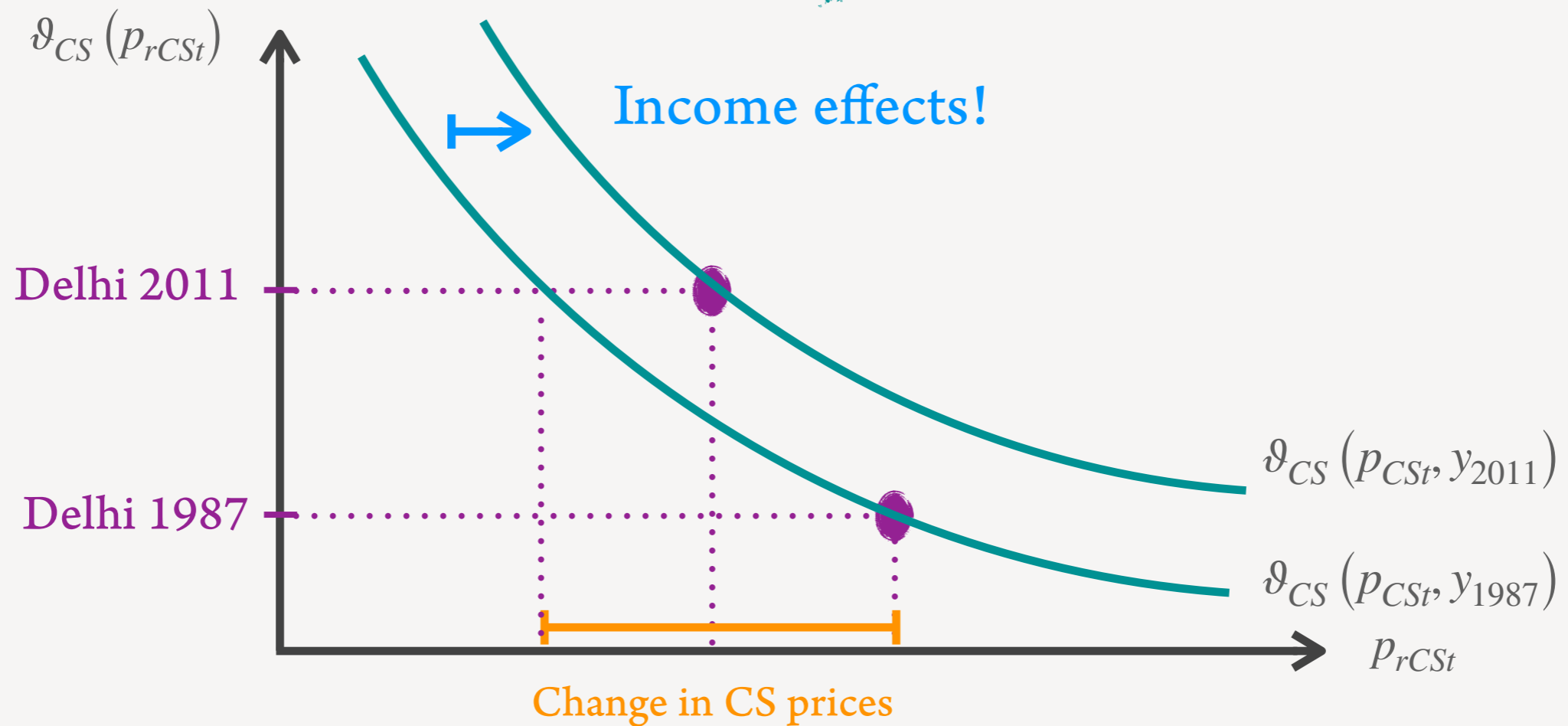
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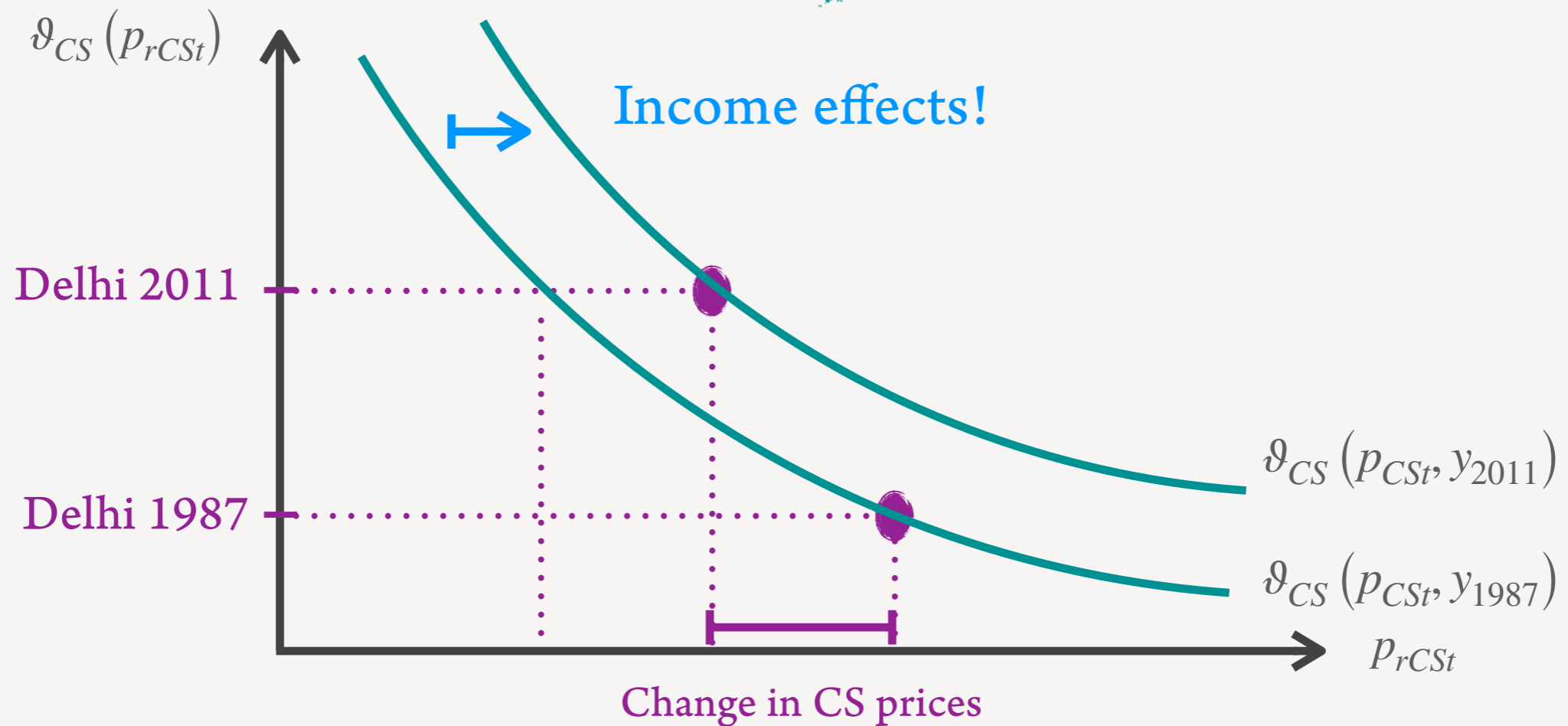
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Our Analysis in “Growing like India”

