LAND MARKETS AND PRICES
A NEW REGIME

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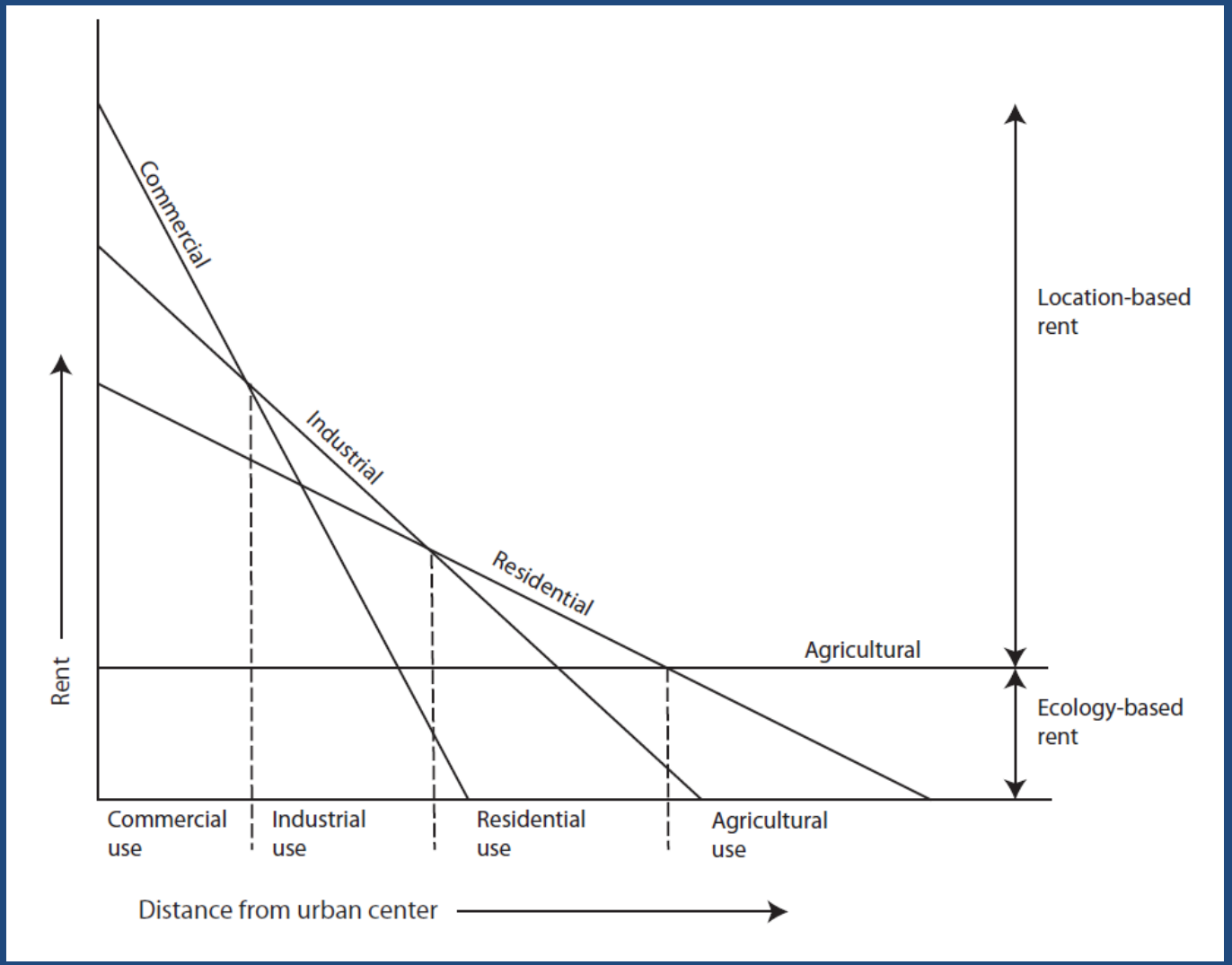
OUTLINE

