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**Understanding the Spatial Dynamics of
Population and Business
with County-level Data**

**Shuming Bao, Ph.D.
Director, China Data Institute**

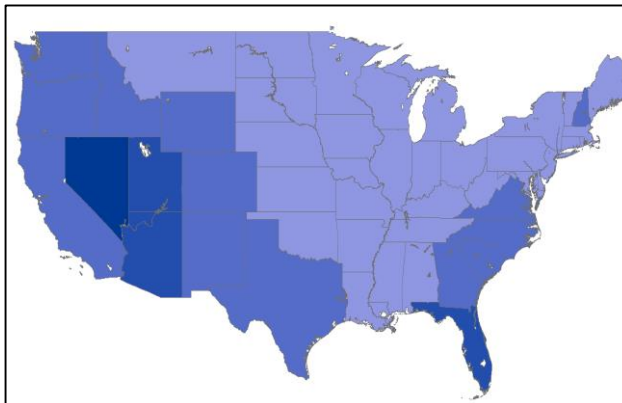
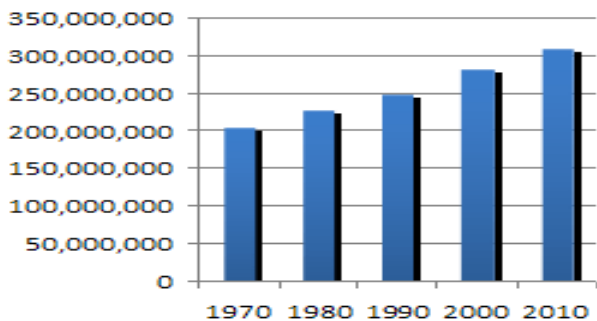
About the County Data of US and China

- The most comprehensive data coverage at lowest administrative level

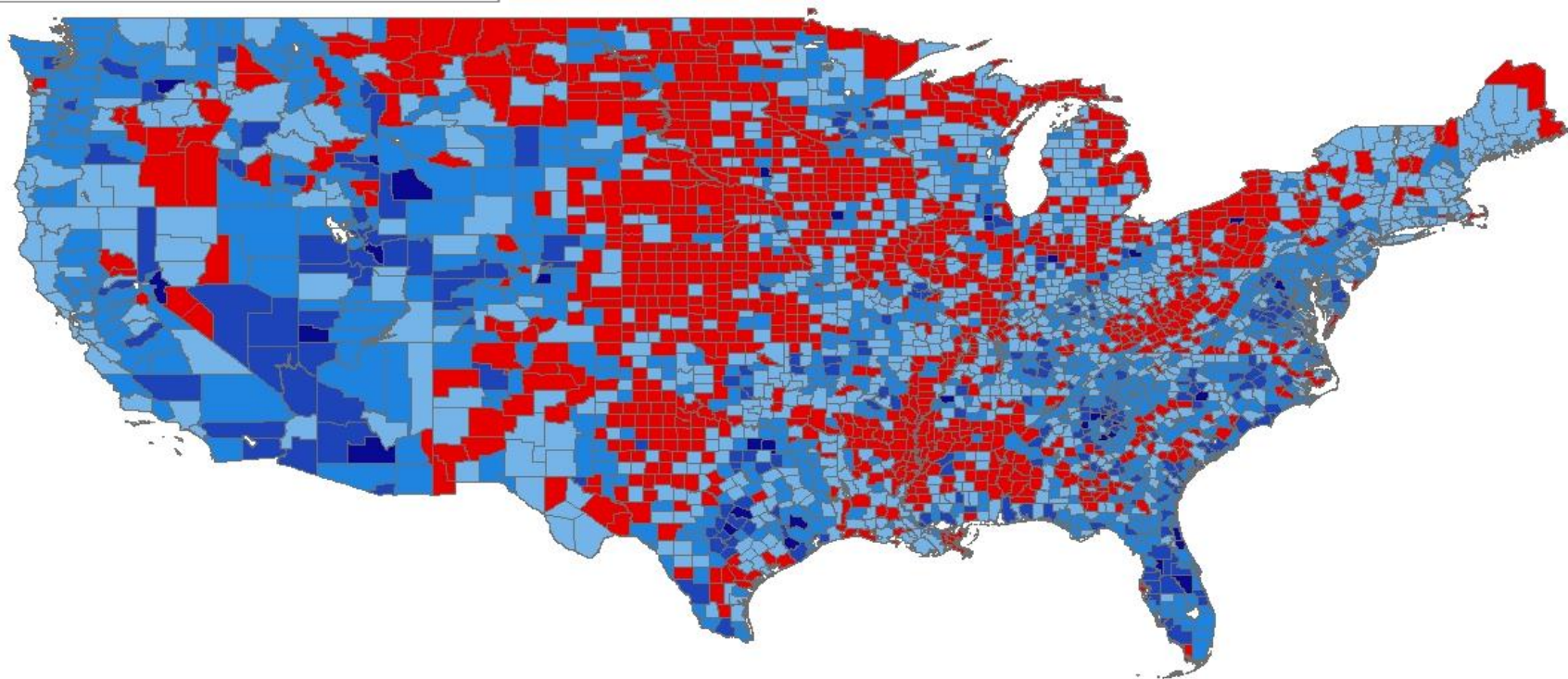
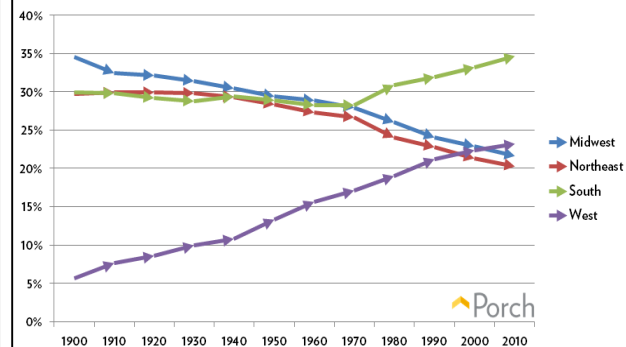
- Availability
- Comparability
- Accessibility

