

# A Value-based Carbon Performance Assessment of 25 Pulp & Paper Companies Worldwide

**Prof Frank Figge, Dr Tobias Hahn, Breeda Comyns, Euromed Management School**

**Dr Ralf Barkemeyer, University of Leeds**

**Frank Mueller, IZT Berlin**

**Zoe Foss, Andrea Liesen, Queen's University Belfast**



**SustainableValue**  
Research Ltd



# What This Presentation is About

- The Sustainable Value approach
- Application of the approach to analyse the carbon performance of 25 pulp & paper companies worldwide, i.e.
- Our forthcoming study

# What is Sustainable Value?

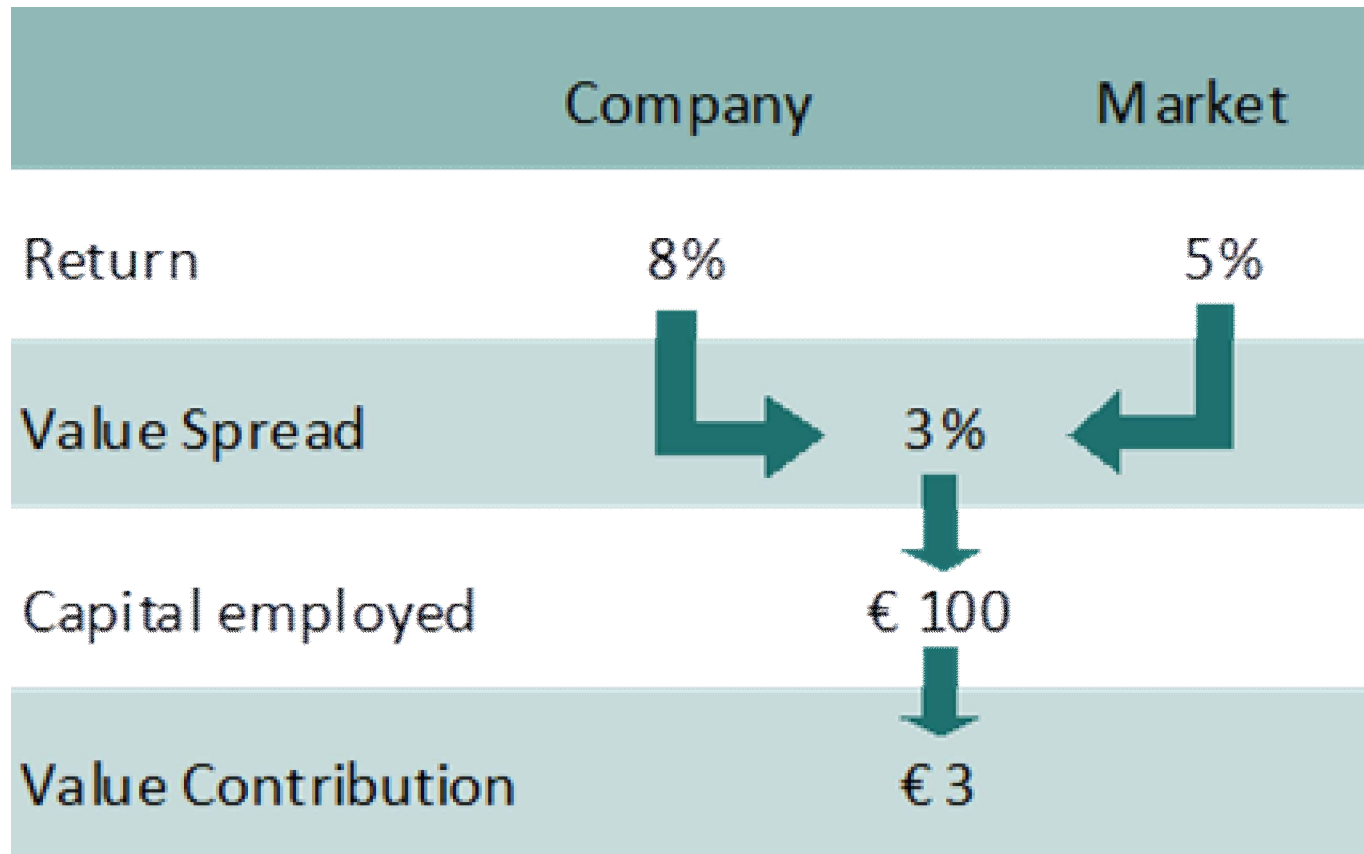
- Sustainable Value
  - is the first value-oriented approach worldwide to assess corporate sustainability performance.
  - assesses environmental and social resources analogously to the way economic resources are valued, i.e. using opportunity cost thinking (like e.g. Economic Value Added – EVA™).
  - expresses the sustainable performance of a company in monetary terms (like e.g. in €, £).
  - shows which companies use their economic, environmental and social resources in a value-creating way.
  - has been developed by researchers working today among others for Euromed Management School (Marseille/France) and the University of Leeds (UK).
  - more information on [www.SustainableValue.com](http://www.SustainableValue.com)

