Perspectives on the global crisis and opportunities for pulp in Europe

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17 September 2009

THE BOSTON CONSULTING GROUP

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Analyses have been based on public information and hypotheses fit at system level, but no access has been provided to entities' reserved information.

This deck has been prepared for an oral presentation. Therefore, it will be incomplete without the appropriate supplementary comments

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Agenda

The situation pre-crisis: dark clouds ahead

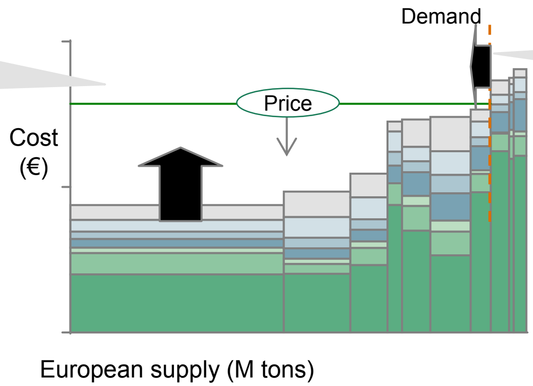
The crisis explained: in the middle of the storm

The implications for pulp players: mixed weather

New strategies for value creation: here comes the sun

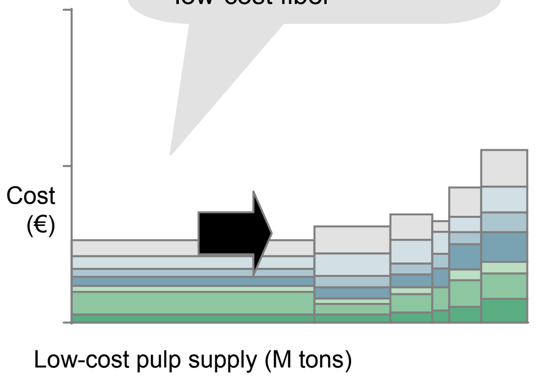
Europe under pressure – industry structure changing?

1 **Cost increases**
- Competition for raw materials
- Russian wood tariffs
- Additional environmental requirements

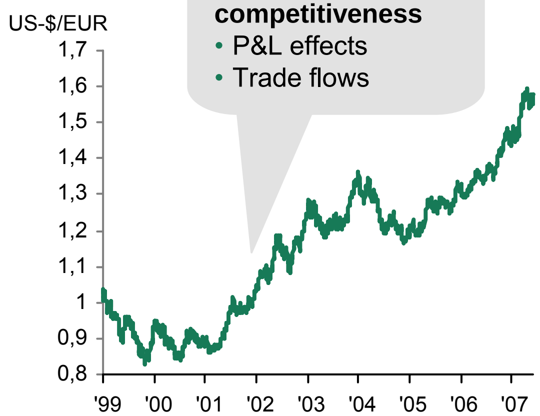


2 **Low demand growth in core markets**
- Stagnant or declining in some grades in WE
- Despite improving operating rates in some grades still over-capacities

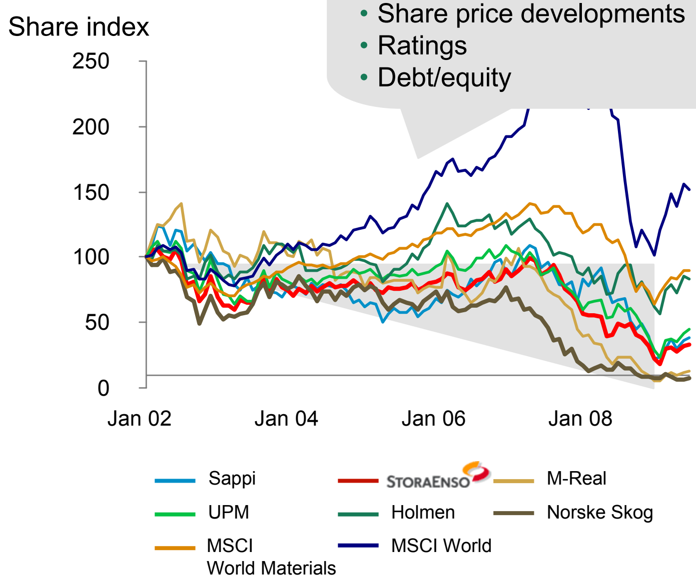
3 **"Natural" shifts in competitiveness**
- Strong capacity growth of low-cost fiber



4 **"Financial" shifts in competitiveness**
- P&L effects
- Trade flows



5 **Loss of financial flexibility for many players**
- Share price developments
- Ratings
- Debt/equity

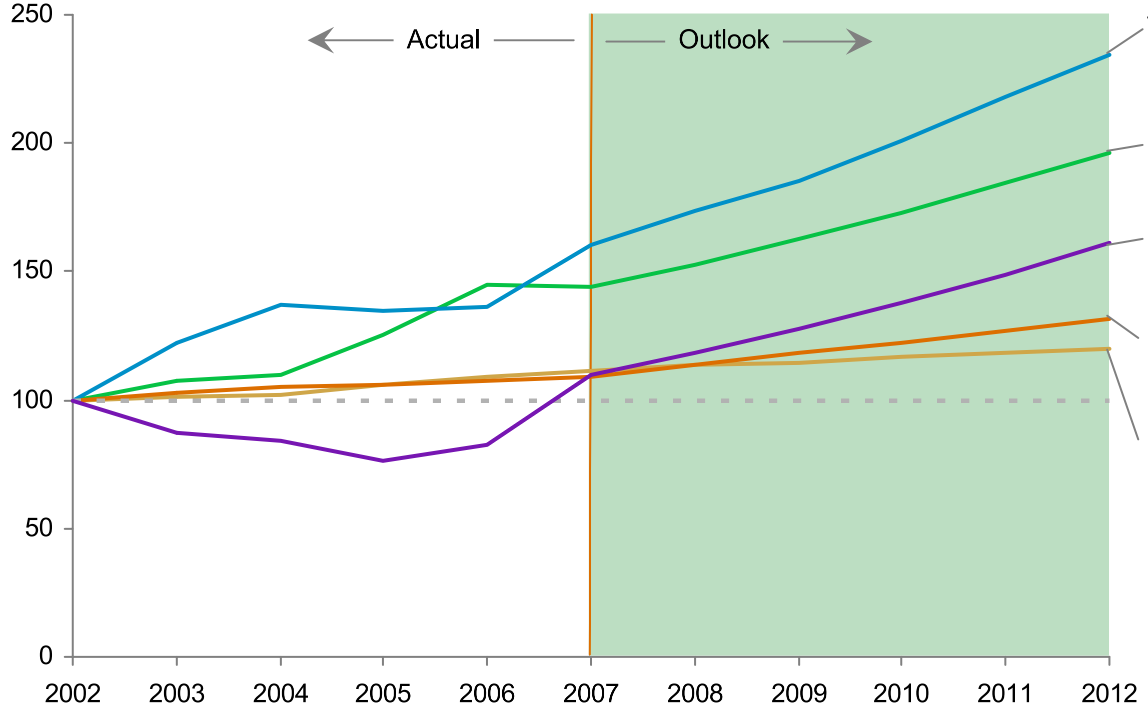


1 Cost increases

Significant recent cost increases in Europe — and more to come

Cost of production factors

Index prices[1] Germany (2000 = 100)



Excluding effects of Russian wood tariffs

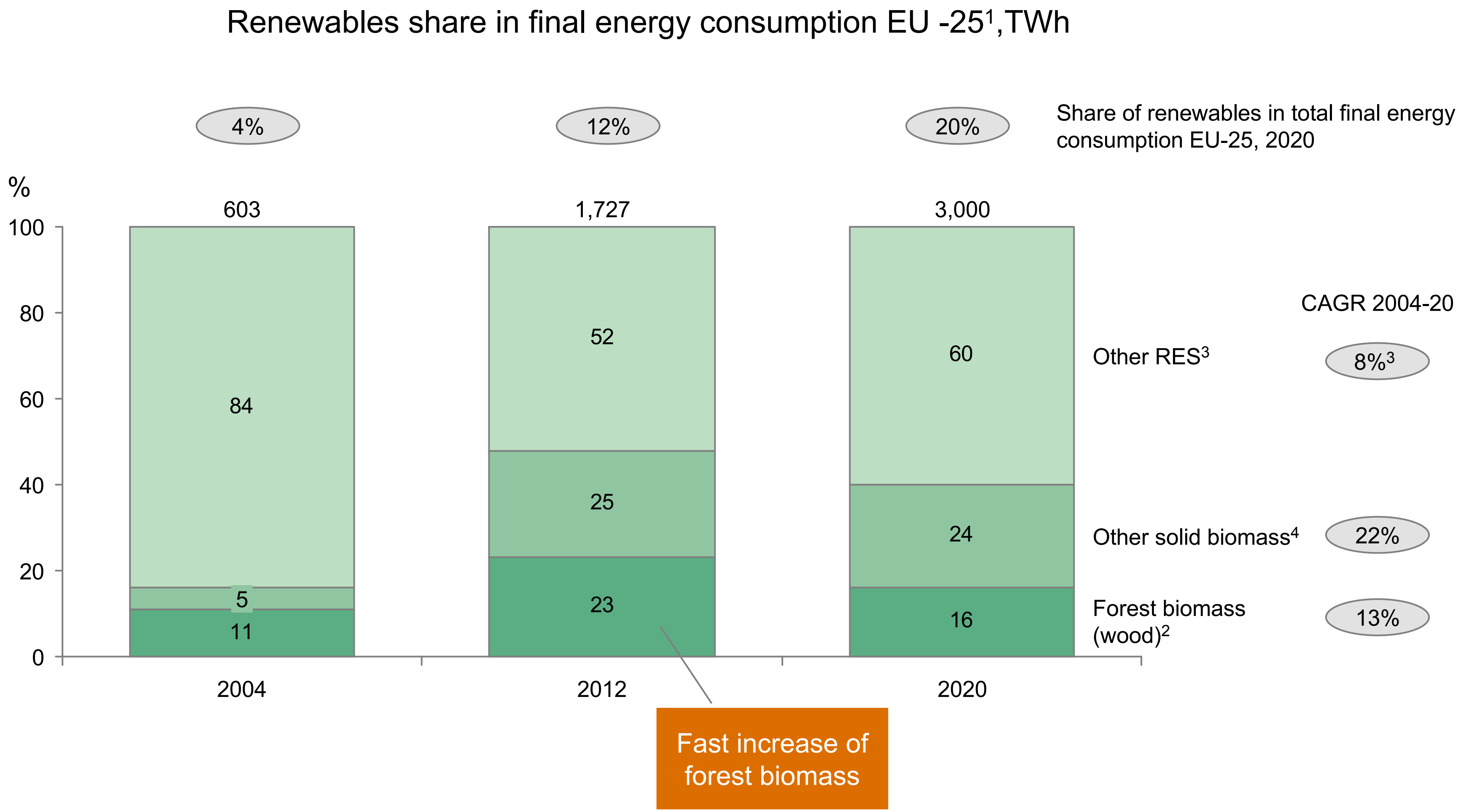
	CAGR (%) 02–07 (actual)	CAGR (%) 07–12 (outlook)
Virgin fibre	9.9	7.9
Energy	7.6	6.3
Recycled fibre[2]	1.8	8.0
Labour	1.8	3.9
Chemicals	2.2	1.6

1. Year end prices 2. Mixed P&B sorted/Mixed Paper or Soft Mixed Paper
Source: Destatis; VEA; VCI; RISI; BCG analysis

1 Cost increases

Stronger demand for wood

EU-25 targets to achieve 20% share of renewable in total energy consumption by 2020