- Quantitative version of this intuition
 - General equilibrium trade model
 - Continuum of goods
 - Heterogeneous consumers with different human capital q
 - 400 Districts
 - Regional trade costs
- Equilibrium: CS employment share = **Local** CS expenditure share

$$\frac{H_{rCS_t}}{H_{rt}} = \omega_{CS} - \bar{v}_{CS} \left(\frac{E_{rt} [q] w_{rt}^{1-\omega_{CS}}}{P_{rF_t}^{\omega_F} P_{rG_t}^{\omega_G}} \right)^{-\epsilon} A_{rCS_t}^{-\omega_{CS}\epsilon}$$

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Income effect

High wages
 Local human capital
 Cheap food and goods

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Service-led growth

High CS productivity

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- **Measurement and Estimation**
- Quantification of Unequal Welfare Effects

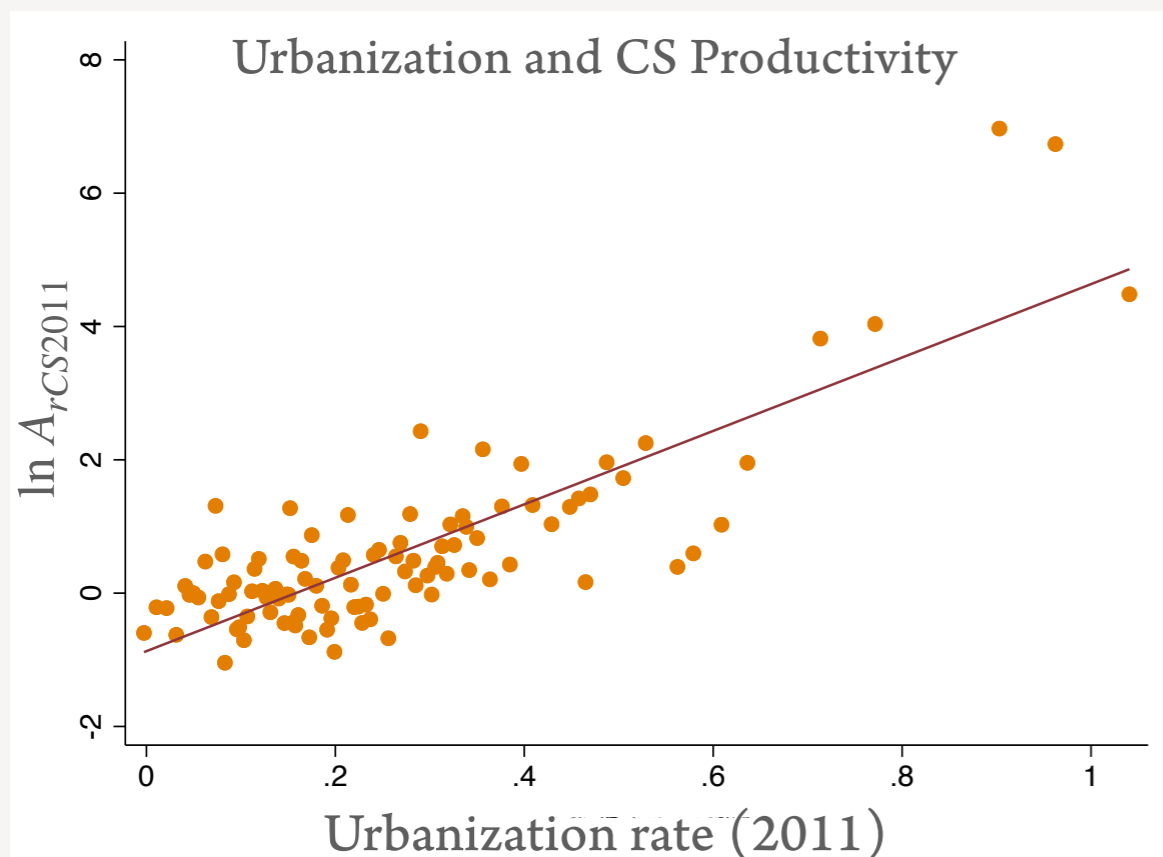
Data

- National Sample Surveys: 1987 - 2011; Micro survey; 400 districts
 - Earnings
 - Sectoral employment patterns
 - Schooling → Human capital in region r (using Mincerian returns)
- Survey on household expenditure
 - Expenditure shares to estimate Engel elasticity ε
- Economic Census (EC) and Survey of Service Firms (SSF)
 - Allocate service workers to **Consumer Services** and **Producer Services (= Goods!)**

Estimates of Consumer Service Productivity

- Recover estimates of $\{A_{rF1987}, A_{rG1987}, A_{rCS1987}\}_r$ and $\{A_{rF2011}, A_{rG2011}, A_{rCS2011}\}_r$