Counties with Population Loss (%) in the US (2000-2010)

Population Growth: 1970-2010

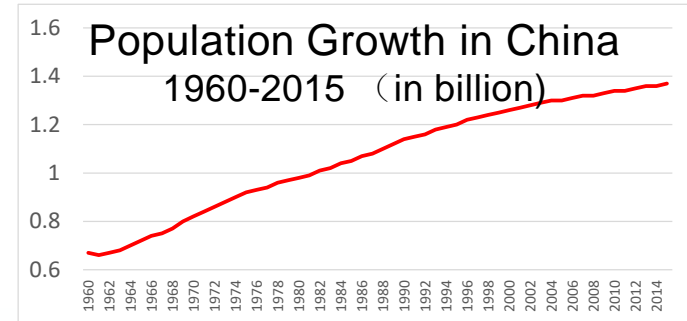


Percent Share of US Population by Region

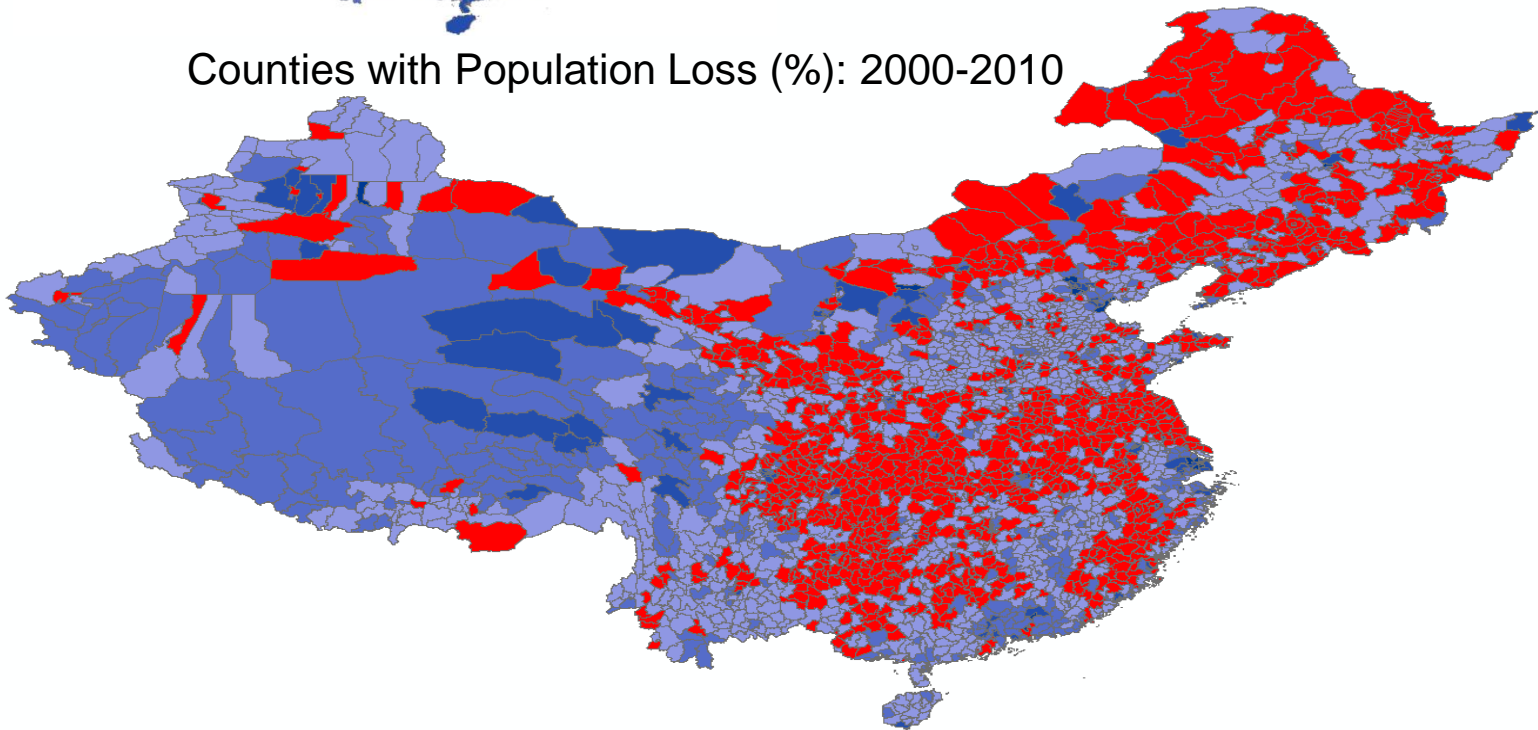


Counties with Population Loss (%) in China (2000-2010)

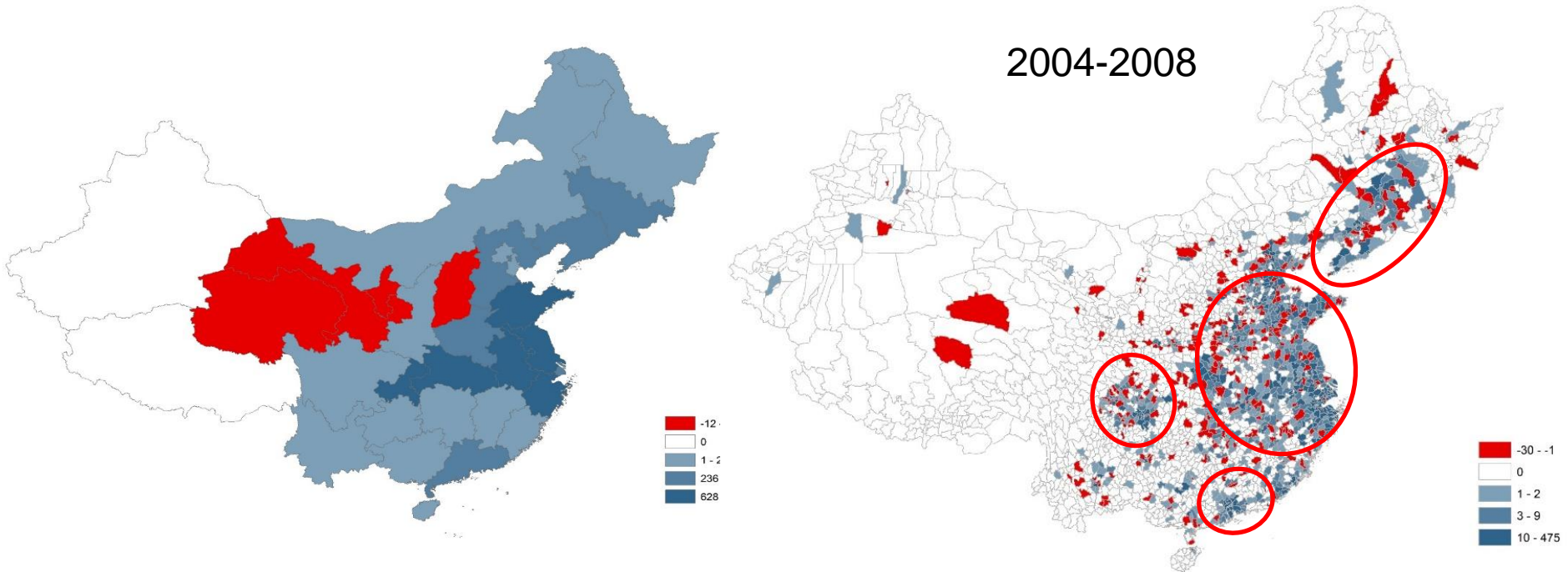
Province with Population Loss (%)
2000-2010



