

**Introduction to eco-city planning in China:
the context of urban transformation and eco-city
development**

中国生态城市规划介绍：城市转型与生态城市的出现

Fulong Wu 吴缚龙

School of City and Regional Planning, Cardiff University
卡迪夫大学城市与区域规划学院

Presented at the 3rd International Conference on Next Generation Infrastructure
Systems for Eco-cities, Shenzhen, 11-13 Nov 2010

Outline 提纲

1. Urban transformation in China: the pathway to pathway to the world-factory regime 世界工厂体制的路径和城市转型
2. Constraints and challenges 制约与挑战
3. Coping with the global financial crisis 应对危机
4. The characteristics of Chinese cities: spatial fragmentation 中国城市的特点与空间分割
5. Transformation of Chinese cities 中国城市转型
6. Introduction to the emergence of eco-city and its planning 生态城市规划的兴起
7. Conclusion 结论

1. Urban transformation in China: the pathway to the world-factory regime 世界工厂体制的路径和城市转型

The starting point of reform 改革的起点

State-led industrialization, centrally-planned economy, effective accumulation, workplace, and the 'redistributive state' 国家导向的工业化、计划经济、有效积累、单位、分配型国家

A large pool of idle production factors 生产要素的富裕过剩

The characteristics of world-factory regime

世界工厂体制的特点

1. Capital injection into export-oriented manufacturing sector 资本注入、出口导向的制造业
2. Local governments are entrepreneurial agents 地方政府承担企业式经营城市运作
3. State social management 国家的社会管理
4. Open economic system: capital flows, free trade, territorial competition 开放系统：资本流动、自由贸易、地域竞争

