Food Demand & Supply in China

--Impact of growing middle class

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Introduction

- **Growth in food production**

	1978-2011	2000-2011
Agric. GDP	+336.8%	+57.7%
Grain output	+87.4%	+23.6%

- **Growth in food imports**

Soybeans	from almost nil to 60 mmt
Cereals	from -10 mmt to +10 mmt

- **Why? Future?**

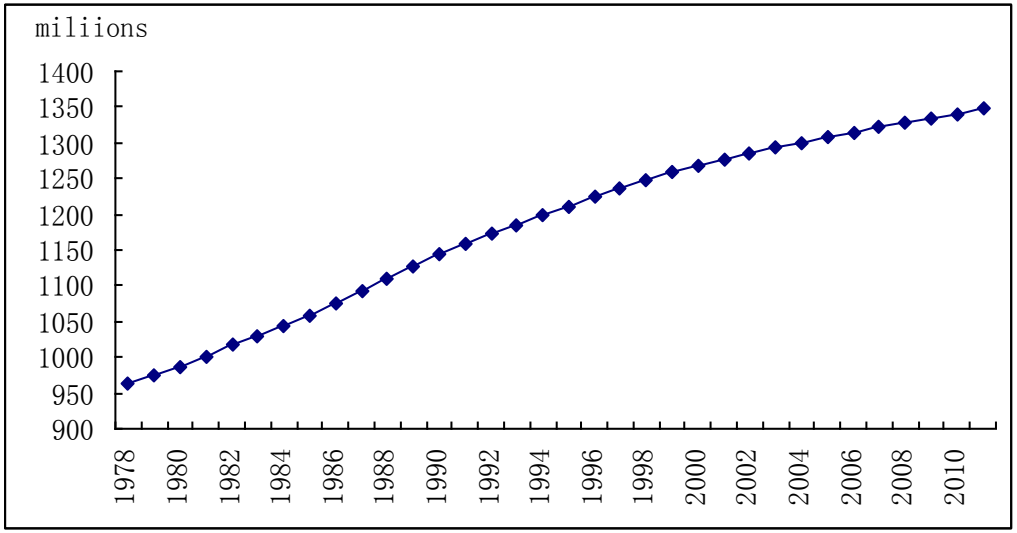
Trends in demand

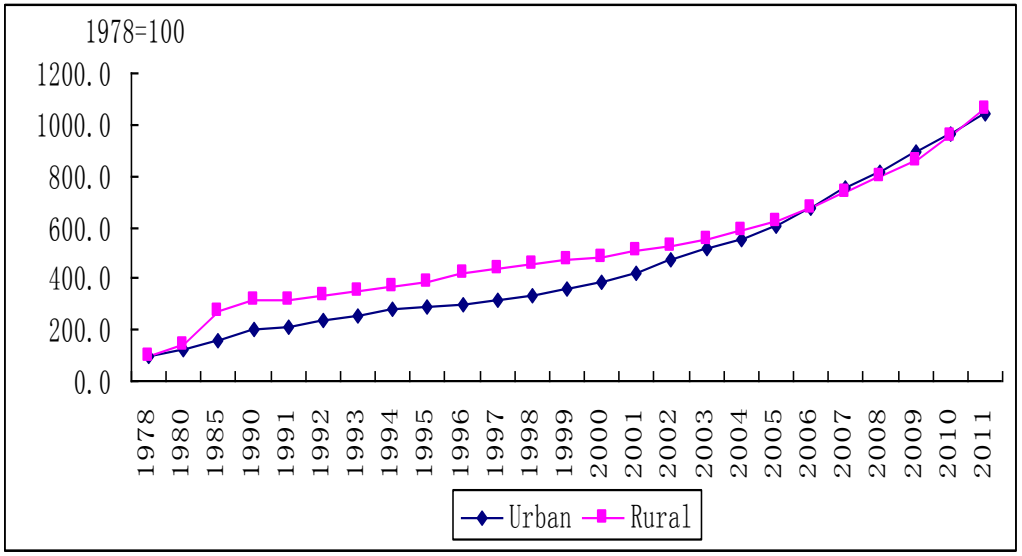
- **Population growth**
- **Income growth**
- **Demographic changes**

  Age & occupation structure, AME;

  Rural-urban migration

Trends in demand





Population:

1978-2011: +40%

2000-2011: +6.3%

Income:

Urban:

1978-2011: +946%

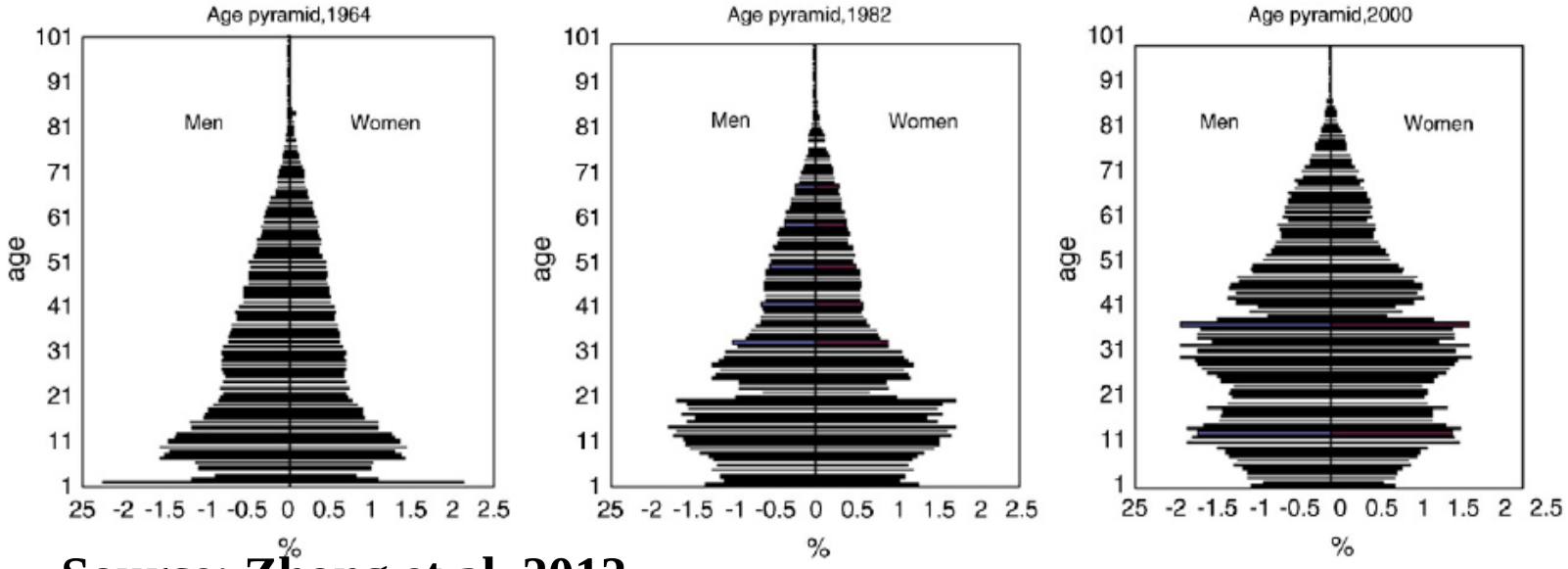
2000-2011: +173%

Rural:

