Future Capital Holdings Limited
Ideas. Investments. Enterprise.

Is Urban Growth Good For Rural India?

Future Capital Research
Roopa Purushothaman
Saurabh Bandyopadhyay
Anindya Roy

Two Parts to the Story

3 Urban Myths About Contemporary Rural India

Myth 1: Faster Economic Growth in Urban India is Driving Rapid Urbanization

Myth 2: Rural India is Still an Agricultural Economy

Myth 3: Rural-Urban Inequality is on the Rise

A Link Between Rural and Urban India

An Econometric Approach

- the impact of urban consumption expenditure on rural employment and incomes
- cross-section and timeseries analysis
- the role of rural nonfarm employment

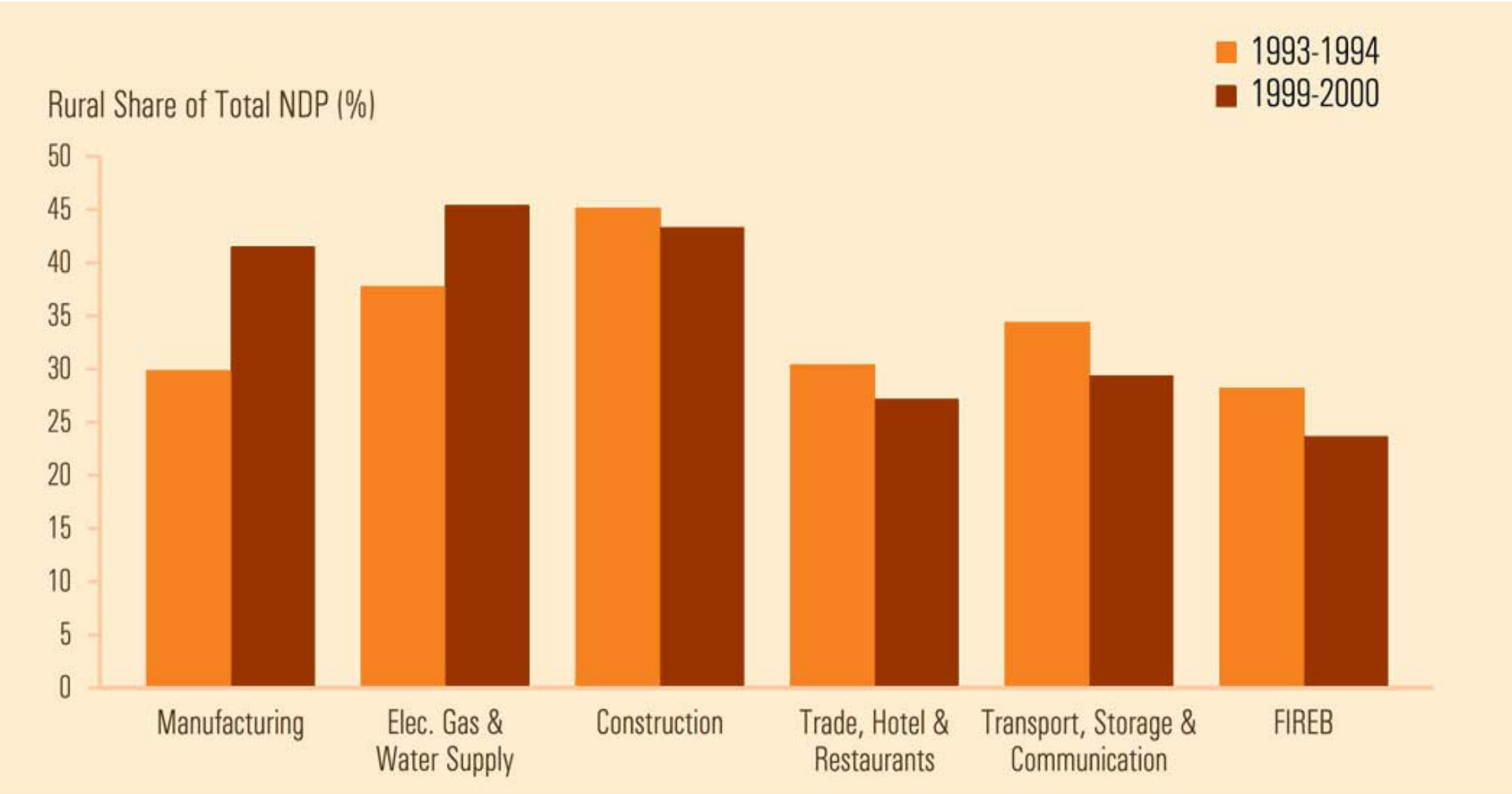
Results reflect a relationship that is virtually ignored at the corporate and policymaking level