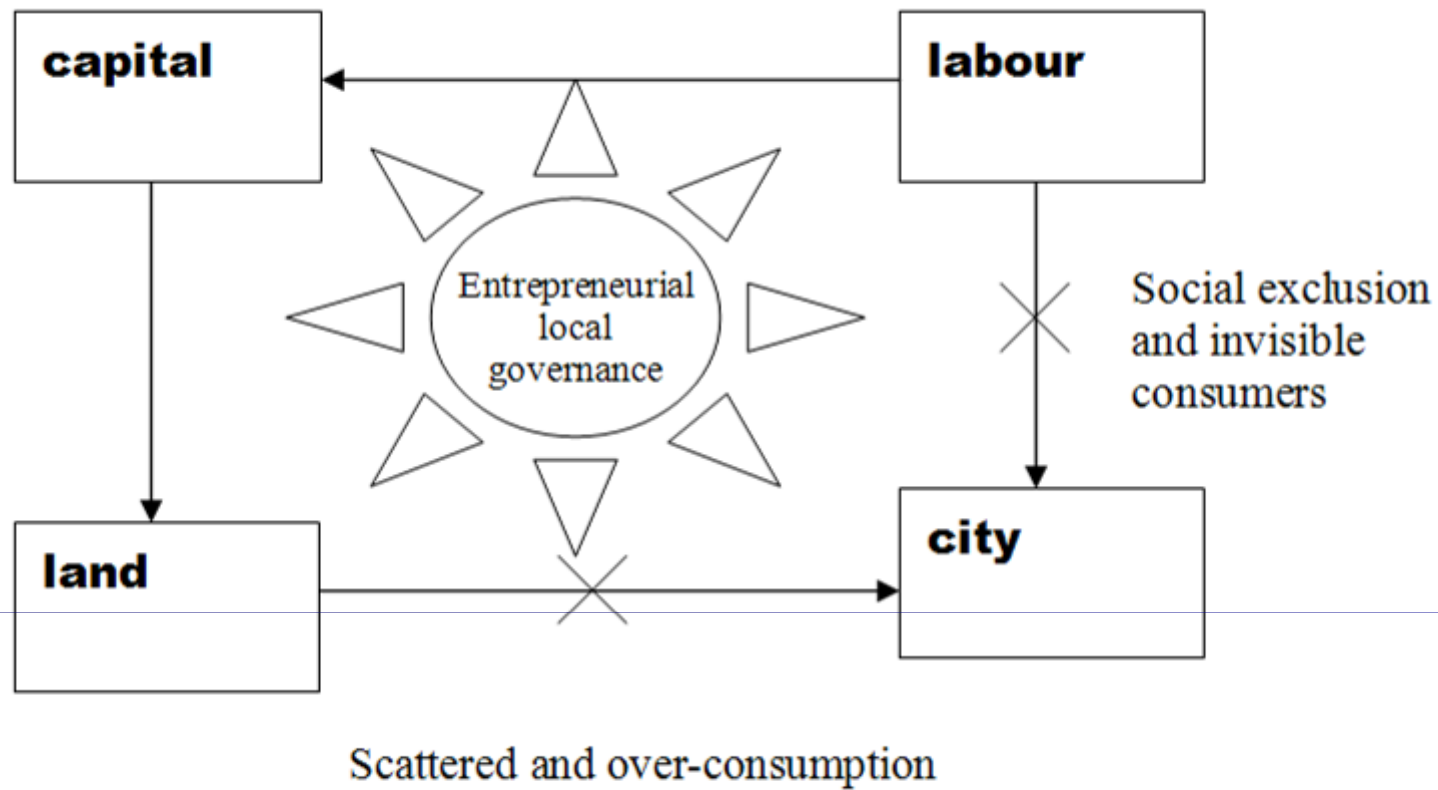


Figure 1 The dynamics of the workshop of the world

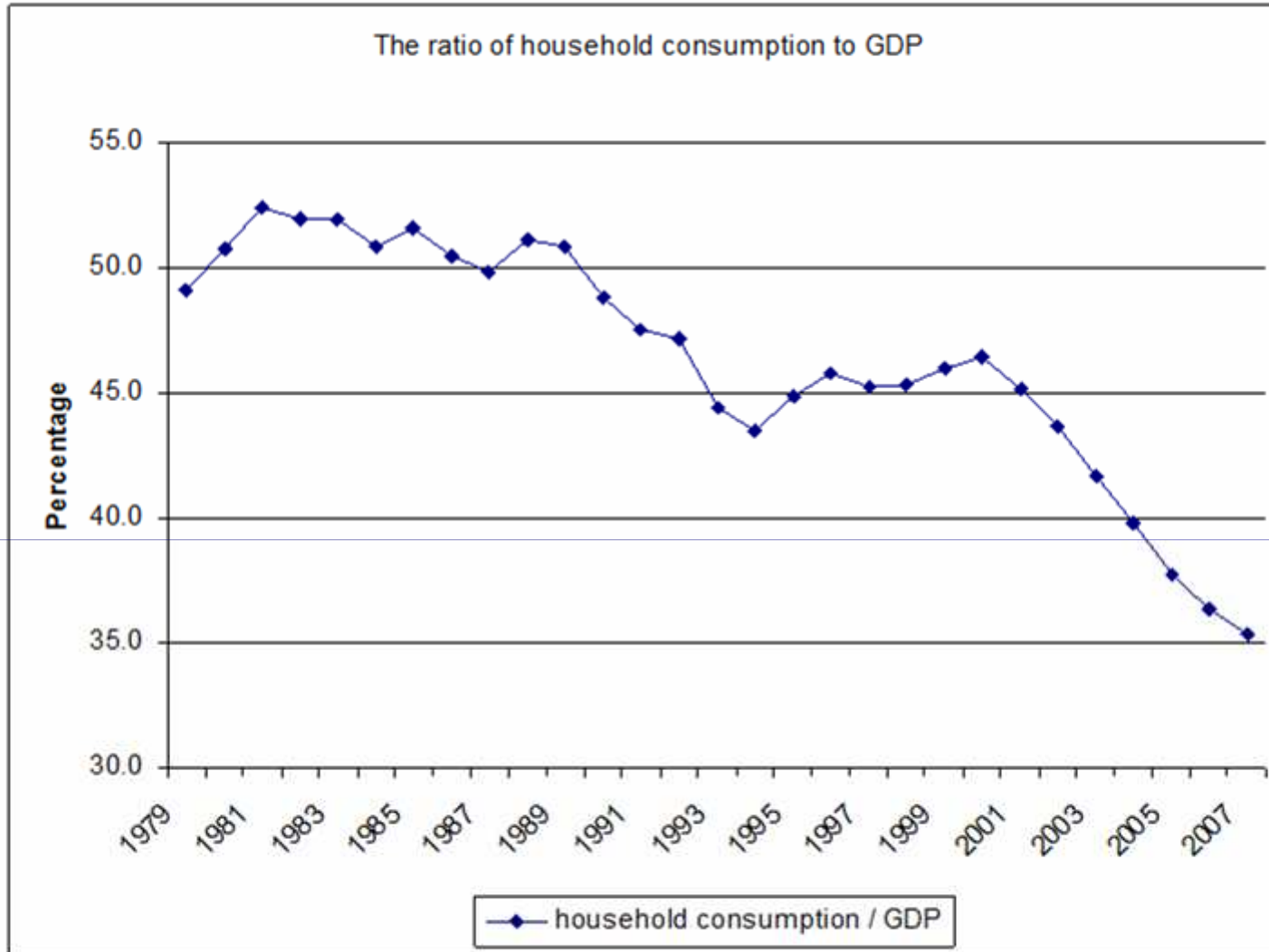


Figure 4 the declining household consumption in GDP

Operation of world-factory regime 世界工厂体制的运作基础

Turning the legacies into competitive advantages 将历史基础转化为竞争优势

- land 土地
- population 人口
- planning 规划控制

Fiscal arrangement 财税体制

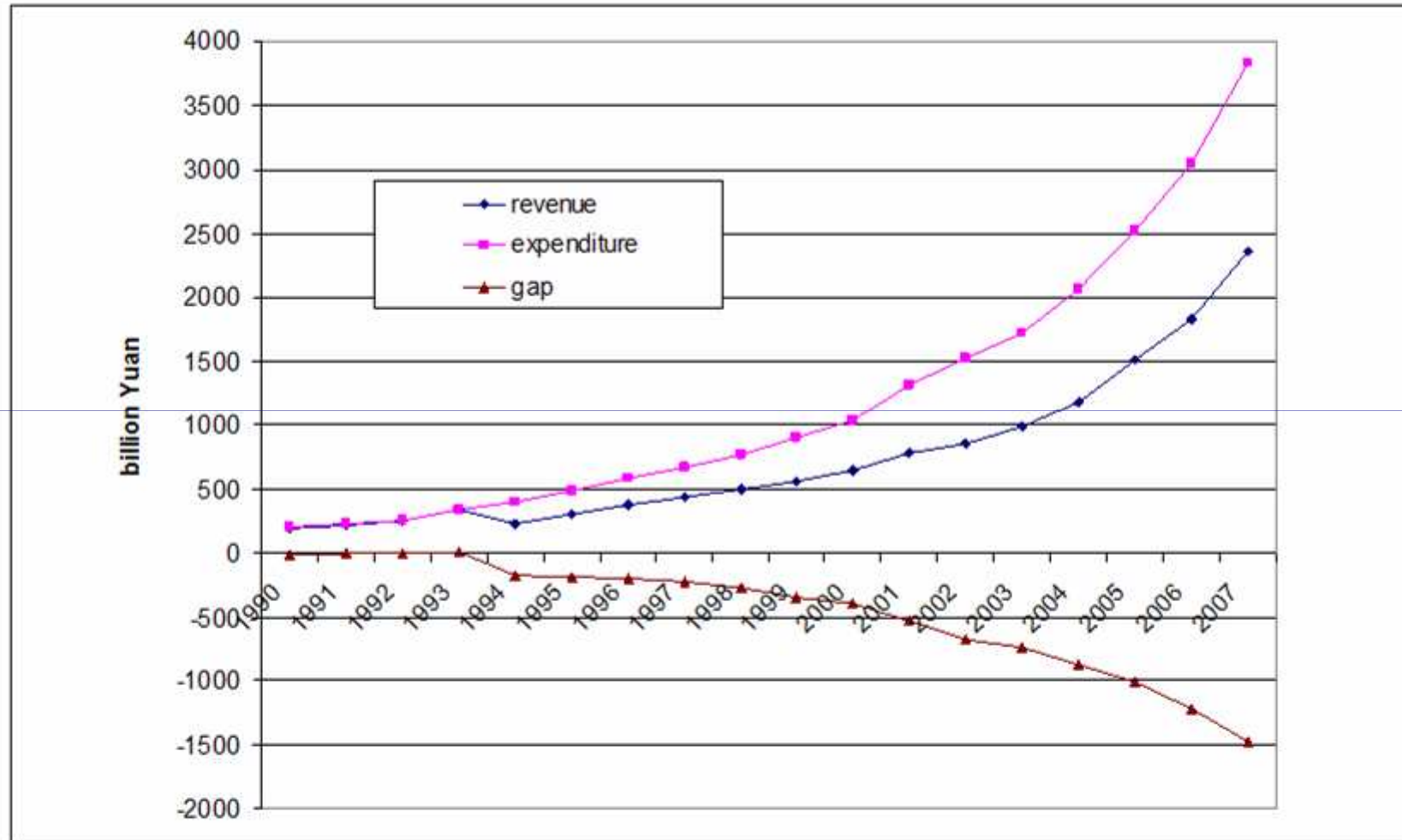


Figure 2 the fiscal revenue and expenditure of local governments and the gap of funding 1990-2007