- Objectives
  - Quantify the levels & dynamics of land prices
  - Explore explanations for
    - the rapidity of the rise
    - the extraordinary peaks
- Three parts
  - Urban land markets
  - Rural land markets
  - A new price regime

URBAN LAND MARKETS



A Classical Land Rent Model

(adapted from Alonso 1964)

Note: Rents are based on scarcity (relative to the urban center)

Where land is not scarce, rents are based on agricultural productivity

Urban price data

- NHB RESIDEX
  - Housing price estimates in 5-16 zones in each city
  - Based on mortgage lending by banks
  - Most reliable Indian data
  - My land price estimates are likely low because
    - Quantity of “black money” is unknown
    - The purchase date of land is unknown
  - Land price estimate (per acre):
    - Sale price (at 1.5 FSI) – Construction cost (at Rs. 1,000/sq. ft.)
  - Variance in housing price arises from variance in land price
- Global Property Guide
  - Prices of 120 sq. m. (about 1,300 sq. ft.) apartments in most expensive real estate submarkets
  - Reliable
  - PPP conversion rates used

Price of housing and land from RESIDEX

	Rs./sq. ft. (in '000s) Average of 2007-10			Possible price of land in Rs. crores/acre	
City	Average	Lowest zone	Highest zone	Lowest zone	Highest zone
Mumbai	7.3	2.6	39.7	10.3	252.9
Bangalore	5.8	5.7	10.1	30.6	59.8
Delhi	5.4	3.7	12.3	17.7	73.8
Chennai	3.7	2.6	4.7	10.4	24.5
Kochi	3.3	2.2	7.3	8.2	40.9
Pune	3.1	3.0	3.3	13.0	14.8
Hyderabad	2.9	2.3	3.4	8.6	15.9
Faridabad	2.9	2.1	4.0	7.1	19.7
Kolkata	2.5	1.7	4.2	4.9	21.2
Ahmedabad	2.5	1.2	2.9	1.6	12.1
Jaipur	2.4	1.2	3.9	1.4	19.0
Patna	2.2	2.0	2.7	6.7	11.2
Bhopal	2.1	1.5	6.0	3.5	32.5
Lucknow	2.0	1.6	2.4	4.2	9.2
Surat	1.9	1.7	2.4	4.4	9.3

Housing price dynamics, from RESIDEX

		Index	
City	Avg. Rs./sq. ft. ('000s) (2007-10)	In 2007 (2001 = 100)	In 2011, Q 4 (2007 = 100)
Mumbai	7.3	268	193
Bangalore	5.8	313	100
Delhi	5.4	298	167
Chennai	3.7		296
Kochi	3.3		82
Pune	3.1		184
Hyderabad	2.9		79
Faridabad	2.9		218
Kolkata	2.5	237	190
Ahmedabad	2.5		167
Jaipur	2.4		64
Patna	2.2		140
Bhopal	2.1	260	211
Lucknow	2.0		165
Surat	1.9		152

International peak prices, 2011

Country	Price in Euro / sq. mt. ('000s)	GNP per capita in PPP USD ('000s)	Years of avg. income to buy apartment
Hong Kong	19.3	48.4	65
Singapore	16.7	59.1	46
United Kingdom	15.2	35.6	69
USA - New York	14.1	48.7	47
Japan	13.9	34.6	65
France	13.4	34.9	62
India, Mumbai	12.9	3.6	580
Russia	10.3	16.8	99
Italy	7.2	28.9	40
Taiwan	7.1	37.2	31
China	6.9	8.3	135
Germany	5.5	37.4	24
Greece	4.9	27.8	29
Netherlands	4.3	41.7	17
Spain	4.0	30.2	22
India, New Delhi	4.0	3.6	180
Denmark	4.0	37.6	17
Cambodia	3.8	2.3	270
USA - Miami	3.5	48.7	12
Poland	3.5	19.9	28
Thailand	3.3	9.6	56
Philippines	3.2	3.9	133
Brazil	2.8	11.8	39
Malaysia	2.2	15.4	23
Indonesia	1.8	4.7	62
Mexico	1.5	15.1	17