1978-2011: +963%

2000-2011: +120%

Trends in demand



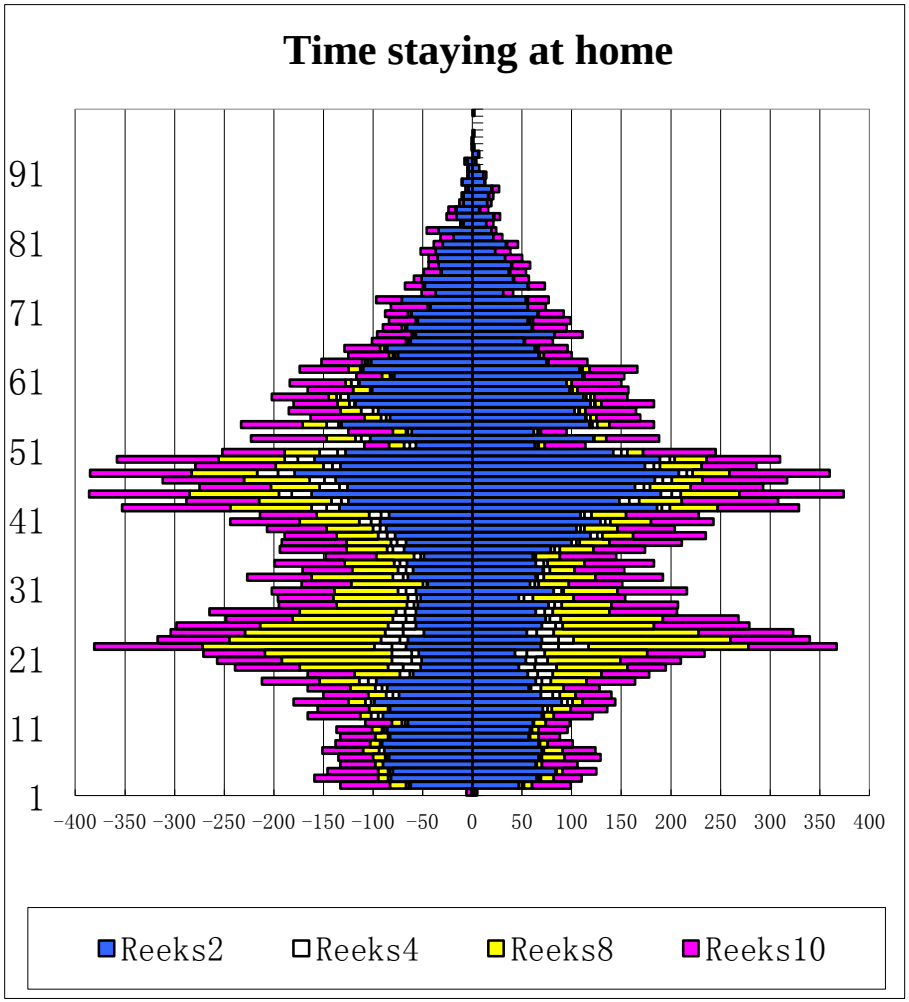
Source: Zhong et al. 2012

Impact of demographic change:

Energy intake is largely determined by physical requirements such as age, gender, and workload;

Changes in age & occupation structures have reduced per capita energy intake by 2-3% since 2000.