Counties with Population Loss (%): 2000-2010

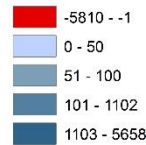
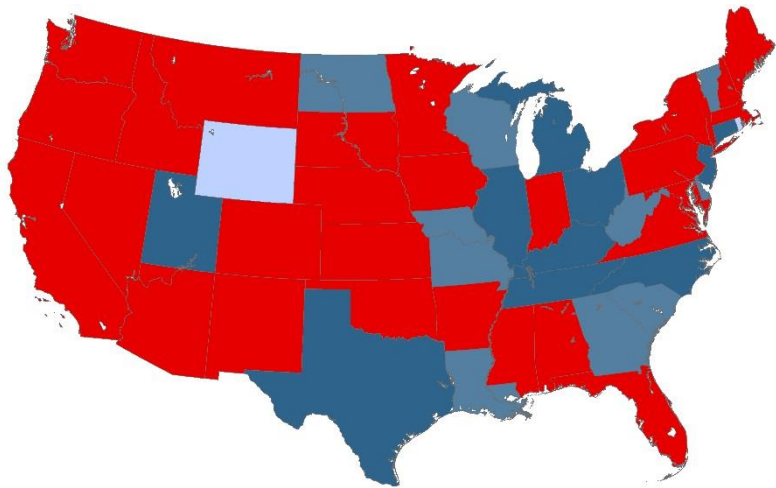


The Growth of Firms in Automobile Parts and Accessories Manufacturing in China: 2004-2008

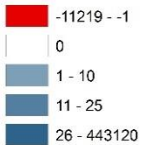
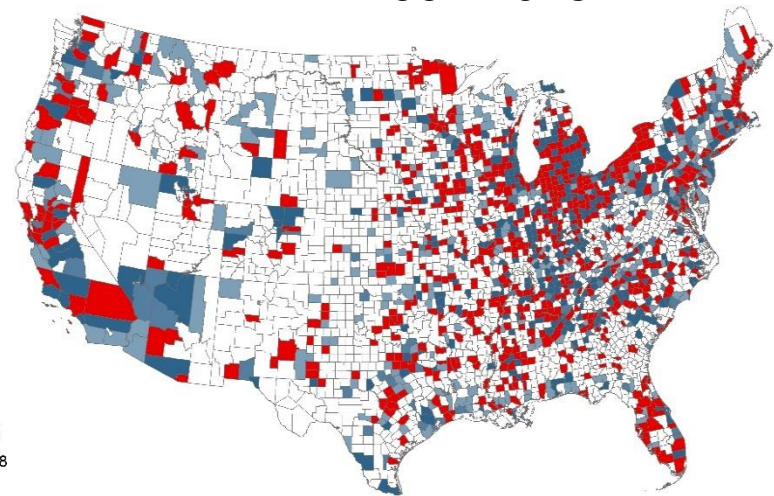


The Growth of Employment in Motor Vehicle Parts and Accessories in US: 1997-2013

1997-2013



1997-2013



Questions to be Explored

- Where** population are growing or shrinking?
- Where** industries are growing or shrinking?
- How** the population and industrial structure have been changing over the space and time?

Data: China



- **Government Statistics**
 - Provincial Statistics (1949 -)
 - City Statistics (1996 -)
 - County Statistics (1997 -)
- **Population Census**
 - Census 1953
 - Census 1964
 - Census 1982
 - Census 1990
 - Census 2000/2010 (province, city, county, township, GRID)
- **Economic Census**
 - Industrial Census 1995 (province, city, county, ZIP)
 - Basic Unit Census 2001 (province, city, county, ZIP)
 - Economic Census 2004/2008 (province, city, county, ZIP)
- **Establishments** (more than 7 millions companies and organizations)
- **Geography and Environment**
 - Land Use data (GRID)
 - Night-Time data (GRID)
 - Transportation (railway, highway, roads)
 - Rivers and Lakes

Data: US



- **Population Census** (State, County, Tract, Block, Metropolitan, CCD, Place)

- Census 1970
- Census 1980
- Census 1990
- Census 2000
- Census 2010
- American Community Survey

- **Economic Census** (State, Metropolitan, County)

- **Business Data** (State, Metropolitan, County, Tract, CCD, Place)

- **Establishments** (individual business and organizations)

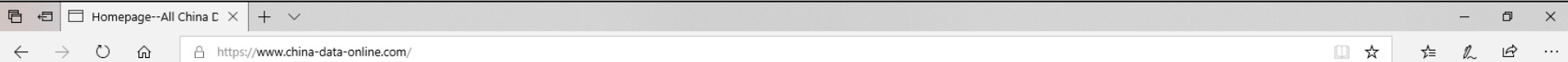
- Firm level records (more than 13 million records with 85 fields for each business)

County Data of US and China

- **Gov't Statistics (China)**
 - Yearly county statistics
- **Census Data (China)**
 - Population Census
 - Economic Census
- **GIS Data Integrated with County Data (China, US)**
 - Population Census
 - Economic Census
 - Business Data
 - Other Data (Nighttime Light, Land Use)
- **County Map Library (China, US)**

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CHINA SPATIAL DATA

- ▶ [China Geo-Explorer II](#)
- ▶ [China Geo-Explorer I](#)
- ▶ [China Map Library](#)