# David Green, 1894

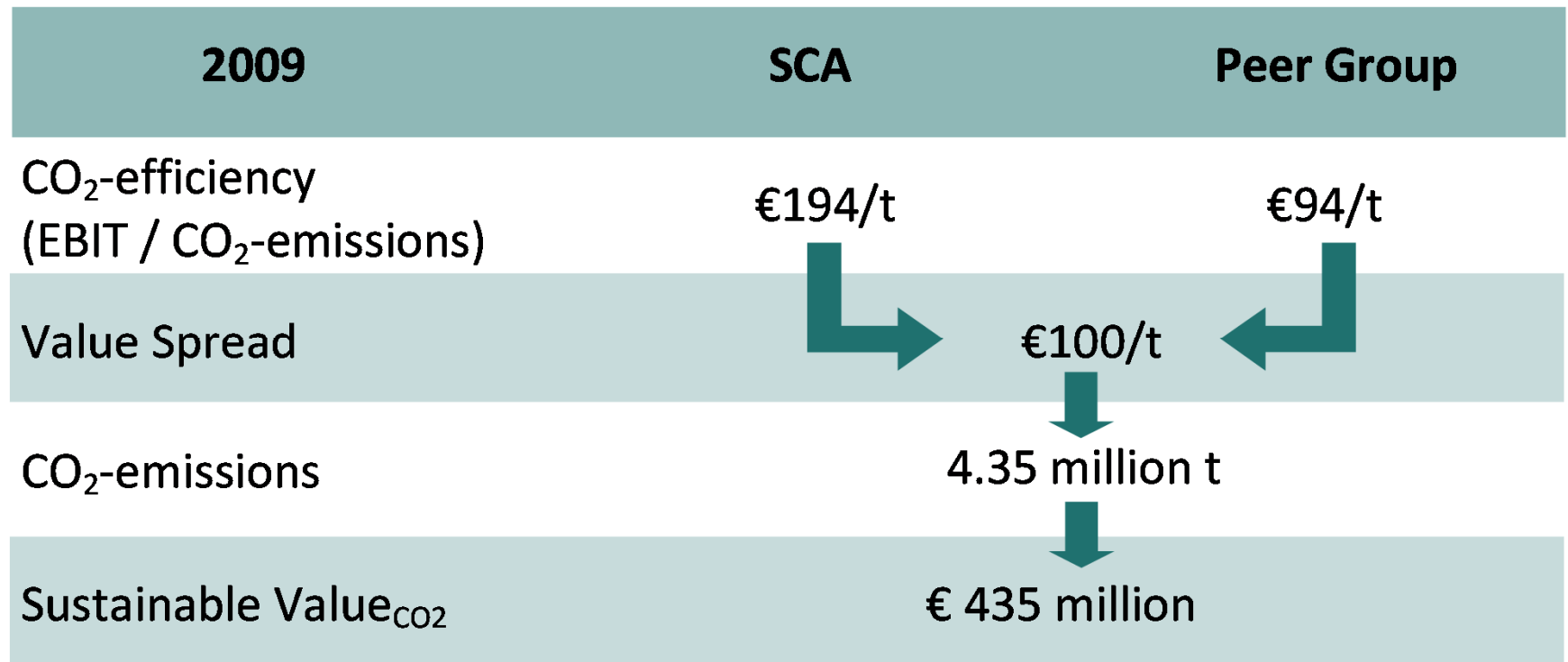
But, when we once recognize the sacrifice of opportunity as an element in the cost of production, we find that the principle has a very wide application. Not only time and strength, but commodities, capital, and many of the free gifts of nature, such as mineral deposits and the use of fruitful land, must be economized if we are to act reasonably. Before devoting any one of these resources to a particular use, we must consider the other uses from which it will be withheld by our action; and the most advantageous opportunity which we deliberately forego constitutes a sacrifice for which we must expect at least an equivalent return.