Urban consumption could be one important—and largely overlooked—engine driving the shift from farm to nonfarm employment in rural India

The Results

- **100 rupee increase in urban consumption could lead to up to 39 rupee increase in real rural household incomes**
- **this relationship means 6.3mn rural nonfarm jobs and $91bn in real rural hshld income over the next decade**
- **a 10% increase in urban expenditure is associated with a 4.8% increase in RNFE**

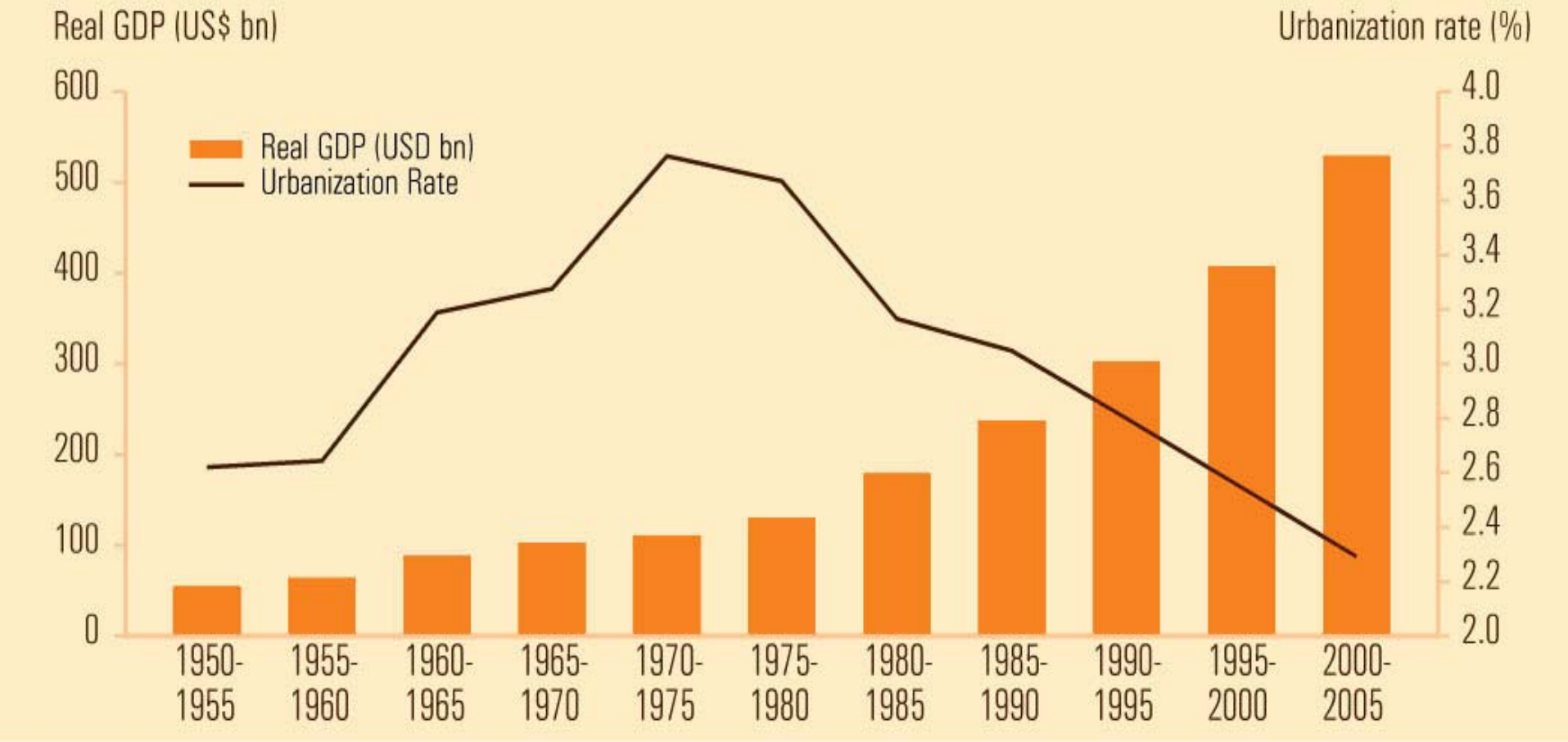
Growth in Rural Manufacturing Output Stands Out