Enhanced fiscal extraction 财政汲取能力

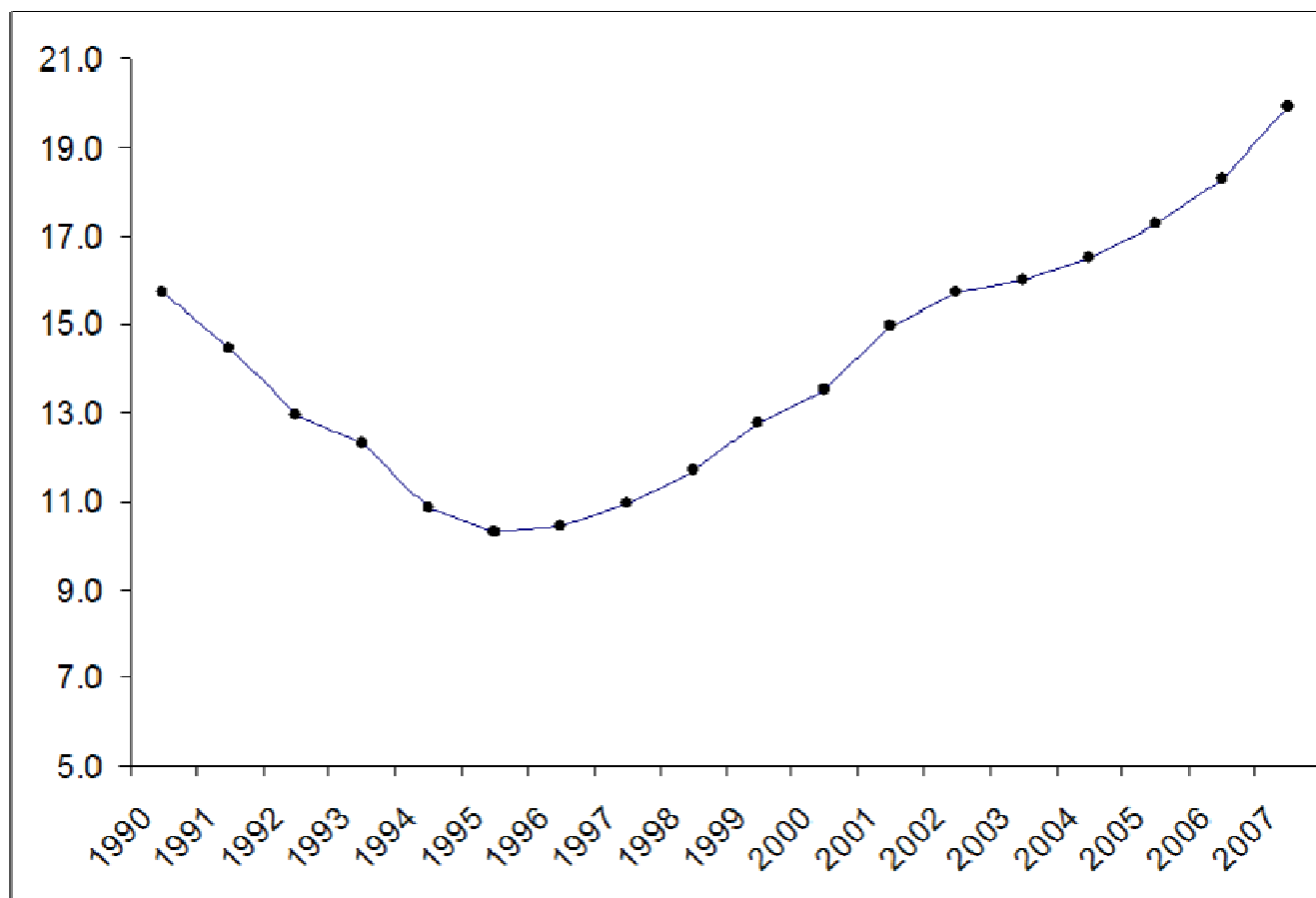


Figure 4 The percentage of the revenue in GDP, indicating the enhanced fiscal extraction capacity

Source: CNSB (2009)