CHINA STATISTICS

- ▶ [Monthly Statistics](#)
- ▶ [National Statistics](#)
- ▶ [Provincial Statistics](#)
- ▶ [City Statistics](#)
- ▶ [County Statistics](#)
- ▶ [Monthly Industrial Data](#)
- ▶ [Yearly Industrial Data](#)
- ▶ [Statistics on Map](#)
- ▶ [Statistical Datasheets](#)
- ▶ [Statistical Charts](#)

CENSUS DATA

- ▶ [Census Maps](#)
- ▶ [All Census Data](#)
- ▶ [Economic Census 2004](#)
- ▶ [Industrial Census 1995](#)
- ▶ [Census 1982](#)
- ▶ [Census 1982 \(10%\)](#)
- ▶ [Census 1990](#)
- ▶ [Census 1995 \(1%\)](#)
- ▶ [Province 2000](#)
- ▶ [County 2000](#)
- ▶ [Census 2005 \(1%\)](#)
- ▶ [Census Data Search](#)

FREE CHINA MAPS

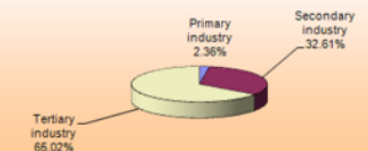
- [2000 Population Census](#)
- [Pop & Env \(1990-1999\)](#)
- [Pop & Env \(2000\)](#)
- [Atlas of Industrial Census](#)

SAMPLE DATA

- [Major Indicators](#)
- [Industrial Surveys](#)
- [Monthly Report](#)
- [Census Data](#)

Investment in Fixed Assets for the First Three Months of 2019

Investment in Fixed Asset From Jan to Mar in 2019



Latest China Statistical News

[Total Retail Sales of Consumer Goods in March 2019 \(4/18/2019\)](#)

[Industrial Production Operation in March 2019 \(4/17/2019\)](#)

[Investment in Fixed Assets for the First Three Months of 2019 \(4/17/2019\)](#)

[Producer Prices for the Industrial Sector for March 2019 \(4/12/2019\)](#)

[Consumer Prices for March 2019 \(4/12/2019\)](#)

[The Gross Imports and Exports in the First Quarter of 2019 \(4/12/2019\)](#)

Yearly County Statistics

- Reported by local government
- Yearly updated from 1997
- Data can be exported to Excel files
- Missing data for some counties/districts and years

- Land Resources & Basic Condition of Rural Area
- Population
- Labors & Employment
- General Economy
- Government Finance & Banking
- Agricultural Production
- Industry
- Foreign Investment
- Education
- Medical System & Social Welfare



- Number of Towns
- Number of Villagers' Committees
- Area of Administrative Region
- Total Agricultural Machinery Power
- Number of Local Telephone Subscribers
- Electricity Amount Used in Rural Area
- Number of Households at Year-end
- Of which: Number of Households
- Population at the Year-end
- Of which: Rural Population
- Number of Employed Persons at Year-end
- Number of Rural Labors
- Of which: Farming, Forestry, Animal Husbandry and Fishery
- GDP
- Value-added of Primary Industry
- Value-added of Secondary Industry
- Industrial Value-added
- GDP Index
- Annual Per Capita Net Income of Rural Households
- Local Government Revenue
- Local Government Expenditure
- Outstanding Amount of Savings Deposits of Urban Households
- Outstanding Loan of Financial Institutes at Year-end
- Grain Output
- Cotton Output
- Oil bearing Output
- Meat Output
- Number of Industrial Enterprises above Designated Size
- Output of Industrial Enterprises above Designated Size (at current)
- Completed Investment in Capital Construction
- Exports Value
- Foreign Capital Actually Used in This Year
- Contractual Foreign Investment
- Student Enrollment in Regular Secondary Schools
- Student Enrollment in Primary Schools
- Number of Beds in Hospitals and Sanitation Agencies
- Number of Social Welfare Nursing Centers
- Number of Beds in Social Welfare Nursing Centers

Year County Statistics

chinadataonline.org/member/county/countyshow.asp

ALL CHINA DATA CENTER **China County Statistics**

District: Hebei Province
All

Time: 2015

General Economy

(Hebei Province 2015)