The urban CS productivity premium

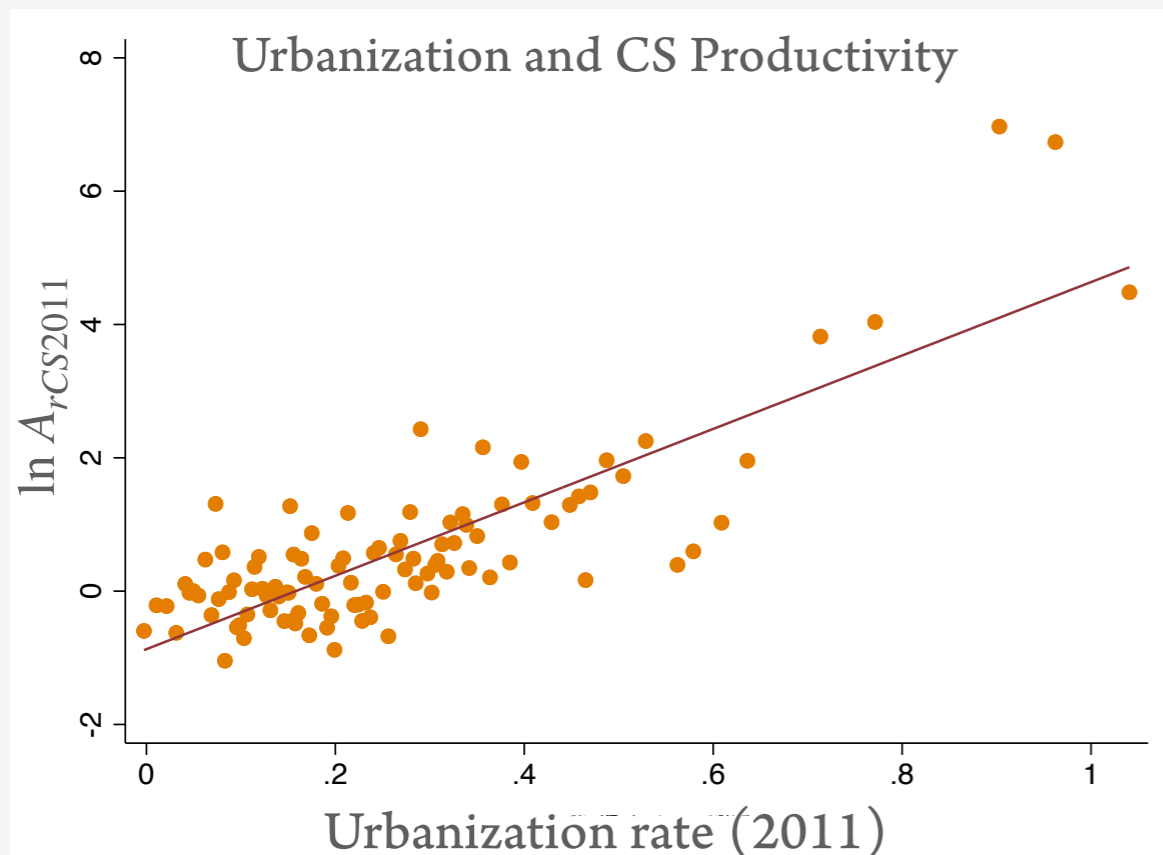


Other Sectors

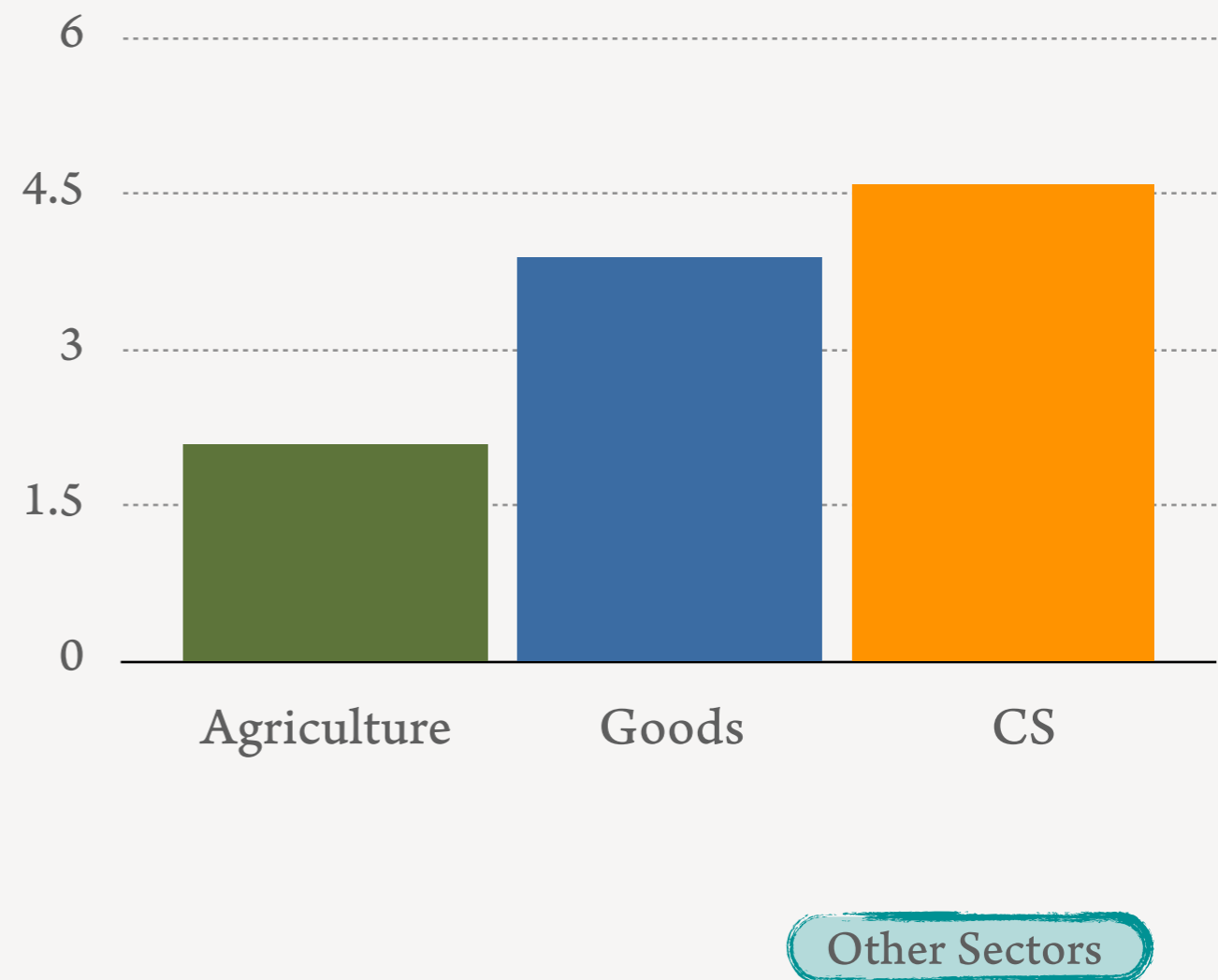
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Service-led growth: 1987-2011