Source: Central Statistical Organization, FCH calculations

Economy Growing, Urbanization Slowing?

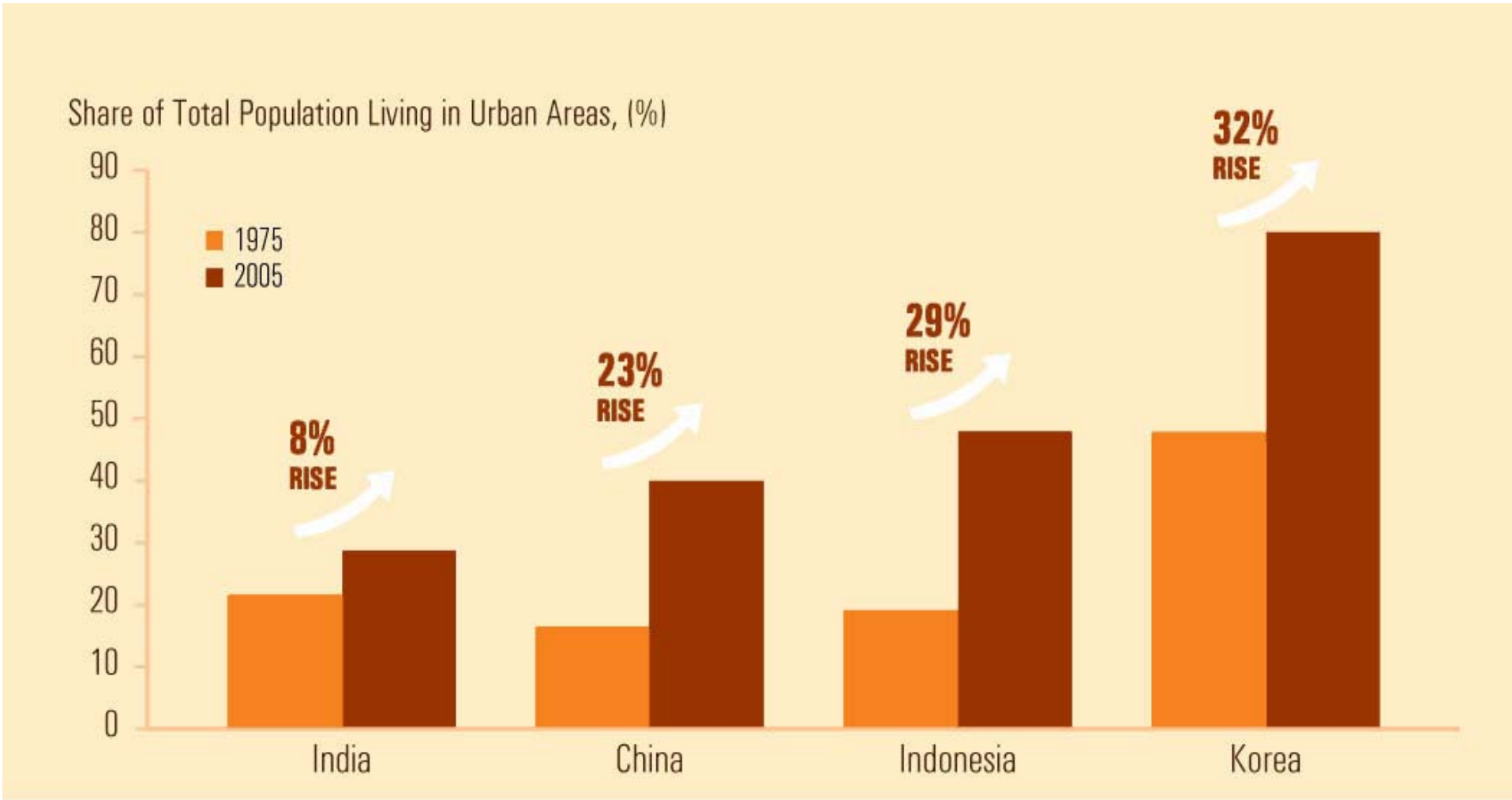
Future Capital Holdings
Ideas. Investments. Enterprise.