Compressed labour wages and rural-urban inequalities 劳动力成本压缩和城乡收入差距扩大

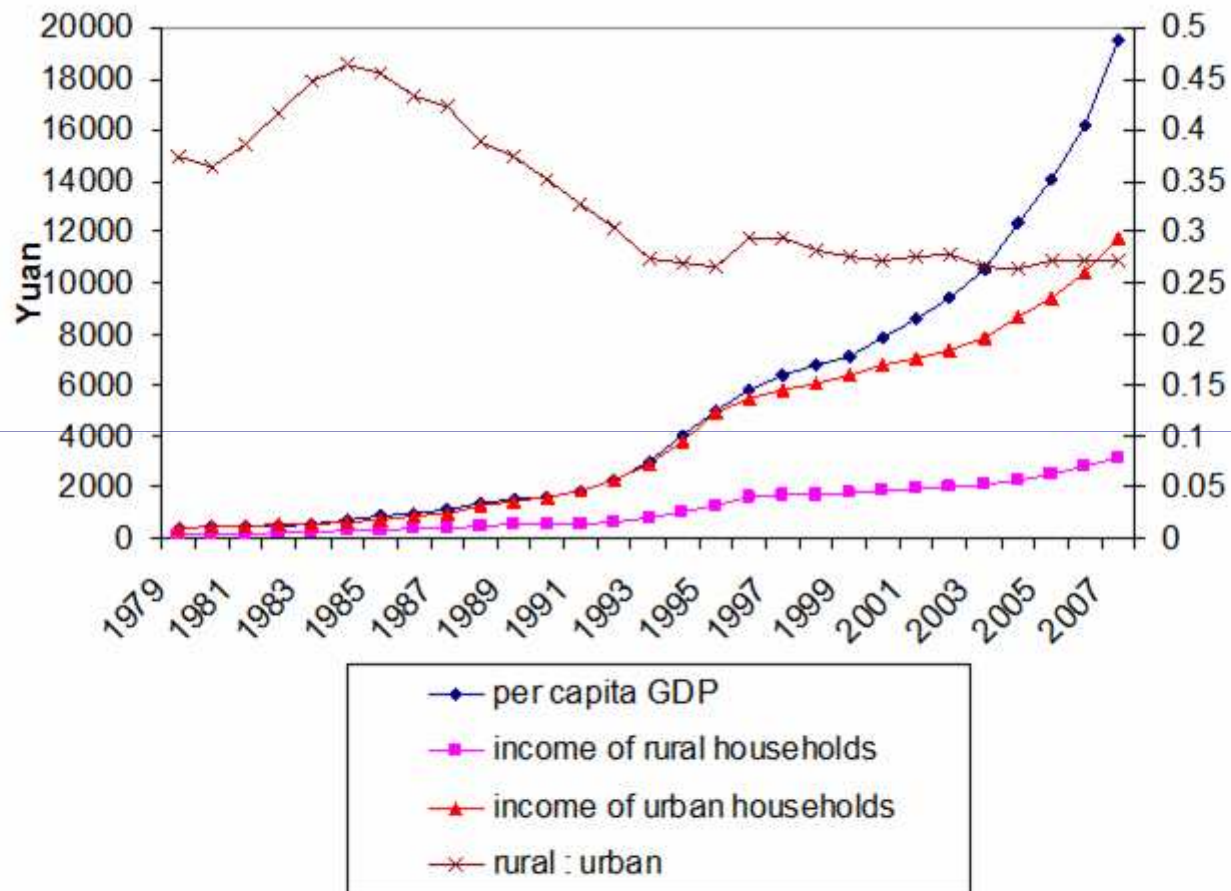


Figure 5 increasing income of urban and rural households and the gap between the two groups

Governance mode 治理模式

Commodification of housing, health care and education 住房、医疗、教育的商品化

Emphasizing greater individual responsibilities 个人责任的强化

'Match of performance' 晋升锦标赛模式 (周黎安)

Maintaining structural coherence 结构的整合性和 '专项治理'

Enhancement of social policies 社会政策的强化(王绍光)

2. Long-term constraint and challenges 长期制约和挑战

Three major components for the regime: 结构的三个稳定因素: Strong state capacity 国家能力, Low trade barrier 贸易与市场, Low-cost labour supply 低成本劳力

External: global trade imbalance, climate change 外部因素: 全球贸易不平衡和气候变化

Internal: the population dividends and 'surplus labour' 内部因素: 人口红利消失与过剩劳力的可持续问题

External constraint: global trade imbalance

外部制约，全球贸易不平衡

Foreign exchange reserve

外汇积累

Exchange rate change 人民

币汇率

Trade protectionism 贸易保

护主义

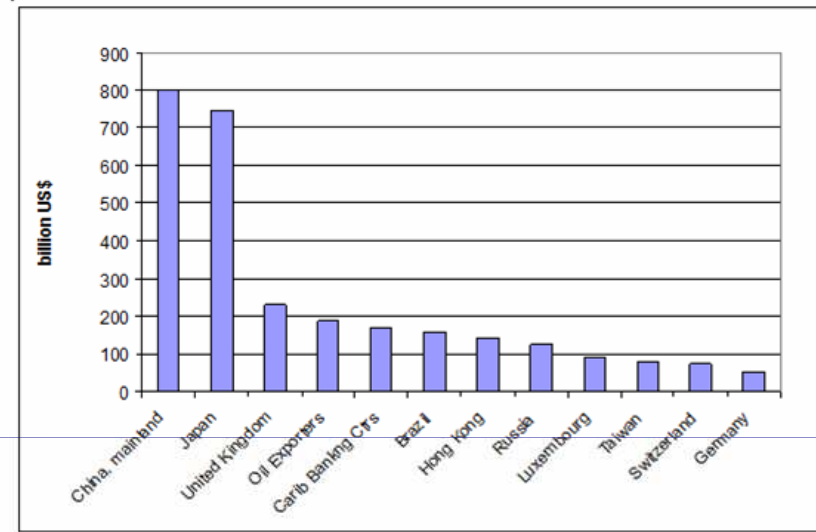


Figure 7 major foreign holders of US treasury securities in Oct 2009 (Source: US Department of the Treasury / Federal Reserve Board)



Migrant shortage and possible Lewis turning point 民工荒和刘易斯转折点

Widespread migrant shortage since 2005 民工荒始现

Cai Fang (2007, 2010) suggest the coming Lewis turning point 刘易斯转折点 (蔡昉)

Evidence: the rising migrant cost by 19% in 2009 证据: 民工成本2009年上升19%

Regardless the turning point, labour reproduction costs 无论转折点问题, 民工劳力在城市的自身生产的制约

3. Coping with the crisis and its implication 应对危机和长远影响

Strengthening investment-driven accumulation 强化了投资推动 and
Infrastructure development is at the core 基础设施建设是核心

4 trillion Yuan:

1,800 billion Yuan to railway, roads, airport, and urban and rural electric grids

1,000 billion post-earthquake reconstruction

370 billion rural livelihood and infrastructure development

Rising SOEs as state agents 国企的角色

Concerns over the 'advance of state sector and decline of private sector'

Injection of capital liquidity before the recover of the real economy, investment in infrastructure etc. fixed assets 流动性和固定资产投资

In 2009 1.5 trillion Yuan of land revenue was raised through land leasing 土地出让收益15000亿

Table 3 the land revenue and its percentage to budgetary local revenue in selected cities (2009) (billion Yuan)

City	Land revenue	Budgetary local revenue	The percentage of land revenue to the local revenue
Hangzhou	105.4	101.9	103.39
Shanghai	104.3	254.0	41.06
Beijing	92.8	202.7	45.79
Tianjin	73.2	n.a.	n.a.
Guangzhou	48.9	265.6	18.41
Ningbo	48.8	96.6	50.51
Chongqing	44.0	68.2	64.53
Wuhan	36.1	100.5	35.92
Chengdu	32.4	84.6	38.30
Xiamen	30.3	45.1	67.12

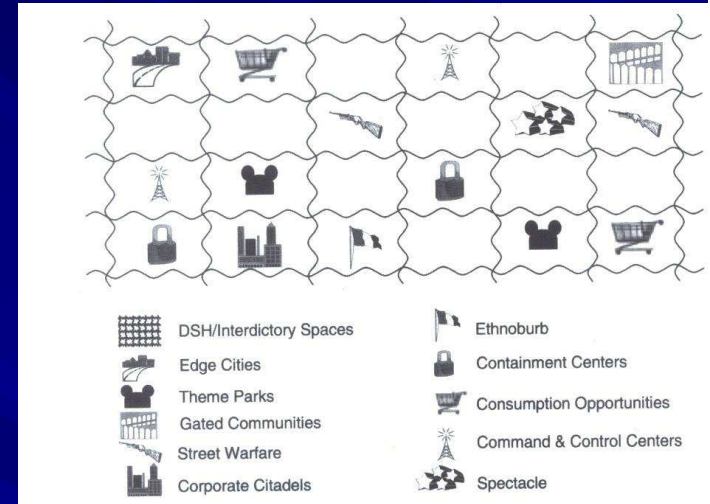
Source: Yuan, 2010: p.159; Xinhua News (www.xinhua.com: 10 Jan 2010)