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The Unequal Effects of Service-led Growth

- Welfare effects of rising CS productivity
- Money metric: **General equilibrium** equivalent variation

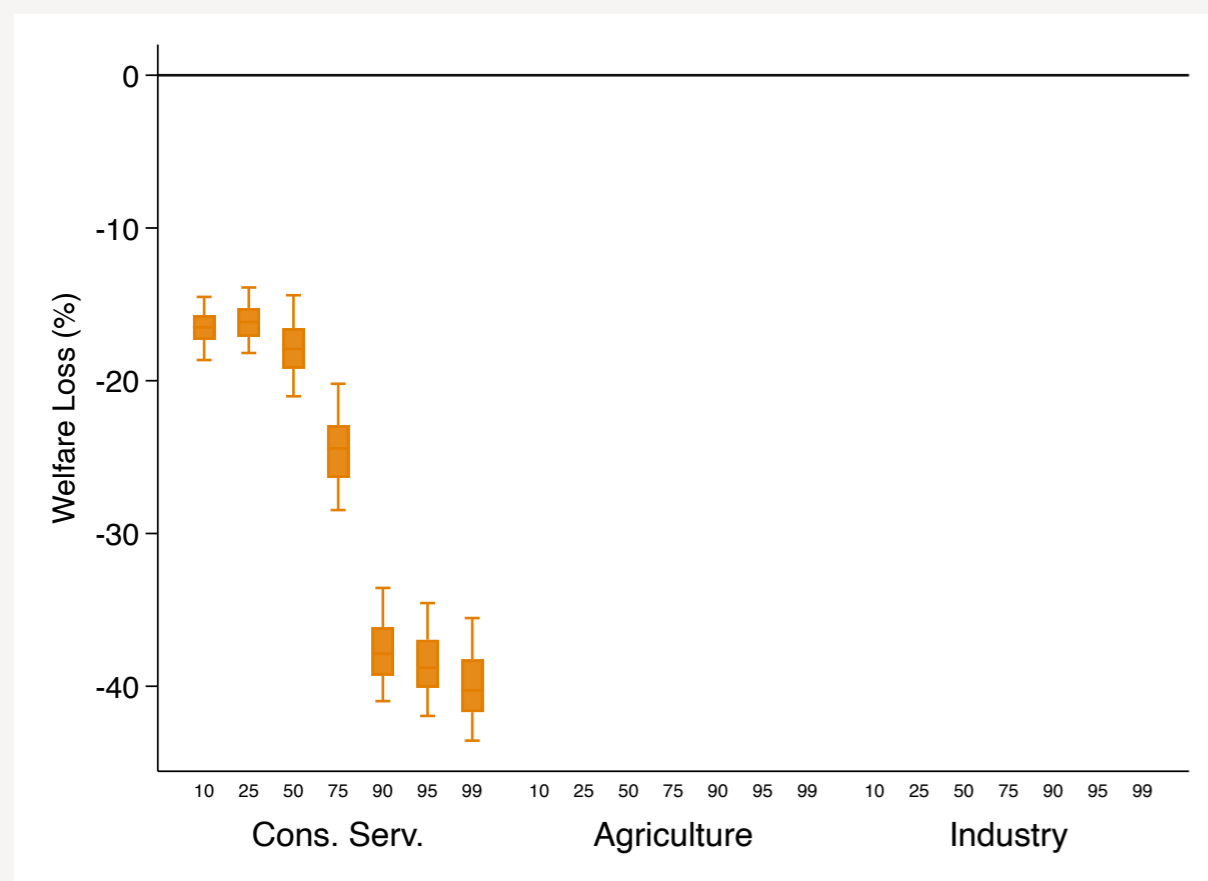
“By how much could we change individuals’ income in 2011 to make them indifferent between status quo and a situation where CS productivity had not grown since 1987?”

$$\mathcal{V}(qw_{r2011}(1+\varpi_q), \mathbf{P}_{r2011}) \equiv \mathcal{V}\left(qw_r^{A_{CS1987}}, \mathbf{P}_r^{A_{CS1987}}\right)$$

- Three concepts
 1. Individual heterogeneity: Welfare **across income ladder**
 2. Regional Welfare: **Utilitarian** welfare by region
 3. Aggregate Welfare: Pop-weighted average of **utilitarian** welfare

