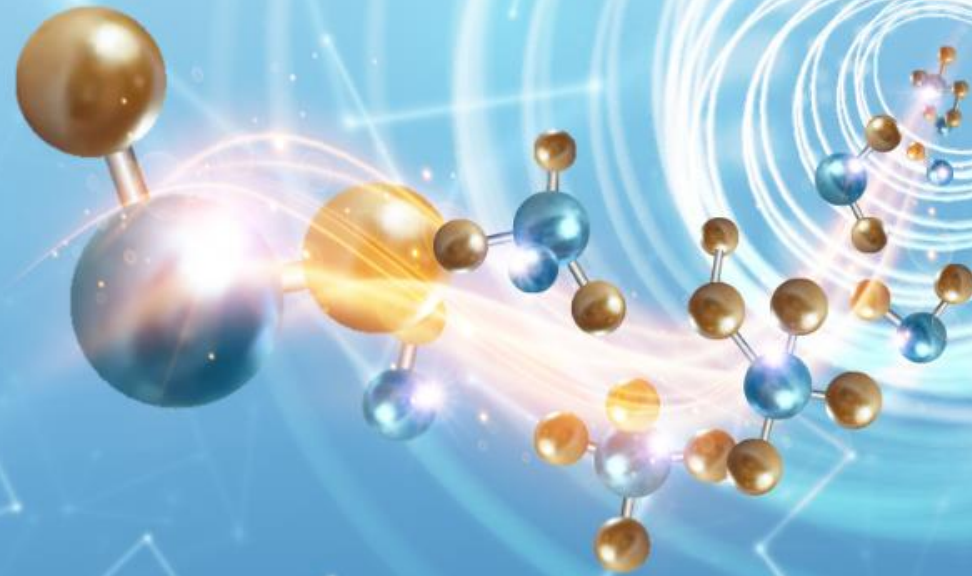
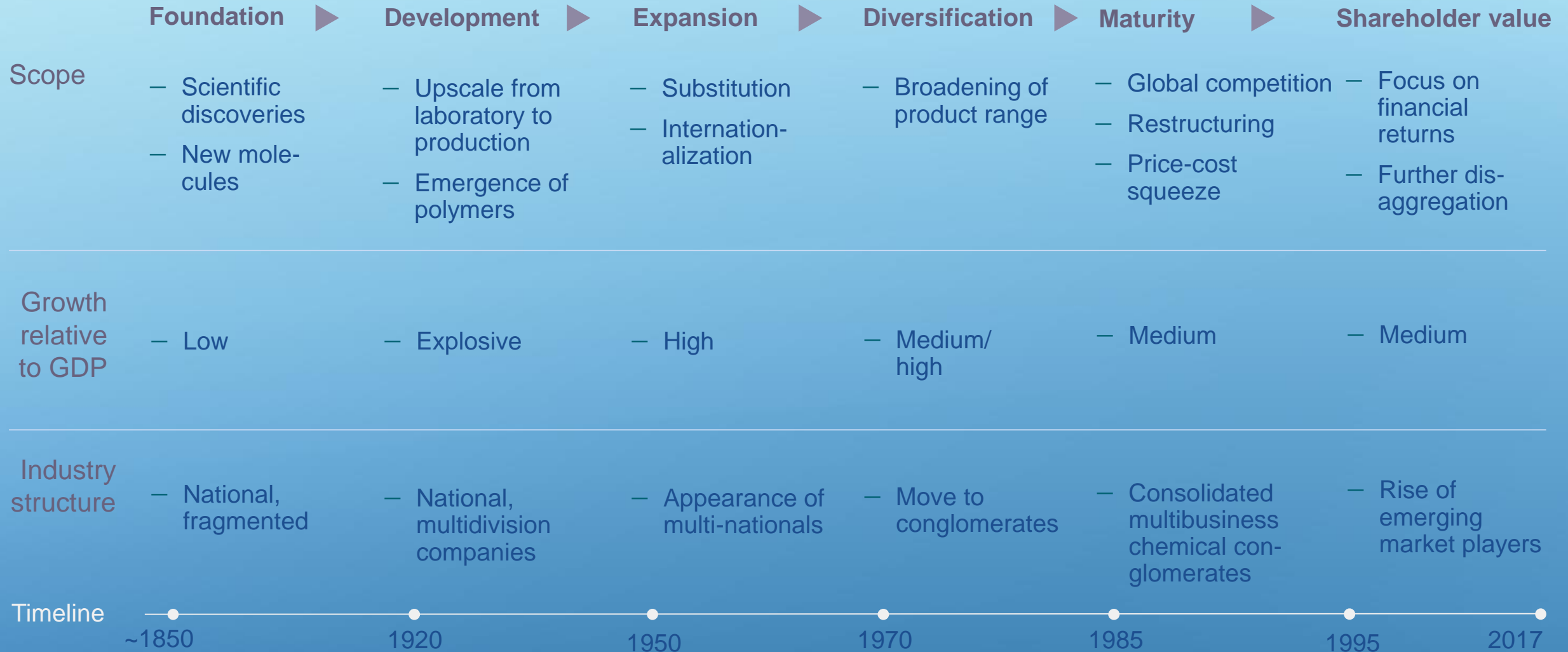


