



中国物流绩效评估指标研究

The study on logistics performance evaluation index of China

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CATS是直属于中国交通运输部的专业科研机构，主要从事现代物流业和综合交通发展战略、政策、运输统计和运行分析、信息化和智能化建设、物流大数据分析等

CATS is a professional scientific research institution affiliated to China's Ministry of Transport. The main research fields of CATS include Modern logistics industry and comprehensive traffic development strategy, policy, transport statistics and operation analysis, information and intelligent construction, logistics big data analysis, etc.



定期分析报告

Periodic analysis report



月度(Monthly)

综合交通运输运行月度监测报告

Monthly monitoring report of comprehensive transport operation

高速公路运行月度监测报告

Monthly monitoring report of expressway operation

季度(Quarterly)

综合交通运输运行季度分析报告

Quarterly analysis report of comprehensive transport operation

中国主要城市骑行报告

Ride reports of China's major urban

年度(Yearly)

中国智慧物流大数据发展报告

Big data develop report on China smart logistics

中国新能源公交车推广应用报告

Application report of China's new energy bus promotion

中国主要城市公共交通分析报告

Analysis report of China's major urban public traffic

高速公路运行年度分析报告

Yearly analysis report of expressway operation

中国主要城市交通分析报告

Analysis report of China's major urban traffic

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专题分析报告

Thematic analysis report



2017中国智慧物流大数据发展报告

Big data development report on China smart logistics in 2017



2016年中国主要城市交通分析报告

Analysis report of China's major urban traffic in 2016



2016年中国主要城市交通分析报告

Analysis report of China's major urban traffic in the second and third quarter of 2016



2017年中国主要城市骑行报告

Ride reports of China's major urban in the first quarter of 2017



2015年度中国新能源公交车推广应用报告

Application report of China's new energy bus promotion in 2015

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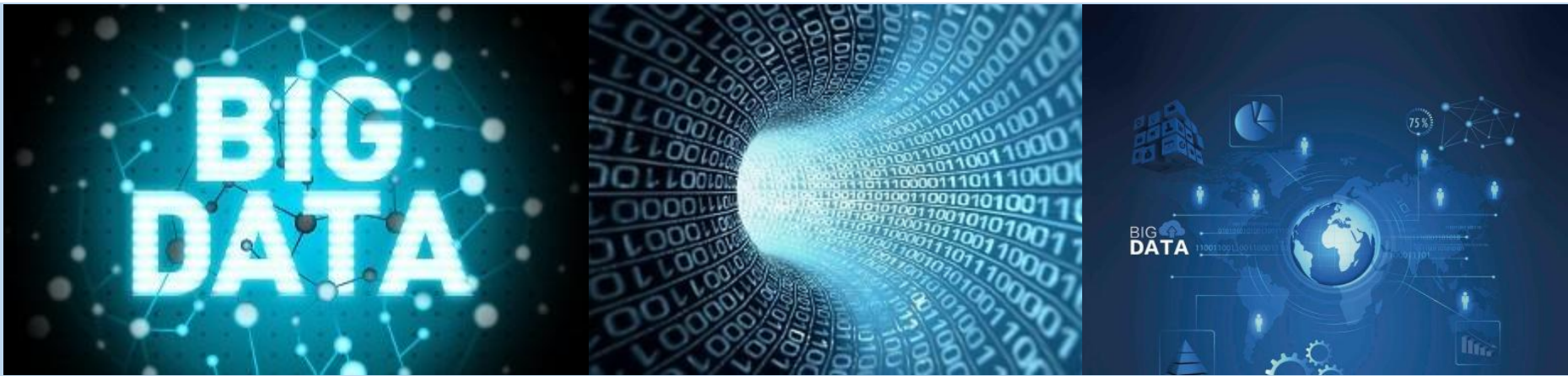
1. 关于宏观物流运行评估指标

Evaluation index of macro logistics operation



2. 交通运输行业物流效率评价指标体系相关研究

Research on the evaluation index system of logistics efficiency in transportation industry



1

Evaluation index of macro logistics operation

关于宏观物流运行 评估指标



物流业发展得到各方面的高度重视

The development of the logistics industry has received much attention in all aspects

■ 国务院：物流业发展中长期规划（2014-2020年）

State department: Medium and long term planning of logistics industry (2014-2020)

- 物流园区等基础设施规划建设
The planning and construction of logistics park and other infrastructure
- 多式联运组织和推广
Multi-modal transport organization and promotion
- 城市和农村物流发展
Urban and rural logistics development
- 物流装备改造升级
Logistics equipment upgrading
- 物流信息化、标准化建设
Logistics informatization and standardization construction
- 循环低碳绿色物流发展
Circular low-carbon green logistics development

物流业发展得到各方面的高度重视

The development of the logistics industry has received much attention in all aspects

■ 交通运输部：关于推进供给侧结构性改革促进物流业“降本增效”的若干意见

Ministry of transport: Some opinions on pushing forward the structural reform of supply side and promoting the logistics industry to reduce cost and increase efficiency

— 加快构建衔接顺畅的基础设施网络，推进物流大通道建设

Accelerate building a cohesive infrastructure network, and promote the construction of large logistics corridor

— 积极推动“互联网+”高效物流，打造物流信息高速公路

Actively promoting "Internet +" efficient logistics, building a logistics information highway

— 大力推广先进运输组织方式，发展海铁联运、陆空联运和甩挂运输等方式

Vigorously promoting the mode of advanced transport organizations, developing sea-rail combined transport, Train-air-truck Transportation and transportation with dumping trailer and other forms

如何科学评价中国物流运作的效率？

How to evaluate the efficiency of China's logistics operation scientifically

我国与发达国家物流方面的差距在那里？

Where is the gap in logistics between China and the developed countries

提升中国物流效率和服务水平的路径和方法是什么？

What is the path and method to improve China's logistics efficiency and service level

It is very important!



常用的三个指标 Three commonly used indicators

物流总费用占GDP比率 The ratio of total logistics cost to GDP

用一个国家或地区在一定时期内消耗的物流总费用与生产的GDP之间的比率，是单位GDP消耗的物流成本，反映一个国家或地区宏观物流成本水平，这个指标源于美国，被世界通用。



The ratio between the total cost of logistics and the GDP of production in a country or region in a certain period of time is the logistics cost of unit GDP consumption, which reflecting the macro logistics cost level of a country or region. this indicator originated in the United States and was used worldwide.