Green, 1894: 224

# Assessing Economic Performance...



# ... and Environmental Performance, analogously.



# Advantages of the Sustainable Value Approach

- The Sustainable Value approach applies the logic of financial management and opportunity cost thinking to sustainability management.
- It allows practitioners in the financial markets to use corporate environmental and social information for an integrated assessment of corporate sustainability performance.
- It is a practical tool for measuring corporate sustainability performance in the same way corporate economic performance is measured.
- The Sustainable Value approach therefore provides a link between corporate sustainability and the value-based approach that is traditionally used in management practice and corporate financial analysis.

# Carbon Performance of Pulp & Paper Companies

- 1.1% of global GHG emissions due to Pulp, Paper & Printing (Source: WRI)
- 2.6% of Swedish CO<sub>2</sub>-emissions due to Pulp, Paper and Paper products (own calculations based on data from Swedish statistics)
- Very important sector in the Nordic context
  - 12 of the largest 100 pulp & paper companies worldwide were based in the Nordic countries in 2008/2009
- CO<sub>2</sub> performance of sector has been somewhat ignored due to perception of “carbon-neutral” dimension of operations



# Sustainable Value Creation by Pulp & Paper Companies

| Company             | Country                    | Industry Affiliation                                    |
|---------------------|----------------------------|---|
| Ahlstrom            | Finland                    | Paper mills   |
| Billerud            | Sweden                     | Paper mills   |
| Corticeira          | Portugal                   | Wood products   |
| Domtar              | Canada                     | Paper mills   |
| DS Smith            | Great Britain              | Packaging paper and plastics film, coated and laminated |
| Grupo ENCE          | Spain                      | Pulp mills  |
| Holmen              | Sweden                     | Paper mills   |
| International Paper | USA                        | Paper mills   |
| Kimberly-Clark      | USA                        | Sanitary paper products                                 |
| Korsnäs             | Sweden                     | Wood products   |
| MeadWestvaco        | USA                        | Corrugated and solid fiber boxes                        |
| Metsäliitto         | Finland                    | Paper mills   |
| Mondi               | Great Britain/South Africa | Pulp mills  |
| Myllykoski          | Finland                    | Paper mills   |
| Nippon              | Japan                      | Pulp mills  |
| Norbord             | Canada                     | Pulp mills  |
| Norske Skog         | Norway                     | Paper mills   |
| PaperlinX           | Australia                  | Paper mills   |
| Södra               | Sweden                     | Wood products   |
| Smurfit Kappa       | Ireland                    | Packaging paper and plastics film, coated and laminated |
| Stora Enso          | Finland                    | Paper mills   |
| Sveaskog            | Sweden                     | Paperboard mills  |
| SCA                 | Sweden                     | Converted paper and paperboard products                 |
| UPM                 | Finland                    | Paper mills   |
| Weyerhaeuser        | USA                        | Sawmills and planing mills, general                     |