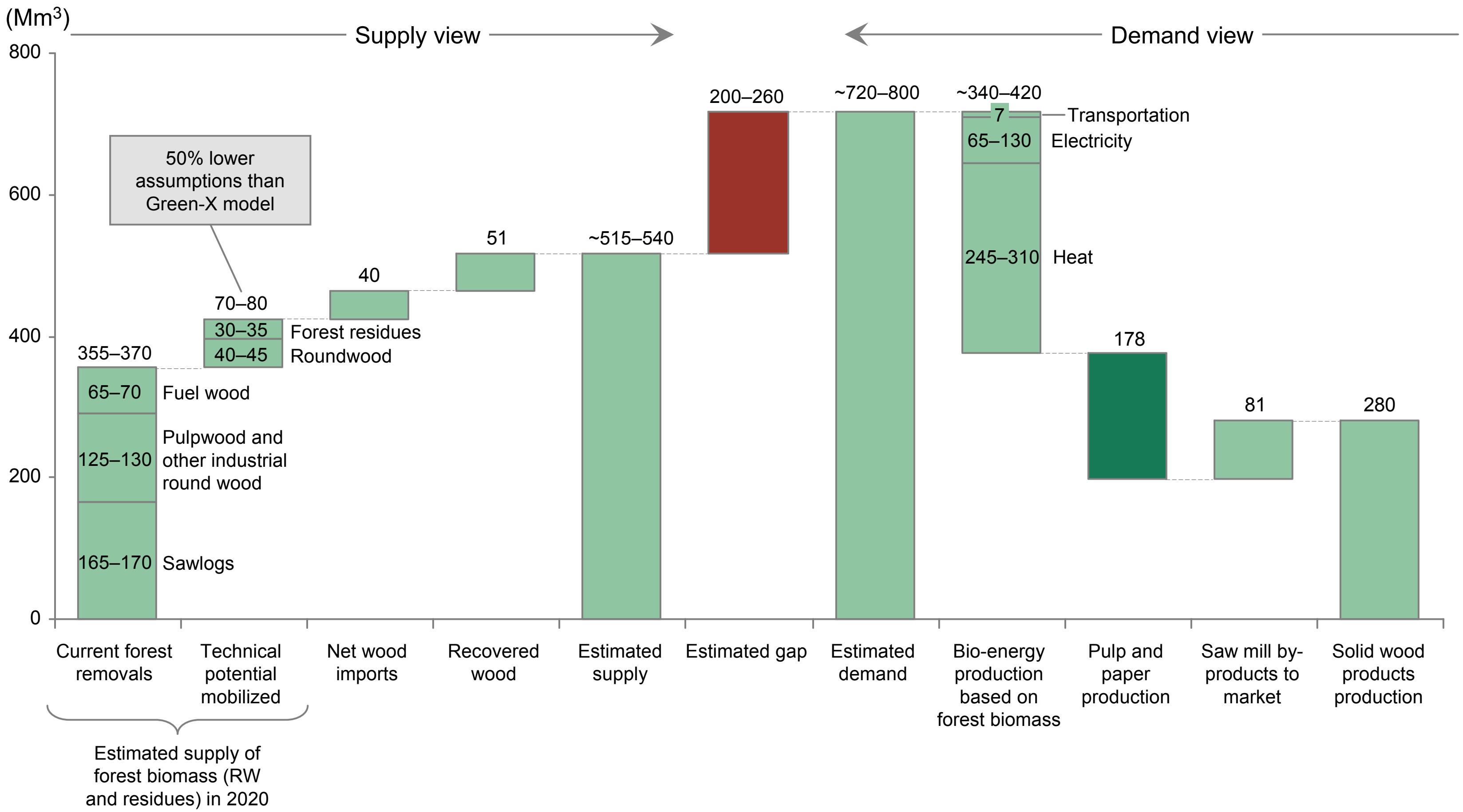


1. Based on existing and projected penetration of RES technologies in Green-X least cost scenario 2. Assume 50% share of forest biomass in 2004 in RES-E and RES-H grid and 100% in RES-H non grid-estimates based on Green-X report 3. Assuming significant further growth in wind (550TWh, 60.000 windmills), 2006: ~100 TWh installed in EU25 4. e.g. corn, sugar cane, wheat, etc.
Source: CEPI, Green-X model

1 Cost increases

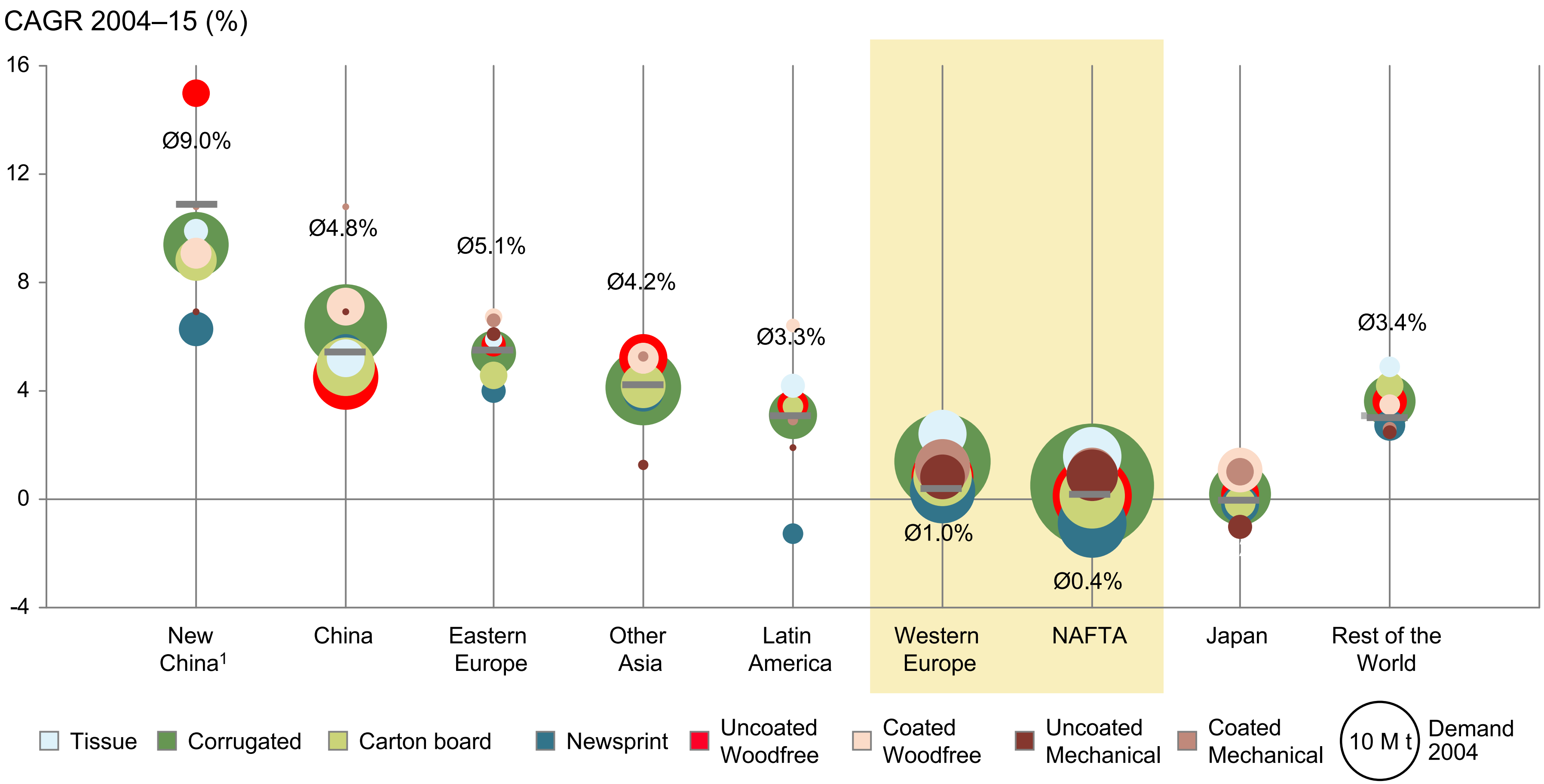
Gap in EU wood supply could further drive demand for South American pulp

Projected wood demand and supply 2020, CEPI-16[1]



1. CEPI-16 include Austria, Belgium, Czech Republic, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, UK
Source: CEPI; Energy demand forecast based on EU-Commission Green-X model

Paper demand growth fuelled by Asia while WE/NA stagnates



Are existing forecasts even too optimistic?
Independent BCG research suggests even lower growth for WE/NA

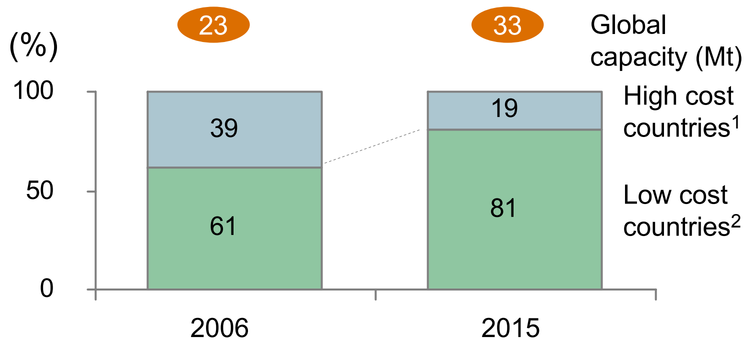
1. Mills with capacity > 50k t
Source: Pöyry; BCG analysis

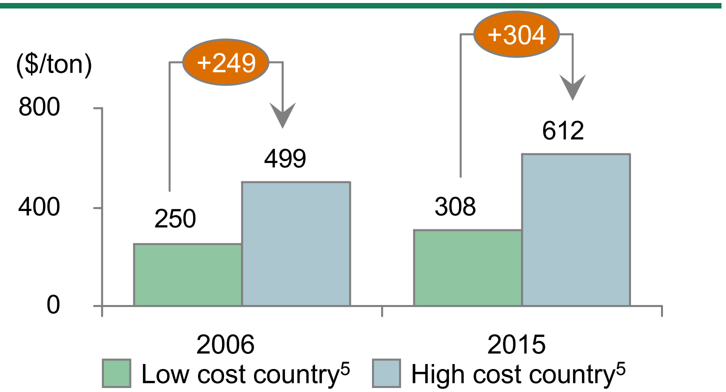
Pulp supply shifts significantly to low-cost countries and cost differential increases

Low/high cost country capacity share

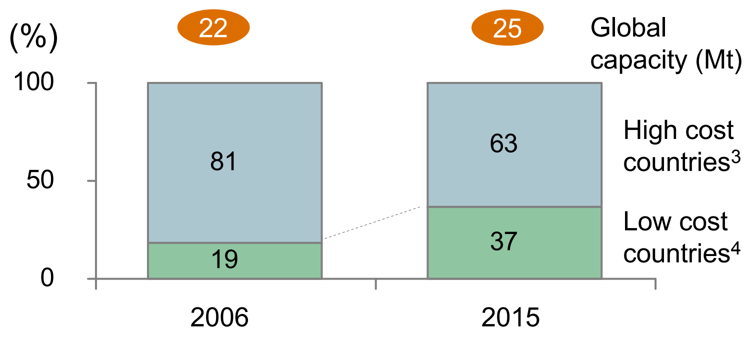
Low/high cost country cost differential

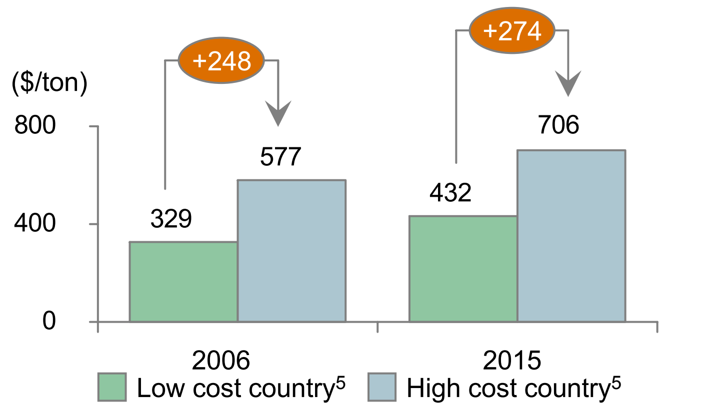
BHKP





BSKP





Shift more critical for integrated players from high cost countries

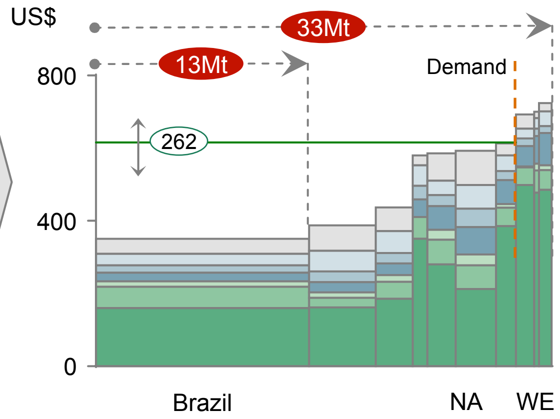
1. Portugal, Spain, France, Belgium, Sweden, Finland, Canada, USA 2. Brazil, Indonesia, South Africa, Russia, Chile (countries below global average production cost 2015) 3. Canada, USA, Germany, Sweden, Finland 4. Chile, Russia (countries below global average production cost 2015) 5. BHKP: 2006: Brazil versus Canada East — 2015: S Africa versus Spain; BSKP: 2006: Chile versus Canada East; 2015: Chile versus Sweden
Source: Hawkins Wright; Pöyry; Valois Vision; BCG analysis

The impact of this might go beyond market pulp

BHKP market pulp supply scenarios (2015)

Base case:

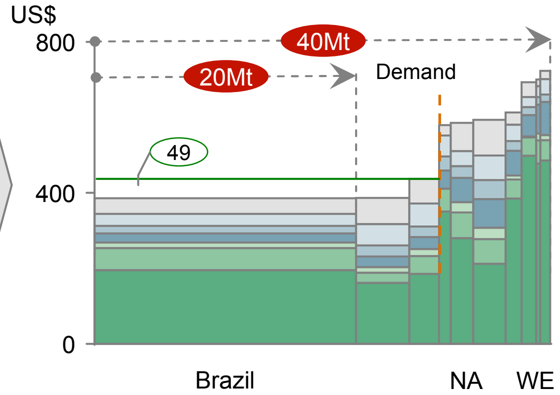
+10Mt capacity 2006-2015



Announced and <u>confirmed capacity</u> according to Hawkins Wright plus necessary extrapolations

High case:

+17Mt capacity 2006-2015



Low cost capacities increase due to additional announced but <u>unconfirmed capacity</u>

Potential impact

European (integrated) mills become uncompetitive

South American players currently with superior profitability and low cost fibre access

Some risk of flattening BHKP supply curve endangers margins (in high case) – depending on development of integrated European mills

Other growth option could be in paper: integrated mills to serve overseas market

Increasing commoditization and low transport costs might facilitate process

Highest likelihood in fine paper (CWF, UCWF), less in packaging/tissue (which are more local)

Impact could go far beyond market pulp

Note: Prices including 10% rebates
Source: Hawkins Wright, Pöyry, RISI; BCG analysis