常用的三个指标

Three commonly used indicators

物流总费用占GDP比率

The ratio of total logistics cost to GDP

物流总费用

total cost of logistics

=

运输费用+保管费用+管理费用

Transportation cost + keeping cost + Management cost

物流成本指标：

Logistics cost index

物流总费用 total logistics cost

GDP

常用的三个指标

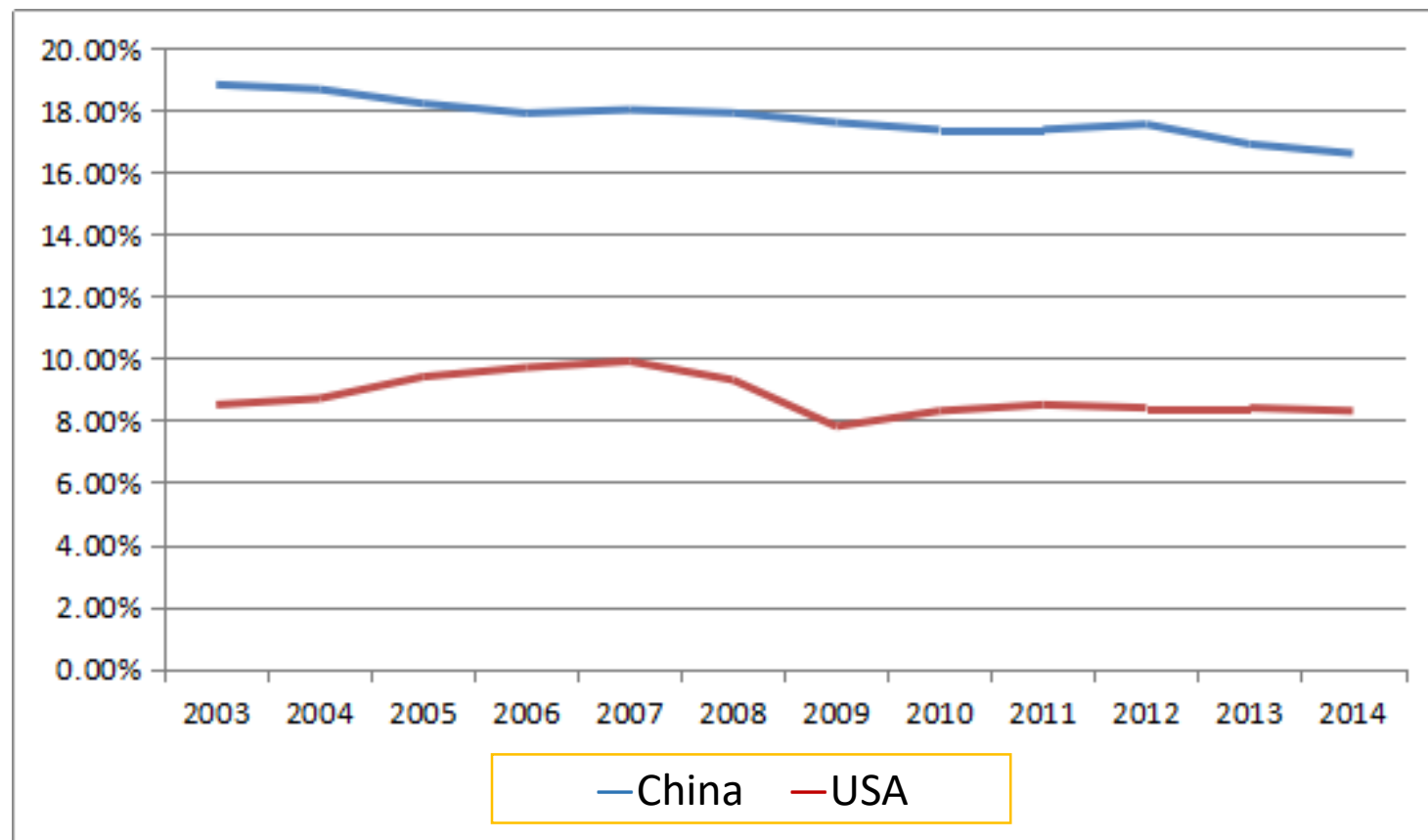
Three commonly used indicators

物流总费用占GDP比率

The ratio of total logistics expenses to GDP

2016年物流总费用占GDP比率为14.9%，连续三年呈加速回落趋势。高于美日约6个百分点，高于金砖国家印度和巴西约3个百分点。

The ratio of total logistics cost to GDP is 14.9% in 2016, tend to go down for three years. It is about 6% higher than the US and Japan's. about 3% points higher than India and Brazil's.



常用的三个指标

Three commonly used indicators

物流总费用占GDP比率

The ratio of total logistics expenses to GDP

区域district	国家country	GDP (十亿美元) a billion dollars	物流费用 logistics expenses (十亿美元) a billion dollars	物流费用与GDP比率 (%) The ratio of logistics expenses to GDP
北美North America	加拿大Canada	1819.0	163.7	9.0
	美国America	15680.0	1334.6	8.5
欧洲Europe	法国France	2609.0	247.6	9.5
	德国Germany	3401.0	299.7	8.8
亚洲 Asia 太平洋 pacific	中国China	8227.0	1480.9	18.0
	印度India	1825.0	237.1	13.0
	日本Japan	5964.0	506.9	8.5
	韩国Korea	1156.0	103.9	9.0
南美 South America	阿根廷Argentina	475.0	57.0	12.0
	巴西Brazil	2396.0	277.9	11.6

常用的三个指标 Three commonly used indicators

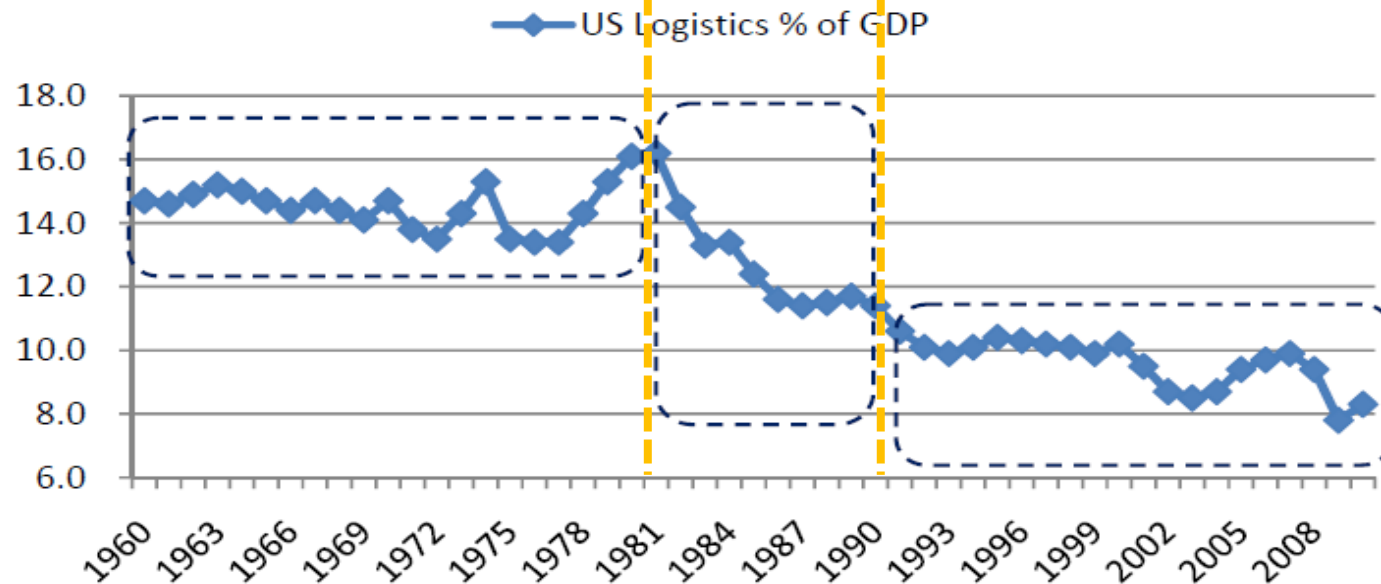
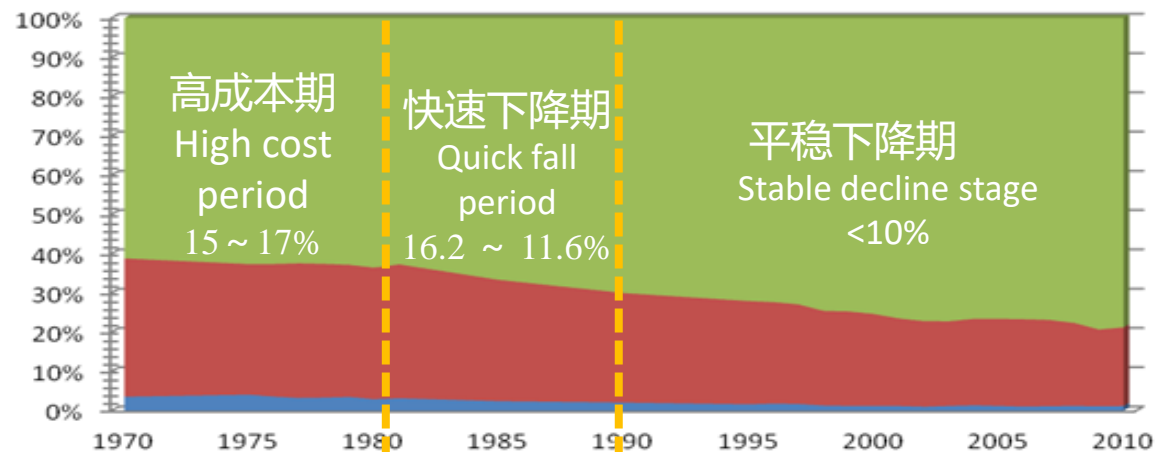
物流总费用占GDP比率

The ratio of total logistics expenses to GDP

物流总费用占GDP比率
与产业结构有密切的内在联系

It has a close inner connection between The ratio of total logistics expenses to GDP and industrial structure.