The Unequal Effects of Service-led Growth

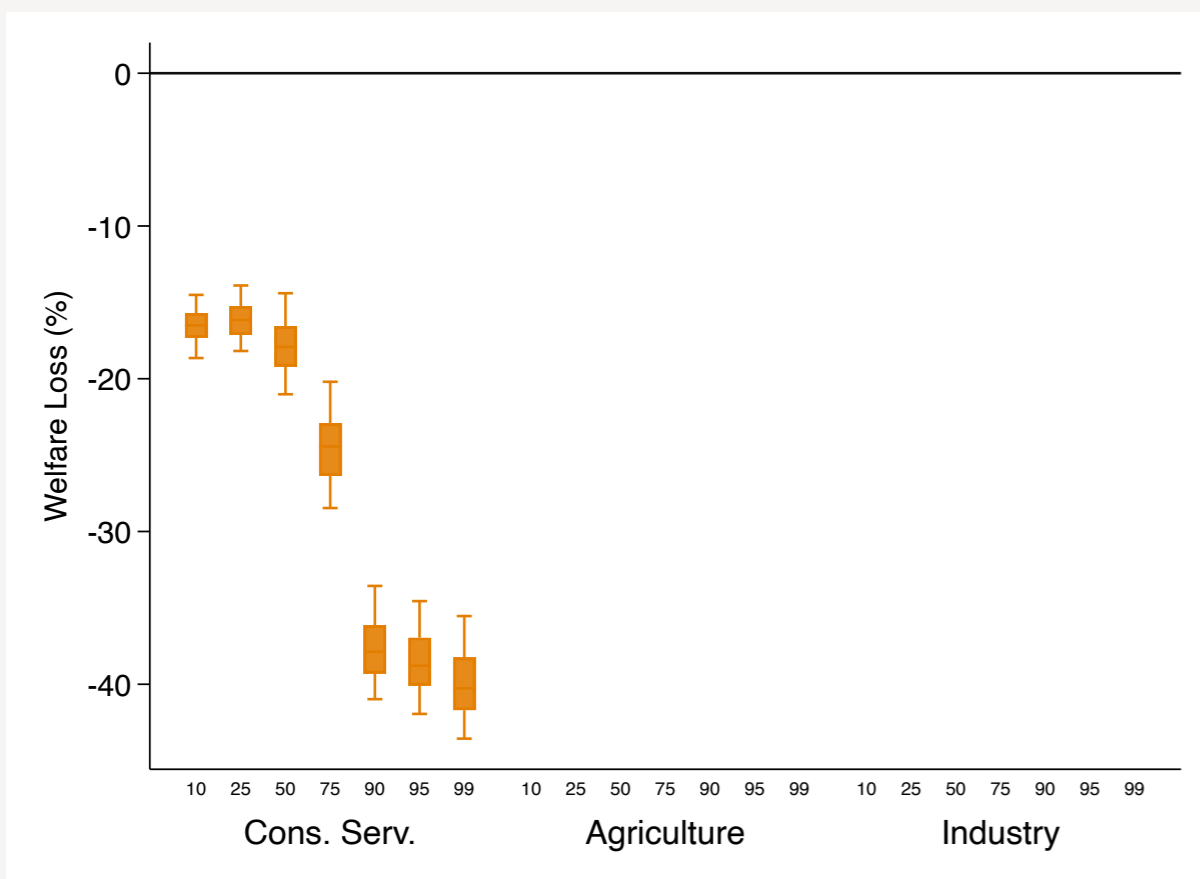
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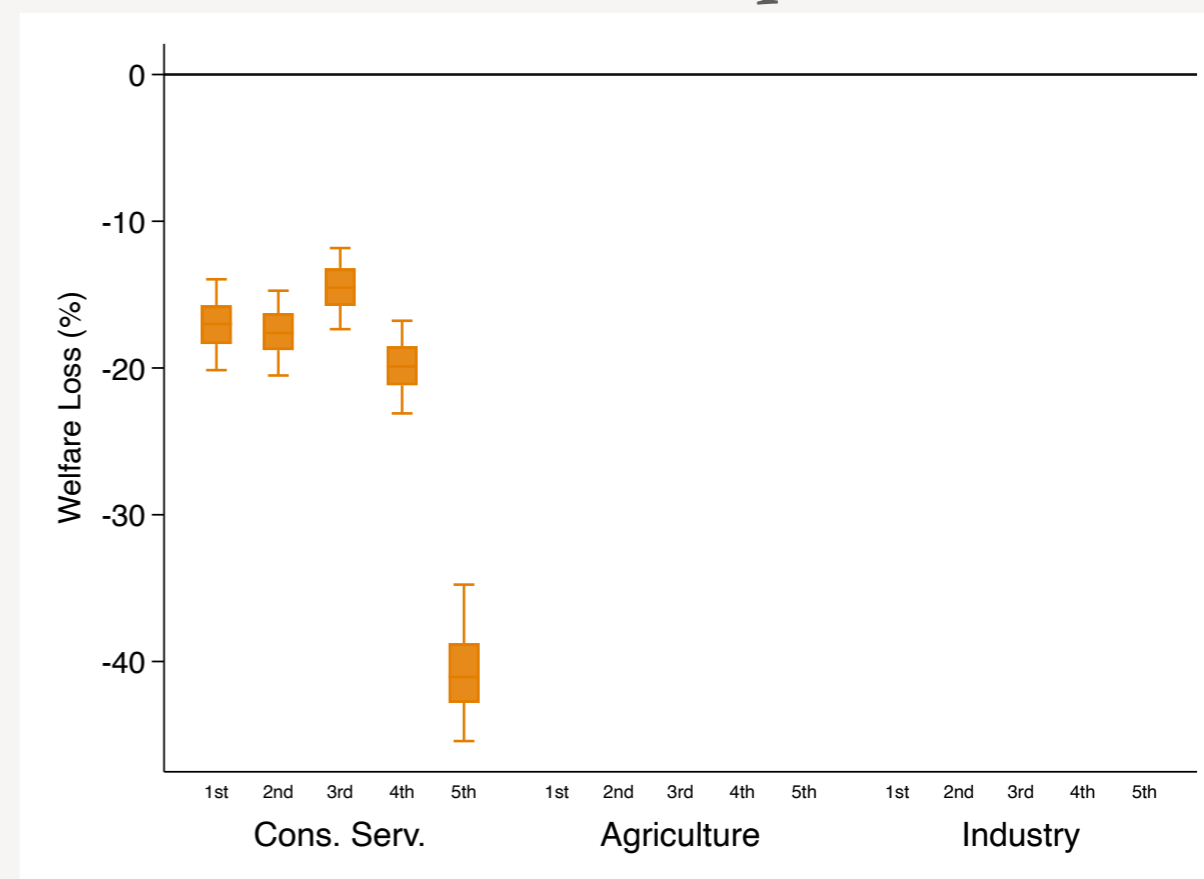
- Growth in **consumer services** is **pro-rich**

