



# ***Trend of Beverage Packing Technology in Transition Period*** **经济转型期饮料包装设备的发展趋势**

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***Shanghai***

## Filling Technology Development 饮料灌装技术的发展

Risk  
Skill

Aseptic PET  
(w/in-line blowing)

Aseptic Can

Semi-aseptic PET

Hot-fill PET

Retort Can

Hot-fill Can

Bottle can

CSD



Coca-Cola (China) Beverages Ltd

1960

1970

2

1980

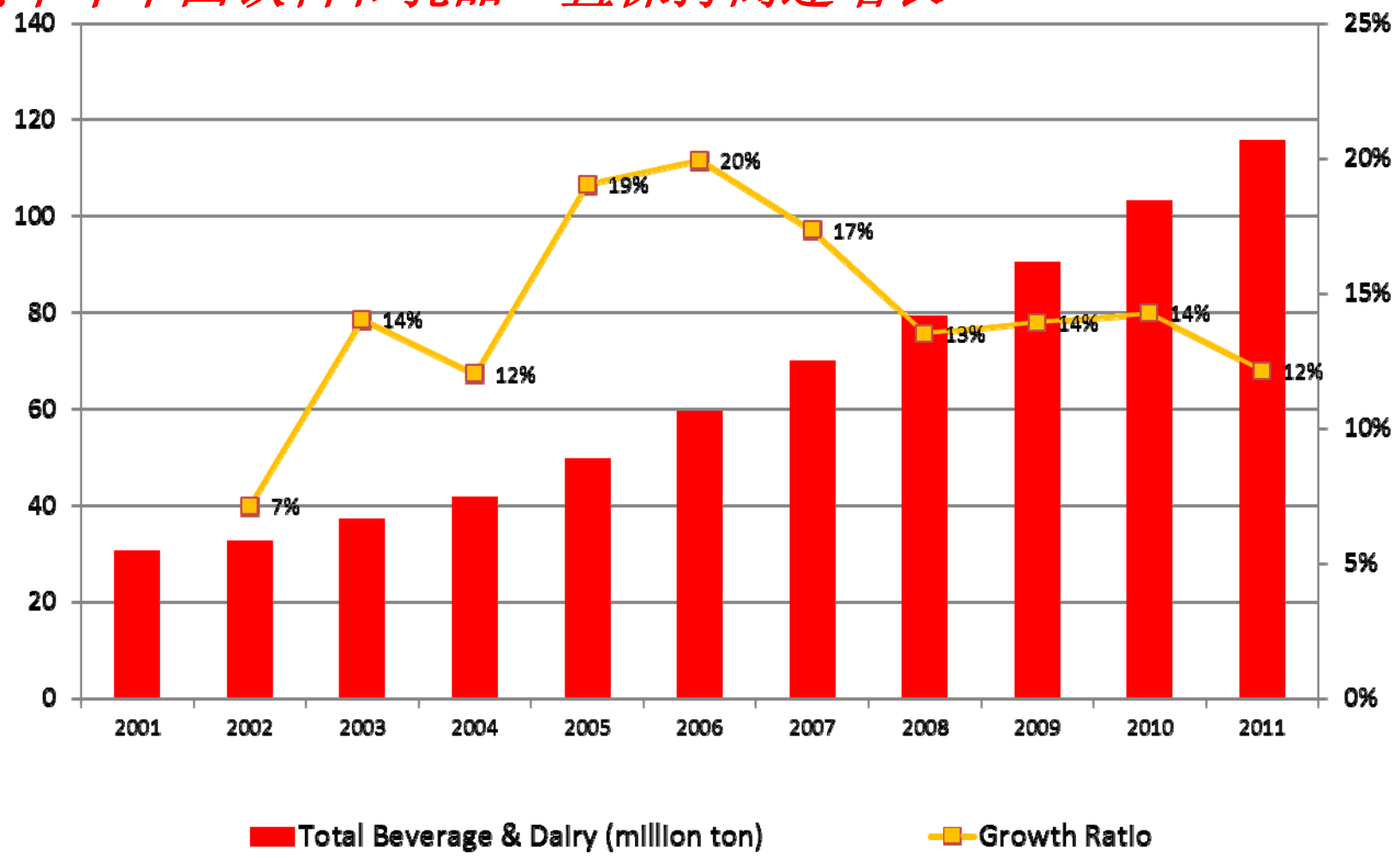
1990

2000

2002

Technical

*China Total Beverage & Dairy grew with double digit for last 10 years*  
*过去十年中国饮料和乳品一直保持高速增长*