Source: Central Statistical Organization, UN Population Division

India's Change in Urban Share Lags Other Comparable Economies

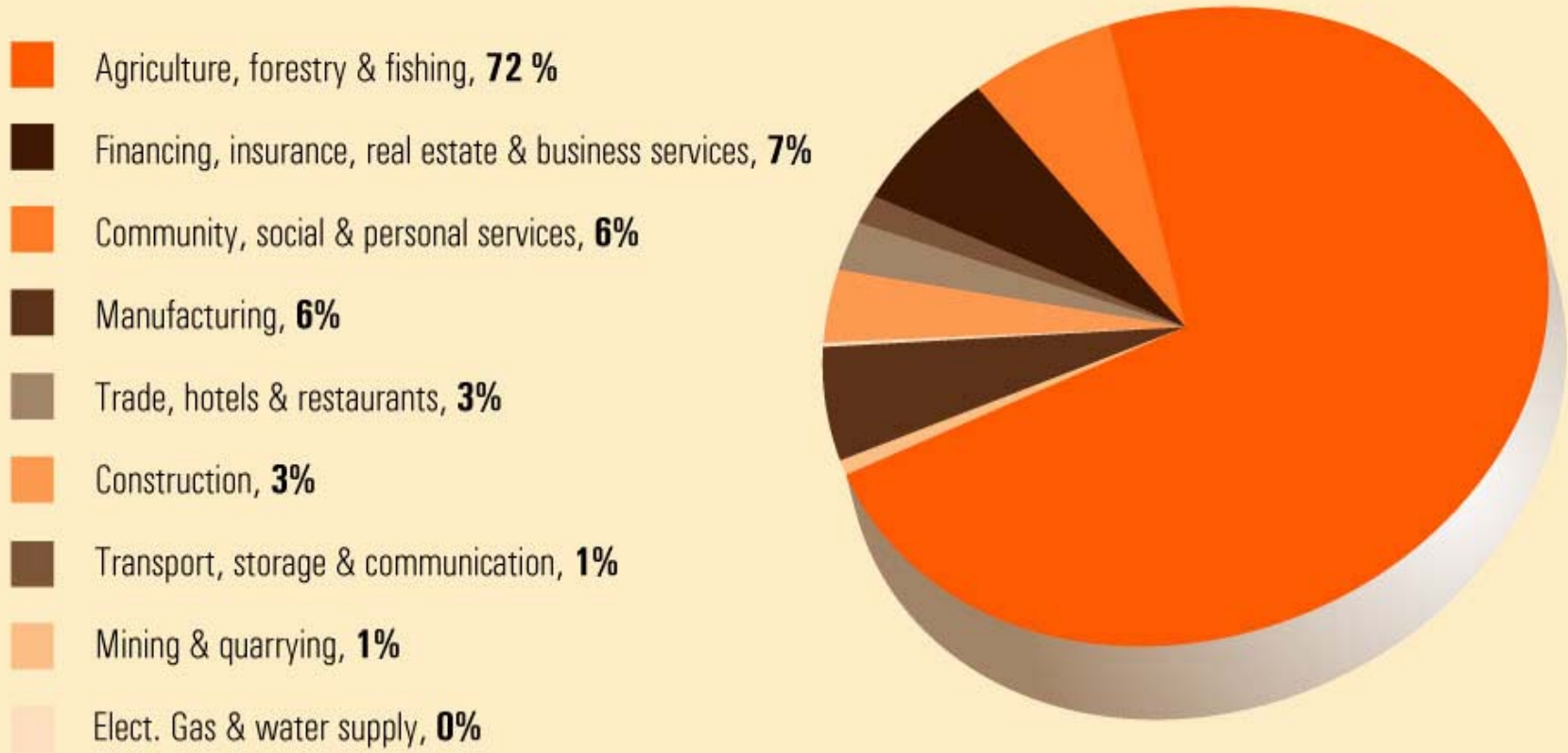
Future Capital Holdings
Ideas. Investments. Enterprise.