# THE CHEMICAL INDUSTRY IN TRANSFORMATION: A NEW JOURNEY BEGINS

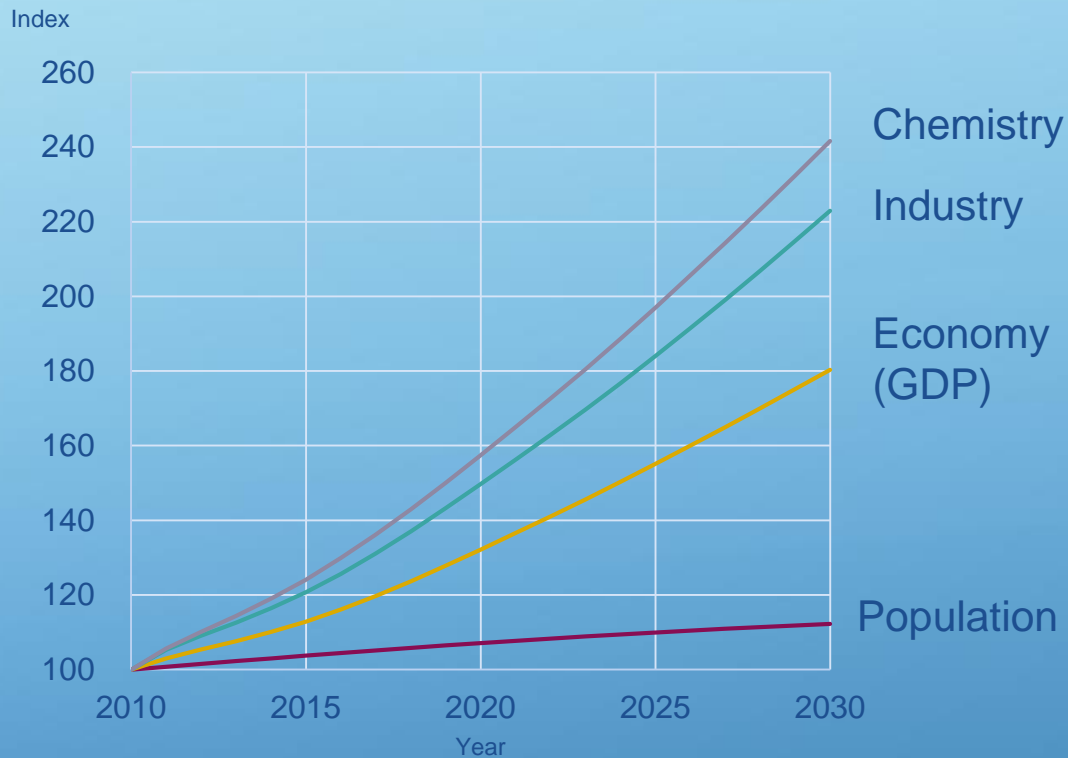


# THE CHEMICAL INDUSTRY STARTED AROUND 1900, VERY MUCH AS THE HITECH START UP INDUSTRY TODAY



# CHEMICALS: A EUR 3.5 TRILLION INDUSTRY TODAY, FORECAST TO GROW TO 6.3 TRILLION BY 2030

## Growth of global chemicals demand (indexed)



## In 2030:

- global chemicals demand expected to more than double (vs. 2017)
- ~2/3 of the market expected to be owned by Asia