The Unequal Effects of Service-led Growth

Individual heterogeneity:
Income distribution



Spatial heterogeneity:
Urbanization quintiles

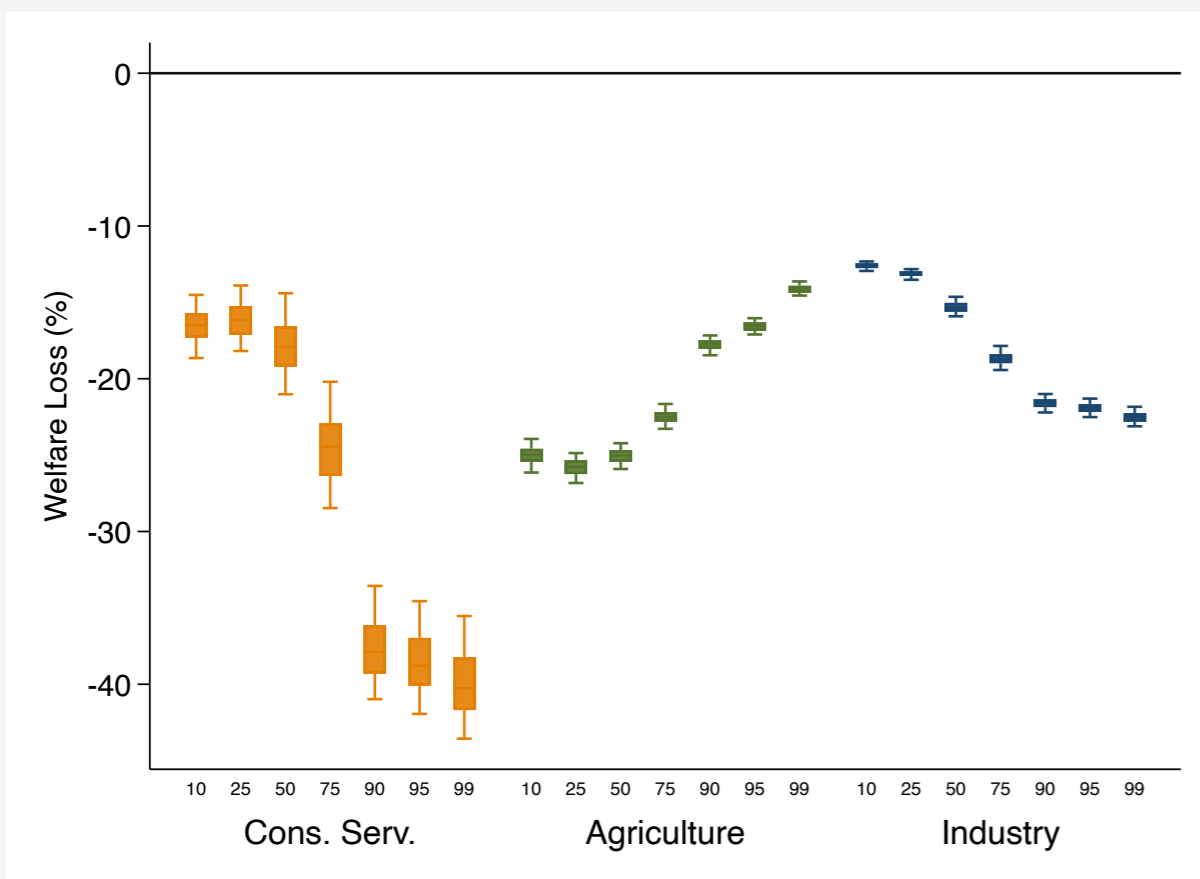


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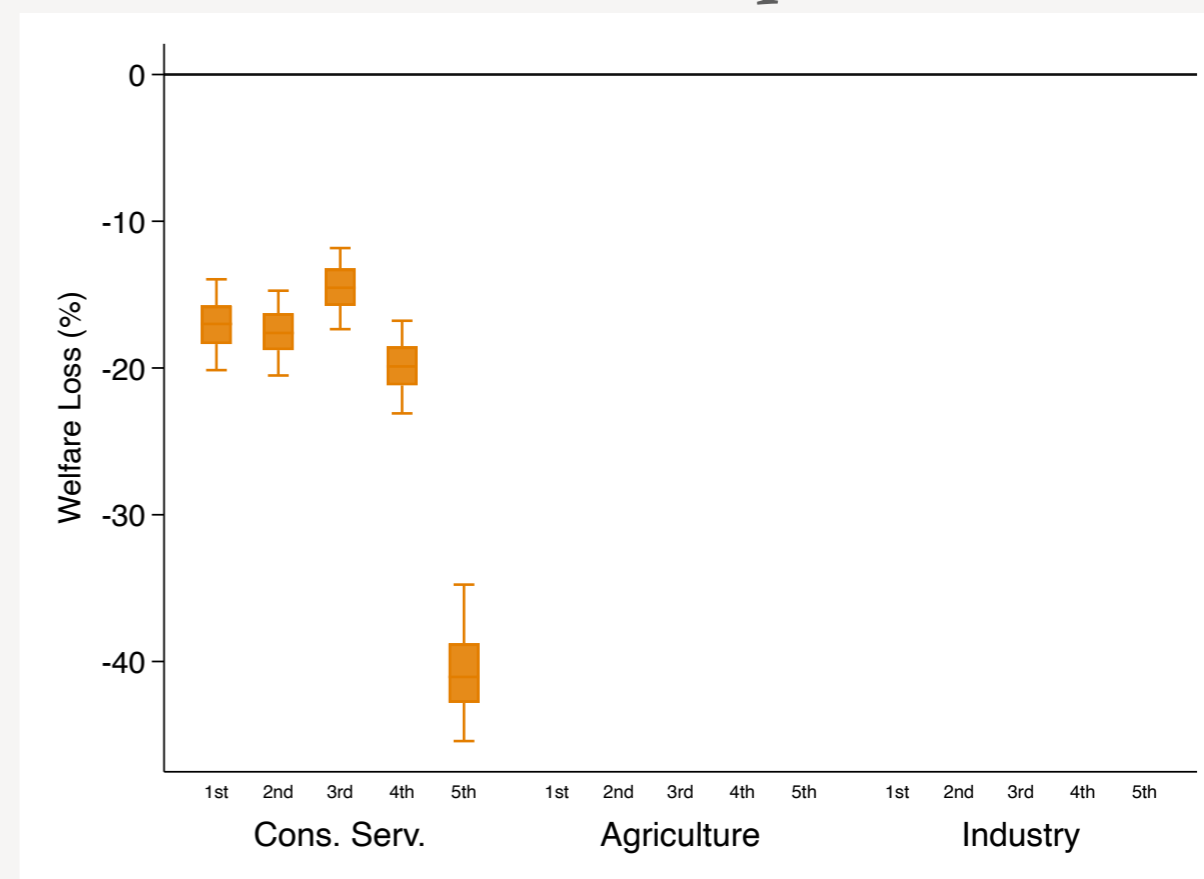
▸ Growth in **consumer services** benefits **cities**