Source: UN Population Division

Composition of Rural GDP 1970-71

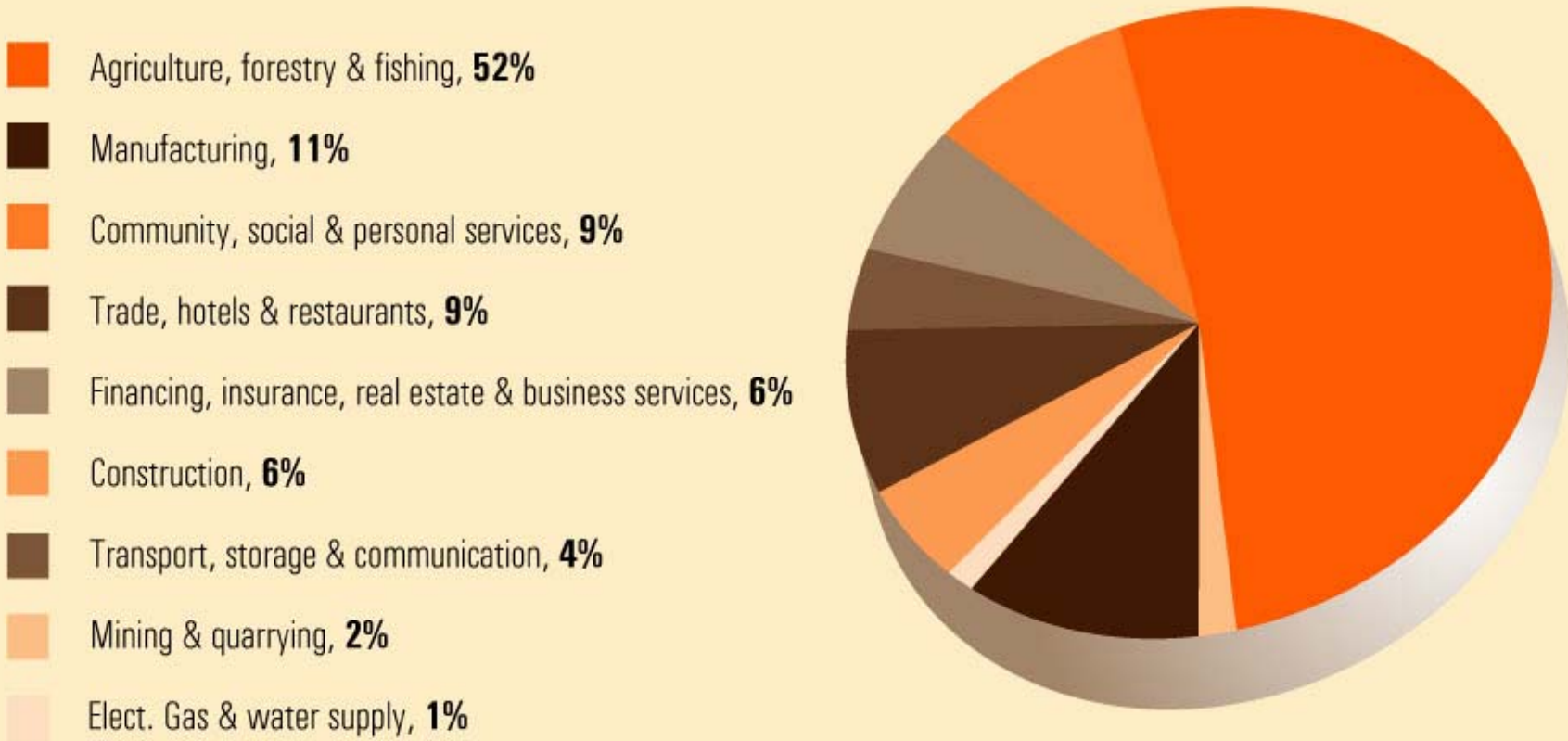
Future Capital Holdings
Ideas. Investments. Enterprise.