- the share of specialty chemicals in total chemicals expected to significantly increase
- >20% of chemicals sales expected to be based on bio-based chemicals

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# KEY POINTS

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The industry had  
a ball for more  
than 15 years



Entropy wins and  
life reverts to  
normal



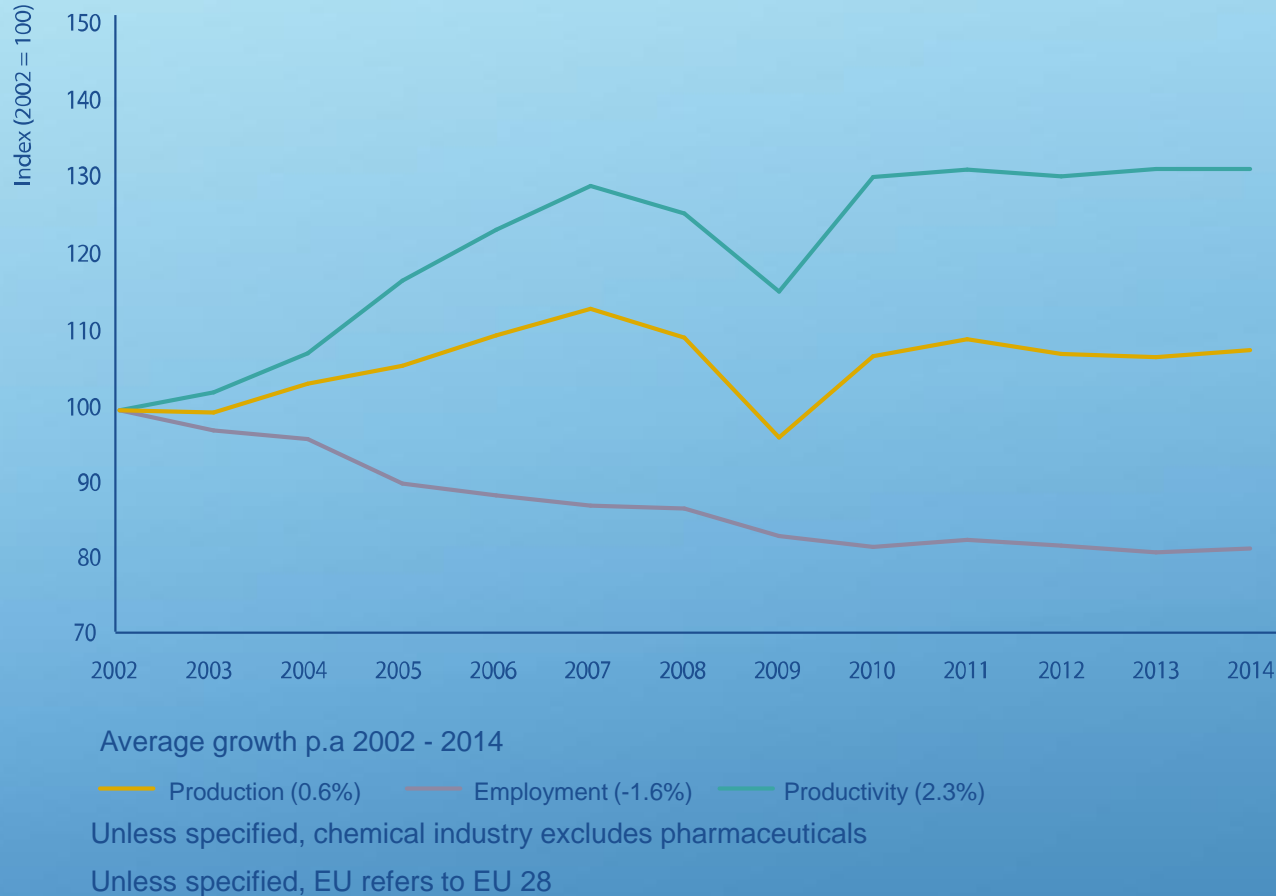
Creating value will  
become  
more difficult –  
questions over  
questions