1970-2010年美国三次产业结构趋势图



常用的三个指标

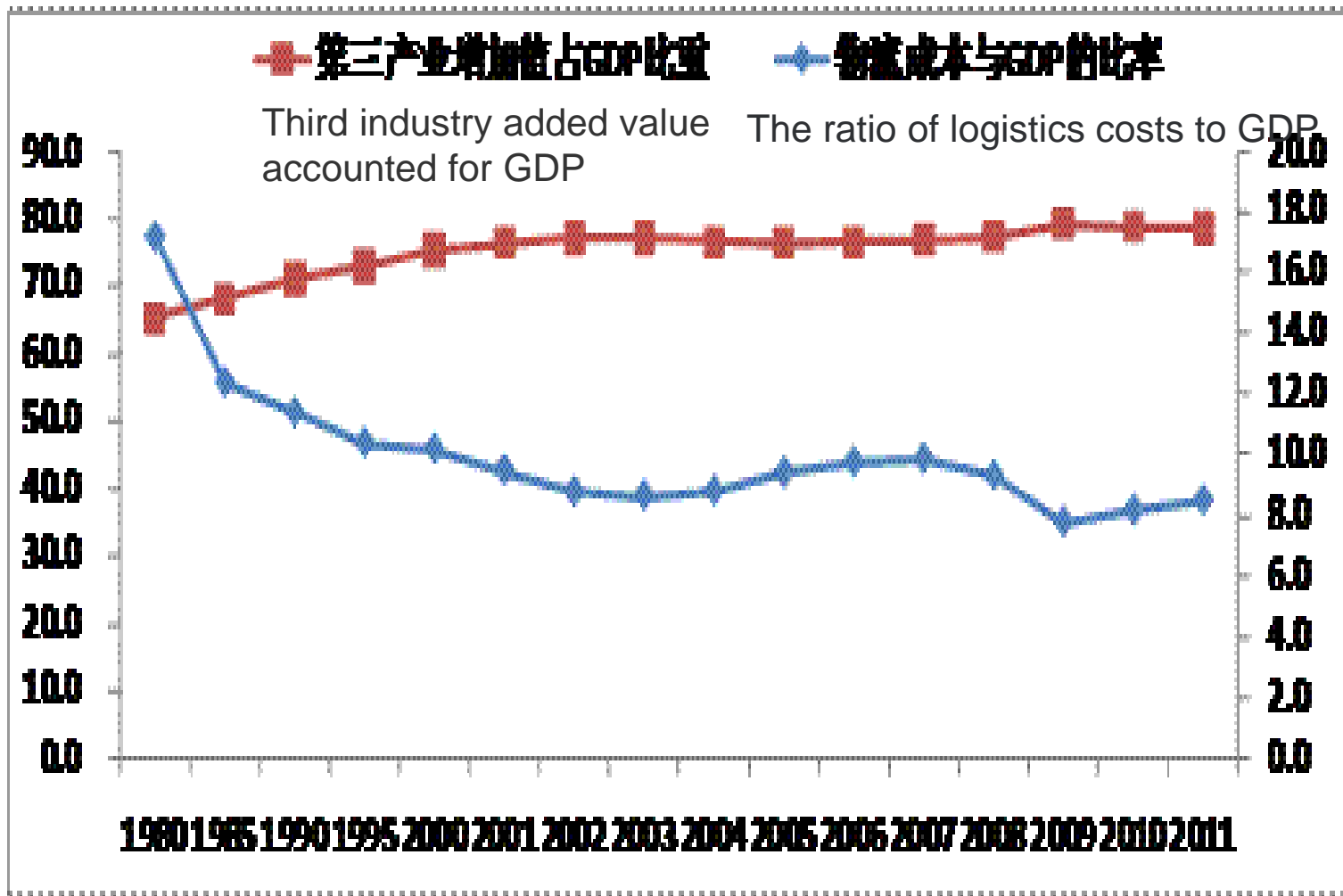
Three commonly used indicators

物流总费用占GDP比率

The ratio of total logistics expenses to GDP

随着服务业等第三产业的比重不断上升，物流总费用占GDP比率呈现稳定的下降趋势

With the increase of The share of tertiary industries, such as services, the ratio of total logistics expenses to GDP Show a steady downward trend.