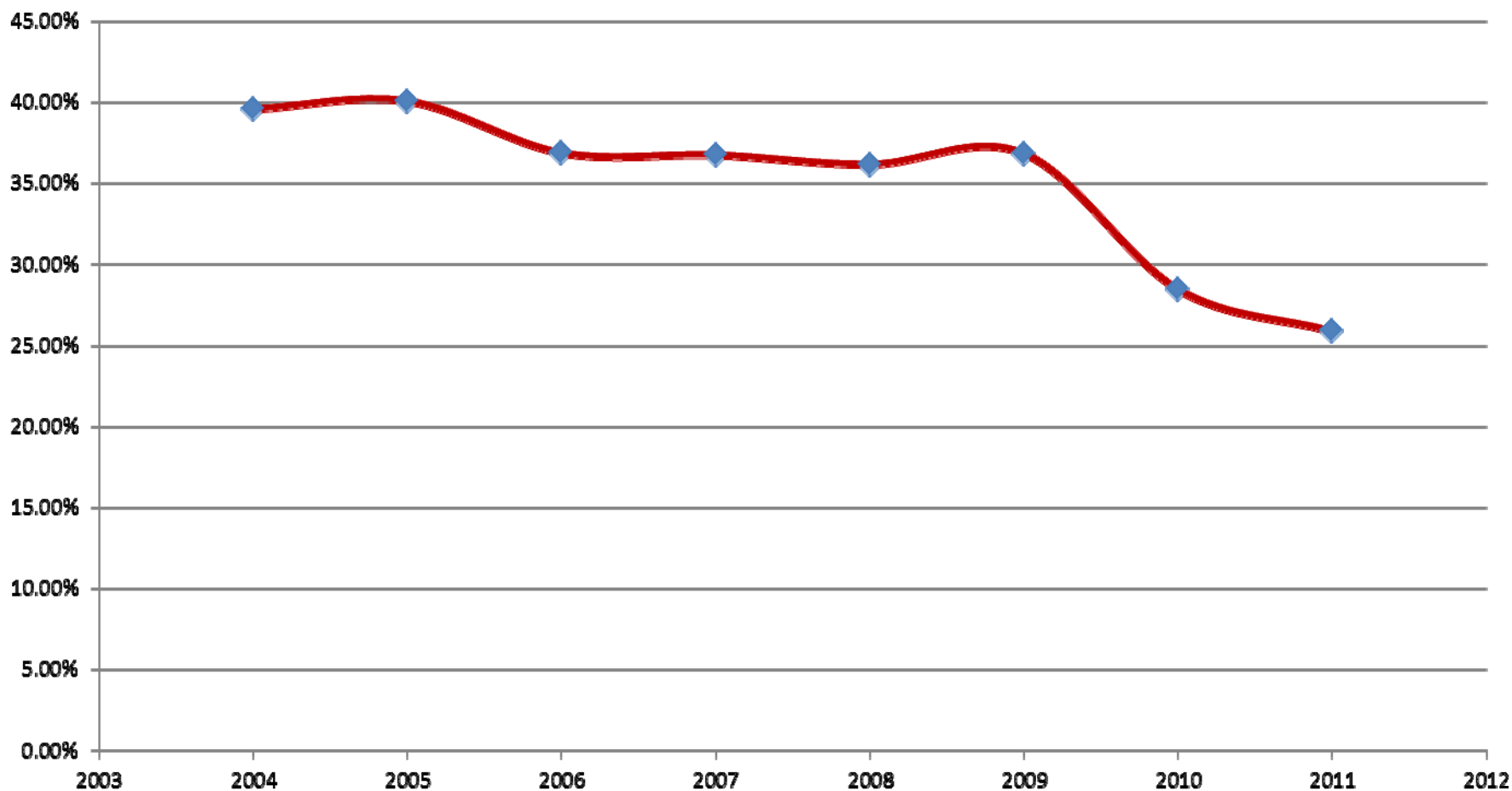


# **Gross Profit reduced for 3 years 最近三年饮料行业的毛利率一直下滑**

2004-2005, 40%

2006-2009, 36%-37%

2010-2011, 低于30%



# ***Key Challenges to Beverage Industry***

- 1. Commodity price inflation: Beverage corporation has no negotiation power on sugar, plastic resin, herbal, etc*
- 2. Labor cost increasing: Basic labor cost doubled from 2008*
- 3. Energy cost inflation: Oil price trebled & coal price inflated 5 times in last 10 years,*
- 4. Food safety: More restrict legal imposed on food safety & quality*
- 5. Consumer awareness of healthy: more concern about safety & quality*

# ***What Actions should be Taken***

- 1. HFSS application to reduce sugar cost***
- 2. High speed fully automatic production line to reduce labor cost***
- 3. Energy saving application on process***
- 4. Reduce package cost with new technology***
- 5. Quality control & food safety compliance***
- 6. Flexible production line to meet regional demand***