4. Characteristics of Chinese cities: fragmented spatial form 城市空间的格局与分割

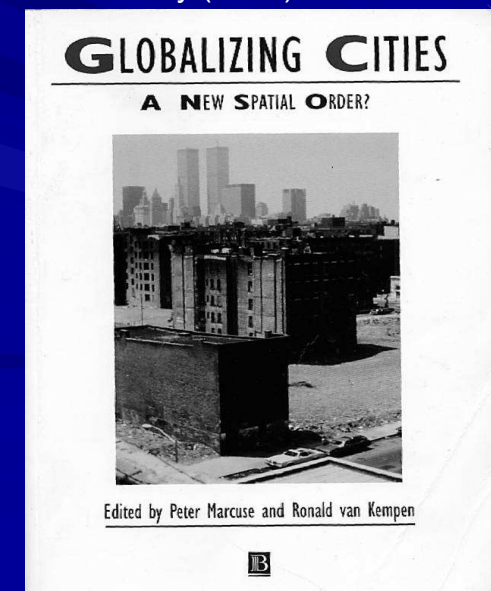
as 'postmodern urbanism' / flexible
accumulation? 后现代城市主义?

A new spatial order of 'globalizing
cities'? 全球化城市空间新格局?

The Chinese logic: world-factory
regime 中国的城市逻辑: 世界工
厂模式



Source: Dear and Flusty (1998)



Informal settlement (urban villages) 城中村

Is it slum? 贫困区?

Is it '*favela*'? 非法居民区?

Is it '*ghetto*'? 隔离区?

Is it a privately governed community? 私有管治?



Village redevelopment 城中村改造问题

For providing decent housing? 提供住宅?

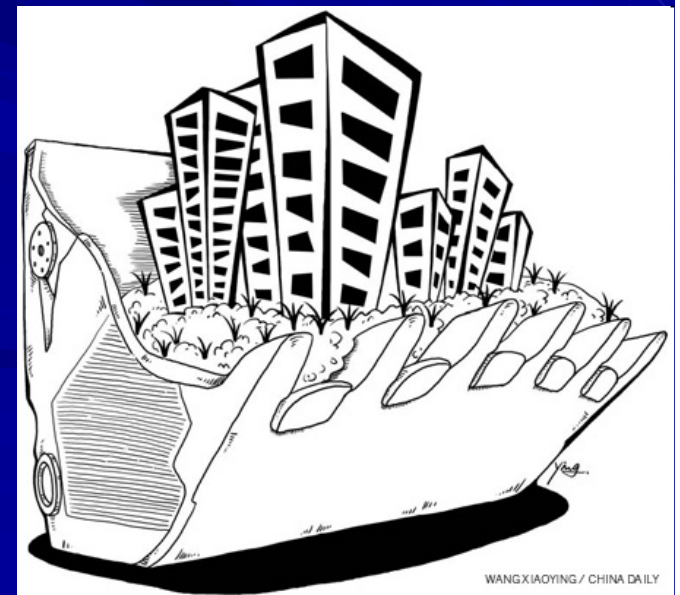
For improving the living environment? 改善环境?

For creating a better urban image? 提升形象?

For generating land revenue? 扩大土地收入?

For creating space for other uses? 创造空间?

For triggering the change of economic structure, upgrading the quality of 'residents'? 经济结构转型?



Packaged suburbia 包装郊区主义

Designed suburbs 设计的郊区

Chinese 'new urbanism' or 'neo-urbanism'? 中国式新城市主义

Branding the place 打造地方?

Self-governed communities? 私有治理?



Uprooted urban society 无根的城市社会

Fei Xiaotong: differentiated association
费孝通：差序格局

Declining totalitarian society 全能社会的
消失

Migrants as 'sojourners' 移民作为‘过路
人’

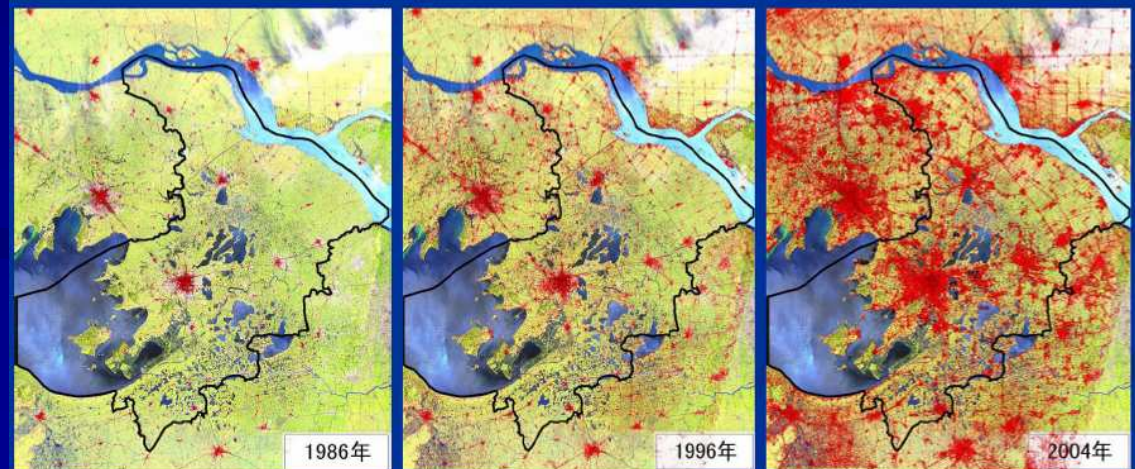
Transforming traditional neighbourhood
传统邻里的演变



5. The transformation of Chinese cities: 中国城市转型的大背景：积累体制转变

Mr. LI Yuanchao: 李源朝

The new Sunnan model is characterised by “two lows, two highs and two overs.” 新苏南模式，两低、两高、两过度



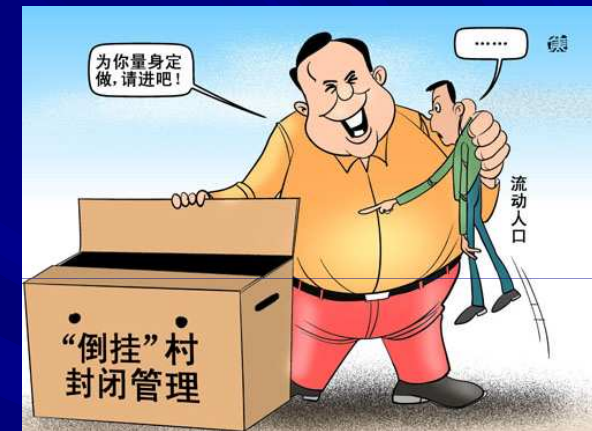
5.1 From de-regulation to re-regulation 从分 松到再管治

The need for constraining labour cost
disappears 不需再压缩劳动力成本

A new Keynesian demand management 新凯恩
斯需求管理?