Source: Central Statistical Organization

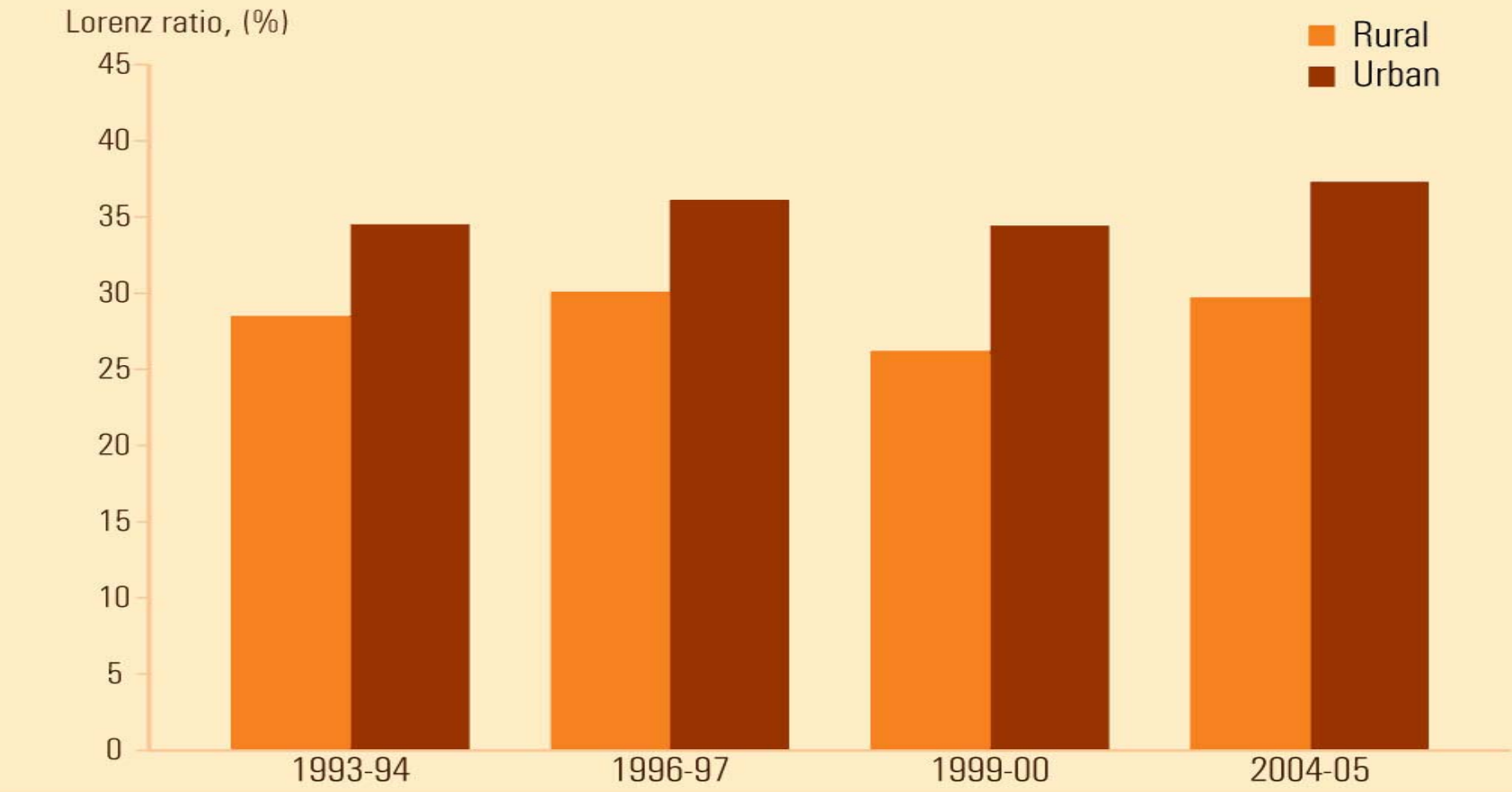
Composition of Rural GDP 1999-2000

Future Capital Holdings
Ideas. Investments. Enterprise.



Source: Central Statistical Organization

Inequality Worsening More In Urban Areas Than in Rural



Source: National Sample Survey Organization

A Rough Cut: Cross-Section Evidence

- rural household income as a function of urban consumption expenditure
- point-to-point difference in our variables between the years 1983 and 2001
- 15 major states of India, accounting for 90% of total population
- two other explanatory variables to the model: the initial level of rural income (RY_83) and initial level of rural literacy in 1983 (RLIT_83)
- other variables considered: degree of urbanization; share of arable land; climate indicators; rural population density; and distance to major markets
- in the end, rural household income is expressed as a function of a constant, urban consumption expenditure, initial rural income levels and initial rural literacy levels

Data

Future Capital Holdings
Ideas. Investments. Enterprise.

CROSS SECTION MODEL:

Variables	Definitions	Source
Rural income (RY) by state	rural household income, converted into 1999-00 prices	Market Information Survey of Households (MISH), NCAER
Urban consumption expenditure (UCON), by state	monthly urban consumption expenditure converted into an annual estimate at 1999-00 prices	NSSO