High prices, increasing rapidly

- The peaks are unprecedented for development level
  - Mumbai ~ New York, Paris, Tokyo
  - Delhi ~ Amsterdam, Barcelona, Copenhagen
- City-wide averages are extraordinarily high
  - To buy avg. 800 sq. ft. flat with avg. income
  - 100 years in Mumbai, 75 years in Delhi & Bangalore
- Prices at the urban edge are very high
  - Rs. 1.5 cr/acre in Ahmedabad/Jaipur (underestimates)
  - Rs. 10 cr/acre in Mumbai/Chennai
- Five-fold price increase in 2001-2011
  - 2.5 times the rate of inflation

Reason 1. Increasing demand for land

- Surge in housing demand led by growth of housing credit
  - Housing finance grew from 18K cr in 2001 to 145K cr in 2008-9
- Growth of demand for commercial and industrial land uses
  - No reliable data
- Growth of real estate as source of and “parking” for black money
  - Finance Ministry’s White paper has no numbers
- Growth of NRI demand for housing
  - No estimates, but probably substantial

Reason 2. Constrained supply of land

- Low Floor Space Index (FSI)
  - Rarely higher than 1.5 anywhere
- Rent control acts
  - Effectively transfers ownership to tenants, who cannot sell
- Land that is off-market
  - Public land (1/3 to 1/2 of all urban land)
  - Slum land (lack of titles)
- Centralized transportation infrastructure
- Incentives to maintain high land prices

Reason 3. Increasing inequality…

- Consumption inequality (an inadequate measure) from NSS
  - In urban India, Gini 34.5 to 40.2 (1994-5 to 2008-9)
- Income inequality (NCAER survey)
  - Gini 54 in 2004-5
  - Ballpark of Brazil and S. Africa
- Wealth inequality
  - Holdings of Indian billionaires: 0.8% to 23% of GDP, 1996 to 2008 (Walton)
  - In 2011: 204,000 dollar millionaires, 4.1 million in global top 10% of wealth holders (Credit Suisse)

…& increasing polarization

- Polarized urban land markets
- Different from polarized markets for education and health care
  - Land has no substitute; neither do education & health care
  - The supply of land is fixed—more or less—unlike resources for education & health care
- Effects
  - Privileged pole removes the best land for own use from a tight market
  - Direct effect: drives up the price of the remaining land
  - Indirect effect: some portion of remaining land stays off-market in anticipation of being absorbed by privileged core
  - The non-wealthy (esp. the poor) effectively pay a land tax—through increased rents and decreased ability to buy

RURAL LAND MARKETS

Stylized facts

- Rural land sales are limited in number
  - Despite 130 mn private landholdings
- Sale prices are underreported
  - To underpay stamp duties
- Some proportion of sales are distress sales
- Rural land markets are opaque

Reasons for limited transactions

- Rural land is a unique good
  - It provides income, insurance, and status
  - It is not valued like any other income-generating good
  - Hence, its reservation price is higher than productivity-based price
- Plus:
  - There are community and legal constraints on who can buy
  - Information asymmetries hinder valuation
- Limited evidence of limited transactions
  - Fewer than 10 papers in last 20 years
  - 0.5% or less of available land changes hands annually; compared with 1.5-5% in W. Europe

A numerical illustration

- What if the price of rural land was based on productivity?
- Methodology
  - Use latest output data (Bhalla and Singh)
  - Assume 35% of output is income; real range is 20%-35% (Foster & Rosenzweig)
  - Calculate NPV of 50 years of income, under three scenarios
    - Interest rate > inflation
    - Interest rate = inflation
    - Interest rate < inflation
  - Compare with international data (U.S. & Europe)