常用的三个指标

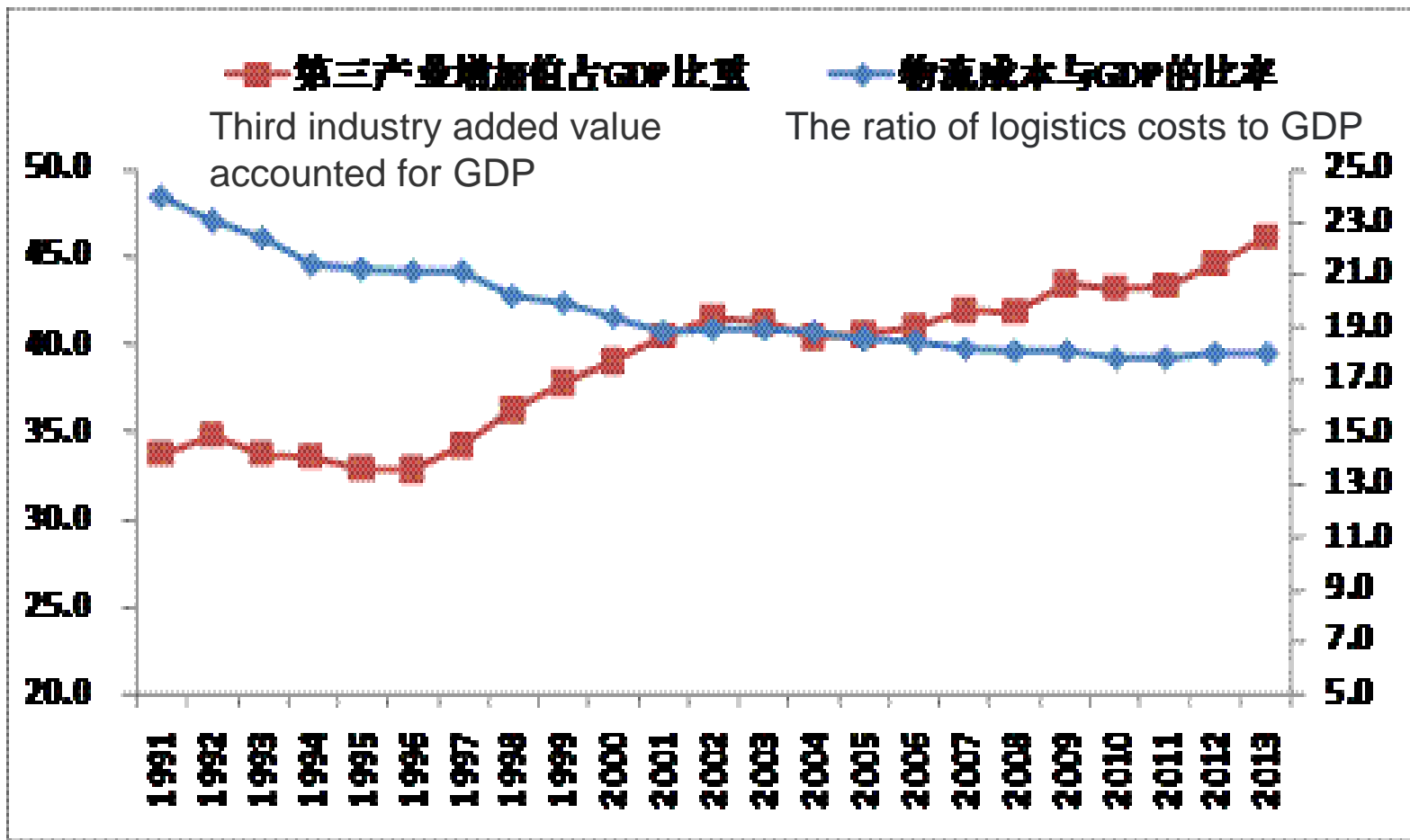
Three commonly used indicators

物流总费用占GDP比率

The ratio of total logistics expenses to GDP

这一现象在我国具有相似的演变规律，根据测算，服务业增加值占GDP的比重每上升1%，社会物流总费用与GDP的比率下降约0.5%。

This phenomenon has similar evolvement rule in our country, According to the calculation, the added value of the service sector accounted for GDP increased by 1%, and the total cost of social logistics dropped by about 0.5%.



常用的三个指标

Three commonly used indicators

物流总费用占GDP比率

The ratio of total logistics expenses to GDP

用这一指标如何评价物流系统自身运行效率的高低呢？

How to evaluate the efficiency of the logistics system with this index?

物流总费用占GDP比率降低，有多少来自于产业结构调整的贡献？

有多少来自于物流服务效率提升带来的贡献？

How much is the contribution of industrial structure adjustment and how much is the contribution of efficiency improvement of logistics services



常用的三个指标 Three commonly used indicators

完成单位货物周转量的物流成本支出

Logistics cost expenditure of unit freight turnover

指完成单位货物位移消耗的物流成本，用社会物流总费用与货运周转量的比值来表述，从物流活动的根本目标出发，反映全社会物流运行效率：**吨公里物流成本（元/吨公里）**

It refers to the logistics cost of the unit cargo displacement consumption, is expressed as the ratio of total cost of social logistics to freight turnover. From the basic objective of logistics activities, it reflects the operation efficiency of the whole social logistics: the logistics cost of per ton kilometer. (yuan/ton-km)

常用的三个指标 Three commonly used indicators

完成单位货物周转量的物流成本支出

Logistics cost expenditure of unit freight turnover

2016年，我国“吨公里物流成本”为0.59元，近年来基本维持在0.60元左右。2011年，我国吨公里物流成本为0.53元，按当期汇率换算，美国为0.96元，我国为美国的55%

The Chinese logistics cost of per ton kilometer is 0.59 yuan in 2016 and basic maintenance around 0.60 yuan in recent years. In 2011, the logistics cost of per ton kilometer is 0.53 yuan in China and 0.96 yuan in American. China is 55 percent of the U.S.

常用的三个指标

Three commonly used indicators

物流费用率

Logistics cost ratio

是指某一行业或企业物流成本与销售收入的比值，反映某一行业或企业的实际物流成本水平。我国《商贸物流发展“十三五”规划》提出，到2020年，批发零售企业物流费用率要争取降低到7%左右

It refers to the ratio of logistics cost to sales revenue in an industry or enterprise, reflecting the actual logistics cost level of an industry or enterprise.

常用的三个指标

Three commonly used indicators

物流费用率

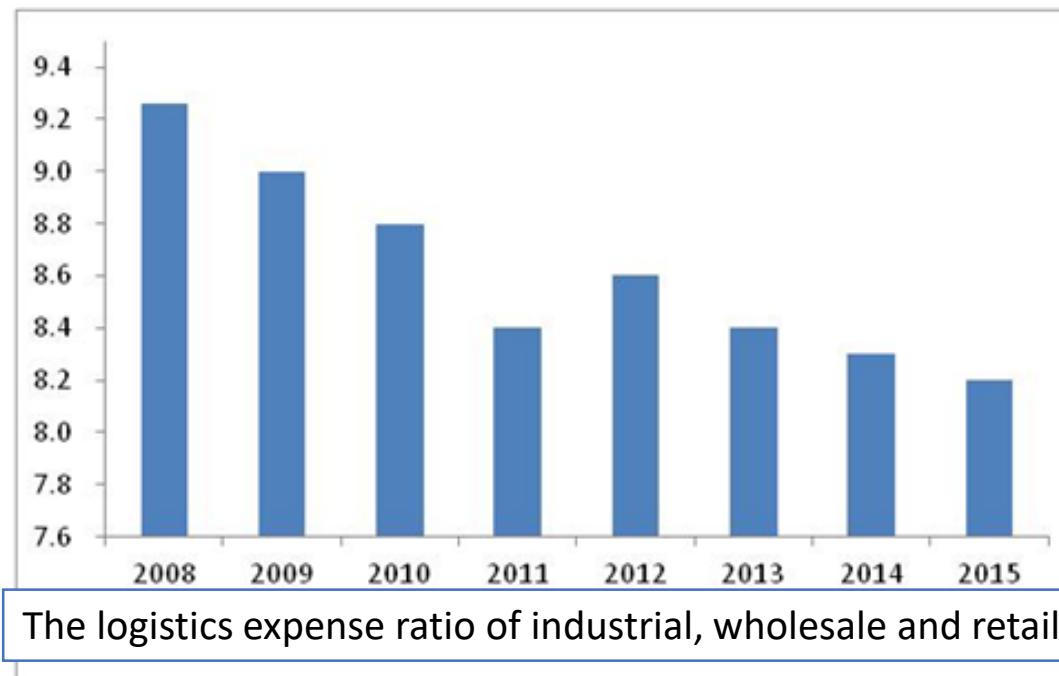
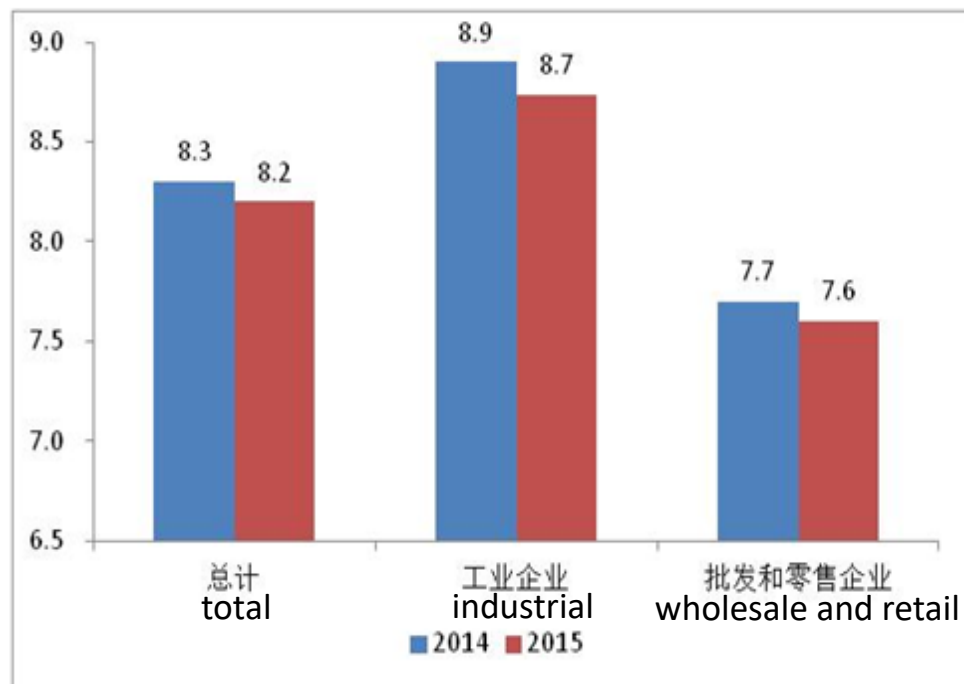
Logistics cost ratio