| District | GDP(100 million yuan) | Value-added of Primary Industry(100 million yuan) | Value-added of Secondary Industry(100 million yuan) | Industrial Value-added(100 million yuan) | GDP Index(%) | Annual Per Capita Net Income of Rural Households(yuan) |
|------------------|-----------------------|---|---|--|--------------|--|
| Jingxing County | 144.53 | 13.70 | 61.26 | 54.45 | 106.10 | 10,449.00 |
| Zhengding County | 276.39 | 33.33 | 113.93 | 102.57 | 107.60 | 14,508.00 |
| Luancheng County | 207.85 | 27.84 | 117.62 | | | |
| Xingtang County | 130.08 | 27.03 | 66.30 | 63.54 | 107.20 | 6,068.00 |
| Lingshou County | 93.24 | 17.96 | 45.03 | 41.83 | 106.70 | 5,528.00 |
| Gaoyi County | 83.01 | 12.42 | 48.00 | 42.81 | 107.20 | 10,978.00 |
| Shenze County | 101.57 | 15.96 | 60.32 | 52.96 | 107.40 | 10,540.00 |
| Zanhuang County | 95.59 | 17.35 | 53.55 | 49.59 | 105.30 | 5,084.00 |
| Wuji County | 182.40 | 27.24 | 97.99 | 92.99 | 107.50 | 11,999.00 |
| Pingshan County | 187.78 | 18.82 | 106.95 | 100.09 | 106.00 | 6,615.00 |
| Yuanshi County | 180.16 | 25.34 | 94.95 | 88.98 | 107.40 | 11,604.00 |
| Zhao County | 202.94 | 34.69 | 118.60 | 113.52 | 107.30 | 12,181.00 |
| Xinji City | 386.13 | 50.44 | 227.15 | 215.64 | 106.20 | 13,364.00 |
| Gaocheng City | 577.81 | 72.79 | 385.24 | | | |
| Jinzhou City | 276.80 | 34.14 | 153.85 | 147.86 | 107.70 | 15,045.00 |
| Xinle City | 190.16 | 29.03 | 103.81 | 95.76 | 107.60 | 13,337.00 |

Statistical Datasheets

chinadataonline.org/member/datasheet/yearbook/sheetdetail.html?yc=YB00000009&cc=P050C&l=cn

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Chinese

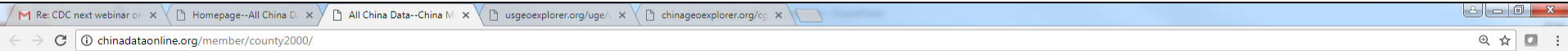
5-12 RESIDENTS CONSUMER PRICES INDEX IN CITIES AND COUNTIES SURVEYED (1997)

(Last year=100)

| Region | General Index | Food | Clothing | Household Appliances | Health Care | Transportation and Communication | Recreation, Education and Cultural Goods | Residence | Service |
|--------------|---------------|--------------|--------------|----------------------|--------------|----------------------------------|--|--------------|--------------|
| Total | 103.1 | 100.0 | 104.0 | 101.5 | 104.1 | 95.8 | 104.0 | 114.7 | 115.2 |
| Taiyuan | 102.4 | 100.4 | 102.3 | 100.6 | 105.0 | 95.9 | 102.8 | 113.4 | 110.5 |
| Datong | 103.8 | 101.1 | 103.1 | 101.9 | 102.0 | 95.7 | 103.2 | 133.6 | 107.2 |
| Yangquan | 105.8 | 100.0 | 109.2 | 103.0 | 102.5 | 92.5 | 101.5 | 121.4 | 126.6 |
| Changzhi | 103.0 | 99.8 | 104.5 | 101.4 | 100.8 | 92.8 | 106.2 | 113.4 | 119.4 |
| Jincheng | 101.7 | 98.5 | 103.9 | 103.6 | 104.0 | 90.1 | 99.0 | 108.0 | 117.5 |
| Suozhou | 101.9 | 98.8 | 105.3 | 102.4 | 106.0 | 98.5 | 105.1 | 107.0 | 108.2 |
| Yuncheng | 104.2 | 97.2 | 113.2 | 101.3 | 99.9 | 94.6 | 109.7 | 122.1 | 116.1 |
| Yuci | 102.5 | 101.4 | 99.8 | 100.3 | 113.6 | 94.5 | 99.9 | 108.8 | 117.8 |
| Linfen | 103.9 | 98.0 | 111.2 | 103.9 | 106.8 | 98.5 | 104.9 | 114.8 | 116.8 |
| Lishi | 103.2 | 98.4 | 108.6 | 103.7 | 96.8 | 100.0 | 102.2 | 101.5 | 126.1 |
| Xingzhou | 102.7 | 100.4 | 102.3 | 101.0 | 100.0 | 88.0 | 108.0 | 107.6 | 113.8 |

County Population Census Data

- Collected at census years only
- Detailed demographic information
- Complete coverage for all counties and districts



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China 2000 County & District Population Census Data Assemblies