Trends in demand

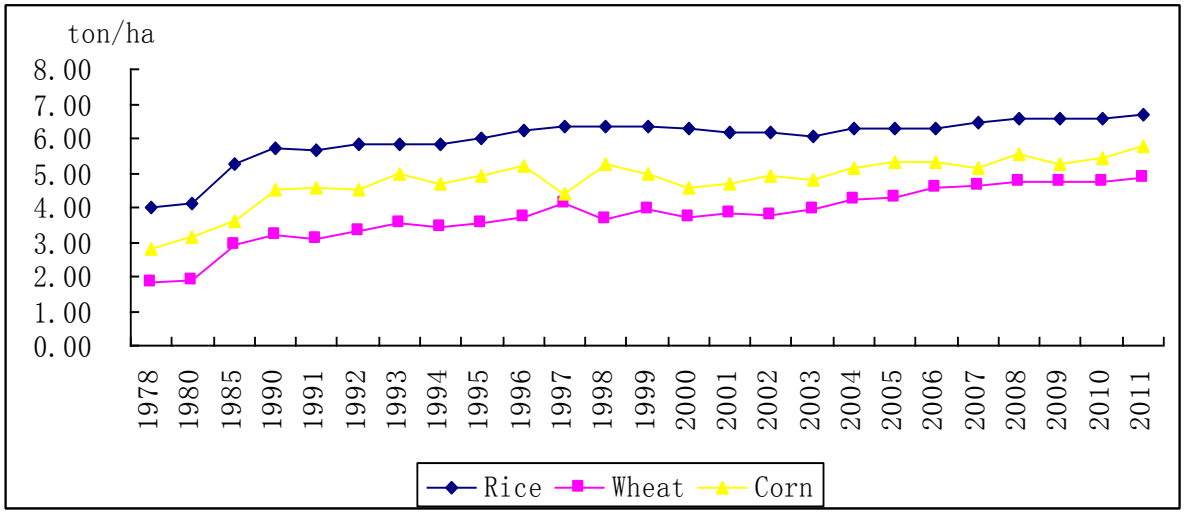


Source: Zhong and Xiang, 2012

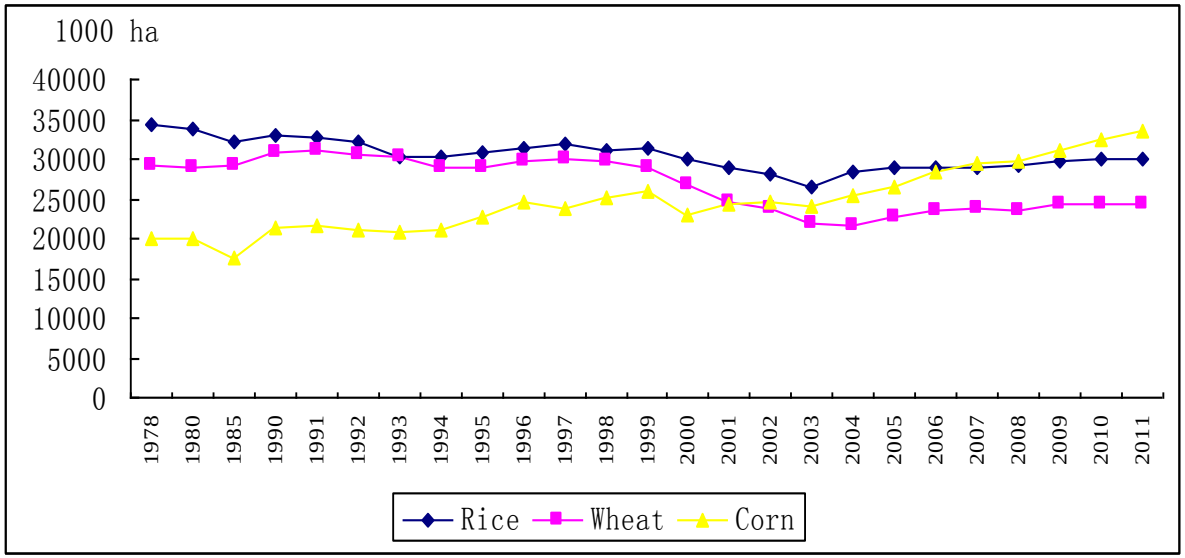
Demographic change:

Rural-urban migration has increased energy intake by 2-3%, and changes in dietary structure may have led to another 5% increase in total grain demand.