- 2015年，我国企业物流费用率为8.2%，比2010年下降0.6个百分点，总体上呈下降趋势，但仍高出日本3.3个百分点。
- 附加值越低的货物“物流费用率”越高，对物流成本越敏感，如玻璃、水泥、煤炭等行业，普遍在20-30%；附加值越高的货物“物流费用率”越低，对物流成本不敏感，如电子产品、高端服饰、精密仪器等行业，普遍在1-3%。

- In 2015, the logistics cost of enterprise in China was 8.2%, down 0.6%points from 2010, and the overall trend was decreasing, but it was still higher than Japan 3.3 percentage points.
- The goods with lower value-added is higher logistics cost ratio, and more sensitive to logistics costs. The goods with higher value-added is in contrast.

常用的三个指标 Three commonly used indicators

物流费用率 Logistics cost ratio



2008年以来，我国工业、批发和零售业企业物流费用率总体呈下降走势，2015年降至近年来最低水平，比2008年下降1.1个百分点。

Since 2008, the logistics expense ratio of industrial, wholesale and retail have generally declined, falling to the lowest level in recent years and down 1.1% from 2008.

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Research on the evaluation index system of logistics efficiency in transportation industry

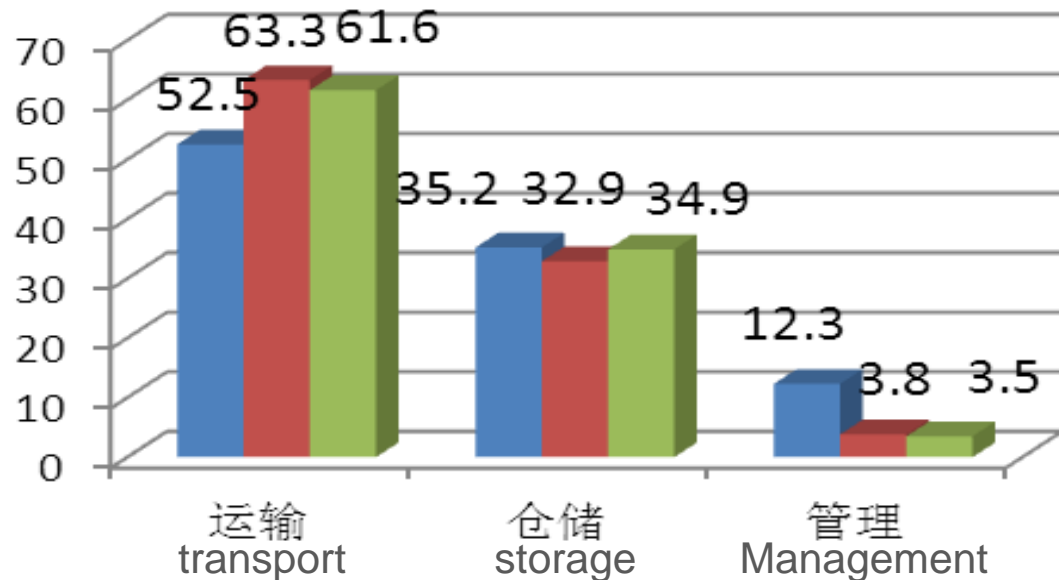
交通运输行业物流效率评价指标研究



交通运输在推动物流业发展中具有重要的作用

Transportation plays an important role in promoting the development of the logistics industry

- 增加值方面贡献**76%**，**80%以上**的物流企业提供与运输直接相关的业务
It contributes 76% in added value aspect, and more than 80 percent of the logistics enterprises provided direct transportation related businesses
- 物流企业50强中运输型企业：**44%** 综合型企业：**52%**（大部分由运输企业转型）
Transportation enterprises in the top 50 of logistics enterprises:44% Integrated enterprise, 52% system-transferred enterprise



在物流成本中占
比达到一半以上

The proportion is more
than half in logistics cost

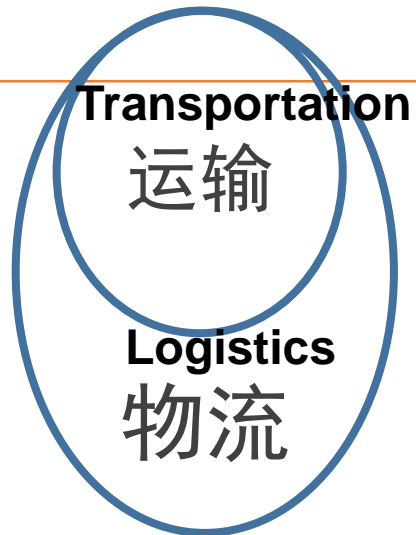
运输与物流 Transportation and Logistics

运输系统的效率对物流系统的运行效率有哪些影响？

What is the impact of the efficiency of the transport system to the efficiency of the logistics system

影响因素是什么？ What are the influence factors

如何改进和提高？ how to improve and enhance



摄图网



典型案例：中国快递业发展指数 (China Express Development Index, CEDI)

□ 对一定时期中国快递发展程度、服务效率及水平的量化评价

It evaluates China's express delivery development degree, service efficiency and level in a certain period Quantitatively

□ 以2010年为基准期，指数设定为100

Based on 2010, the index was set at 100

□ CEDI包括**发展规模、服务质量、发展普及和发展趋势**四个一级指标

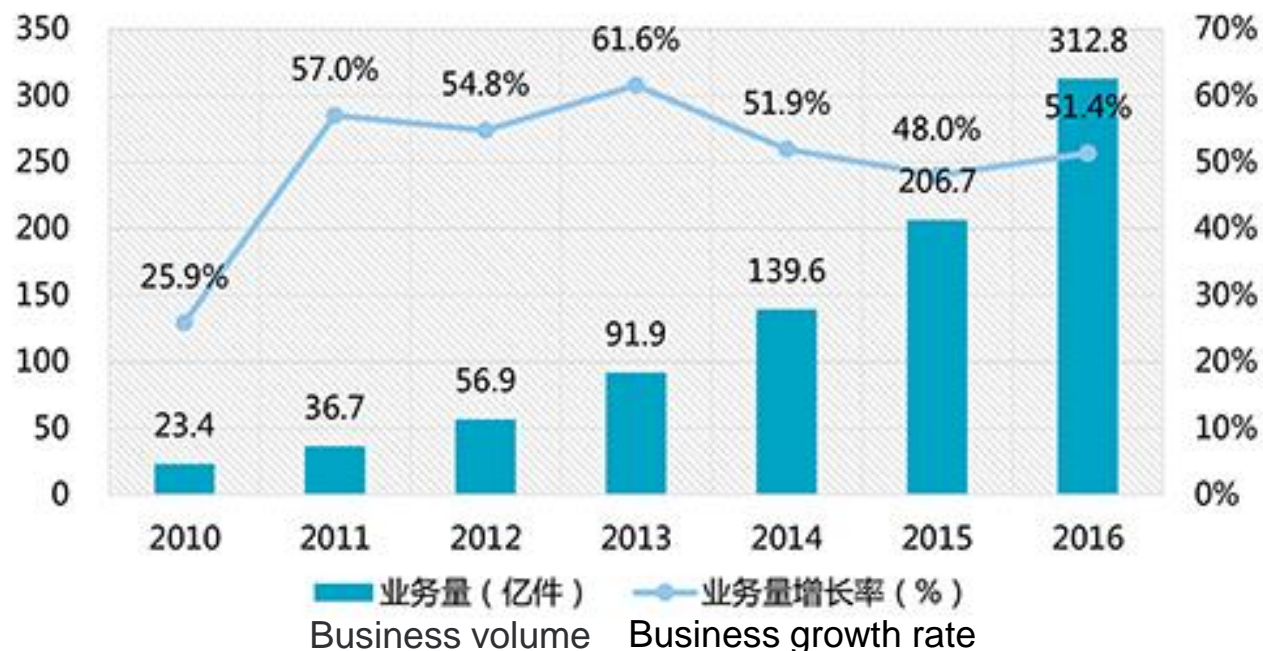
CEDI includes four primary indicators: **scale of development, service quality, development popularization and development trend**