No textbook  
solutions,  
but some  
guidelines

# IT IS A PRODUCTIVITY GAME: SINCE LATE 1990s MORE COMPETITIVE, DEMANDING AND CHALLENGING ENVIRONMENT

## Labor Productivity Rate grows at 2.3%

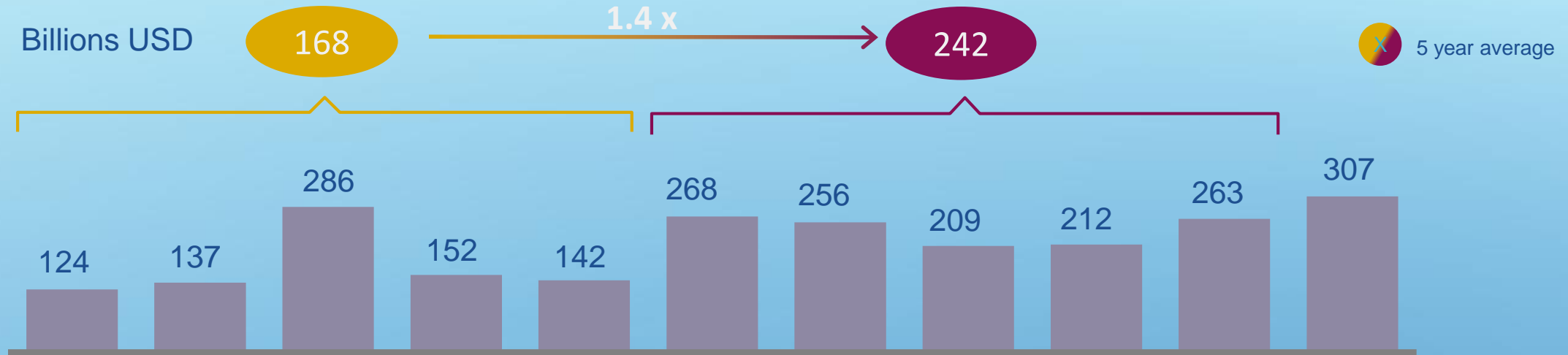


“Highly educated and trained employees, coupled with continuously high investments in the workforce, have turned the EU chemicals sector into a leading industry in terms of high labor productivity.