Trends in supply

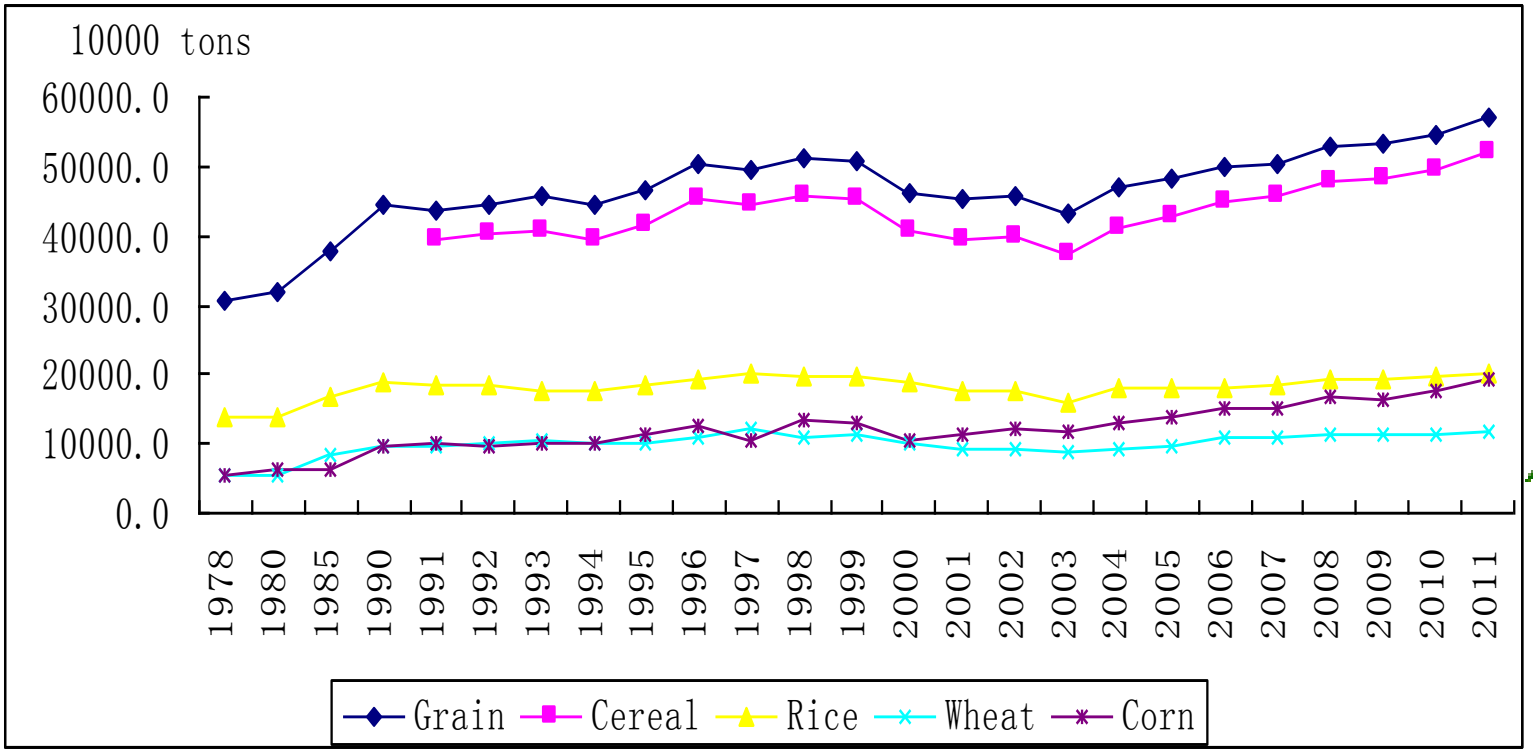


Yield growth



Acreage structure

Trends in supply



Output growth

Trends in supply

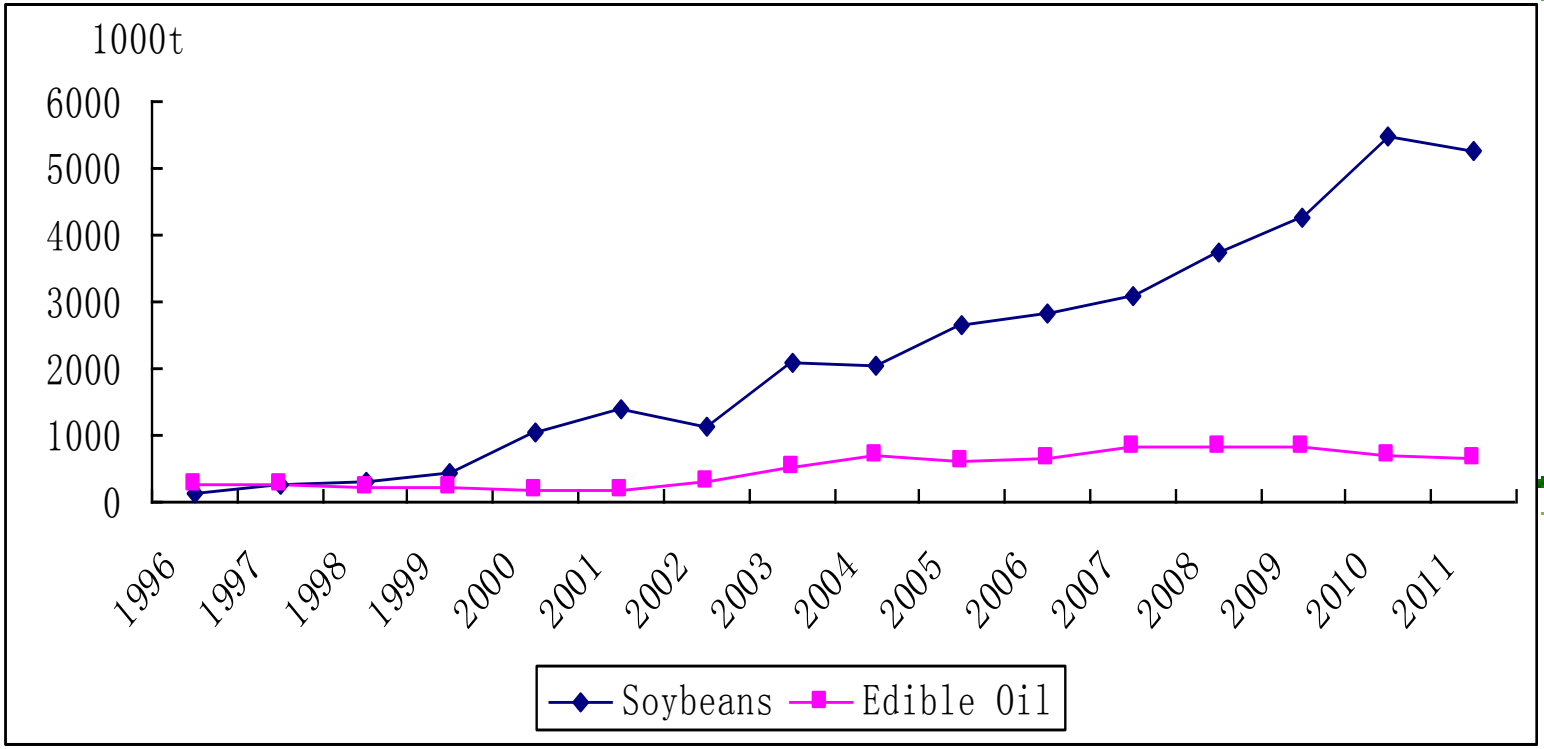
Resource constraints:

arable land: 1/4 of the world average on per capita terms, and declining to urbanization;

fresh water: 1/3 of the world average on per capita terms with faster growing demand for non-agricultural uses;

labor resource: reducing quickly due to rural-urban migration; remaining farmers may substitute machine for labor or shift to high value products facing rising labor cost, which is largely influenced by geographic conditions.

Trends in supply

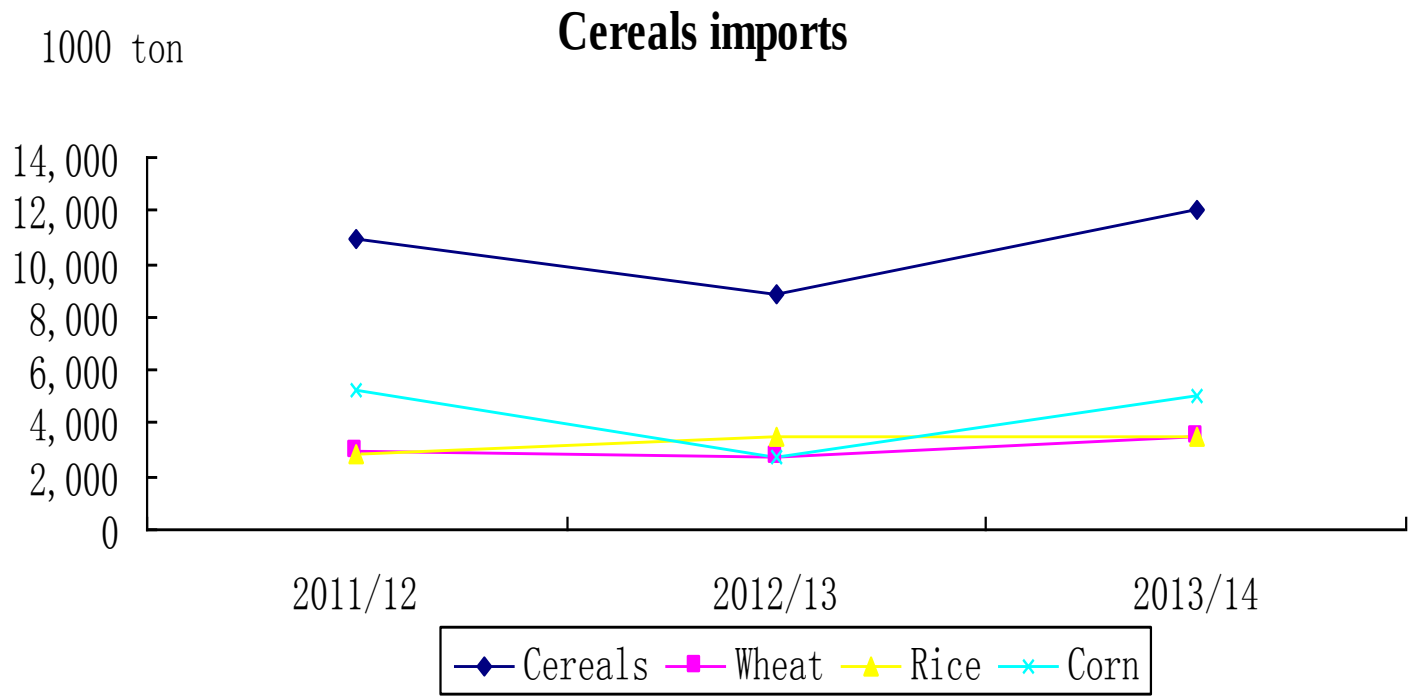


Imports of edible oil & seeds

Trends in supply

- **Recent trends: cereal imports**

China exported more than 10 mmt of corn a year during the early 1990s, and was a net exporter during 2008/09 world food crisis.