## ***Blow/Fill/Cap Technology Application in Sparkling***

- ***Achieve high speed more than 700bpm***
- ***Filling at ambient temperature to save energy***
- ***Reduce bottle weight up to 25%***
- ***More hygienic to be preservative free***



# **Blow/Fill/Cap Technology Application in Hot Filling**

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- ***Reduce filling temperature with cleaner bottle***
- ***Improve blowing efficiency due to low crystallization requirement***
- ***Reduce 25% of bottle weight***
- ***Further reduce 15% bottle weight with liquid nitrogen***



# **Blow/Fill/Cap Technology Application in Water**

- ***Reduce ozone ratio with more hygienic bottle***
- ***Reduce 25% bottle weight without air conveyor***
- ***Improve 10% blow efficiency***
- ***Achieve high speed up to 1200 bpm***



# **Blow/Fill/Cap Technology Application in Aseptic**

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- ***Reduce chemical consumption with more hygienic bottle***
- ***GEA developed aseptic blower to eliminate chemical sterilization process***
- ***Krones & Sidel utilized preform sterilization process to reduce chemical consumption***



## **❑ Advantage of high speed Blow/Fill/Cap**

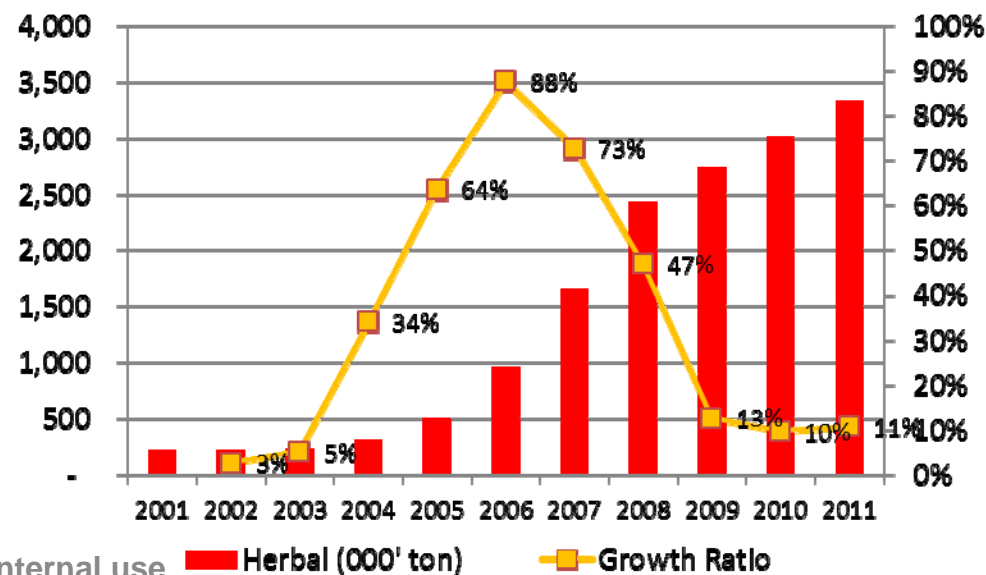
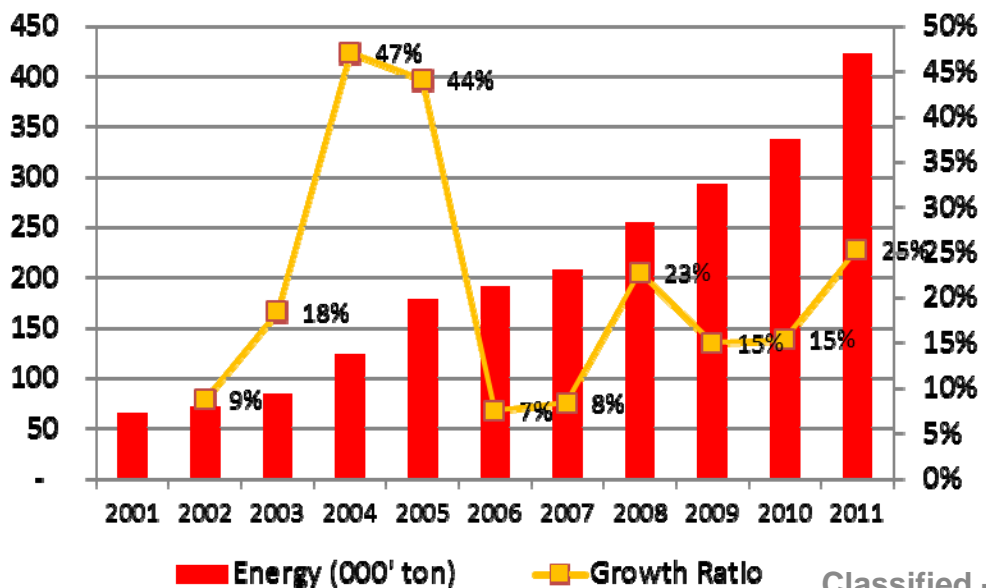
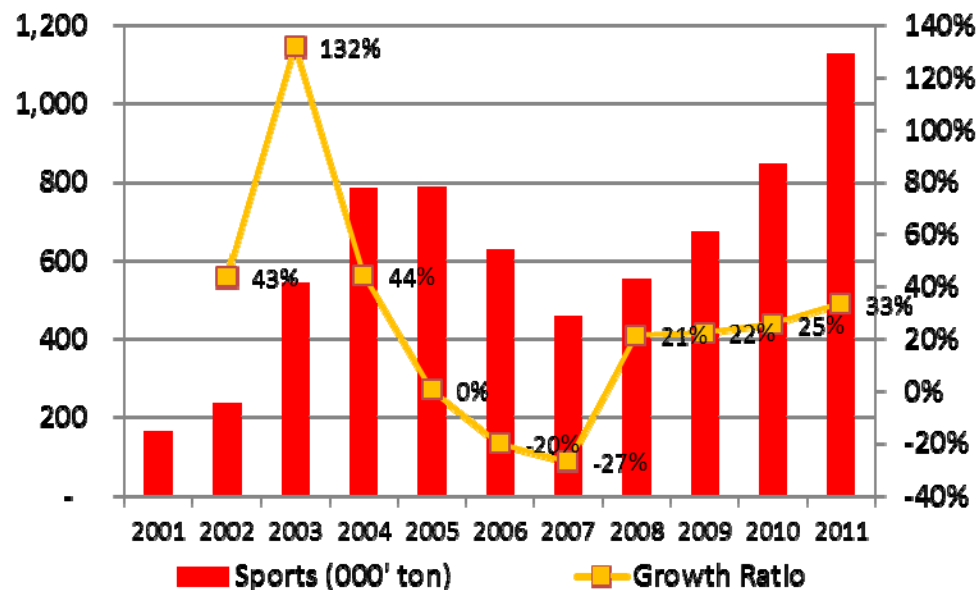
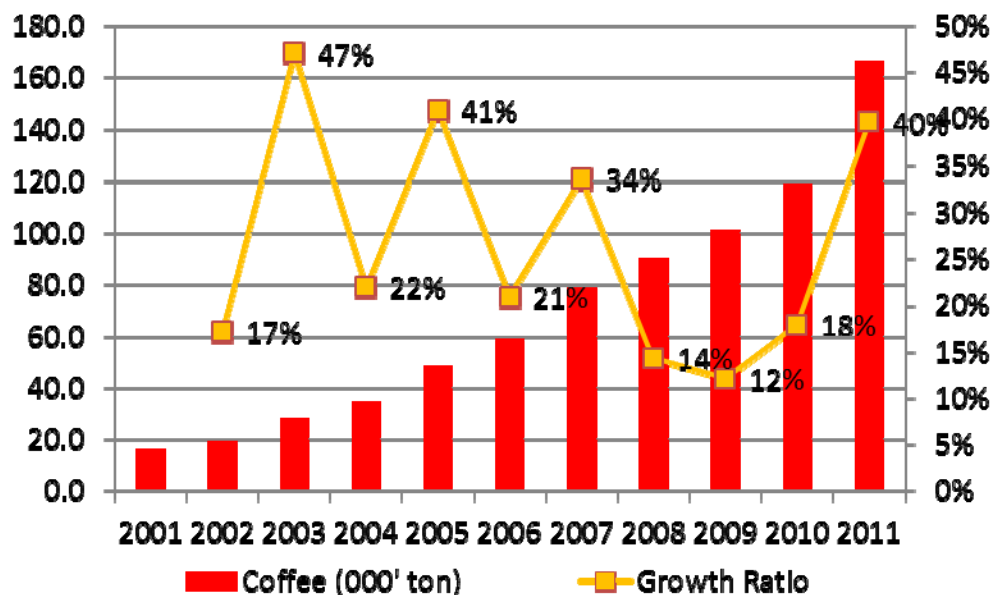
- **Big scale for Category A product**
- **Low variable cost & package cost**
- **Economic batch size is 1,000 to 2,000 tons**

## **❑ Disadvantage of high speed facility**

- **High fixed cost**
- **High change over cost**
- **Not suitable for small scale production**
- **High change parts cost**
- **Not flexible for Category B & C product**



## New Categories are Blooming Business



Classified - Internal use

# *What Facility is better for New Categories*

## ☐ *Optimized Cost with Balanced Consideration*

- *Fixed Cost*
- *Variable & Package Cost*
- *Change Over Cost*
- *Change Parts*
- *Suitable for 100 tons batch size*
- *Regional Application*
- *Meet Diversified Demand*



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# *Question ?*