Pricing possibilities

State	Output in Rs. per acre, 2003-6 (1990-3 prices)	Rs. '000 per acre in 2010 prices		Annuity to pay 50 years income in Rs. Lakhs/acre		
		Output	Income	Int rate > Inflation	Int rate = Inflation	Int rate < Inflation
Punjab	6,224	19.8	6.9	2.1	3.2	5.2
Kerala	5,611	17.8	6.3	1.9	2.9	4.7
Tamil Nadu	5,311	16.9	5.9	1.8	2.7	4.4
WB	4,916	15.6	5.5	1.6	2.5	4.1
Gujarat	4,792	15.2	5.3	1.6	2.5	4.0
Haryana	4,684	14.9	5.2	1.6	2.4	3.9
AP	4,671	14.9	5.2	1.6	2.4	3.9
UP	4,006	12.7	4.5	1.3	2.1	3.4
Assam	3,639	11.6	4.1	1.2	1.9	3.0
Karnataka	2,832	9.0	3.2	1.0	1.5	2.4
Odisha	2,709	8.6	3.1	0.9	1.4	2.3
HP	2,500	7.9	2.8	0.8	1.3	2.1
Mah.	2,413	7.7	2.7	0.8	1.2	2.0
Bihar	2,296	7.3	2.6	0.8	1.2	1.9
MP	2,283	7.3	2.6	0.8	1.2	1.9
Rajasthan	2,063	6.6	2.3	0.7	1.1	1.7
ALL INDIA	3,425	10.9	3.8	1.1	1.8	2.9

Farmland prices in the U.S. & Europe

USA			Europe		
State, 2011, Top 10	Value: USD/acre	Value: Rs. Lakhs/acre	Country, year	Value: Euro/acre	Value: Rs. Lakhs/acre
New Jersey	12,800	6.4	Netherlands 2007	13,765	8.9
California	9,230	4.6	Arable	14,170	9.2
Arizona	8,000	4.0	Grassland	12,753	8.3
Delaware	7,800	3.9	Belgium 2006	11,012	7.2
Maryland	7,000	3.5	Denmark 2006	9,231	6.0
Florida	6,030	3.0	Italy 2006	6,437	4.2
Illinois	5,800	2.9	Plains	10,850	7.1
Iowa	5,700	2.9	UK 2006	5,425	3.5
Pennsylvania	5,550	2.8	Prime arable 2007	6,275	4.1
Indiana	4,800	2.4	Livestock 2007	3,441	2.2
Bottom 10			Greece 2006 Irrig.	4,899	3.2
Washington	1,960	0.98	Spain 2006	4,211	2.7
New Mexico	1,820	0.91	France 2004	3,846	2.5
South Dakota	1,810	0.91	Germany 2007	3,441	2.2
Texas	1,650	0.82	West Germany	6,478	4.2
Colorado	1,340	0.67	East Germany	1,619	1.1
Kansas	1,300	0.65	Finland 2007	2,530	1.6
Wyoming	1,270	0.64	Sweden 2006	1,500	0.97
Oklahoma	1,190	0.60	Arable	1,719	1.1
North Dakota	1,040	0.52	Grazing	783	0.51

Are the price estimates reasonable?

- The India-wide estimate of Rs. 2.9 lakhs/acre
  = price of land in Illinois & Iowa, both very productive Midwestern "corn-belt" states
  > 4 X price in Kansas and Oklahoma, both productive wheat-growing regions (roughly as productive as Punjab)
  > prices in Spain, France & Germany
- The Punjab estimate of Rs. 5.2 lakhs/acre
  > all U.S. states except New Jersey
  > all European countries except Netherlands, Belgium & Denmark
- If PPP conversions are used (rather than exchange rates), the international prices will be halved
- Hence, the estimated prices are reasonable, even excessive, by global standards

What are the "actual" prices?