Trends in supply

- **Recent trends: meat imports, 2012**

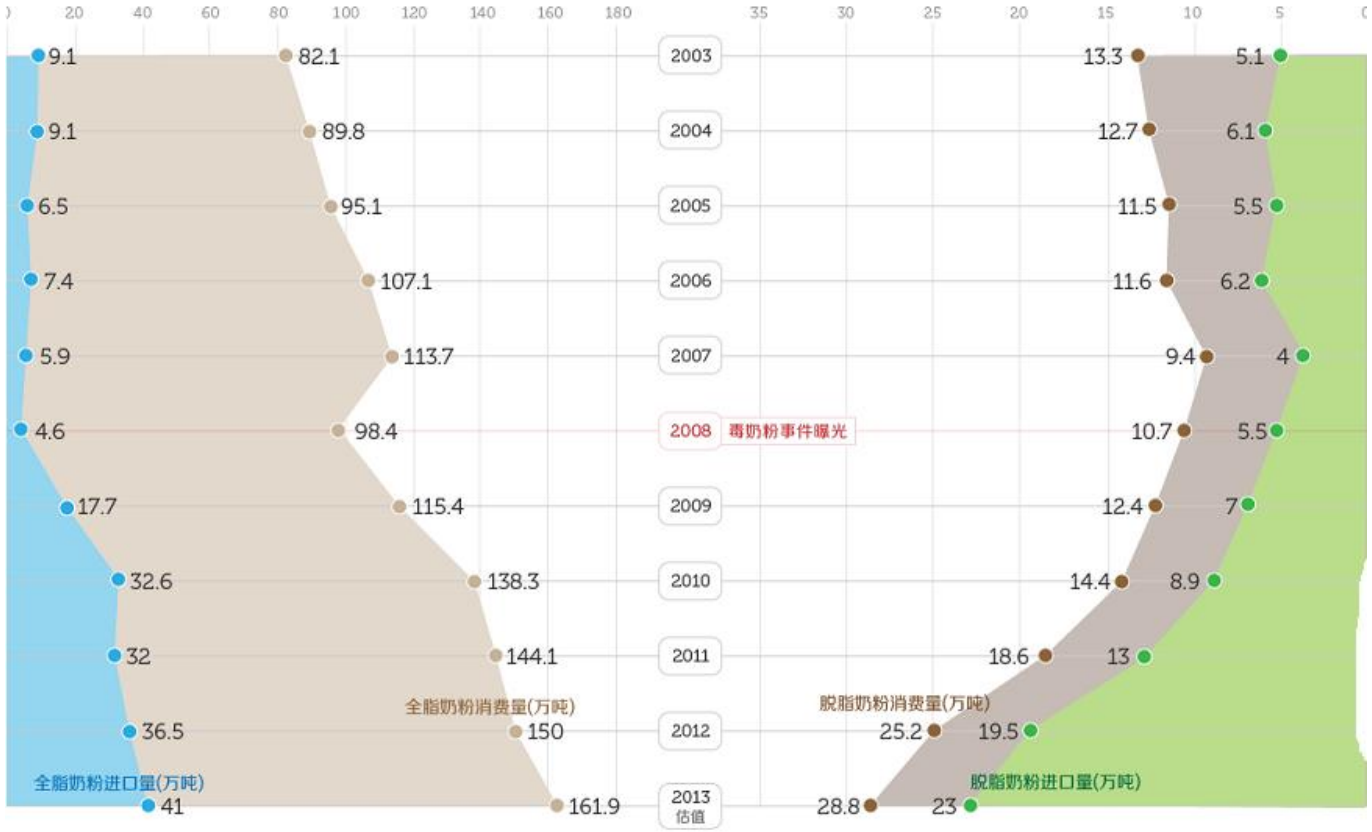
	billion US$	over 2011
Animal products	**13.4**	**+38.8%**
pork	**2.14**	**+114.3%**
beef	**0.37**	**+25.9%**
mutton	**0.37**	**+136.7%**
poultry	**0.92**	**-7.7%**

Pork imports was 1.35 mmt, about 1/4 of world trade.