High value of Euro puts profit under pressure directly and indirectly

Ongoing strong Euro affects European players

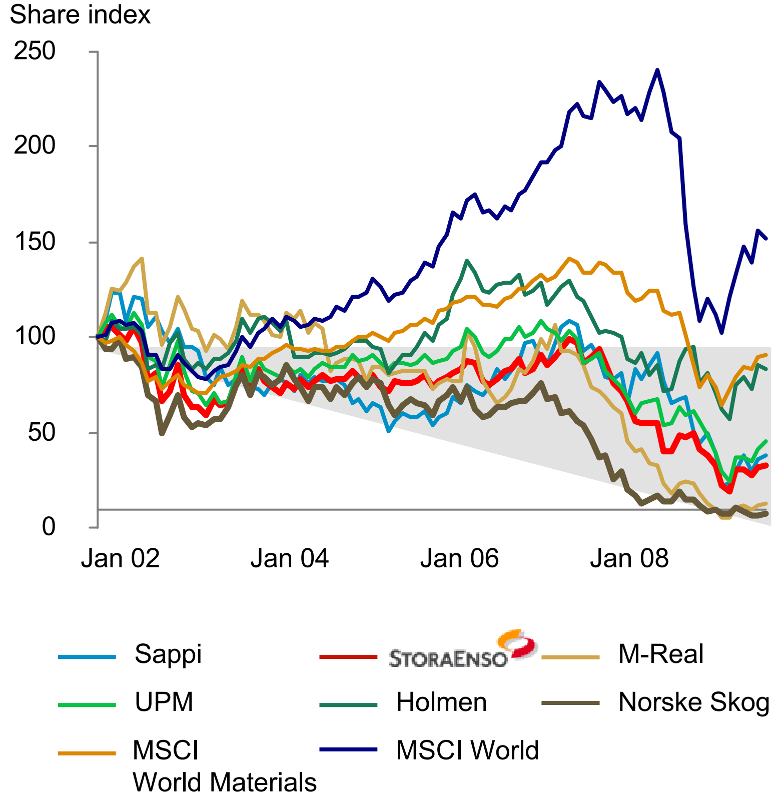
Direct P&L effects

Indirect effects on trade flows and competitiveness

1. According to Stora Enso Annual Report 2007 2. Calculation before currency hedges
Source: BCG analysis, Stora Enso Annual Report 2007

European share prices under pressure

Falling share prices



Polarization of European industry

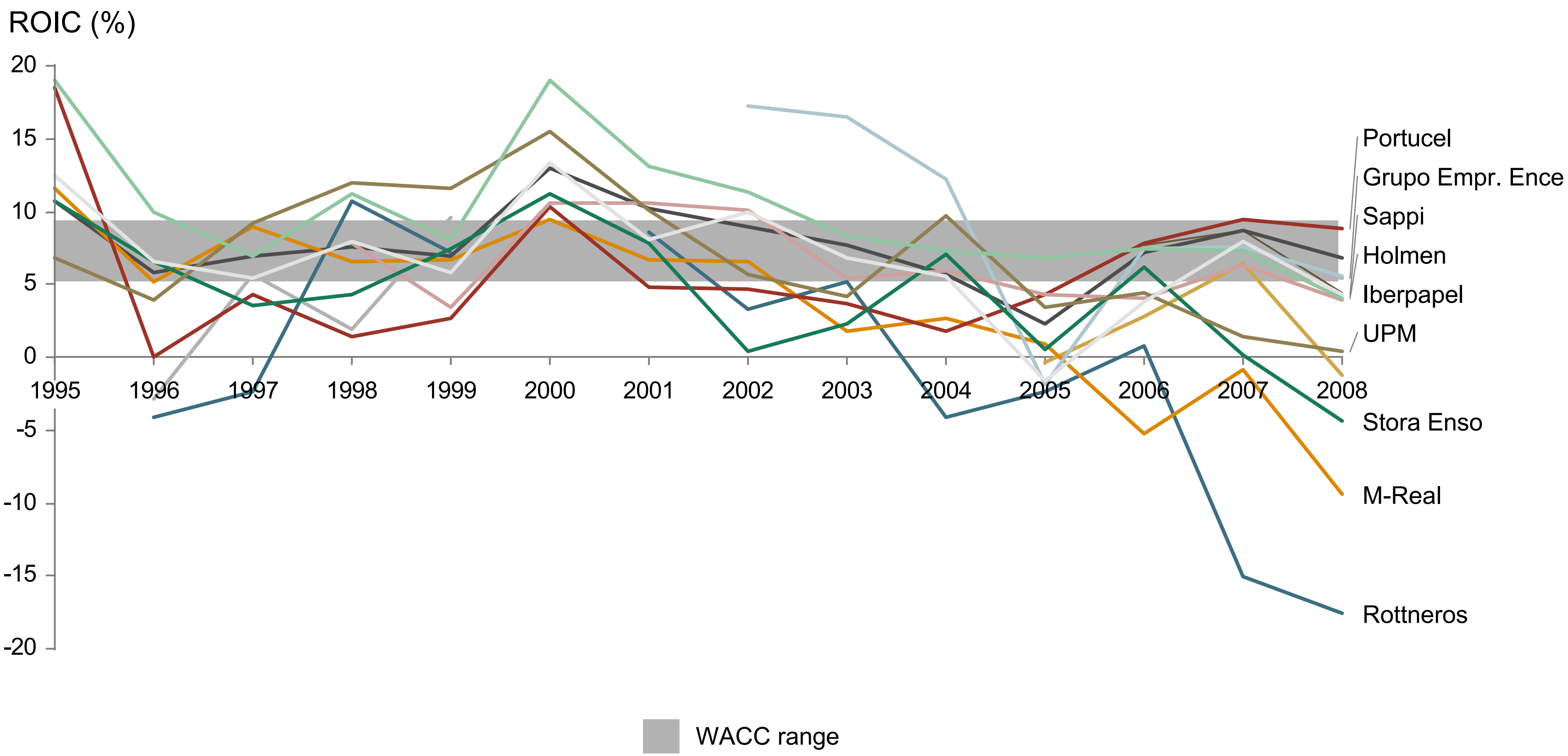
Few strong players
- Low D/E ratio
- Recent restructurings/divestitures
- Investors confidence
- Waiting for best timing to buy

Many weak players
- High D/E ratio
- Mixed assets
- Deteriorating debt rating
- Hoping for fast consolidation

1. Indexed since January 2005
Source: Thomson Reuters; Broker reports; BCG analysis

As a result, many established companies have unsatisfactory profitability – they need to act

ROIC[1] development



1. ROIC = (Net Income * (1-Tax Rate)) / Average of Last Year's and Current Year's (Total Capital + Last Year's Short Term Debt & Current Portion of Long Term Debt) * 100
Source: Thomson Reuters Datastream, BCG analysis

Potential impact: Changing market environment

One scenario for 2015/2020

Pulp is mostly being supplied from South America and Russia

- Many European integrated mills have shut down and pulp prices increase before they decrease again

The basics of competitive advantage have shifted from assets to resources

- Access to low-cost fibre
- Access to the right people/management skills

Players have restructered and consolidated significantly

- Players have much clearer competitive advantage and are more focused on certain (customer) segments (e.g. print vs. packaging or paper vs. conversion)
- Market is clearly divided in commodity paper products (with no complexity) and speciality products

New (global) alliances have been built, but on a different logic than previous acquisitions

- Not synergy-based
- But on raw material access...
- ... and new value chain splits
  - between pulp production and paper production and marketing/sales
  - also between supplier and customers (as paper industry understood limited potential for passing on price increases without further accelerating substitution)

But in between came the crisis ...

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The crisis explained: in the middle of the storm

The implications for pulp players: mixed weather

New strategies for value creation: here comes the sun

There is not one crisis but three

Three gambles mixed a deathly cocktail for the financial system and the economy

1 The real-estate market bubble and overleveraging of U.S. and other economies

Asset devaluation

2 The leverage in banks' balance sheets

Low capital ratios

3 The reliance of banks on short-term funding

Liquidity squeeze

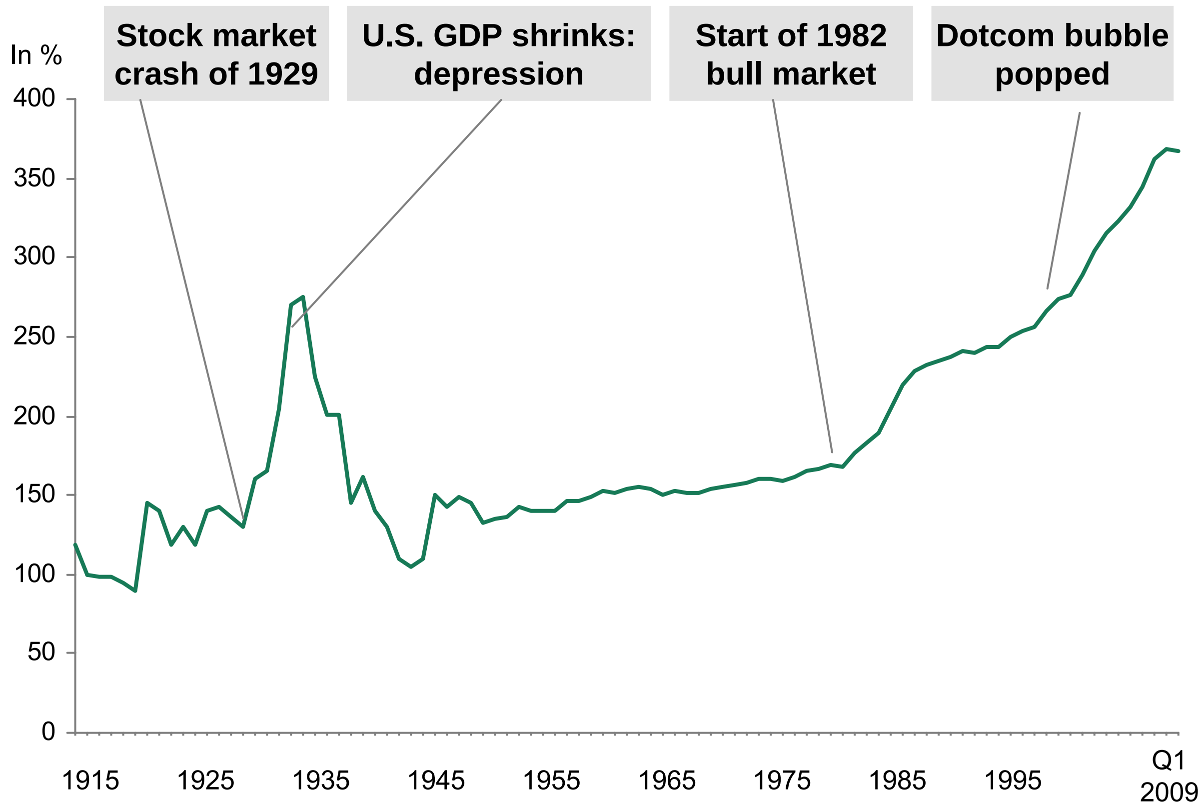
The need of banks for deleveraging and de-risking spawns a vicious circle

Source: BCG analysis

The true background: record levels of debt

US consumer deleveraging might drag growth for years

Indebtedness of private U.S. households, municipalities and corporations as % of GDP



Deleveraging might drag growth for years

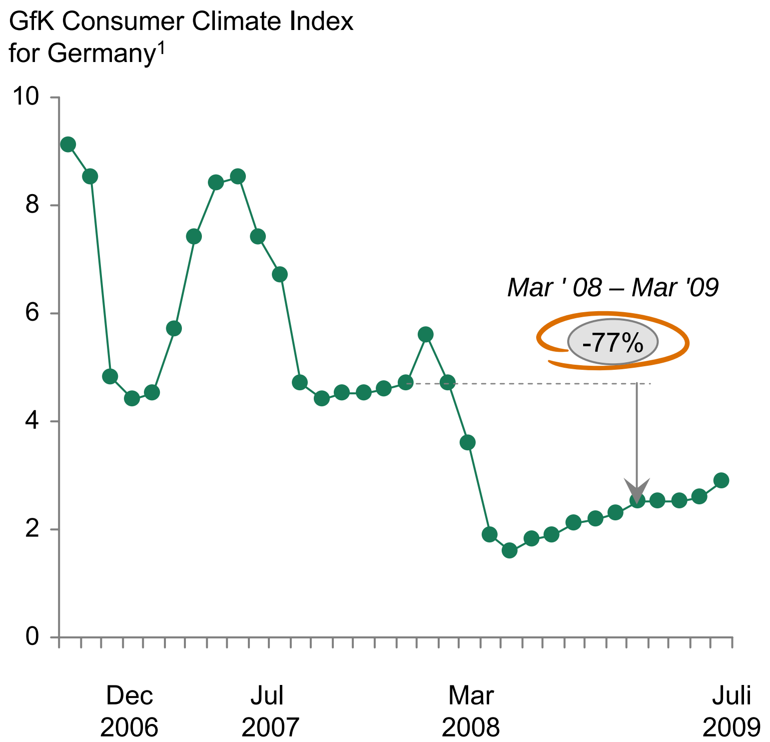
Reverting U.S. household debt alone from 96% of GDP to long-term averages of 68% or 55% meant a decrease of ~ $4–6T in debt

Additional deleveraging by overly indebted companies will lead to decrease in asset values, causing further deleveraging pressure