Rolling out the welfare coverage 福利扩张

Territorialisation of governance: *shequ* and
governing space 管治的社区化和管治空
间



Source: view.ce.cn



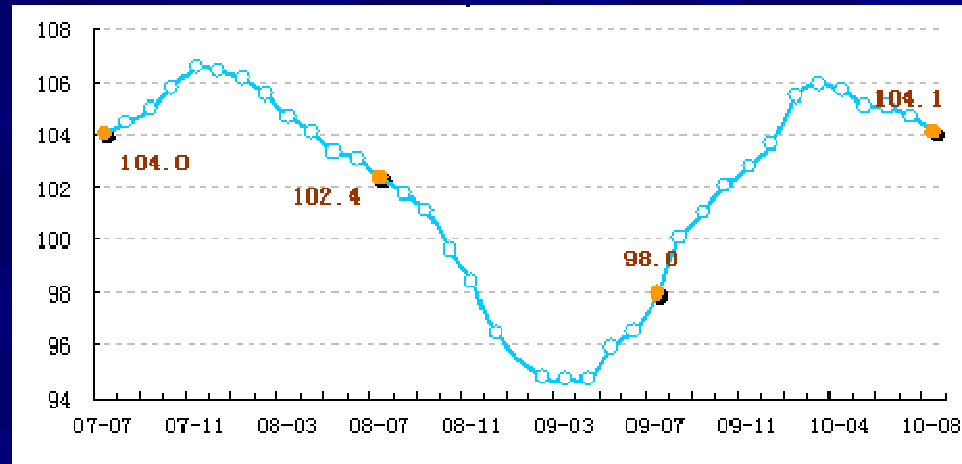
5.2 From global trade imbalance to property bubble 从全球贸易不平衡到房地产泡沫

The issue of 'liquidity' 流动性问题

The boom and control 过热和控制

The sustained pressure 持续压力

The 'hot money': the currency vs property market 热钱问题



The change in the Chinese Real Estate Development Index from 2006 to 2009 (the base line year 2000 = 100)

Source: China Economic Information Statistic Database 2009



5.3 From urban-rural dualism to structured exclusion 从城乡二元到结构化的社会排斥

hukou and urban-rural dualism 户口

A new Keynesian style of demand management to boost demand 新凯恩斯的需求管理

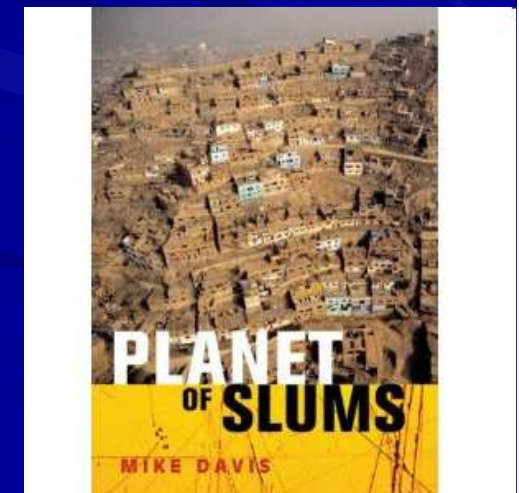
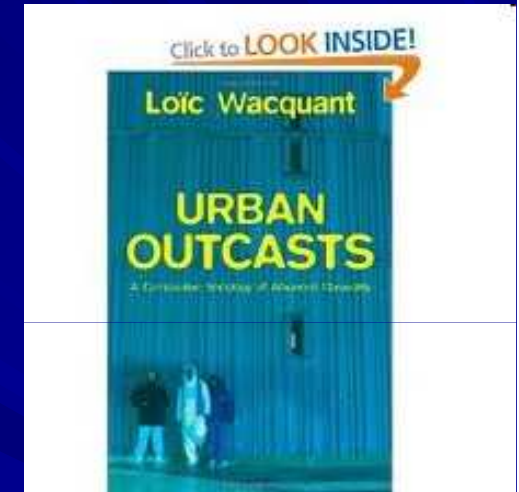
Rising middle class vs. jobless people 新中产和失业问题

De-industrialization? Structured exclusion 去工业化问题和社会排斥



French Banlieue and riots in 2005

source: commons.wikimedia.org and www.fotolog.com



5.4 Economic restructuring, innovation and low-carbon eco-city 经济转型、创新和低碳生态城市

Inevitable restructuring 经济转型势不可免

Indigenous innovation capacities 自主创新

Industrial parks and science parks 科技园区

Low-carbon eco-city 低碳生态城市

6. China's eco-city development in the wider context of post-crisis regime change 中国低碳生态城市发展的背景

Western advanced market economies: from Fordist to post-Fordist transition --> neoliberalism, social polarization
西方的后福特主义, 新自由主义, 社会极化

Transitional economies of CEE: from plan to market, part of the global economy 东欧转型社会的市场主义和全球经济