典型案例：中国快递业发展指数 (China Express Development Index, CEDI)

1. 发展规模：业务量指标和业务收入指标

Development scale: business volume index and business income index



The change of express business volume in China

年快递量：312.8亿件

Annual express volume:
31.28 billions units

日均处理量：8571万件

Average daily throughput:
8571 ten thousands

日均服务人次：1.7亿人次

Average daily service:
0.17 billions people

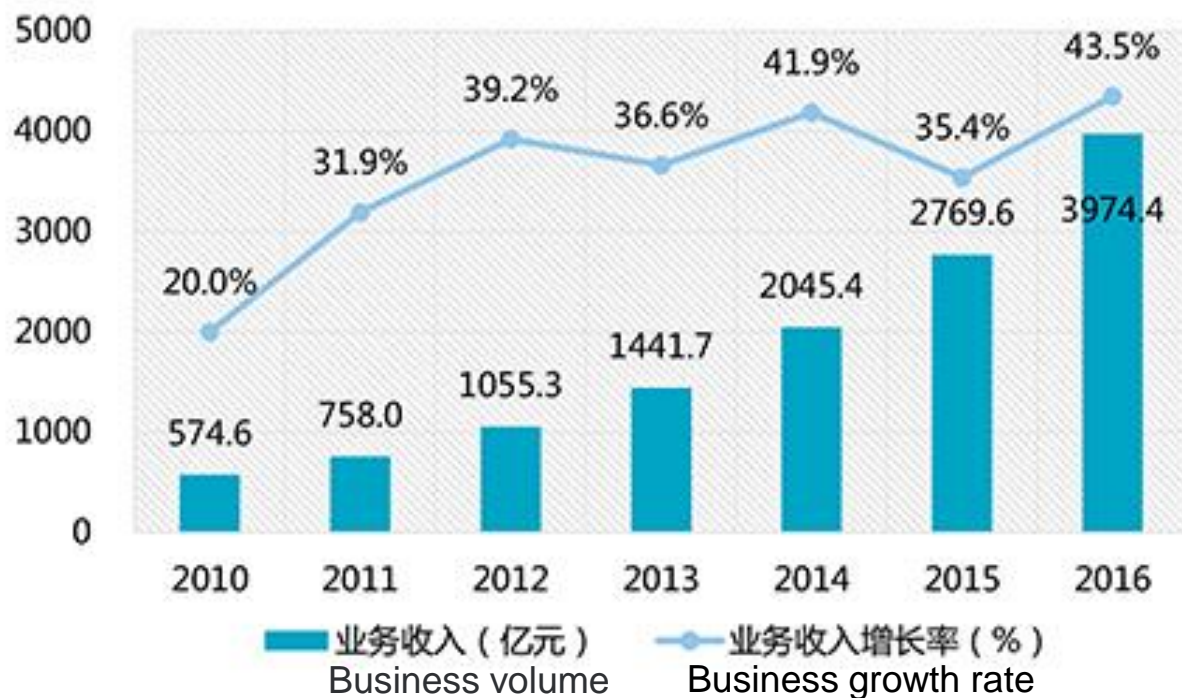
人均年快递量：23件

Express volume per person
per year:23 units

典型案例：中国快递业发展指数 (China Express Development Index, CEDI)

1. 发展规模：业务量指标和业务收入指标

Development scale: business volume index and business income index



快递业务收入：3974亿

Express revenue: 3974 hundred millions

占GDP比重：0.53%

a share of GDP: 0.53%

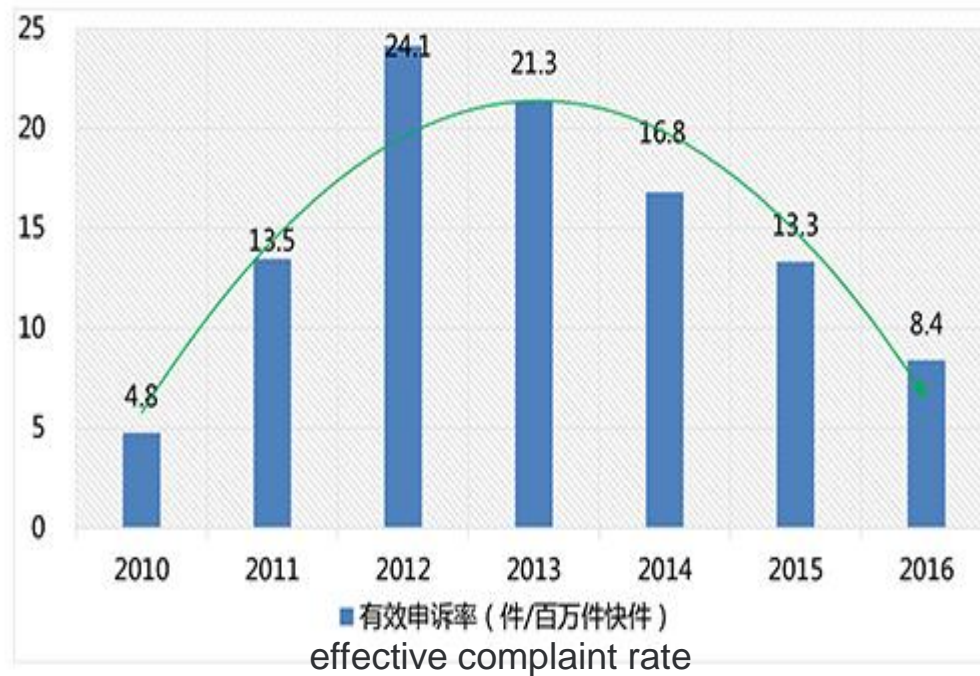
占邮政业总收入：73.9%

Gross income to the postal service: 73.9%

典型案例：中国快递业发展指数 (China Express Development Index, CEDI)