Source: Region: 2000 to 2000 --Select--

| Census book ID | Census book Title | 目录 |
|----------------|--|--------------------|
| 110101 | DONGCHENG 2000 POPULATION CENSUS DATA ASSEMBLY | 东城区2000人口普查统计资料汇编 |
| 110102 | XICHENG 2000 POPULATION CENSUS DATA ASSEMBLY | 西城区2000人口普查统计资料汇编 |
| 110103 | CHONGWEN 2000 POPULATION CENSUS DATA ASSEMBLY | 崇文区2000人口普查统计资料汇编 |
| 110104 | XUANWU 2000 POPULATION CENSUS DATA ASSEMBLY | 宣武区2000人口普查统计资料汇编 |
| 110105 | CHAOYANG 2000 POPULATION CENSUS DATA ASSEMBLY | 朝阳区2000人口普查统计资料汇编 |
| 110106 | FENGTAI 2000 POPULATION CENSUS DATA ASSEMBLY | 丰台区2000人口普查统计资料汇编 |
| 110107 | SHIJINGSHAN 2000 POPULATION CENSUS DATA ASSEMBLY | 石景山区2000人口普查统计资料汇编 |
| 110108 | HAIDIAN 2000 POPULATION CENSUS DATA ASSEMBLY | 海淀区2000人口普查统计资料汇编 |
| 110109 | MENTOUGOU 2000 POPULATION CENSUS DATA ASSEMBLY | 门头沟区2000人口普查统计资料汇编 |
| 110111 | FANGSHAN 2000 POPULATION CENSUS DATA ASSEMBLY | 房山区2000人口普查统计资料汇编 |
| 110112 | TONGZHOU 2000 POPULATION CENSUS DATA ASSEMBLY | 通州区2000人口普查统计资料汇编 |

County Population Census Data Assemblies

2,873 counties/districts census data books in English and Chinese

Census data variables:

- General Information
- Nationalities
- Age
- Age Structure
- Education
- Household Structure
- Deaths
- Migration
- Marriage
- Fertility
- Deaths
- Migration
- Housing Status
- Industries and Occupations

DONGCHENG 2000 POPULATION CENSUS DATA ASSEMBLY
中文

| | |
|-----|----------------------------|
| 1 | General Information |
| 2 | Nationalities |
| 3 | Age |
| 4 | Education |
| 5 | Households |
| 6 | Deaths |
| 7 | Migration |
| 8 | Housing |
| L-1 | General Information |
| L-2 | Nationality |
| L-3 | Education |
| L-4 | Industries and Occupations |
| L-5 | Marriage |
| L-6 | Fertility |
| L-7 | Migration |
| L-8 | Housing |

1.1 Family households, population and sex ratio by township

| Township | Households | | | Total | | | | Population | | | | Average Size of Family Household | | | | |
|-------------|------------|-------------------|-----------------------|--------|--------|--------|-----------|------------|--------|--------|-----------|----------------------------------|-----------|-------|--------|-----------|
| | Total | Family Households | Collective Households | Total | Male | Female | Sex Ratio | Sub-total | Male | Female | Sex Ratio | | Sub-total | Male | Female | Sex Ratio |
| Total | 177690 | 169723 | 7967 | 538558 | 269492 | 266066 | 101.29 | 489295 | 235784 | 253511 | 93.01 | 46263 | 33708 | 12555 | 268.48 | 2.88 |
| Donghuamen | 19571 | 18101 | 1470 | 61795 | 31477 | 30318 | 103.82 | 53061 | 25167 | 27894 | 90.22 | 8734 | 6310 | 2424 | 260.31 | 2.93 |
| Jingshan | 12633 | 12011 | 622 | 37380 | 18745 | 18635 | 100.59 | 34607 | 16720 | 17887 | 93.48 | 2773 | 2025 | 748 | 270.72 | 2.88 |
| Jiaodakou | 13051 | 12370 | 681 | 40351 | 21442 | 18909 | 113.4 | 34655 | 16754 | 17901 | 93.59 | 5696 | 4688 | 1008 | 465.08 | 2.8 |
| Andingmen | 15305 | 14817 | 488 | 44691 | 22104 | 22587 | 97.86 | 42562 | 20660 | 21902 | 94.33 | 2129 | 1444 | 685 | 210.8 | 2.87 |
| Beixinqiao | 22030 | 21229 | 801 | 65791 | 32903 | 32888 | 100.05 | 61638 | 30142 | 31496 | 95.7 | 4153 | 2761 | 1392 | 198.35 | 2.9 |
| Dongsi | 14370 | 13788 | 582 | 40773 | 20200 | 20573 | 98.19 | 38189 | 18407 | 19782 | 93.05 | 2584 | 1793 | 791 | 226.68 | 2.77 |
| Chaoyangmen | 11125 | 10660 | 465 | 34692 | 17549 | 17143 | 102.37 | 31470 | 15093 | 16377 | 92.16 | 3222 | 2456 | 766 | 320.63 | 2.95 |
| Jiangoumen | 19471 | 18537 | 934 | 57922 | 28979 | 28943 | 100.12 | 52833 | 25463 | 27370 | 93.03 | 5089 | 3516 | 1573 | 223.52 | 2.85 |
| Dongzhimen | 15786 | 15148 | 638 | 48232 | 24375 | 23857 | 102.17 | 44667 | 21623 | 23044 | 93.83 | 3565 | 2752 | 813 | 338.5 | 2.95 |
| Hepingli | 34348 | 33062 | 1286 | 103931 | 51718 | 52213 | 99.05 | 95613 | 45755 | 49858 | 91.77 | 8318 | 5963 | 2355 | 253.21 | 2.89 |