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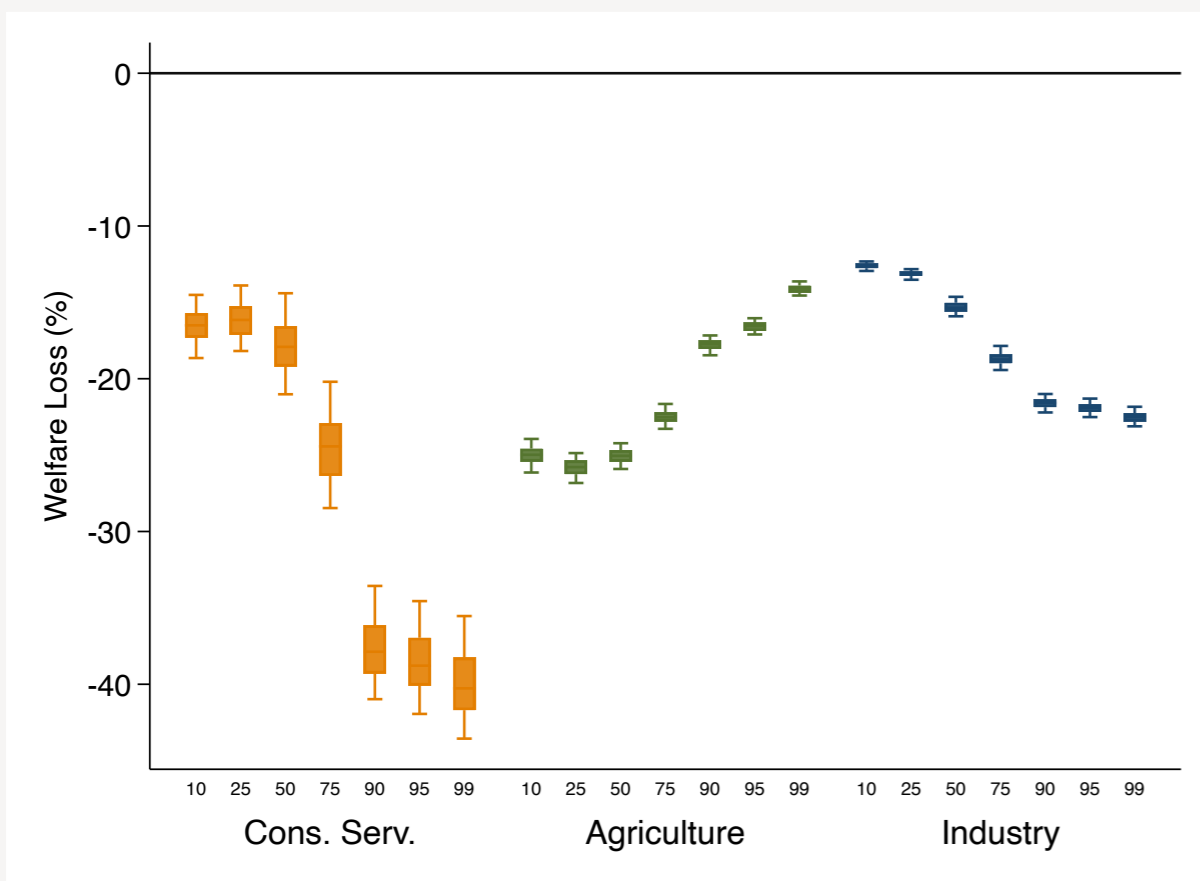


- Growth in **consumer services** is **pro-rich**
- Growth in **agriculture** is **pro-poor**