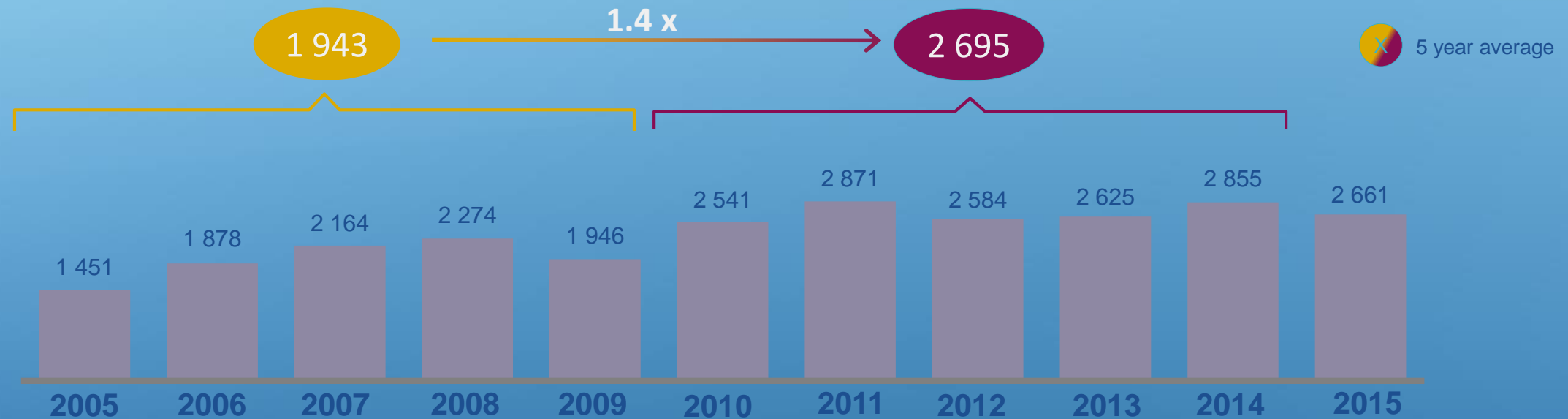
As a consequence, between 2002 and 2014, labor productivity in the EU chemical industry rose at an average annual rate of 2.3 per cent.”

# THE CHEMICALS INDUSTRY IS UNDERGOING A RESURGENCE IN M&A ACTIVITY

Deal value in the chemicals industry



Number of deals in the chemicals industry



# NEW INDUSTRY GIANTS HAVE EMERGED

## Top 10 companies in chemicals industry and their revenue in USD bn

2000

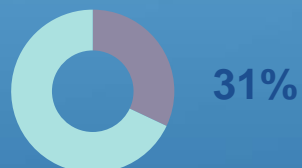
2015



### »DNA of new mega-players«

- Present in developing countries
- Take long-term, strategic perspective
  - Relatively independent from stock markets (often due to state-ownership)
  - Different KPIs (e.g. employment)
- Industry consolidation
  - DowDuPont
  - ChemChina + Syngenta
- Aggressively invest to gain
  - Technology (e.g. China-based players)
  - Access to export markets (e.g. Middle East; LATAM-based players)
- Own or have access to significant investment budgets (often SOEs)

### Share of emerging market mega-players



(1) Estimate based on merger inputs (2) Chemical revenue taken from ICIS Top 100 2015  
Source: McKinsey analysis, Capital IQ, corporate websites, annual reports, ICIS Top 100

# DEALING WITH CHEMICALS REQUIRES A GREAT DEAL OF RESPONSIBILITY

## Chemical industry

- Consumes 13% of the global oil production
- Contributes 4% of global CO<sub>2</sub> emissions
- Deals with toxic, explosive, and cancerogenetic substances
- Needs to transport raw materials and finished products over long distances
- Only partially can control the usage of its products by its customers