Rural population (RPOP), by state	population residing in areas classified as rural	Census of India
Rural literacy (RLIT), by state	literate population in rural areas	Census of India

TIME SERIES MODEL:

Rural income (RY)	rural household income, converted into 1999-00 prices	NCAER Market Information Survey of Households (MISH)
Urban consumption expenditure (UCON)	monthly urban consumption expenditure converted into an annual estimate, in 1999-00 prices	NSSO
Rural nonfarm employment (RNFE)	the ratio of nonfarm employment (mining and quarrying; household and non-household manufacturing; processing; repair; construction; trade and commerce; transport and other services) to farm (agricultural) employment.	NSSO
Rural population (RPOP)	population residing in areas classified as rural	Census, mid-year population estimated from various reports
Public investment in agriculture (PUBINVAGRI)	gross capital formation in agriculture by the public sector at 1999-00 prices	National Accounts Statistics (NAS), various issues

$$\text{Log}(DRY/RPOP\_83) = -4.14+0.38\text{Log}(DUCON/RPOP\_83)+1.52\text{Log}(RY\_83/RPOP\_83)+0.57\text{Log}(RLIT\_83/RPOP\_83)$$

where:
DRY= change in rural household income between 2001 and 1983
DUCON=change in urban consumption expenditure between 2001 and 1983
RY_83= level of rural income in 1983
RLIT_83= literate rural population in 1983
RPOP_83=rural population in 1983