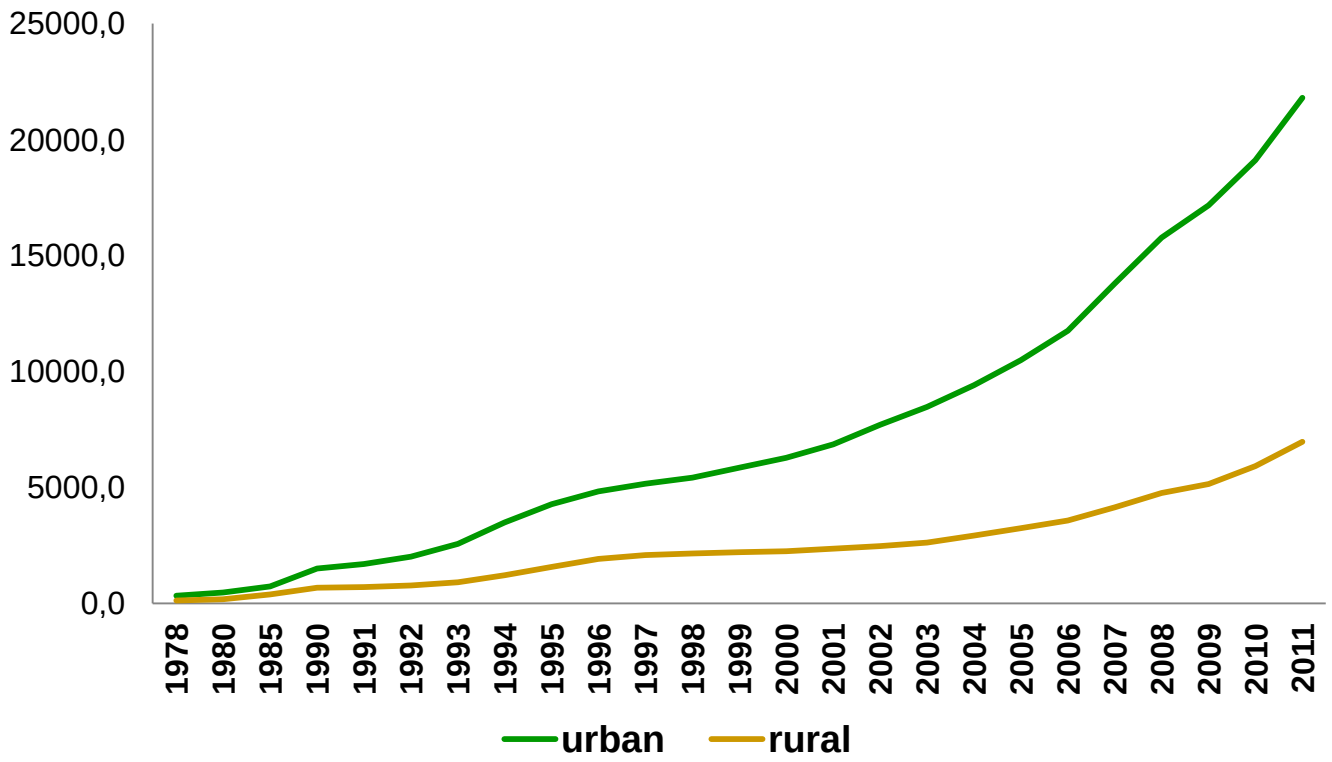
Trends in supply

- **Recent trends: milk powders imports**

(impact of melamine scandal in 2008)

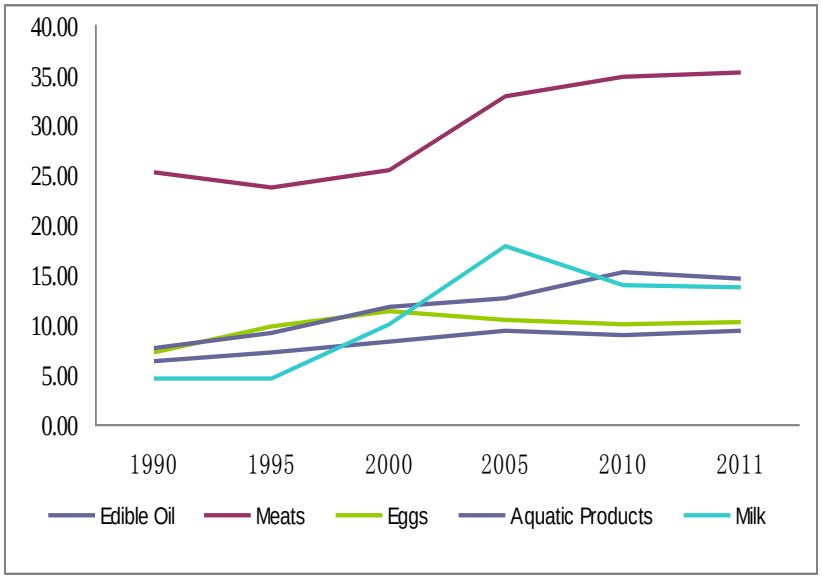


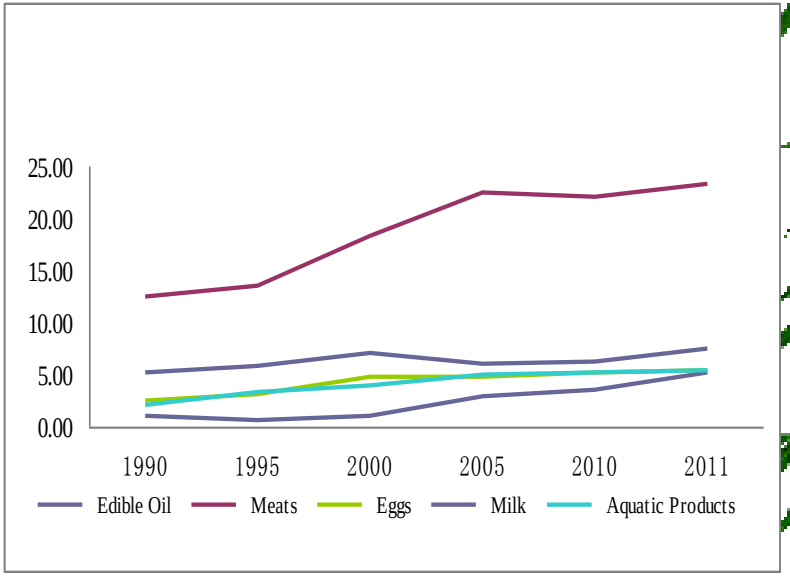
Income growth & distribution



Per capita disposable income has always been higher in the urban areas; the ratio was 2.57:1 in 1978, reduced to 1.86:1 in 1985, and increased to 3.13:1 in 2011.