- They are unknown
- Evidence from acquisition prices in Chakravorty (2012)
  - Up to 2000, thousands of acres of agricultural land could be acquired for under Rs. 1 lakh/acre
    - Eg., Saidapet (Madras EPZ); Tonnur dam (Karnataka)
    - Now unlikely at less than Rs. 5 lakhs/acre anywhere
  - Several instances where price offers of Rs. 7 to 10 lakhs/acre have been contested for being too low
    - Near Nagpur, near Mangalore, near Raipur in Chhattisgarh, and most famously in Maha Mumbai SEZ (Raigad dist.) and Singur in West Bengal
  - Several price demands of Rs. 20 lakhs/acre and more
    - Mahbubnangar, AP; Unnao, UP; Nandagudi, Karnataka
  - Payments of more than Rs. 50 lakhs/acre in Sanand in Gujarat
  - Haryana's acquisition price policy
    - Price bands from Gurgaon out (Rs. 72, 54, 45, 36, & 22 lakhs/acre)

Acquisition prices in Punjab

- Recent data:
  - Rs 1.5 cr/acre for Mohali's international airport (for land whose "market value" was Rs 50 to 60 lakhs per acre) in 2008
    - 20 times New Jersey, 190 times Kansas
  - Rs 1.5 cr/acre for farms near the highway and 1.25 cr for farms 7 or more km. away, near Mohali
  - From Rs. 19.6 lakhs/acre for waterlogged to 28 lakhs/acre for fertile land in Gidderbaha for a power plant in 2008
  - Rs. 35 lakhs/acre for the Rajpura thermal power plant in 2009
  - Now: Rs. 23-24 lakhs/acre for a power plant being contested in Mansa; farmers demanding Rs. 50-60 lakhs/acre
  - "The minimum cost of good agricultural land in Punjab is Rs. 10 lakhs per acre while on GT Road or near cities it goes over Rs. 2 crore." – Jt. Sec., Agriculture, Punjab, 2007

A NEW PRICE REGIME

Scarcity

- Productivity has little influence on the price of land
- Scarcity is the key
  - Spatial or locational scarcity (as in urban areas)
  - Generalized scarcity
- How scarce is agricultural land?
  - Nationwide: 3 acres/holding in 2005-6
    - Down from 5.6 acres/holding in 1970-1
  - Kerala: 0.6 acres; Bihar: 1 acre; WB, UP, TN: 2 acres → Punjab: 10 acres
  - France: 110 acres; U.S.: 450 acres; → Brazil, Argentina…

Why now and not before?

- Key question: Can reservation price be met?
- Before:
  - Widespread poverty, land ceiling laws, weak credit markets
    - There were few buyers anywhere
- Now:
  - Increasing money supply (white, black, foreign) & stronger credit markets
    - There are many buyers in some regions
  - Rising significance of land as a status good
    - With rising inequality and diminishing marginal utility of income
- This is not a bubble; It is a new price regime

Implications for land acquisition 1

- Four types of land markets (Chakravorty 2012)

  Type A: Many transactions, known prices, no gap between reservation & "market" price

  - All of urban India & several rural regions (Punjab, Haryana, much of TN, Kerala)

  Type B: Several transactions, knowable prices, narrowing gap between reservation & "market" price

  - Rural regions around district centers and market towns

  Type C: Few transactions, opaque prices, sizable but unknown gap between reservation & "market" price

  - Deep rural regions, Scheduled Areas

  Type D: Priceless land, cannot be valued through market mechanism

  - Niyamgiri in Odisha, many Common Property Resources

Implications for land acquisition 2

- Pricing process in Land Acquisition bill (LARR)
  - Quadruple all rural “market” prices
  - Double all urban “market” prices
- May possibly be an appropriate approach for Type C lands
  - But there are many problems
- Will create havoc in Type A & Type B lands
  - Major cost implications, for everything, esp. public goods
  - Major regional development implications, more significant than Freight Equalization Policy
  - And many other issues…
- This bill should not become law

Known unknowns

- Quantity & spatial distribution of:
  - Black money in real estate
  - NRI money in real estate
- Income and wealth distribution at metropolitan scale
  - esp. Mumbai, Delhi, Bangalore
- Non-local buyers of agricultural land
  - Relatively new phenomenon, almost nothing known
- Sale prices in deep rural regions
- Quantity of distress sales
- Unknown unknowns?

“Buy land. They ain’t making any more of the stuff.”

Will Rogers

American cowboy & comedian

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