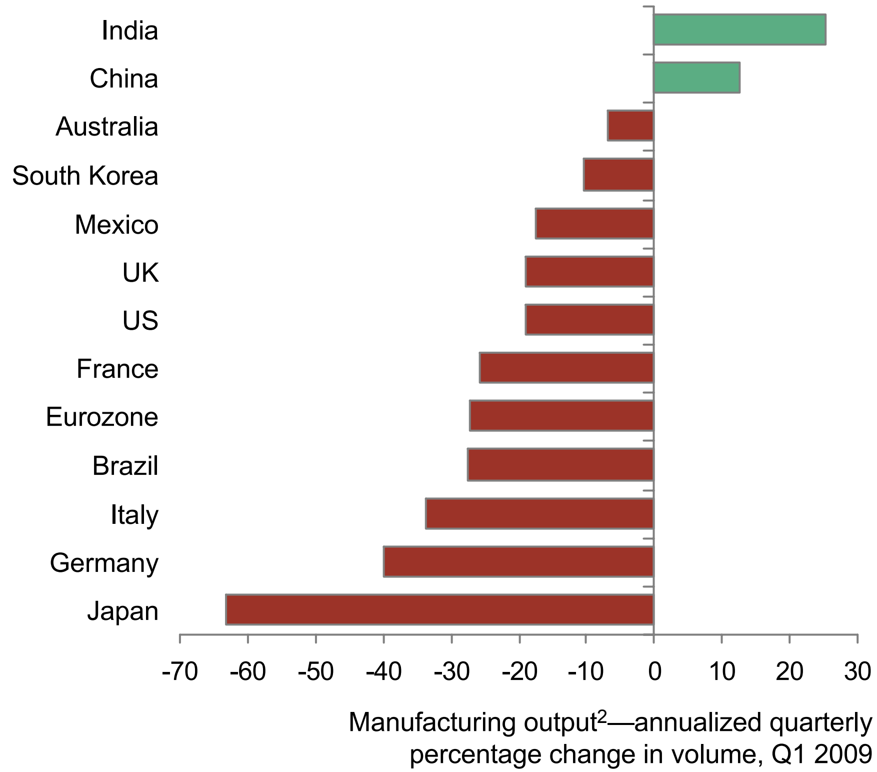
Source: Thomson Financial Datastream; Federal Reserve; Bureau of Economic Analysis; Barron's; Elliot Wave International; The Gabelli Mathers Fund; BCG estimate

Clear effects: a collapse in consumer confidence and dramatic fall in industrial output

Consumer confidence dropping everywhere (Example Eurozone—Germany)



Industrial output showing deep declines in major economies

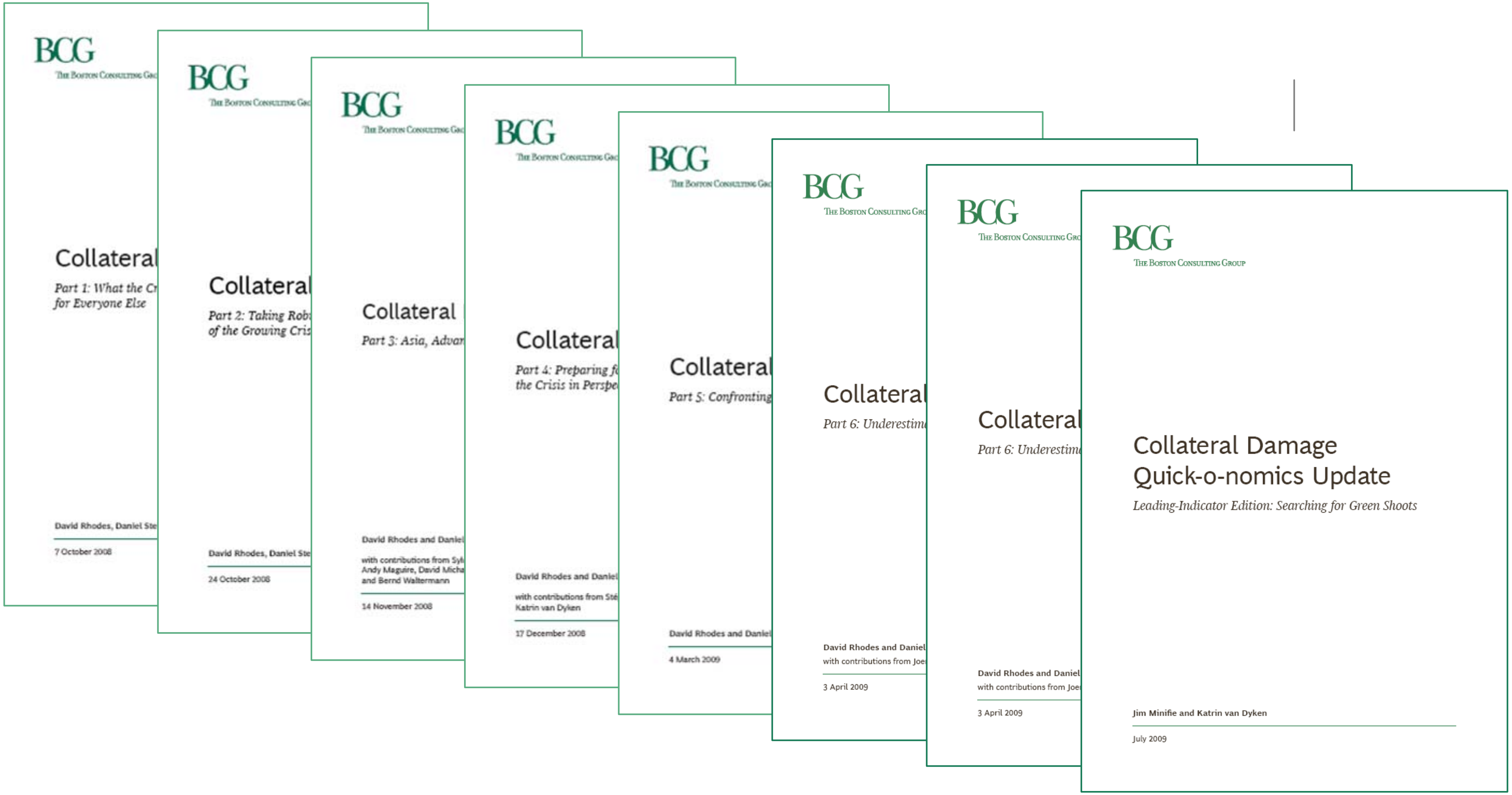


1. The GfK Consumer Climate Index is based on ca. 2,000 monthly consumer interviews. The consumers are asked to give their assessments of their current economic situation and their expectations for the next twelve months. E.g., a value of 4 could be interpreted as a 0.4% growth expectation of private consumption 2. Annualized percentage change in industrial value added

Source: Thomson Datastream; Global Insight; The Wall Street Journal – 4 Feb. 2009; Federal Reserve; U.S. Census Bureau; Philadelphia Federal Reserve Autodata

Enough macroeconomic talk …

If interested, please read BCG's "Collateral Damage" series



Source: www.bcg.com

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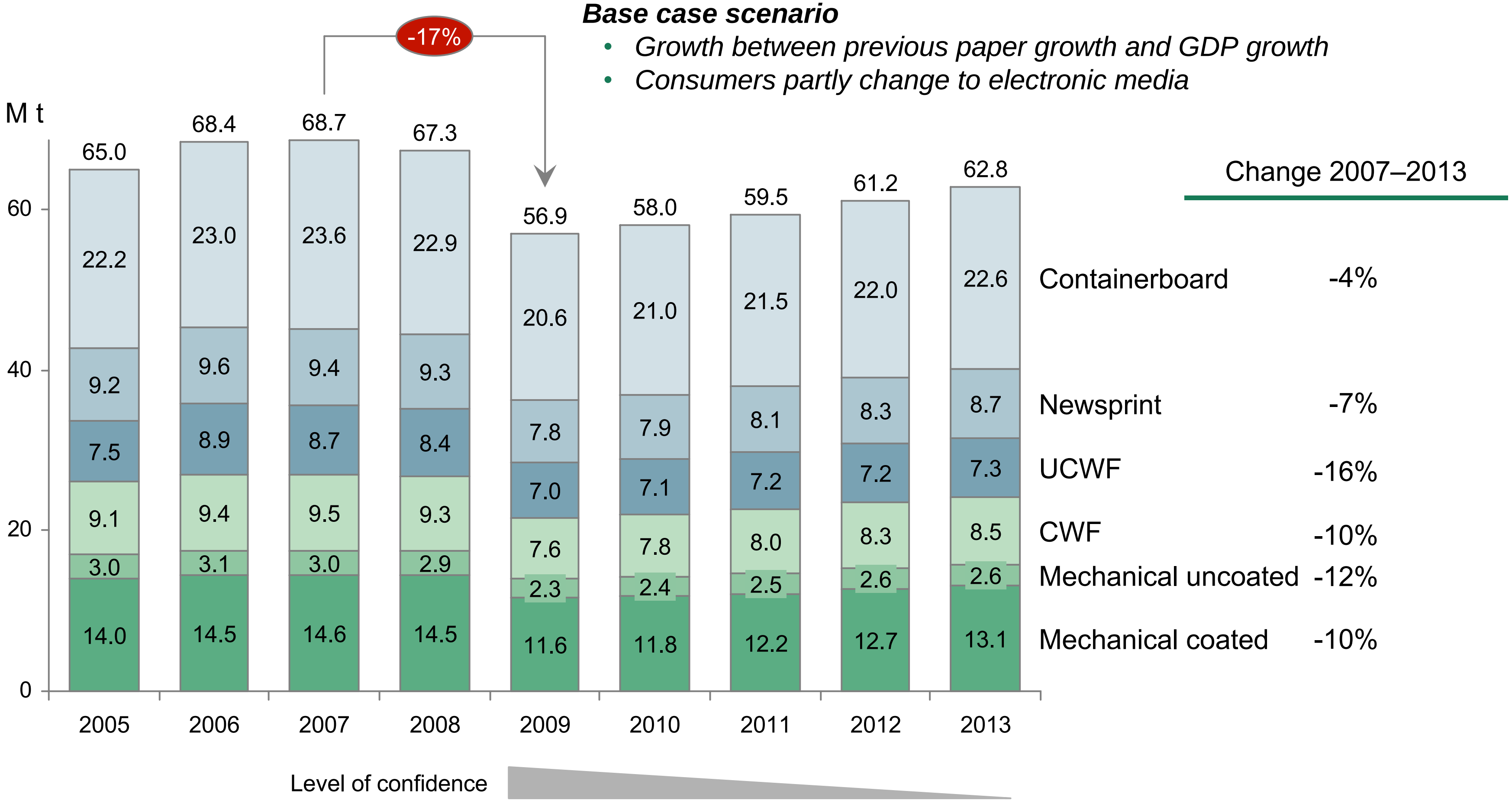
For P&P, we expect the impact of the downturn to be significant and longlasting

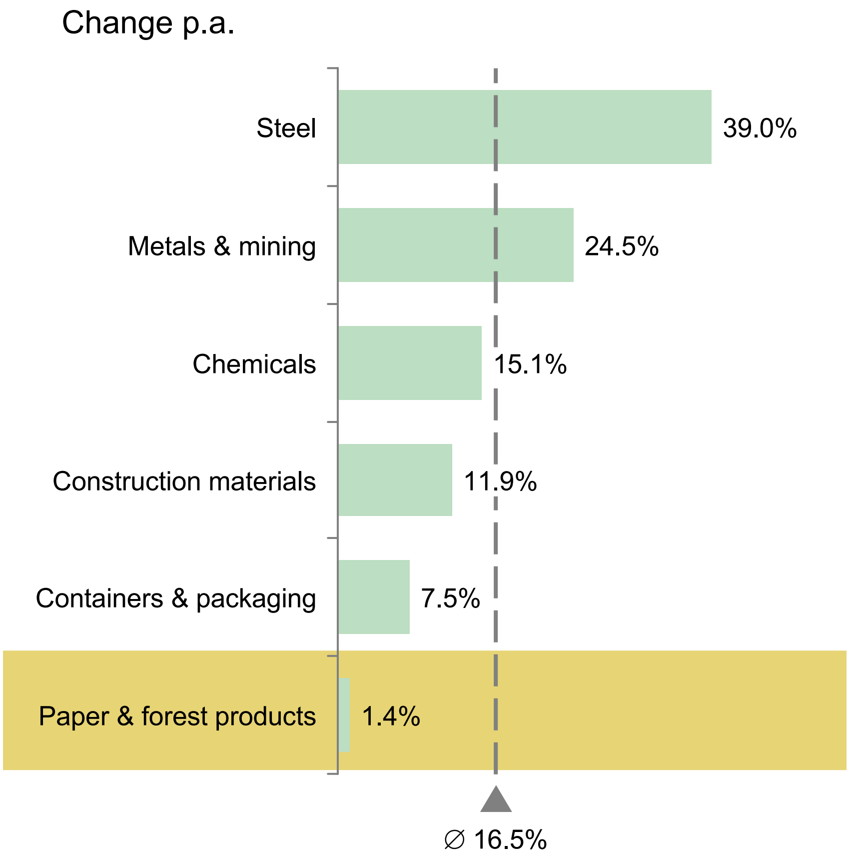
Base case scenario
- *Growth between previous paper growth and GDP growth*
- *Consumers partly change to electronic media*



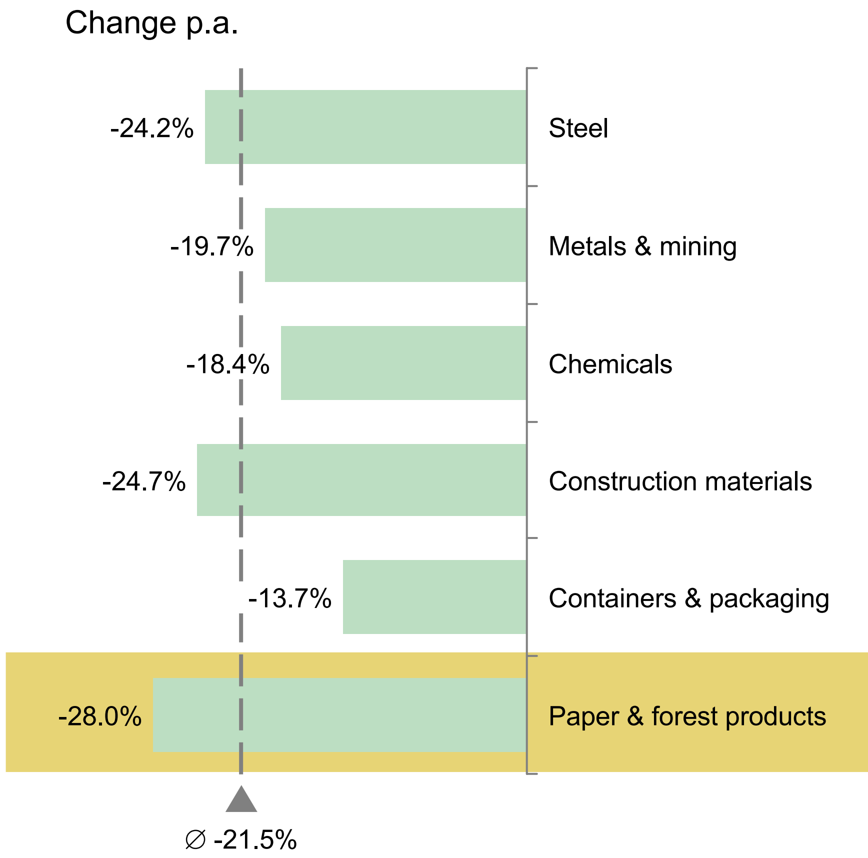
Additionally, economic slowdown accelerates shift in usage/buying behavior

Investor confidence and financial performance (again) low

Industry TSR performance 2002–2007 p.a.