2. 服务质量：公众满意度、时限准时率、用户投诉率

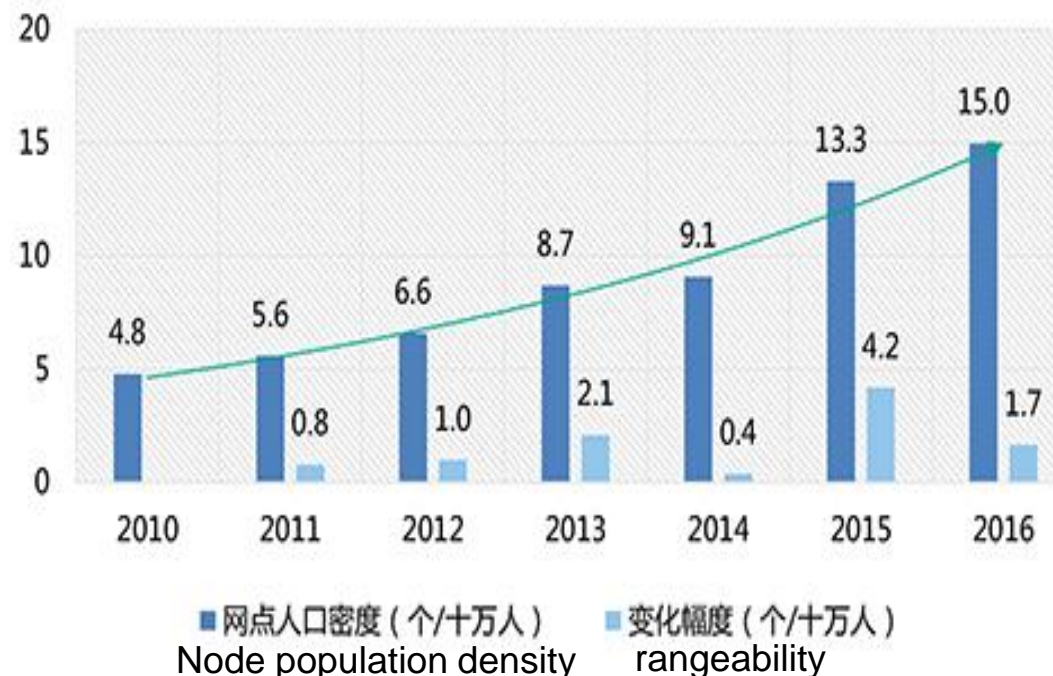
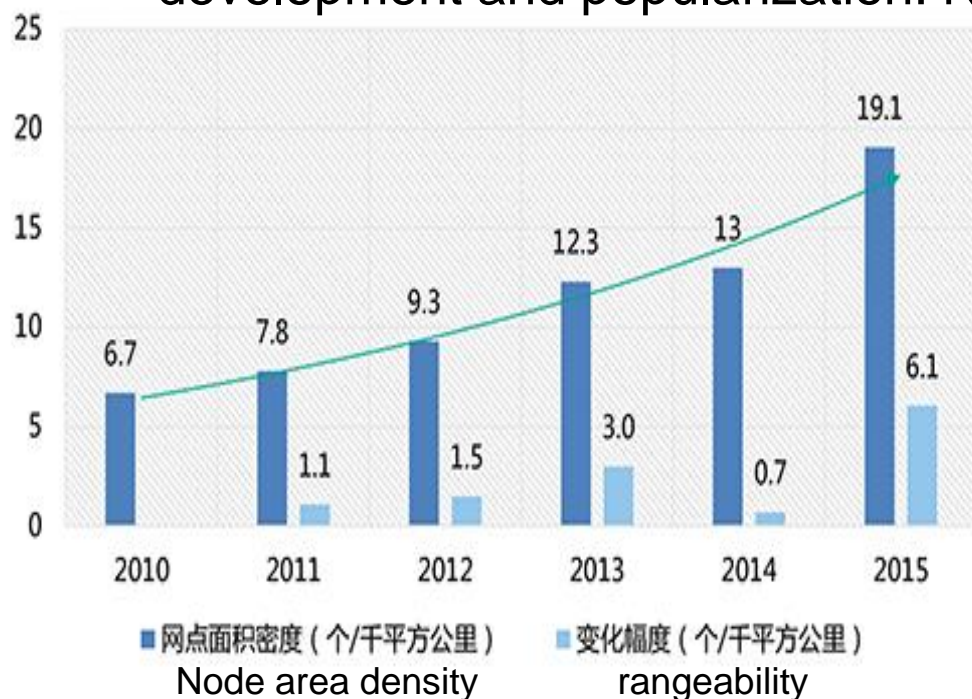
service quality: public satisfaction index, time limit on time rate, User complaints rate



典型案例：中国快递业发展指数 (China Express Development Index, CEDI)

3. 发展普及：网点密度、快递深度（占GDP比重）

development and popularization: Network density, Express depth



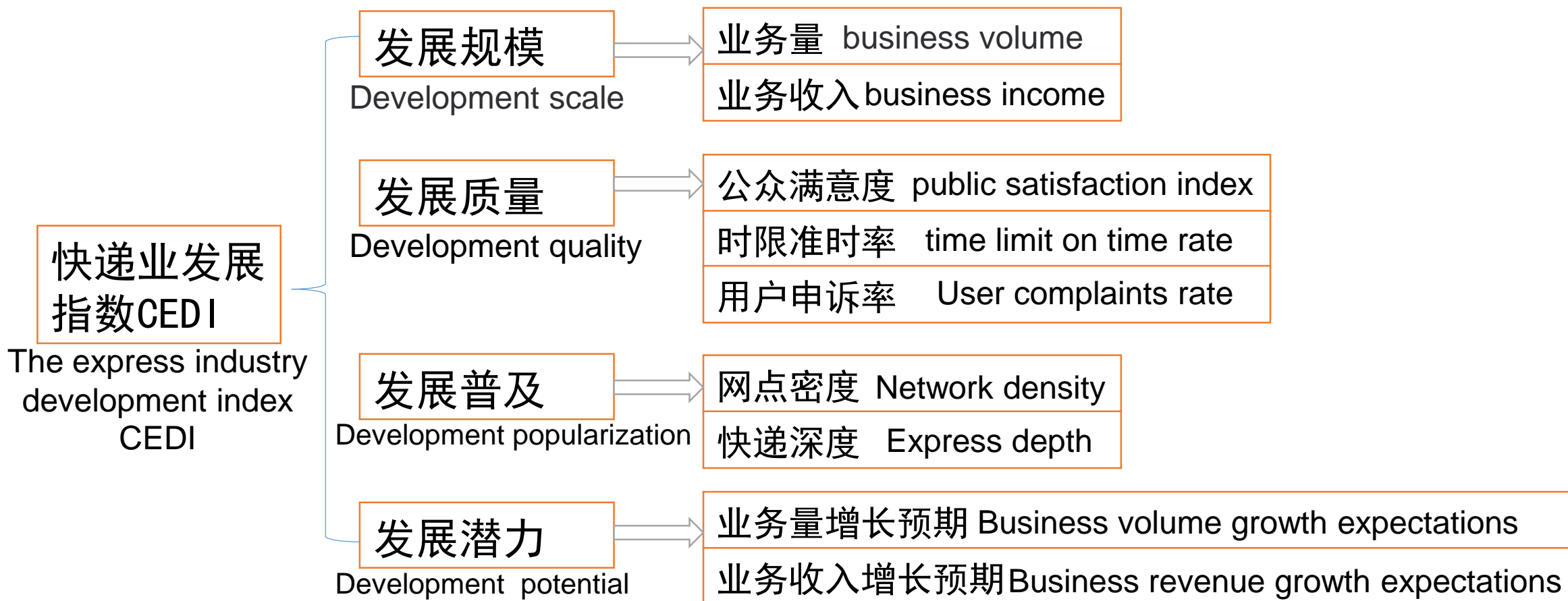
主要快递企业乡镇覆盖率超过80%，城市和农村差距进一步缩小

The township coverage of main express enterprises is over 80%, the gap between urban and rural areas has been further narrowed.