The Chinese economy: the rise and fall of world-factory regime 中国经济: 世界工厂的兴起和消解

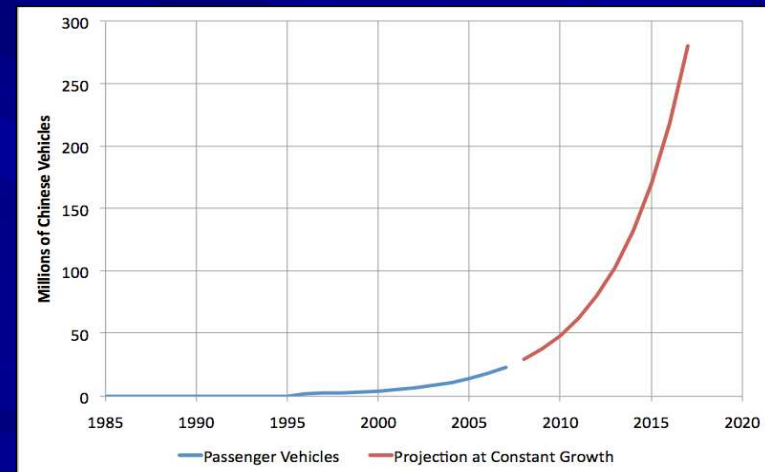
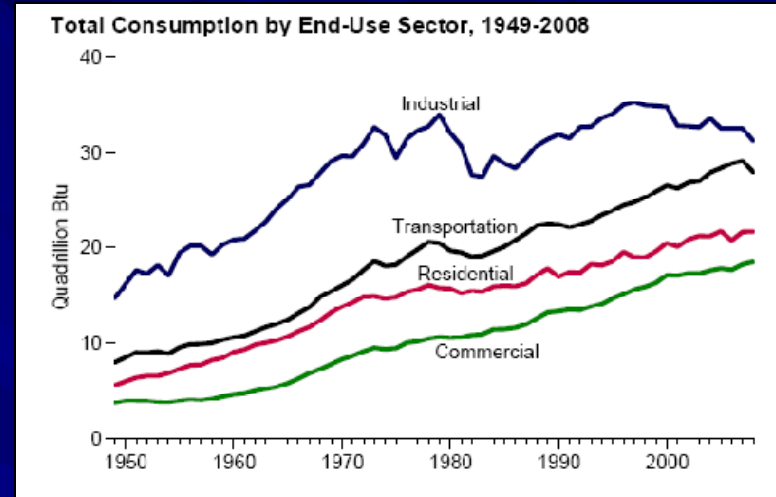
Eco-city imperative in China 中国的生态城市的 必要性

Industrial sector is main energy consumption sector 工业是主要的能源消费部门

Coal: 70% in the total energy consumption, 煤炭在能源消费70%以上

The number of vehicle ownership is increasing dramatically 私有机动车增长迅猛

Reduction of carbon intensity (per unit GDP) by 40-45% from the base of 2005 排放强度在2005年基础上下降40%到45%



Source: CNSB

Dongtai 东滩

The world's first eco-city

84 km², planned 80,000 people by 2020

Designed by Arup, contracted by Shanghai Industrial Investment Corporation (SIIC)

"Compact city": work in Chongming Island

"Green city": carbon neutral



Challenges for Dongtan 东滩存在的挑战

How to obtain the quota for land construction 土地

How to achieve environmental sustainability and social sustainability 环境和社会

How to maintain environmental impacts of development, constraining it from evolving into a real estate project 房地产

How to connect inter- (private) and intra- transport (public) 交通

How to develop the project within changing governance involving the central, Shanghai municipality and Chongming County governments 政府和治理问题



Photographed by Fulong Wu, 08 Nov 2010

Tianjin China-Singapore eco-city 天津中新生态城

30 km²: about 1/20 of Singapore

Between Hangu (20 km²) and Tanggu (10 km²),

A joint investment of 30 billion yuan

50-50% joint investment company

Non-arable land: 1/3 saltpan, 1/3 deserted beach, 1/3 polluted water surface

Neighbourhood unit, eco-cell

Industrial parks and producer services



Source: news.sohu.com, 2009



Caofeidian international eco-city 曹妃甸 国际生态城

Relocation of Capital Steel

74.3 km², population 800,000

SWECO designed the plan

Key state enterprises

Very detailed 109 planning indicators and 32 management indicators



Source: people.com



Shenzhen Guangming New District 深圳光明 新区

2007, merge between Guangming and Gongming two street offices

156.1 km²,

2010, low-carbon city example by MHRUC

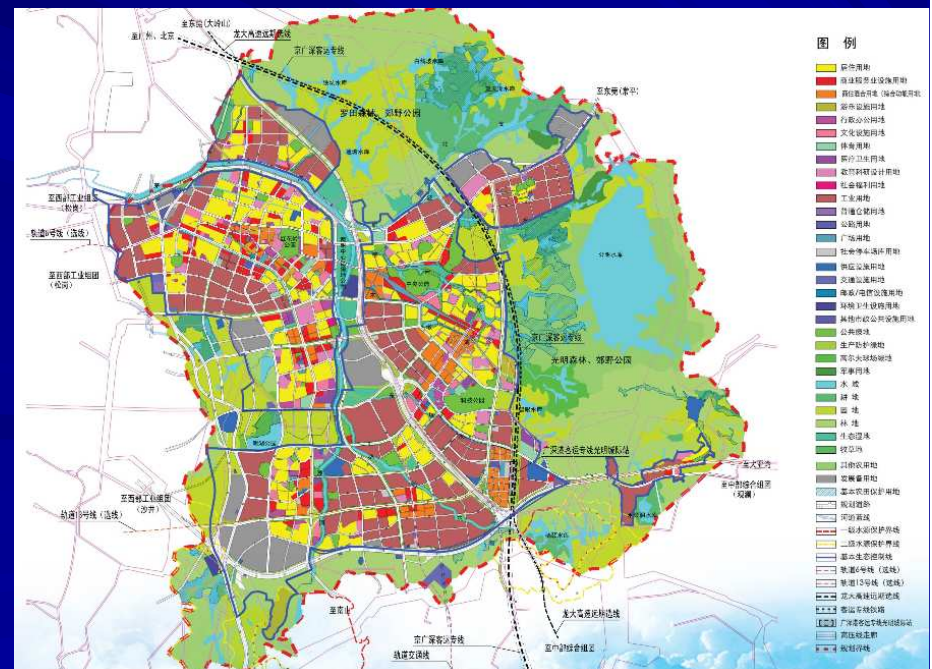
Industrial clusters, eg. LED

“Ecological high-tech new town”

Reflect the transition from earlier model to a new mode of development



Source: sznews.com



Comparison 比较

Upgrading or new development 改建或新建

Combination of residential and industrial development 居住和产业发展的关系

Location: accessible, under-developed, enclave kind of new town?
区位: 独立、没有开发的

The land: land quality 土地质量

Actors: local government + central gov. + overseas investors + planners + ... and partnerships? 开发的角色: 地方政府、海外投资、规划机构、合作类型

Diagnose the eco-city development 生态城市发展的分析

As place promotion – helping a positive and futurist image
地方提升

As local growth pole – helping the economy move up the ladder of service industry
开发和增长的极

As entrepreneurial endeavour – helping the joint development
企业化经营

As a national exemplar – helping to spread the sustainable development approach to other places
国家示范

As a solution to cutting greenhouse gas emission
减排措施

The future of eco-cities 生态城市的未来

The eco-cities should be 'sustainable places', they should not be 'enclaves' of the rich, or 'technoburbs' 是否是可持续的社区? 还是科技飞地

Not just a technical solution, but also a social project: who builds its, for whom? 是否是社会工程还是技术解决方案

Governance in the eco-city is critical towards its success (institutional arrangement) 治理和制度架构是关键

Is the Chinese turn to the eco-city genuine? Can the eco-city be built? 中国建生态城市是真的吗, 建设的可能性

Changing conditions in the post-crisis era: external and internal 世界工厂的内外制约因素

Economic cost of environmental damages 环境破坏的经济成本

Rising income of the urban people 收入上升、内需扩大

The capacities of municipal finance 市政的能力

International / the central government pressures 国际和中央政府的要求

Lessons might be learnt 可能的教训

Place promotion? 地方推销?