Income growth & distribution

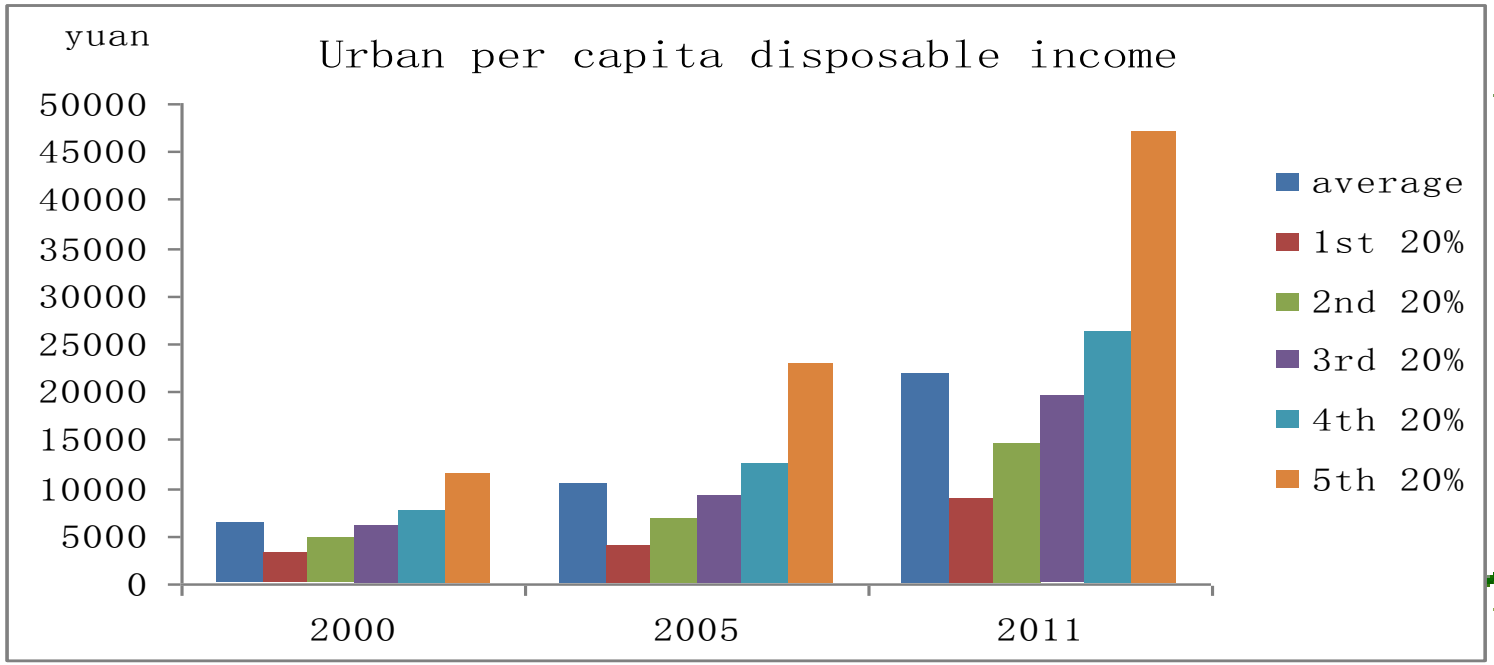




Comparison of per capita food consumption, selected items

Per capita consumptions of edible oil and animal products have always been higher in the urban areas; implying further growth in food consumption is likely to be the outcome of rural-urban migration.

Income growth & distribution

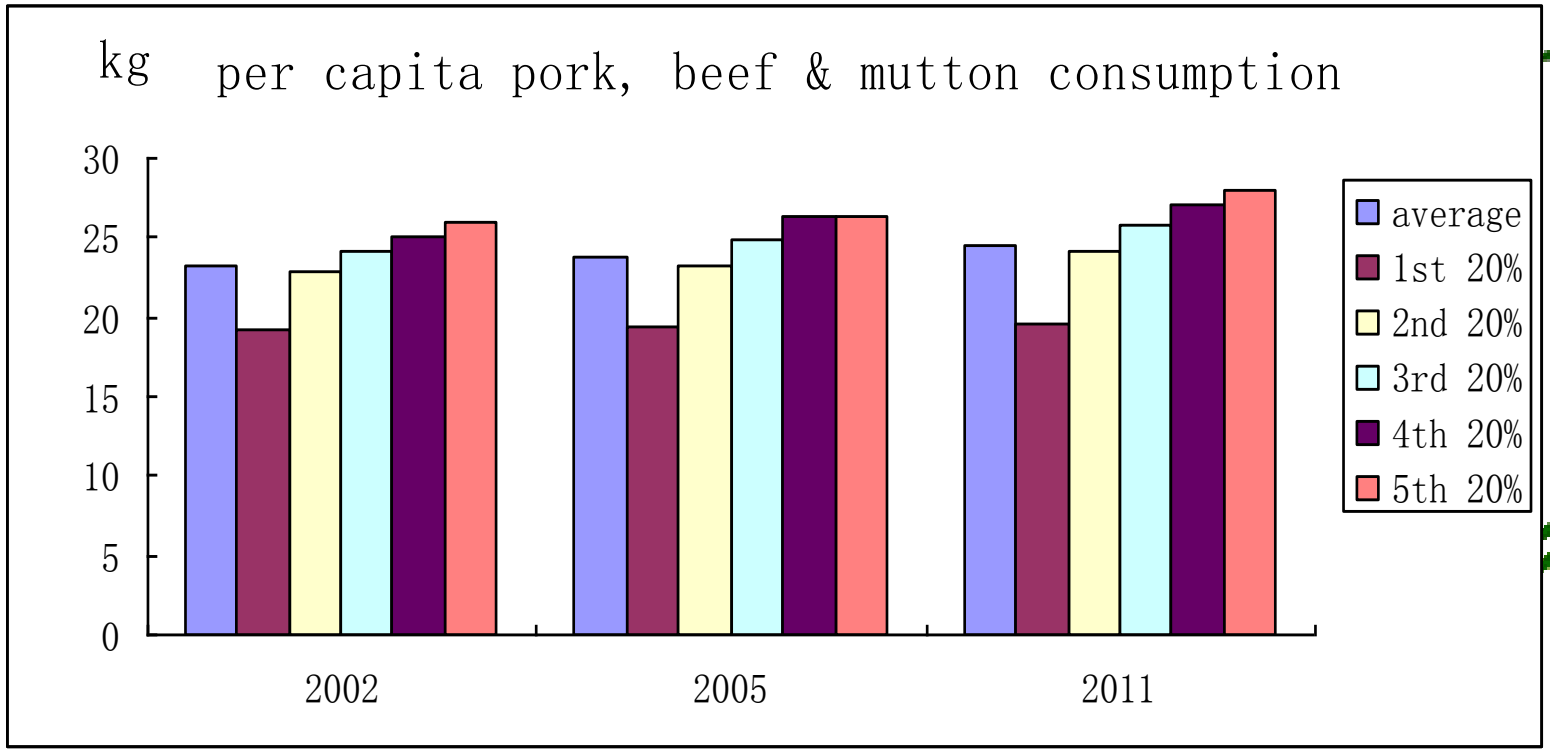


	average	1st 20%	2nd 20%	3rd 20%	4th 20%	5th 20%
2005/2000	167.1%	127.6%	145.1%	155.8%	168.3%	202.1%
2011/2005	207.9%	218.8%	216.1%	212.7%	209.6%	205.4%

On average, per capita disposable income increased by 58.3% from 2000 to 2005 and 72.3% from 2005 to 2011, respectively, in real terms.