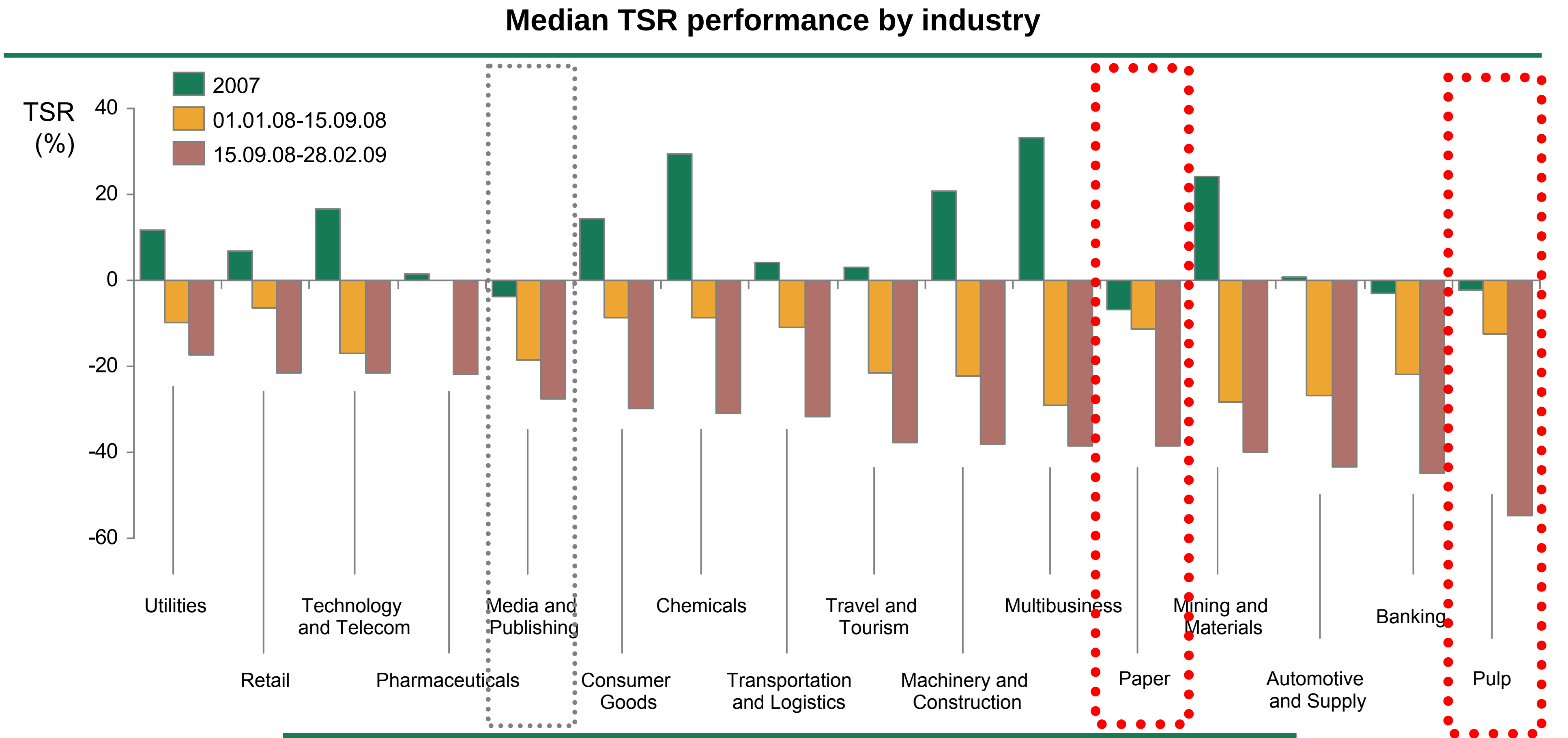


Industry TSR performance 2008–2009[1] p.a.



1. Data from Jan 1, 2008–July 31, 2009
Note: Total shareholder return (TSR) based on calendar year data (MSCI world industry indices and Dow Jones Total Market World Iron and Steel Index)
Source: Thomson Financial Datastream; BCG analysis

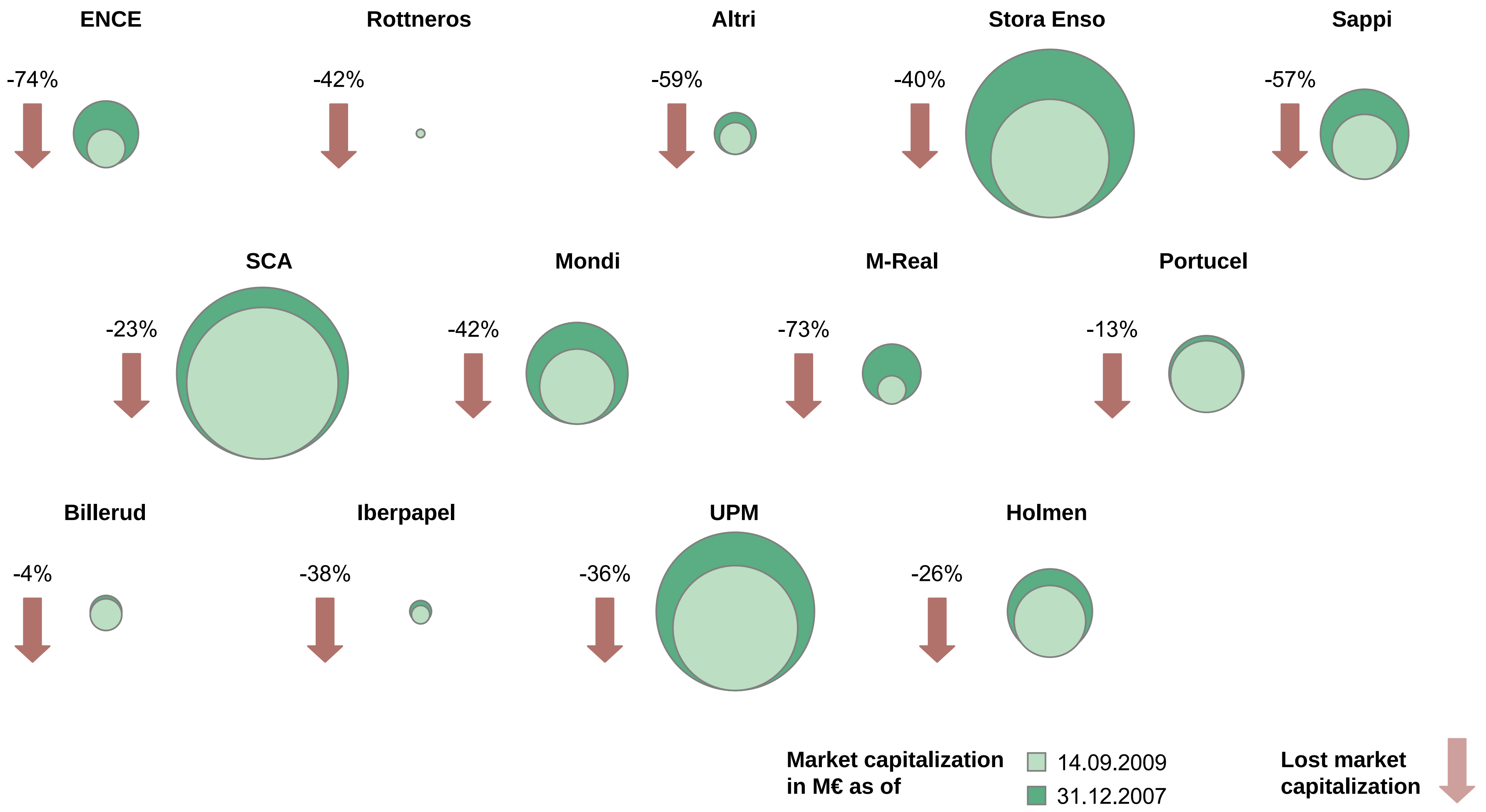
No better picture for pulp this time



2008 saw the worst stock market drop since the Great Depression

Note: All TSR values based on median per industry.
Source: Thomson Reuters, Datastream, Bloomberg, BCG analysis

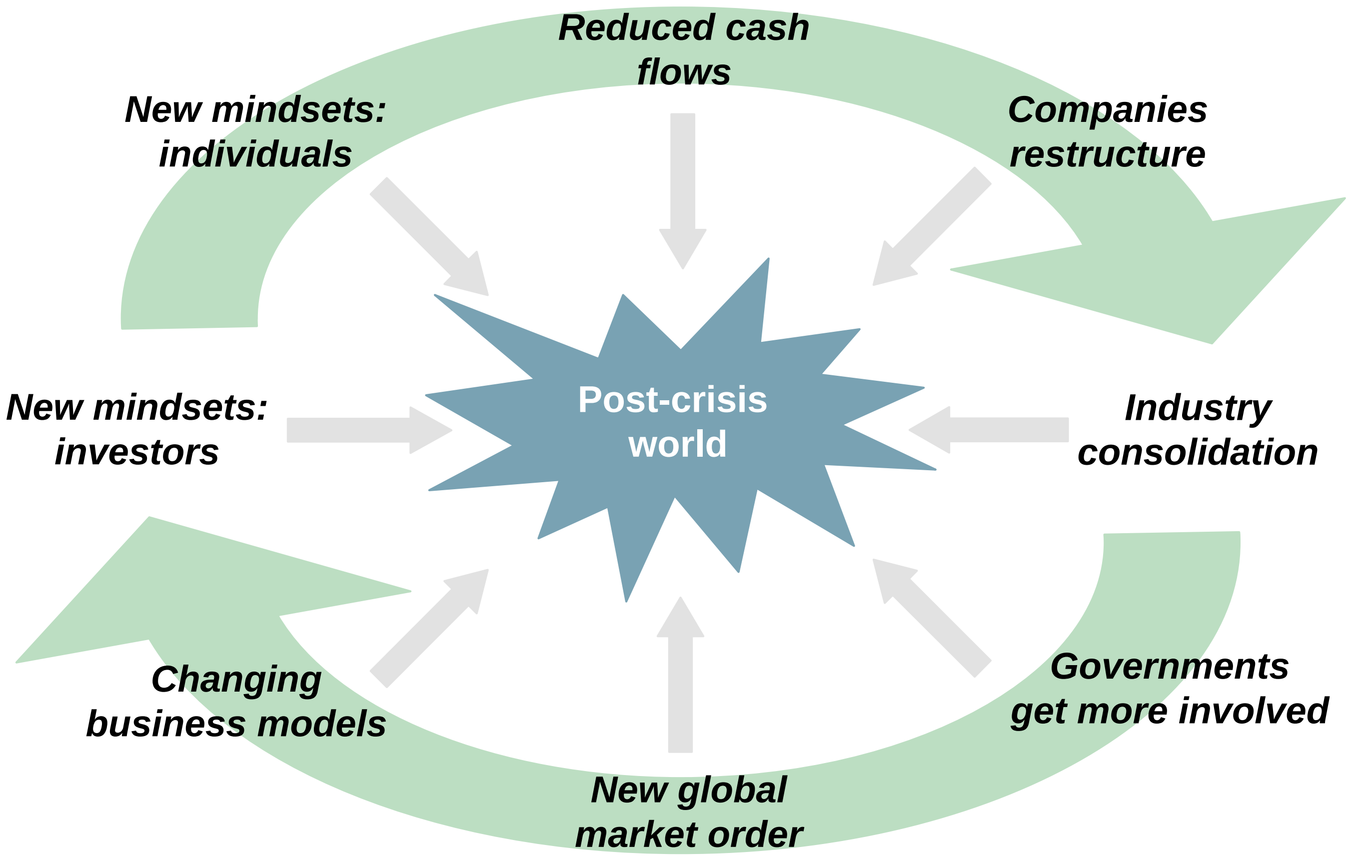
European P&P companies on average lost about 35% of their market cap since 12/2007



Source: Bloomberg; BCG analysis

As a result, the industry faces different challenges

Post-crisis world will be different



How to cope with all these challenges?