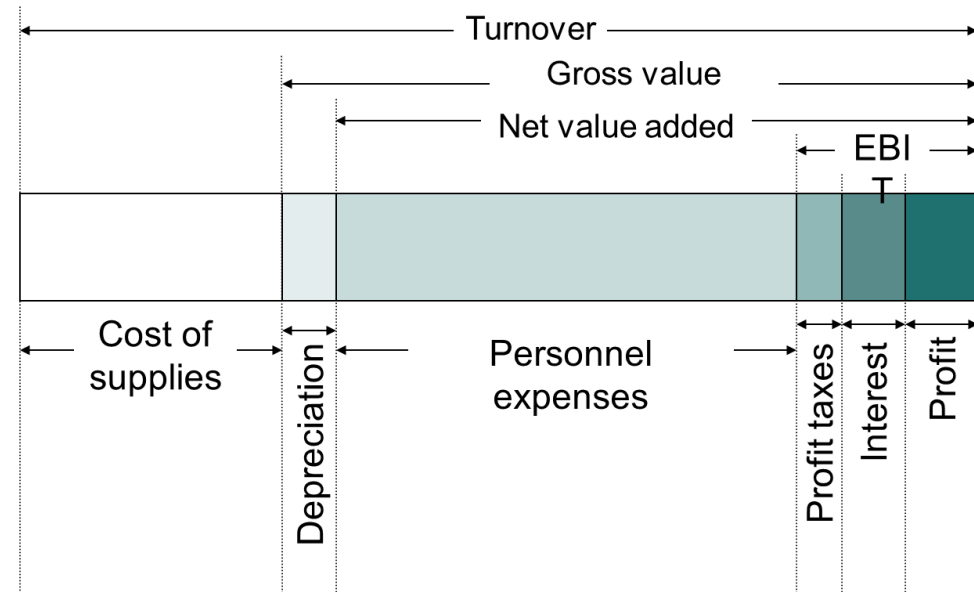
# Sustainable Value Creation by Pulp & Paper Companies

| Industry Affiliation                                    | Number of Companies |
|---|---------------------|
| Paper mills   | 11                  |
| Pulp mills  | 4                   |
| Wood products   | 3                   |
| Packaging paper and plastics film, coated and laminated | 2                   |
| Converted paper and paperboard products                 | 1                   |
| Corrugated and solid fiber boxes                        | 1                   |
| Paperboard mills  | 1                   |
| Sanitary paper products                                 | 1                   |
| Sawmills and planing mills, general                     | 1                   |
| <b>Total</b>  | <b>25</b>           |

| Country                    | Number of Companies |
|----------------------------|---------------------|
| Sweden                     | 6                   |
| Finland                    | 5                   |
| USA                        | 4                   |
| Canada                     | 2                   |
| Australia                  | 1                   |
| Great Britain              | 1                   |
| Great Britain/South Africa | 1                   |
| Ireland                    | 1                   |
| Japan                      | 1                   |
| Norway                     | 1                   |
| Portugal                   | 1                   |
| Spain                      | 1                   |
| <b>Total</b>               | <b>25</b>           |