County Economic Census Data

- Collected at census years only
- Detailed business information
- Aggregated from firm level data (> 7 million firms)
- Complete coverage for all counties and districts

Industries

- 852 industries

Employment

1

1-19

20-49

50-99

100-499

500-999

1000-4999

5000-29999

30000-49999

50000+

Revenue

(in 10,000 Yuan)

0-30

30---50

50---100

100--300

300--500

500--1000

1000-3000

3000-5000

5000-10000

10000-30000

30000-50000

50000-100000

100000-150000

150000-200000

200000 and over

Products

- 3 primary products

Ownerships

- 23 different industries

Revenue

- 15 revenue ranges

Employment

- 10 employment ranges

China Geo-Explorer

- Complete coverage for all counties and districts
- Comparable across different data sources
- Comparable county data between 2000 and 2010
- Data can be exported to Excel or GIS map files

Theme map export options

Base Year: 2000 2010 2000-2010

Extent: All Regions Selected Regions

Level: Province City County Town

The theme map at this level starts displaying at zoom 5

Find:

Census 2010

- General Information (Short Table: 100 percent sampling)
- Family households, population and sex ratio by county
 - Total Number of Households
 - Total Number of Family Households
 - Total Number of Collective Households
 - Total Population**
 - Total Males
 - Total Females
 - Sex Ratio(Female=100)
 - Sub-Total Population of Family Households
 - Total Males of Family Households
 - Total Females of Family Households
 - Sex Ratio of Population from Family Households(Female=100)
 - Sub-Total Population of Collective Households
 - Total Males of Collective Households
 - Total Females of Collective Households
 - Sex Ratio of Population from Collective Households(Female=100)
 - Average Size of Family Households(person/household)
- Population by sex, household registration status and by county
- Status of registered population by sex and county
- In-coming population from different household registration status

Theme Map Options

Classification list

| No. | Color | Classification Value |
|-----|-------|----------------------|
| 1 | | 0 to 160,217 |
| 2 | | 160,217 to 275,112 |
| 3 | | 275,112 to 379,469 |
| 4 | | 379,469 to 524,799 |
| 5 | | 524,799 to 759,570 |
| 6 | | 759,570 to 8,220,207 |

Theme Layer List

- Total Population
- TianDiTu
- No BaseMap

Basic Layer List

- OpenStreetMap
- TianDiTu
- No BaseMap

Boundary Layer List

- Province Layer 2010
- Prefecture Layer 2010
- County Layer 2010
- Township Layer 2010

US Geo-Explorer

- Complete coverage for all counties and districts
- Comparable across different data sources
- Comparable county data between different years
- Data can be exported to Excel or GIS map files

The screenshot displays the US Geo-Explorer web application interface. The main map shows the United States with a data layer for County_2010 Population, color-coded by population range. The sidebar on the left contains a menu with the following items:

- Presidential Election Data
- Census Data 1970-2010
 - Census 2010
 - Census 2000
 - Census 1990
 - Census 1980
 - Census 1970
- Economics Census 1986-2012
- Business Data 1997-2013
 - Firm Level Total 2013**
 - Firm Level Total 2012
 - Firm Level Total 2011
 - Firm Level Total 2010
 - Firm Level Total 2009
 - Firm Level Total 2008
 - Firm Level Total 2007
 - Firm Level Total 2006
 - Firm Level Total 2005
 - Firm Level Total 2004
 - Firm Level Total 2003

The bottom-left sidebar shows the 'Theme Map Options' for 'County_2010 Population' with a classification method of 'Quantile' and 6 classes. The 'Classification list' table is as follows:

| No. | Color | Classification Value |
|-----|-----------------|----------------------|
| 1 | Lightest Yellow | 81 to 7,832 |
| 2 | Light Yellow | 7,832 to 15,226 |
| 3 | Yellow | 15,226 to 25,857 |
| 4 | Orange | 25,857 to 45,924 |
| 5 | Dark Orange | 45,924 to 113,792 |
| 6 | Darkest Orange | 113,792 to 9,818,605 |

The bottom-right sidebar shows the 'Theme Layer List' with 'County_2010 Population' checked. The 'Basic Layer List' includes 'Open Street Map' checked. The 'Reference Layer' includes 'State', 'County', and 'Tract'.

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Contact

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