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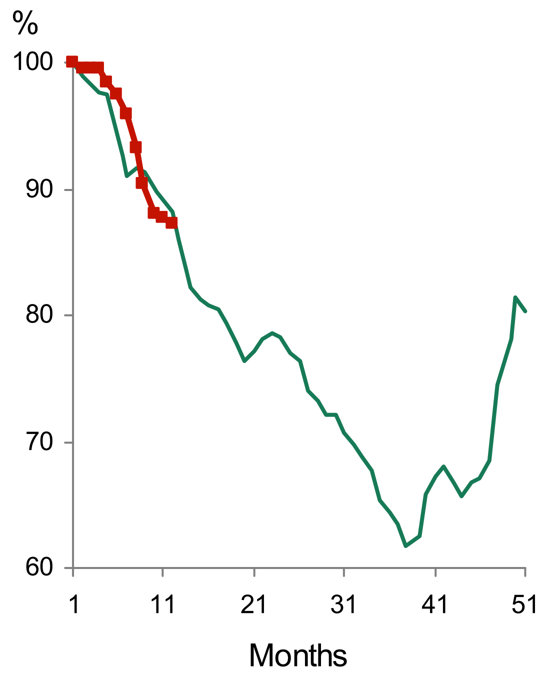
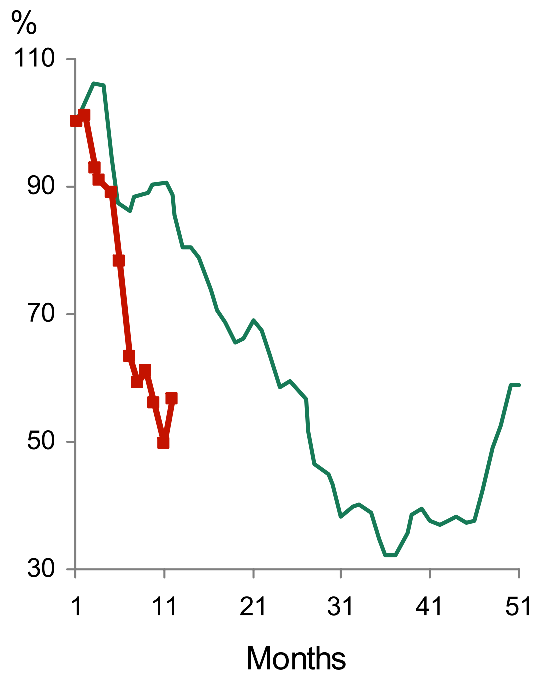
The current situation is not entirely new

Disturbing similarities to Great Depression (but governments have acted quickly this time)

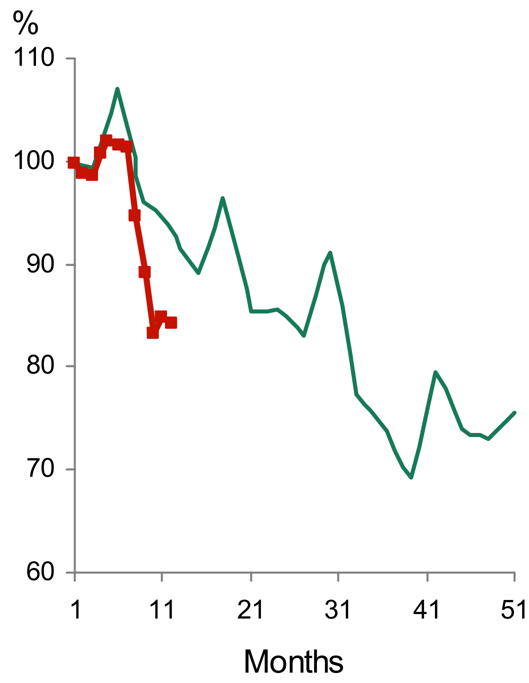
World industrial output



World stock markets



World trade



June 1929 = 100

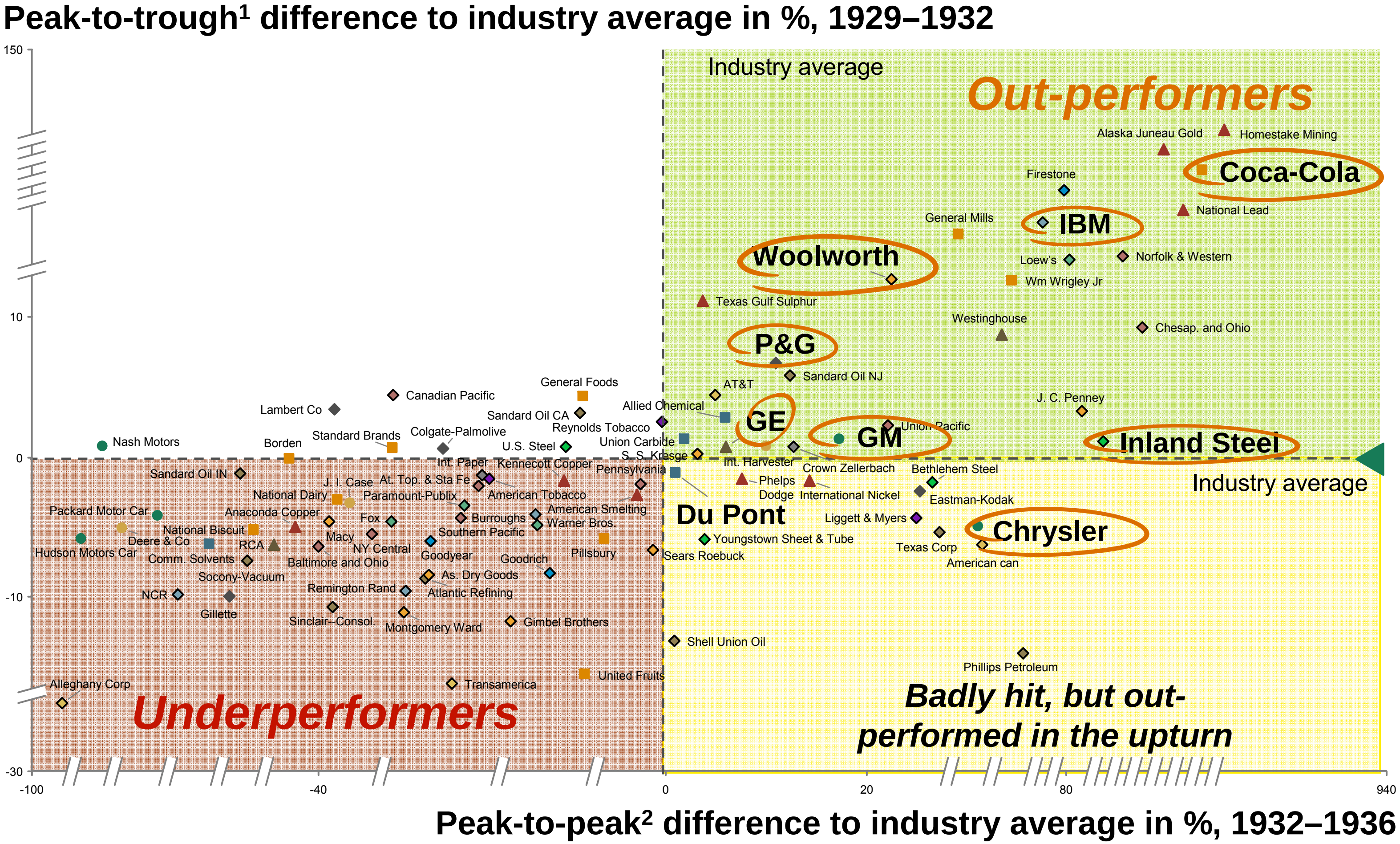
April 2008 = 100

What can we learn from the Great Depression?

Source: Barry Eichengreen and Kevin H O'Rourke, "A Tale of Two Depressions", April 6, 2009, http://www.voxeu.org/index.php?q=node/3421; League of nations monthly bulletin of statistics, http://www.cpb.nl/eng/research/sector2/data/trademonitor.html

Some companies outperformed in 1929 through 1936

Company performance (total return) relative to industry



1. 1929 peak to 1932 trough cumulative total return 2. 1929 peak to 1936 peak cumulative total return
Source: Calculated based on data from *CRSP US Stock Database* 052009 Center for Research in Security Prices (CRSP), The University of Chicago Booth School of Business; BCG analysis

Outperformer followed clear "roadmap to success"

Stringent program management key to succeed—bold and quick actions required

Strong leadership and focus
Bold moves and decisive program management

Control cost

1. Protect cash
2. Strengthen the core
3. Increase flexibility
4. Cut cost/capacity quickly and strongly

Protect revenues

5. Adapt product offering in line with changing preferences
6. Review sales/marketing opportunity carefully
7. Accelerate promising product launches

Invest in the future

8. Invest selectively in R&D
9. Reprioritize portfolio (biomass, etc.)
10. Keep an eye out for value-adding M&A
11. Retain the best talent

Conflicting at first glance, complementing at second look

Value-oriented culture and balance actions

1. Protect cash: optimize working capital

Working Capital management is an important lever to protect cash during crisis

Liquidity management is key in actual context

- Difficult access to financing
  - it is necessary to ensure enough liquidity to cover company's operations
- Uncertainty about market scenarios
  - when uncertainty is higher, you need to have more liquidity for caution
- Having cash strengthens negotiating power and allows taking advantage of opportunities. For e.g.
  - negotiation with suppliers or clients
  - opportunistic M&A

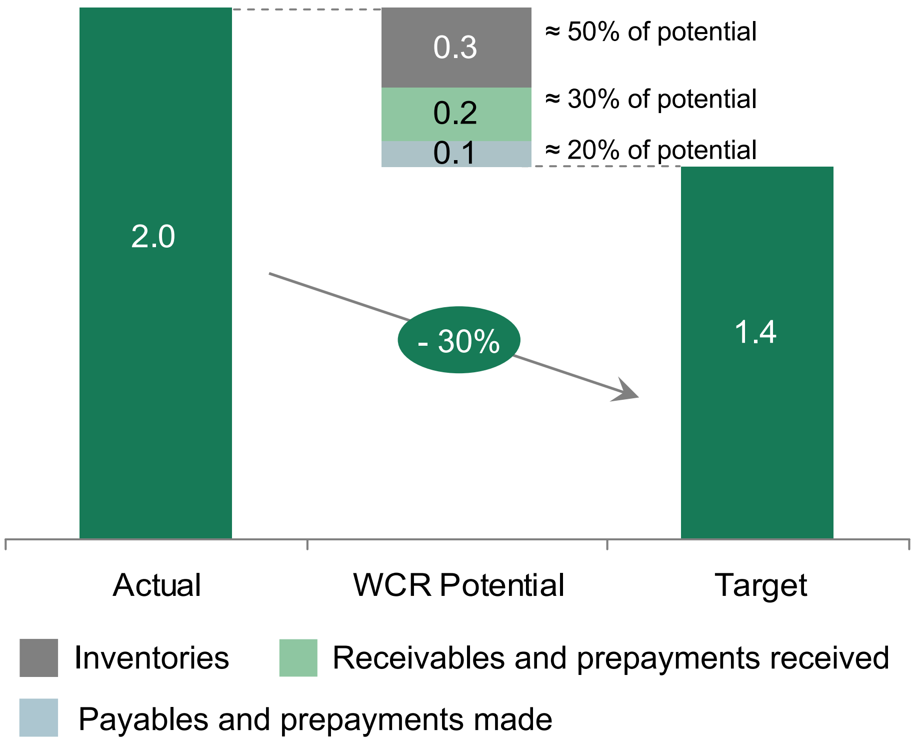
Working capital management is an important lever to improve liquidity

- Working capital reduction is an attractive source of cash in a moment that is more difficult to access the traditional sources such as banks and capital markets

Typical impact of improved working capital management: Reduction of NWC by 20 to 40 percent

Example for typical industrial goods company

In B€



Most relevant improvement levers

Inventories

- Reduce cycle times and idle times
- Improve stockholding
- Review supply concepts

Receivables

- Improve invoicing and dunning process to customers
- Re-negotiate payment schedules and conditions

Payables

- Improve payment process to suppliers
- Re-negotiate terms and conditions in purchasing

50% of potential often realized already in the first year

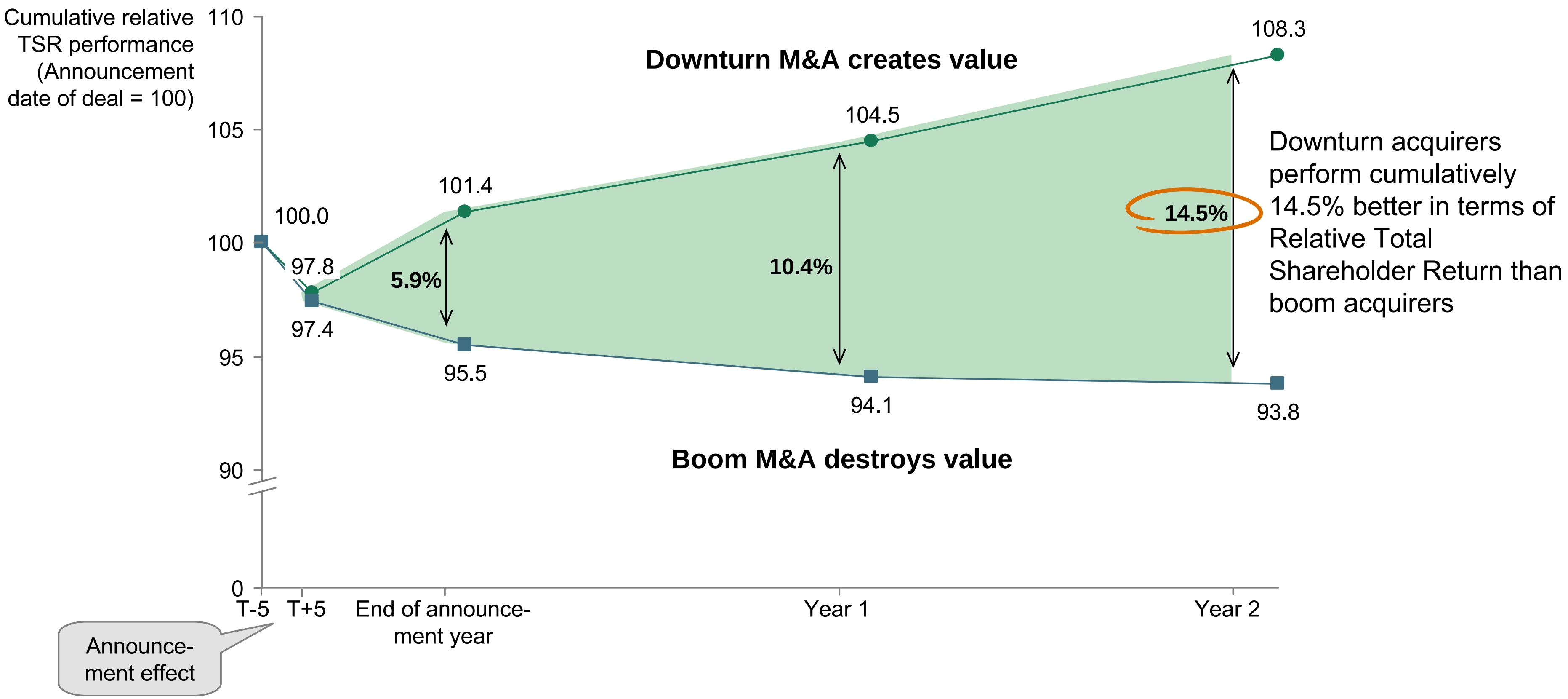
Note: Working capital figures indexed to 100; including prepayments