## Ethics



**General Regulations**



**Governmental Initiatives and Regulations**



**Voluntary Initiatives**

## Sustainability



**Environmental**



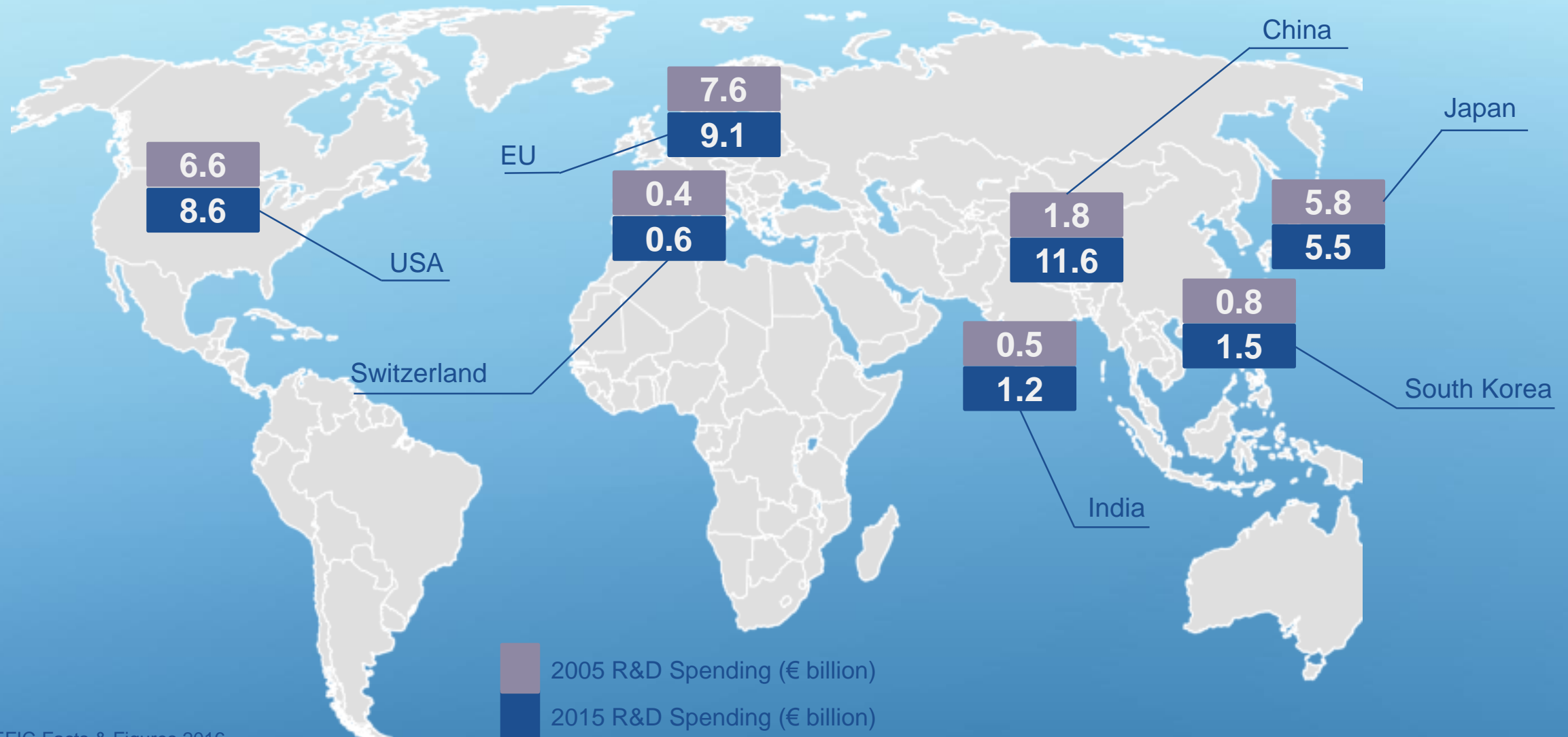
**Social**



**Economic**



# TOTAL R&D SPEND OF THE CHEMICAL INDUSTRY IN CHINA HAS SURPASSED EVERY OTHER REGION



# SUMMARY

## CHALLENGES FOR THE CHEMICAL INDUSTRY

Our industry is becoming increasingly dynamic, competitive and customer-focused

- Sound fundamentals: The chemical industry is a key enabler of life and the basis for high living standards
- Since late 1990s more competitive, demanding and challenging environment → “productivity game”
- Either small, highly specialized or large, diversified companies → fast and strong consolidation
- Historically volume and technology driven – but increasingly innovative
- Dealing with chemicals requires a great deal of responsibility → adhering to global standards as competitive advantage

**CLARIANT**