- Growth in **consumer services** benefits **cities**

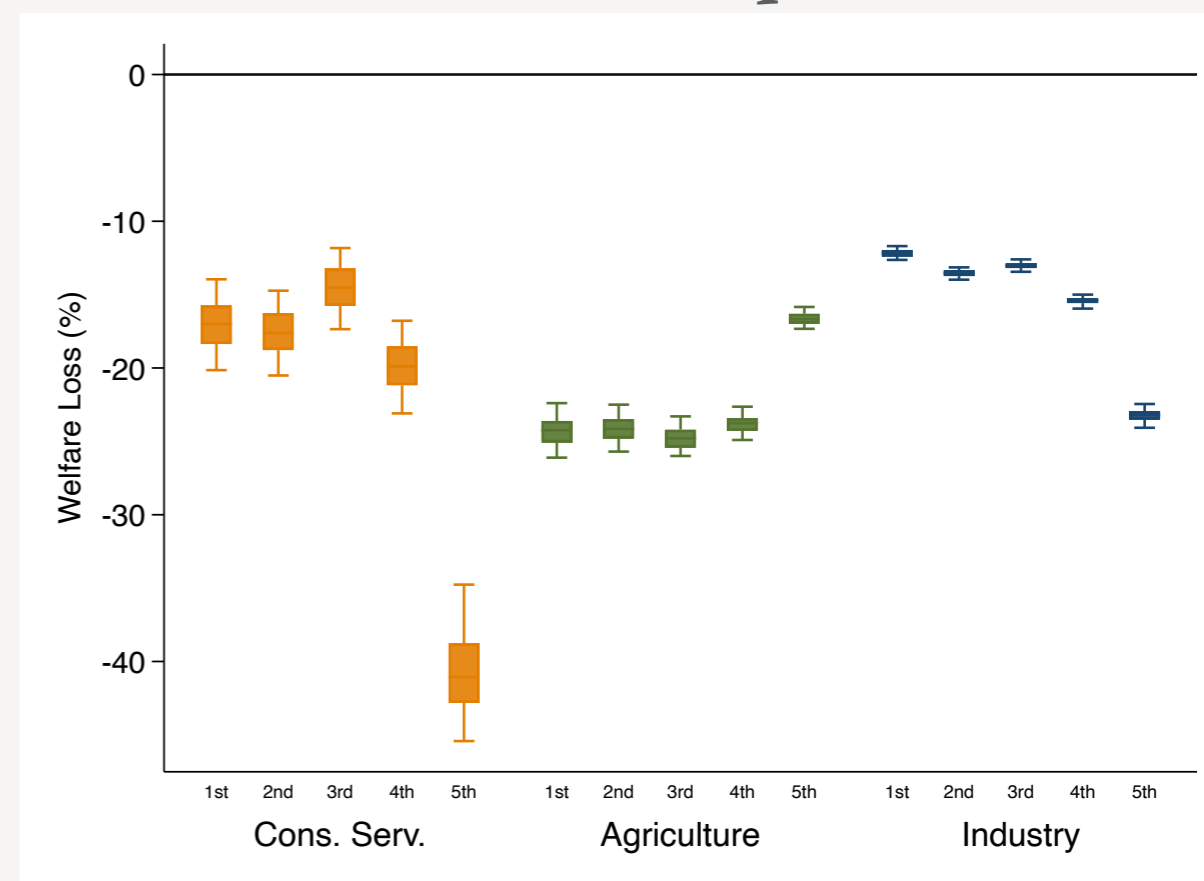
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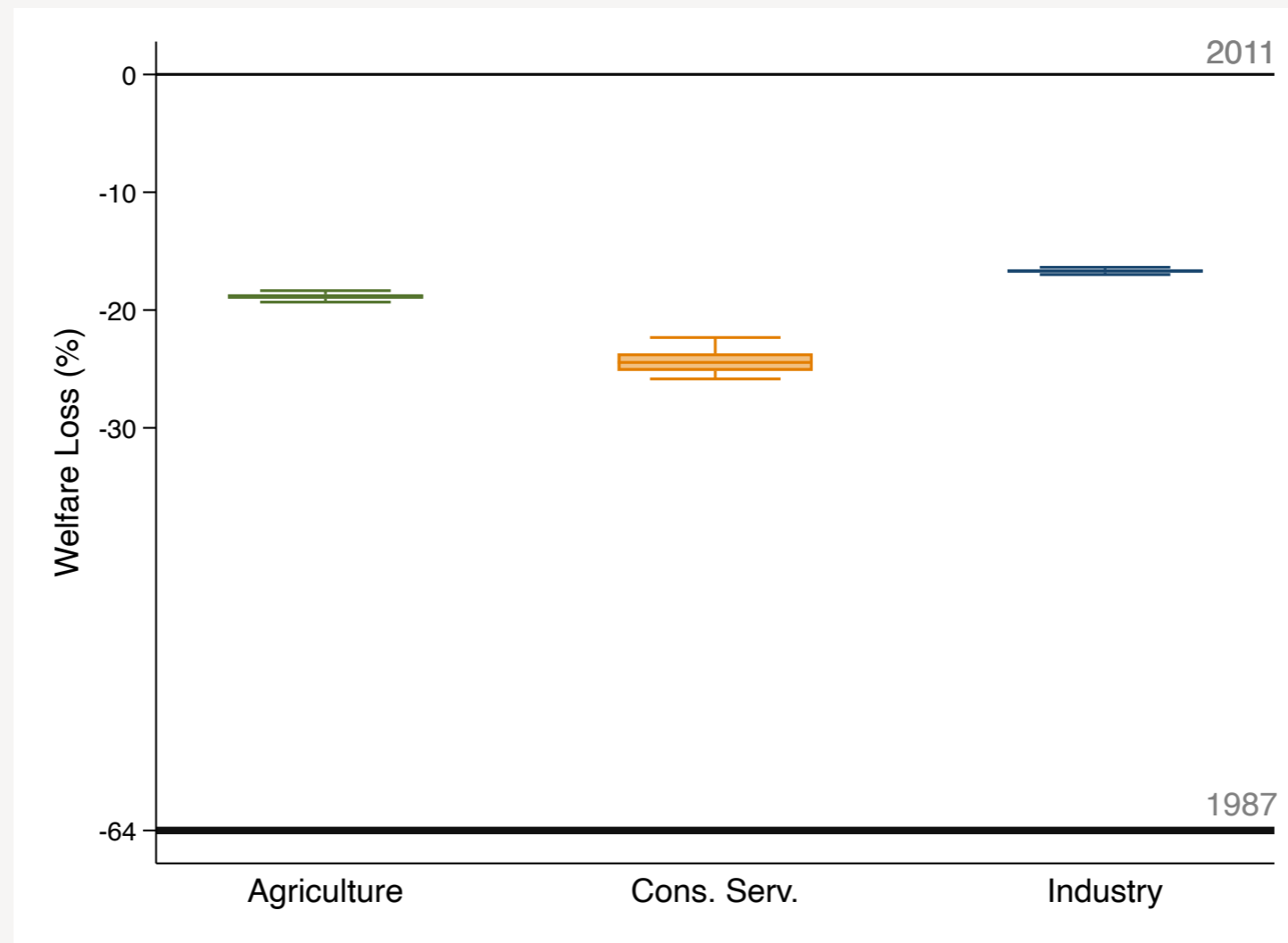
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Spatial heterogeneity:
Urbanization quintiles



- ▶ Growth in **consumer services** benefits **cities**
- ▶ Growth in **agriculture** benefits **rural locations**

Aggregate Welfare Effects



- Large **aggregate** welfare effect of prod. growth in **CS** ($\approx 21\%$)

Conclusion

- Growth of service sector: cause or consequence of growth?
- India 1987-2011: Substantial growth in productivity of **consumer services**
 - **Pro-rich**
 - Particularly salient for **urban** consumers
- “Premature De-Industrialization” necessarily bad?
- Important lingering questions:
 - **Determinants** of CS productivity growth? Marketization?
 - Are these patterns representative of the developing world today?
 - Gender inequality during the structure transformation