Source: BCG analysis

4./10. Capacity management/M&A

Downturn acquisitions create more value

Outperformance of boom time sample by +14.5 percent RTSR in the longer term



Looking at announcement alone proves short-sighted

Note: Sample size = 277, values based on averages
Source: VM research system; SDC; BCG analysis

Low profitability results from rising cost and weak prices

Profitability

Profitability

ROCE below WACC for eight years

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1 Cost

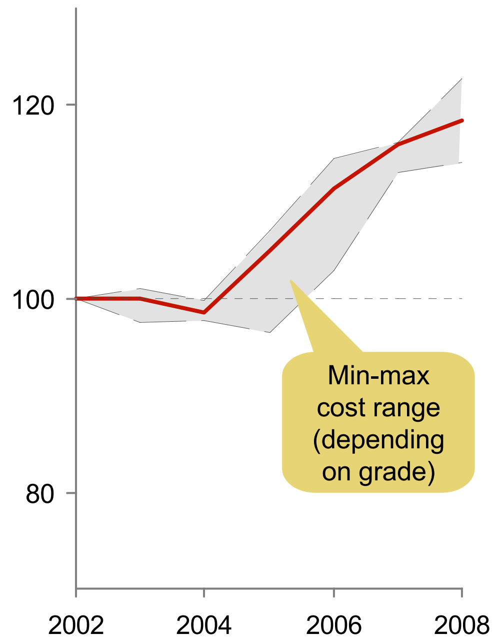
Cost increasing

2 Price

Prices stagnating for most grades

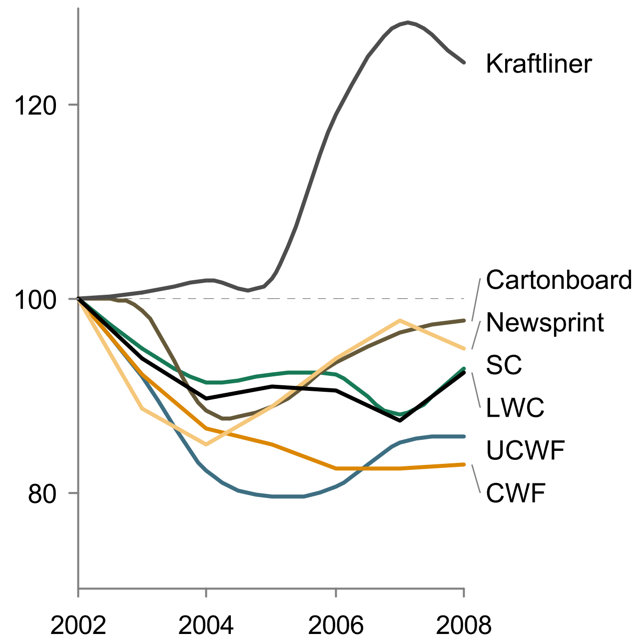
1 Cost

Cost index[1] (2002=100)



2 Price

Index prices Germany (2002=100)



1. Nominal prices for Germany – representative for Western Europe
Source: RISI; BCG analysis

Operating rate is key driver for ability to influence price

2 Price outlook

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Likely primary drivers

Overcapacity
- Δ capacity — Δ demand
  - Growth expectations

Supply cost
- Cost factors
- Differentials

Product substitution
- Relative value (price, quality)
  - Within industry (across grades)

Likely secondary drivers

Market and buyer concentration
- Relative number and market share of competitors
- Historical consolidation
- Level of integration
- Relative distribution and volume of customers and segments

Price corridor
- Price is dependent on prices of final product and costs of raw materials

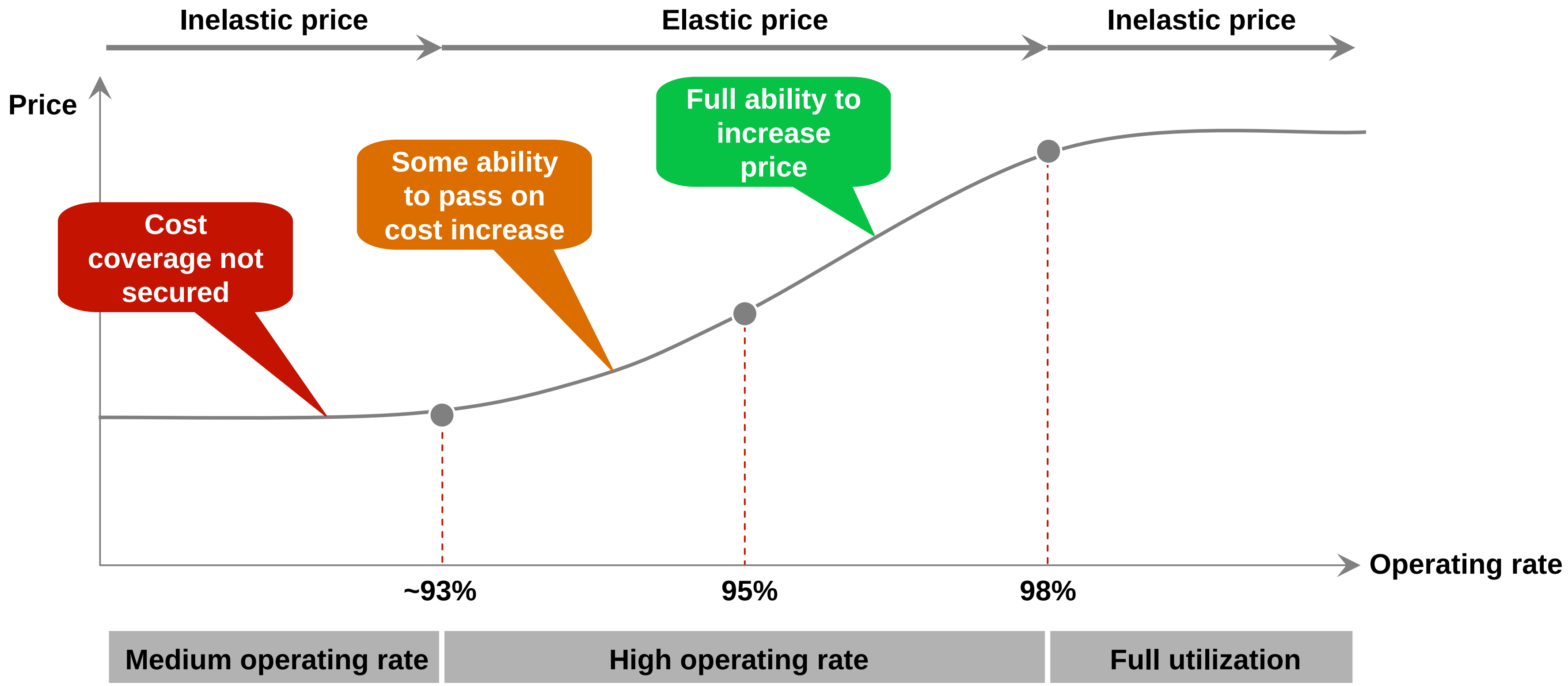
Technological innovation
- Relative rate of technological innovation
- Patent protection

Driver evaluated

Overcapacity further analyzed

Source: BCG analysis

Operating rates of 95% enable producers to fully pass on cost



Prices respond with time lag on change of operating rates

Immediate price response above 95%-threshold

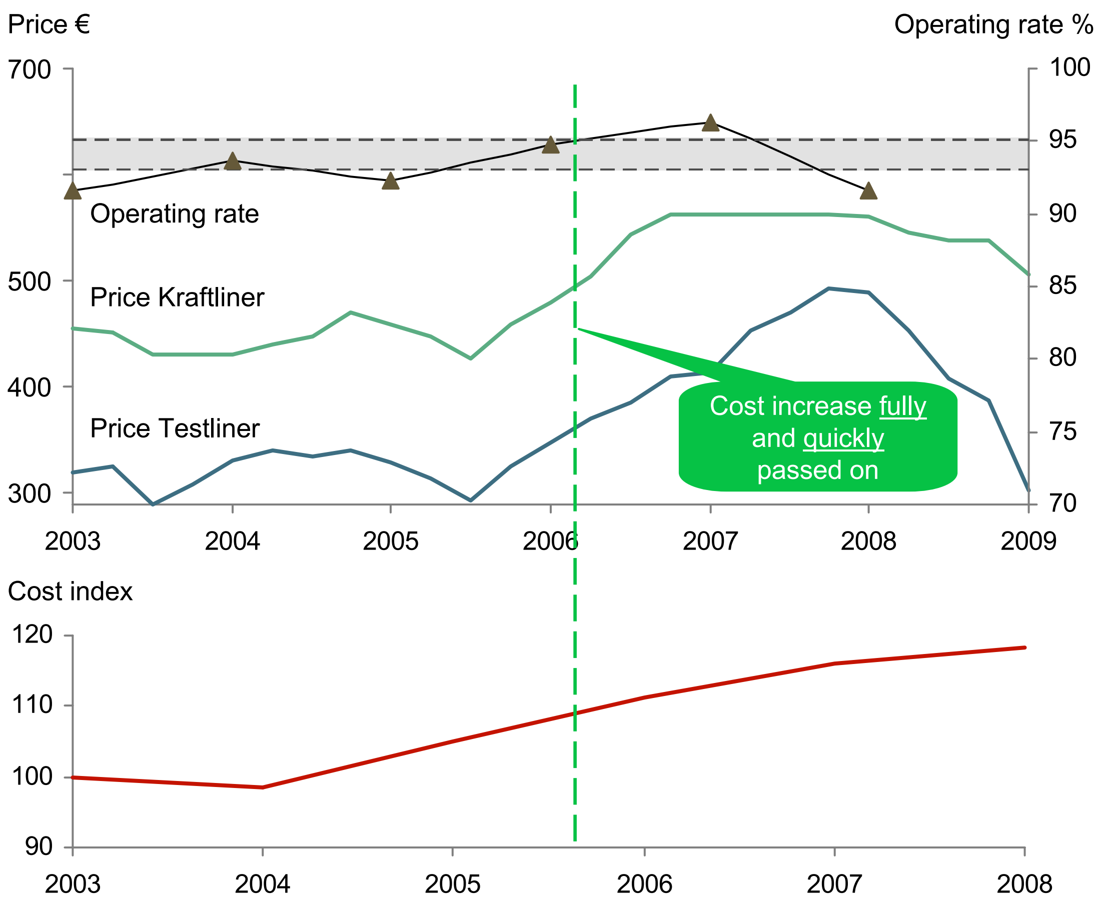
Two thresholds exist

Operating rate of 95% gives ability to fully and quickly pass on cost increase

Ability to partly pass on cost increase starts at 92% – 94%

- Depending on grade
  - 93% for containerboard
- Price increase follows operating rate with time lag, depending on
  - Duration of contracts
  - Expectations on future overcapacity