Cross-Section Results

- urban expenditure significant at 94% level, initial rural income level at 93% level, while rural literacy at 89% percent level

A 10% increase in:

  - urban expenditure is associated with a 3.8% increase in rural household income;

  - the initial state level of rural income is associated with a 15.2% increase in rural household income; and

  - the initial level of rural literacy is associated with a 5.7% increase in rural household income

- initial results are indicative, but we give less weight to the actual coefficients.

A Closer Look: The Timeseries Evidence

- **all-India data spanning the years 1980/81-2005/06**

- **including an explanatory variable covering public investment in agriculture in addition to urban consumption expenditure**

- **other indicators considered: literacy rates; an infrastructure index; policy dummies; and industry-agriculture terms of trade**

- **timeseries model specifies per capita rural household income as a function of a constant, urban consumption expenditure and public investment in agriculture**

Time Series Model

Future Capital Holdings
Ideas. Investments. Enterprise.

$$D(\text{Log}(RY/RPOP)) = 0.05 + 0.39D(\text{Log}(UCON/RPOP)) + 0.11D(\text{Log}(PUBINVAGRI/RPOP))$$

where:
RY= rural household income
UCON=urban consumption expenditure
PUBINVAGRI=public investment in agriculture (gross capital formation in agriculture)
RPOP=rural population
D=difference operator

Timeseries Results

- urban consumption expenditure and public investment in agriculture move with rural household income in the expected direction

- both are statistically significant at the 91% and 98% level respectively

A 10% increase in:

- urban expenditure is associated with a 3.9% increase in rural household income per head; and

- public investment in agriculture is associated with a 1.1% increase in rural household income per head

Identifying the Channel

- **next step: cast light on the channel through which the relationship occurs**

- **hypothesis: urban expenditure may affect rural household income through rural nonfarm employment (RNFE).**

- **theoretically, including rural nonfarm employment should render our urban expenditure variable insignificant**

- **to test, we look at household income as a function of a constant, urban consumption expenditure, public investment in agriculture and rural nonfarm employment**

$$D(\text{Log}(RY/RPOP) = 0.04 + 0.31 D(\text{Log}(UCON/RPOP) + 0.10 D(\text{Log}(PUBINVAGRI/RPOP)) + 0.17 D(\text{Log}(RNFE/RPOP)$$

where:
RY= rural household income
UCON=urban consumption expenditure
PUBINVAGRI=public investment in agriculture (gross capital formation in agriculture)
RPOP=rural population
RNFE=rural nonfarm employment
D=difference operator

Results with RNFE

- inclusion of rural nonfarm employment dramatically reduces the significance of the urban expenditure variable

- a 10% increase in rural nonfarm employment translates into a 1.7% increase in rural household incomes, at a 98% significance level

- related work shows that a 10% increase in urban expenditure could lead to a 4.8% increase in rural nonfarm employment

- on conservative estimates, urban household expenditure growth could translate into a boost of 6.3 million rural nonfarm jobs and $91billion in rural household incomes over the next ten years

Conclusion

- urban and rural economies are more integrated than we traditionally acknowledge
- only focused on one transmission mechanism running from the urban to the rural economy, but there are many more channels running both ways
- although the country tends to focus on distinct rural strategies and rural policies, urban demand may be one important—and largely overlooked—engine driving the shift from farm to nonfarm employment in rural India