From 2000 to 2005, the rich enjoyed higher income growth, while income growth was rather even among all income groups between 2005 and 2011.

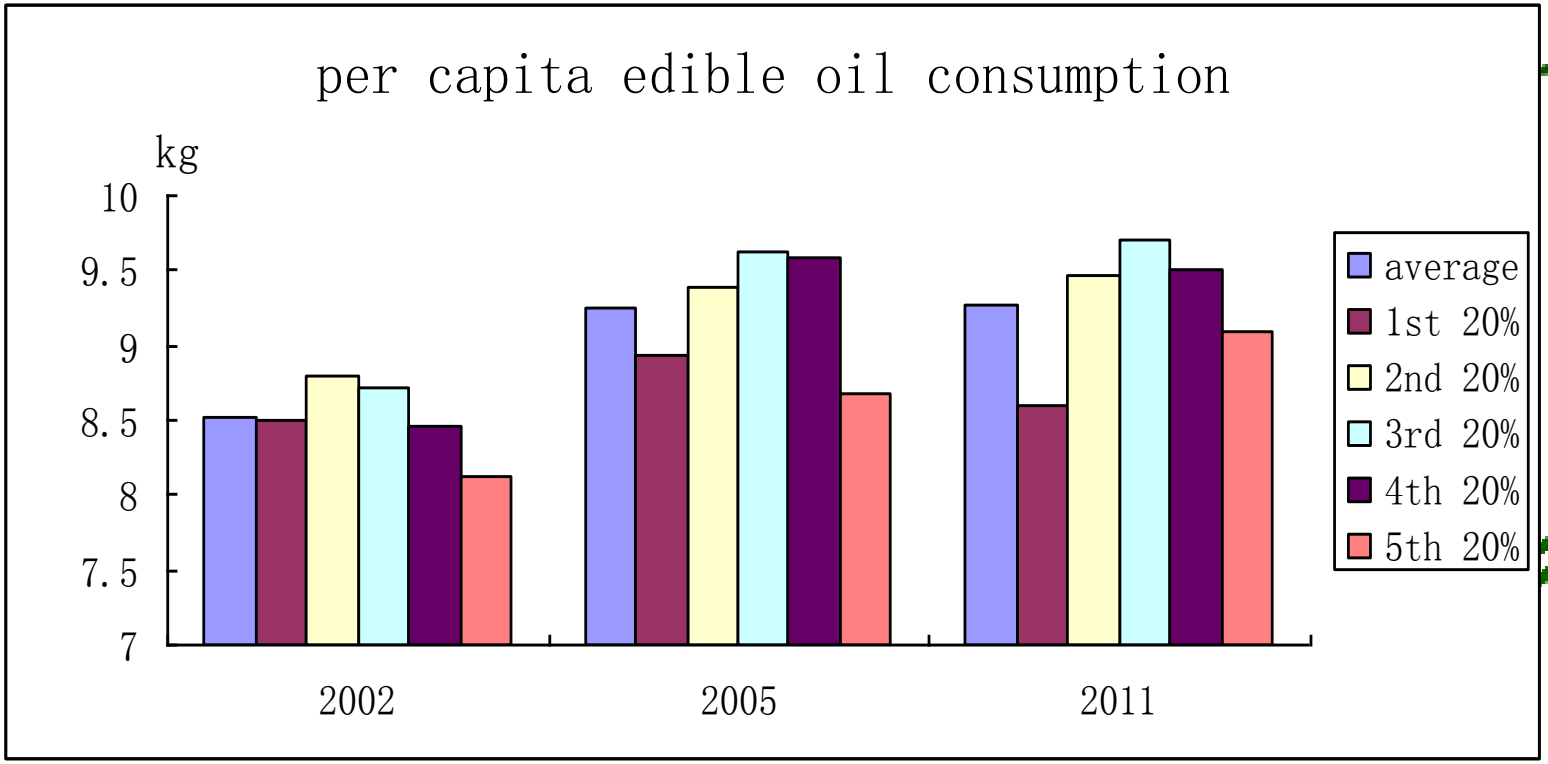
Income growth & distribution



	average	1st 20%	2nd 20%	3rd 20%	4th 20%	5th 20%
2011/2002	105.6%	102.4%	105.3%	106.9%	107.4%	107.2%

Meat consumption was increased faster among richer households.

Income growth & distribution



	average	1st 20%	2nd 20%	3rd 20%	4th 20%	5th 20%
2011/2002	108.7%	101.2%	107.5%	111.4%	112.3%	112.1%

Edible oil consumption was also increased faster among the richer.

Income growth & distribution

- **GDP growth→→income growth**
- **Growing of middle class:**

  rural-urban migration;

  improved education & infrastructures;

  changing industrial & employment structure;

  the relatively rich getting richer

Growing power of middle class

- **Growing demand for food:**
  - **Higher energy intake;**
  - **Changing diet (more animal based food)**
- **Changing attributes of demand**
  - **Higher safety;**
  - **Higher quality;**
  - **Nutritional & functional contents**

Faster increase in demand, but slowing down increase in supply

Perspectives for the future

- **Population growth**

  declining, leveling out at 1.45 billions by 2030

- **Income growth**

  slowing down to 6-8% per year or lower

- **Demographic changes**

  further urbanization, 65% by 2030, and aging

- **Demand from middle class**

  higher safety and quality standards; nutritional concerns

Perspectives for the future

- **Total demand for grain**

  620-630 mmt, about a half being feed

- **Imports of edible oil & seeds**

  may continue to increase but slow down

- **Imports of cereals**

  may increase, especially feed grain such as corn

- **Imports of high quality products**

  animal products, other high value produce

Perspectives for the future

- **Sustainability of domestic supply**

  Natural resource constraints:

  arable land & fresh water

  Social & economic constraints:

  safety and quality concerns

  Both are reinforced by the power of the growing middle class!

- **Potential approaches to ease the constraints:**

  Tightened regulations accompanied with technology innovations, supported by public funds

Perspectives for the future

- **How about the near future ?**

  (10 years from now)

- **Imports of food**

  edible oil seeds: 65-70 mmt;

  edible oil: 6-8 mmt

  cereals: 10-15 mmt

  meats: 3-5 mmt

  other high value produce

A substantial push power is coming from growing middle class!

Thanks for your attention!