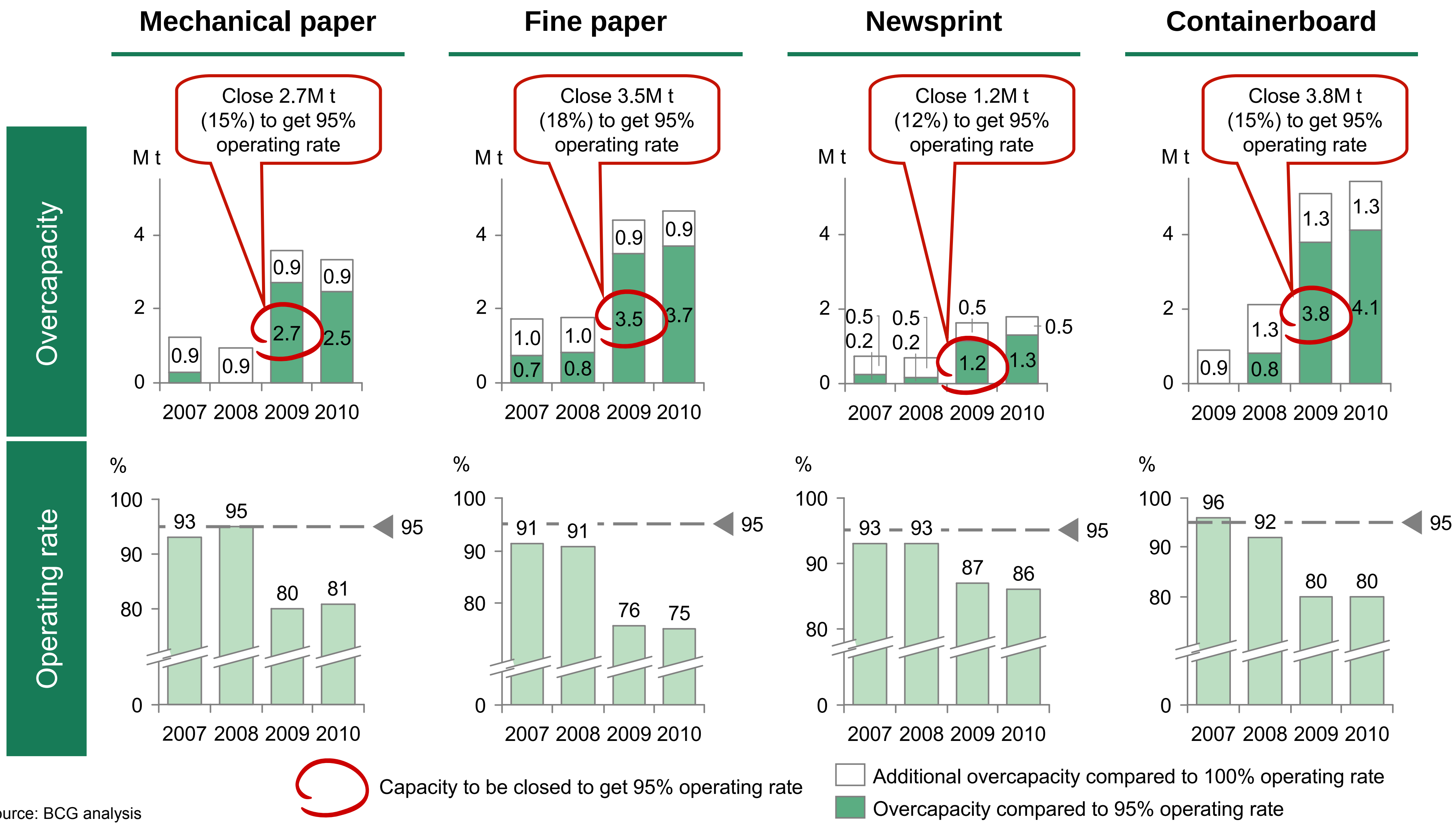
Example containerboard



Source: BCG analysis

Weakened demand leads to overcapacity in all grades

Closures of 1.2M – 3.8M t per grade required to reach 95% operating rate



Source: BCG analysis

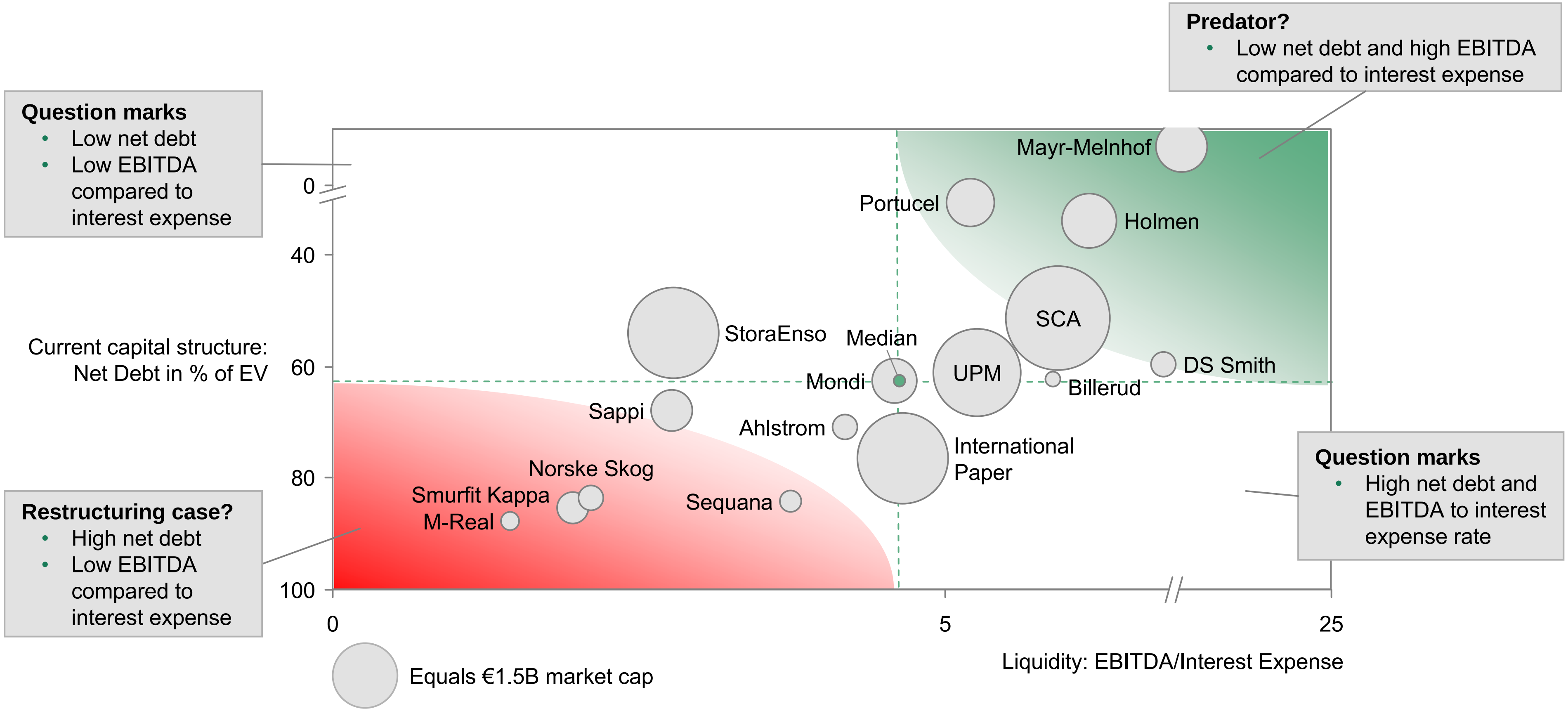
What is the best way for restructuring the industry?

Actions:

1. Standalone capacity closure
2. Acquire competitor
3. Merger with competitor; Strategic alliances
4. "Allow" restructuring
   - Governments
   - Banks

   Public-private funded capacity management; Buying of overcapacities "Bad bank"

Only selective players in a position to take on further debt

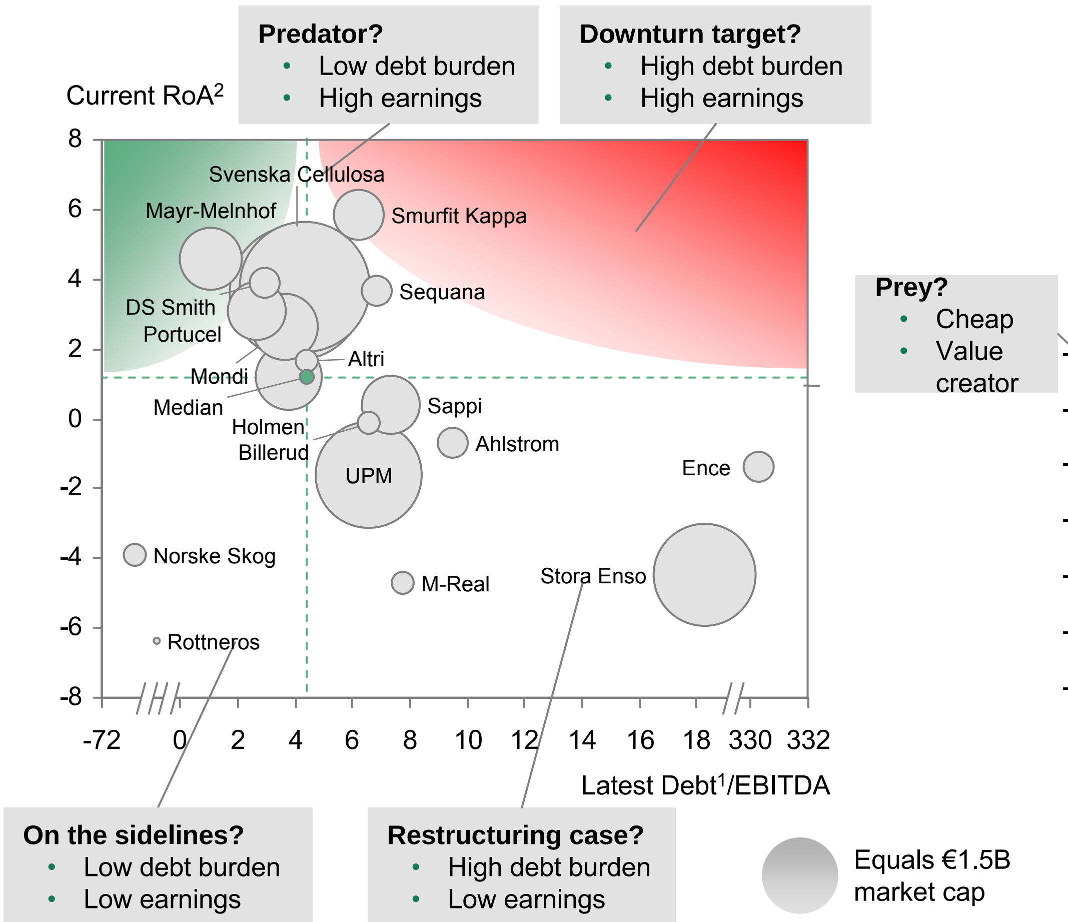


Note: Reported data as of 31.12.2008; except: Mayr-Melnhof (2008 Q3), M-Real, Sappi und StoraEnso (2009 Q1), DS Smith (2009 S1)
Source: Thomson Reuters Datastream; Thomson Reuters Worldscope; Bloomberg; company disclosures; BCG analysis

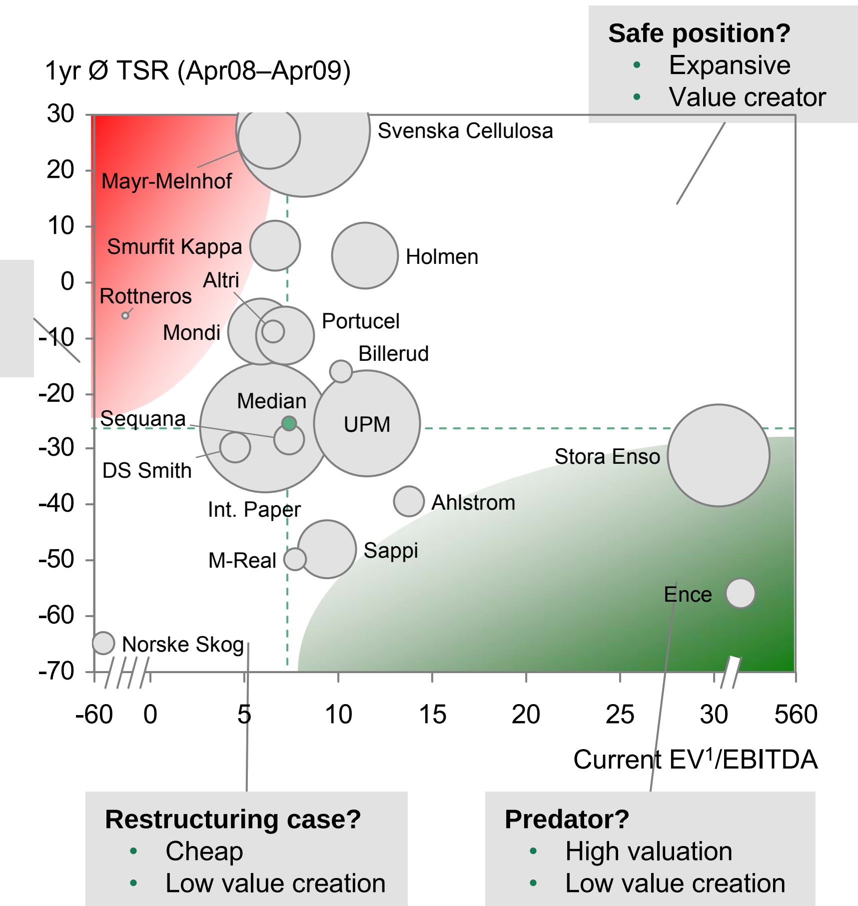
No big player in a position to acquire competitors

Mayr-Melnhof, DS Smith, Portucel and Mondi are potential predators

Who is in a position to act?



Some companies need to fulfill value expectation



1. Includes pension accruals and capitalized leases 2. Defined as an post-tax return on average gross assets
Note: Data as of 27.04.2009 or reported data as of 31.12.2008; except: Mayr-Melnhof (2008 Q3), M-Real, Sappi und StoraEnso (2009 Q1), DS Smith (2009 S1)
Source: Thomson Reuters Datastream; Thomson Reuters Worldscope; Bloomberg; company disclosures; BCG analysis

How will the future landscape look like?

"Believe me! We are just about to make a huge breakthrough ..."

Summary

Sector has been in crisis for years

Demand declines for all grades in 2009, leading to even larger overcapacities

Competitiveness of many European players significantly weakened

Rigorous capacity management needed – industry restructuring required
- Most likely, merger/alliance and central facilitation successful ways to restructure industry

European P&P industry can be profitable in 2015 if
- Operating rate of at least 95% are reached
  - likely pre-requisite for above: more consolidation
- They have established/found new revenue pools
- You have secured access to energy and cheaper wood resources

Prepare for the worst
Make the best out of it

Please contact me in case of questions/need for further discussions

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