典型案例：中国快递业发展指数 (China Express Development Index, CEDI)

4. 发展趋势：业务量增长预期、业务收入增长预期

development tendency: Business volume growth expectations, Business revenue growth expectations



典型影响物流绩效因素—高速公路运输

Typical impact factors of logistics performance-expressway transportation

以较小的公路总里程承担了主要的公路运输任务
2015年底，我国高速公路通车里程突破12万公里，占公路总里程的2.6%；
承担的汽车行驶量占国省道行驶总量的42%

The main road transport task was undertaken with the total mileage of the smaller highways

At the end of 2015, China's expressways broke through 120,000 kilometers, accounting for 2.6% of the total highway mileage. The number of vehicles on the road accounts for 42 %of the total



典型影响物流绩效因素—高速公路运输

Typical impact factors of logistics performance-expressway transportation

大大提高了物流的速度与效率

沪杭高速公路货车行驶速度77公里/小时，与其平行的国道G320（一般道路）货车行驶速度45公里/小时

It has greatly improved the speed and efficiency of logistics

The shanghai-hangzhou expressway speeds up to 77 km/h, and its parallel state road G320 (general road) truck speeds up to 45km/h



典型影响物流绩效因素—铁路运输

Typical impact factors of logistics performance-railway transportation

降低物流成本

煤炭运输中公路运输每公里成本在0.3元至0.4元间，而铁路运输每公里的成本只用0.1元多

Reduce the cost of logistics

The cost of road transportation in coal transportation is between 0.3 yuan and 0.4 yuan per kilometer, while the cost of railway transportation per kilometer is only 0.1 yuan



典型影响物流绩效因素—铁路运输

Typical impact factors of logistics performance-railway transportation

降低物流成本

根据测算，在全社会货物运量中，铁路货运比重每提高一个百分点，每年就可以节约社会物流成本212亿元

Reduce the cost of logistics

Every one percentage point increase in rail freight will save the cost of social logistics 21.2 billion yuan per year.



典型影响物流绩效因素—物流园区

Typical impact factors of logistics performance-logistics park

促进资源整合

传化物流园、林安物流园等通过信息化整合了50多万辆零散货车，提高了组织化水平，服务周边数万家企业，为工商企业降低物流成本40%左右

Promoted the integration of resources

The logistics park through information integration, improved the organizational level, served the enterprises around about tens of thousands and reduced logistics costs about 40%



典型影响物流绩效因素—多式联运

Typical impact factors of logistics performance-multimodal transport

发挥各种运输方式的整体优势
我国多式联运运量占全社会货运量比重每提高1个百分点，可节约物流成本支出1000亿元左右

Give full play to the overall advantages of various traffic modes

China's multi-modal transport volume accounts for one percentage point increase in the proportion of freight traffic in the whole society, which can save about 100 billion yuan in logistics costs



典型影响物流绩效因素—多式联运

Typical impact factors of logistics performance-multimodal transport

低碳节能优势

我国公路中远距离运输向铁路转移10%，将减少能源消耗近1000万吨标准煤

Low-carbon energy saving advantage

If the middle-long distance transportation of highway is transferred to the railway by 10%, it will reduce energy consumption by nearly 10 million tons of standard coal



交通运输行业物流绩效评价指标的初步考虑

Preliminary consideration of logistics performance evaluation index of transportation industry

从发展规模、网络覆盖、发展贡献、科技水平、运营效率、服务质量、综合效益等**七个方面**进行系统评价

Including **seven aspects** :development scale, network coverage, development contribution, technological level, operation efficiency, service quality, comprehensive benefits.

交通运输物流绩效

发展规模

Development scale

网络覆盖

Network coverage

发展贡献

Development contribution

科技水平

Technological level

运营效率

Operation efficiency

服务质量

Service quality

综合效益

Comprehensive benefits

从**发展规模**、网络覆盖、比例结构、科技水平、运营效率、服务质量、综合效益等**七个方面**进行系统评价

Including **seven aspects**: development scale, network coverage, development contribution, technological level, operation efficiency, service quality, comprehensive benefits.

development scale

■ **发展规模**



- 1.综合交通网里程 Integrated traffic network mileage
- 2.货运枢纽（物流园区）数量 Logistics park quantity
- 3.固定资产投资总规模 Total investment in fixed assets
- 4.货运总量（含货运量、货运周转量、快递总量、冷链运量）
Freight tonnages
- 5.运输总费用 Total transport cost
- 6.运输业增加值 Transportation added value

从发展规模、网络覆盖、比例结构、科技水平、运营效率、服务质量、综合效益等七个方面进行系统评价

Including **seven aspects** :development scale, network coverage, development contribution, technological level, operation efficiency, service quality, comprehensive benefits.

network coverage

■ 网络覆盖



- 1.网络人口密度
Network population density
- 2.网络面积密度
Network area density
- 3.乡镇村公路通达率
Rural road access rate
- 4.邮政和快递网点覆盖率
Postal and express network coverage



从发展规模、网络覆盖、**发展贡献**、科技水平、运营效率、服务质量、综合效益等七个方面进行系统评价

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Development contribution

■ 发展贡献



1.固定资产投资占物流业比重

Fixed asset investment to logistics

2.运输成本占物流成本比重

Transportation cost to logistics cost

3.增加值占物流业增加值比重

Added value to the added value of logistics industry

4.从业人员占物流业从业人员比重

The employees to the employees in the logistics industry

从发展规模、网络覆盖、比例结构、**科技水平**、运营效率、服务质量、综合效益等七个方面进行系统评价

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technological level

■ **科技水平**



1.设施装备标准化率

Facility equipment standardization rate

2.信息化普及率

Information popularity rate

3.装卸、转运作业机械化率

Mechanization rate of handling and transfer operation

4.科技研发投入

Scientific research and development investment

5.专利总数量

Total number of patents

6.物流从业人员学历构成

Education composition of logistics practitioners

从发展规模、网络覆盖、比例结构、科技水平、运营效率、服务质量、综合效益等七个方面进行系统评价

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operation efficiency

■ 运营效率



- 1.车辆运行速度 The speed of vehicle
- 2.平均车辆配货时间 Average vehicle delivery time
- 3.装卸效率 Efficiency of cargo-handling
- 4.单位运输周转量成本
Unit transport weekly turnover cost

从发展规模、网络覆盖、比例结构、科技水平、运营效率、**服务质量**、综合效益等七个方面进行系统评价

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service quality

■ **服务质量**



1. 送达准点率

Delivery punctuality rate

2. 客户投诉率

Customer complaints rate

3. 货损货差率

Cargo damage and shortage rate

4. 安全事故数量

Number of safety accidents

5. 用户满意度

Customer satisfaction

从发展规模、网络覆盖、比例结构、科技水平、运营效率、服务质量、**综合效益**等七个方面进行系统评价

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comprehensive benefits

■ **综合效益**



- 1.单位运输量能耗和碳排放
Unit transportation energy consumption and carbon emission
- 2.新能源车比例
New energy vehicle ratio
- 3.包装材料的循环使用率
Recycling rate of packaging materials
- 4.从业人员数量
Number of practitioner
- 5.从业人员平均收入水平
Average income level of practitioner

利用互联网、移动通讯、大数据分析等现代信息技术提高物流绩效评估的数据采集、建模和分析



Transfar
传化物流

货运量OD数据

- 东部
- 中部
- 西部



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合作期待 Cooperation expected

➤ 物流系统绩效评估方法和理论

Logistics system performance evaluation method and theory

➤ 物流大数据采集与建模分析

Big data acquisition and modeling analysis

➤ 物流绩效评估成果应用

Application of logistics performance evaluation

➤ 城市物流系统运行效率评估方法

Operation efficiency evaluation method of urban logistics system

➤ 国家物流竞争力对比研究

Comparative study of national logistics competitiveness



Cooperation

谢谢！
THANK YOU



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China Academy of Transportation Sciences