Futurist city or the future of city 未来城市还是城市的未来

Economic vs. social 经济和社会

Exemplar or ordinary practices 特例还是普遍实践?

Exemplar or 'ordinary practice' 特例还是普遍实施 exemplars are overwhelmingly important



Arup has won the Sustainability Award
at the British Business Awards 2010

Source: arup web page

2009 ISOCARP Award:
Changxingdian low carbon city
planning

2010 ISOCARP award:
*Planning for Low Carbon Regional Urban-Rural
Systems: Zhengbian New District Plan, Zhengzhou
City*

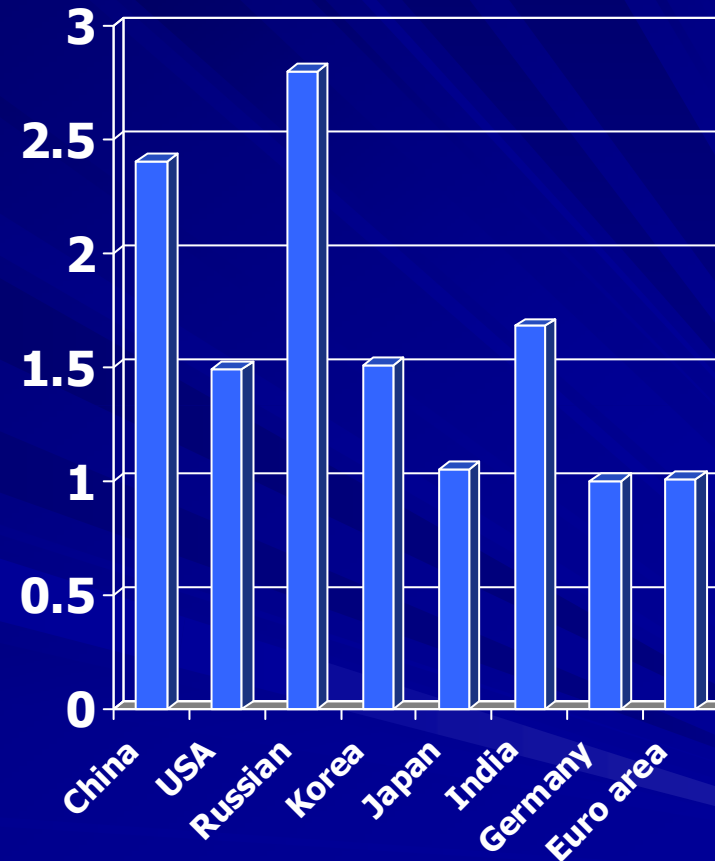


The need for an infrastructure approach 需要 基础设施的方法

Great potential for energy saving

Decline in the world-factory regime would 'automatically' reduce the emission

USA: residential 40%,
China 20%

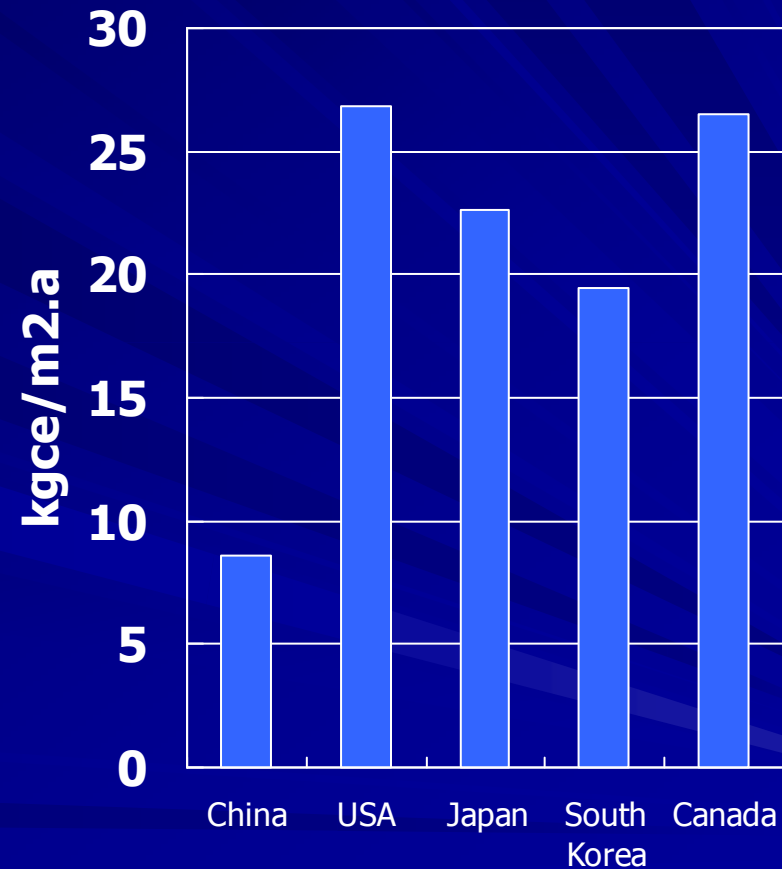


Energy consumption (kg oil equivalent) per PPP\$ 2005, Source: WDI database

Changing behaviour and the need for eco-cities 行为变化和对生态城市的需求

Significant impact of changing behaviour along with the income increase;

Two sides: 1) demand for better quality environment 2) significant potential increase in energy consumption



Energy consumption in residential buildings

Conclusion 结论

Chinese eco-cities emerge mainly as exemplars; they are developed under the specific context; The transformation of Chinese cities is driven by the changing regime of accumulation, namely world-factory regime 生态城市的规划多为范例, 其规划要考虑世界工厂模式的转型

The weakening of world-factory and the rising income and consequent demand for better quality life are two major parameters to define the planning of eco-city: 世界工厂的演变和收入提高是生态城市规划要考虑的两个重要因素

Eco-cities are possible, but there are some potential problems: the need to consider eco-city as sustainable places 生态城市在中国是可行的, 但要把设想成可持续社会

Infrastructure development is the core but more is needed 基础设施建设是手段, 需要考虑相关因素