# 2 Scenarios: EBIT & NVA

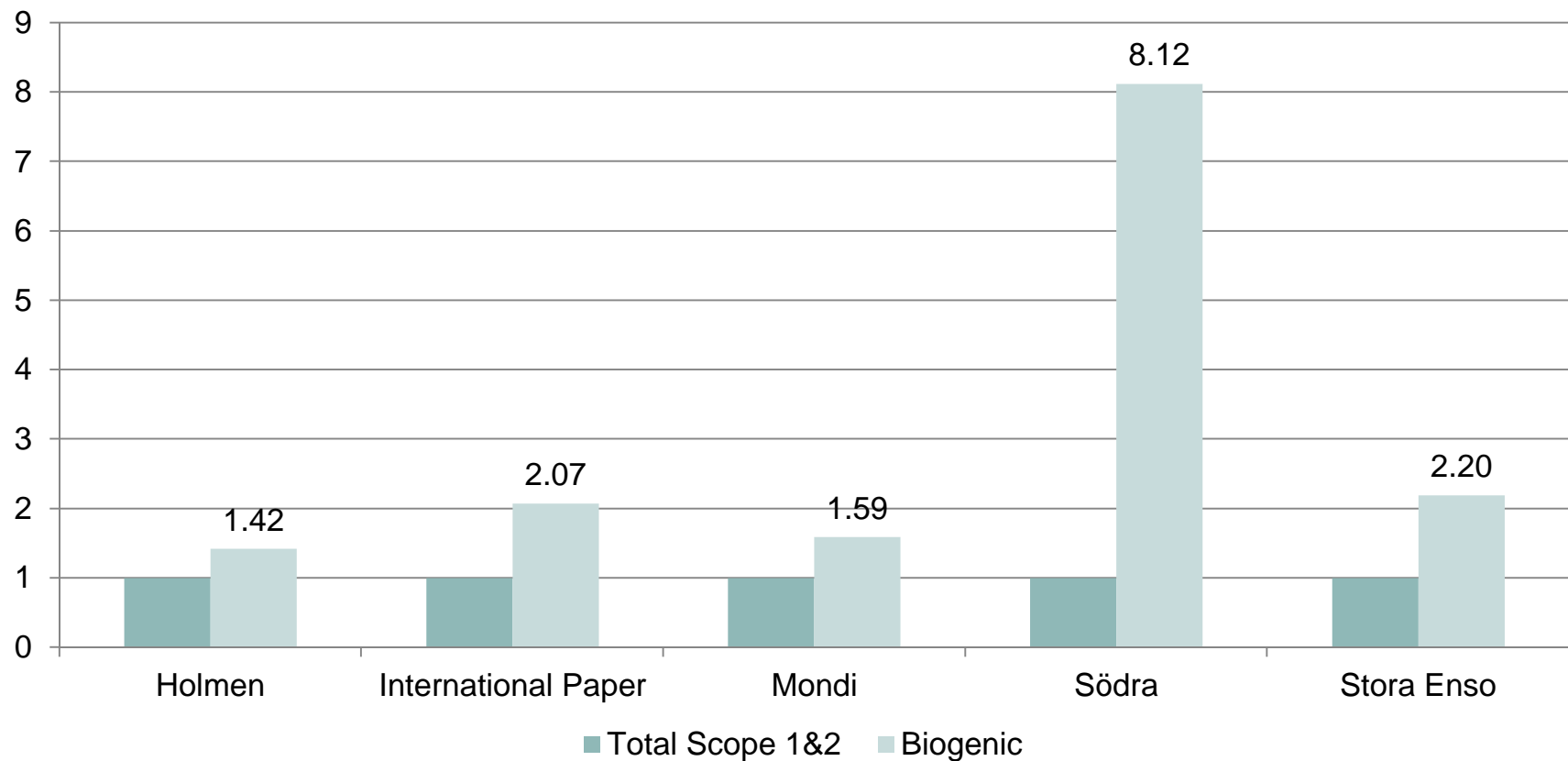
- For this study, 2 return figures have been used
  - EBIT
  - Net Value Added



| CO <sub>2</sub> -efficiency of the benchmark | 2005        | 2006        | 2007        | 2008        | 2009        |
|--|-------------|-------------|-------------|-------------|-------------|
| EBIT scenario                                | € 79 per t  | € 98 per t  | € 91 per t  | € 52 per t  | € 94 per t  |
| NVA scenario                                 | € 255 per t | € 320 per t | € 332 per t | € 362 per t | € 348 per t |

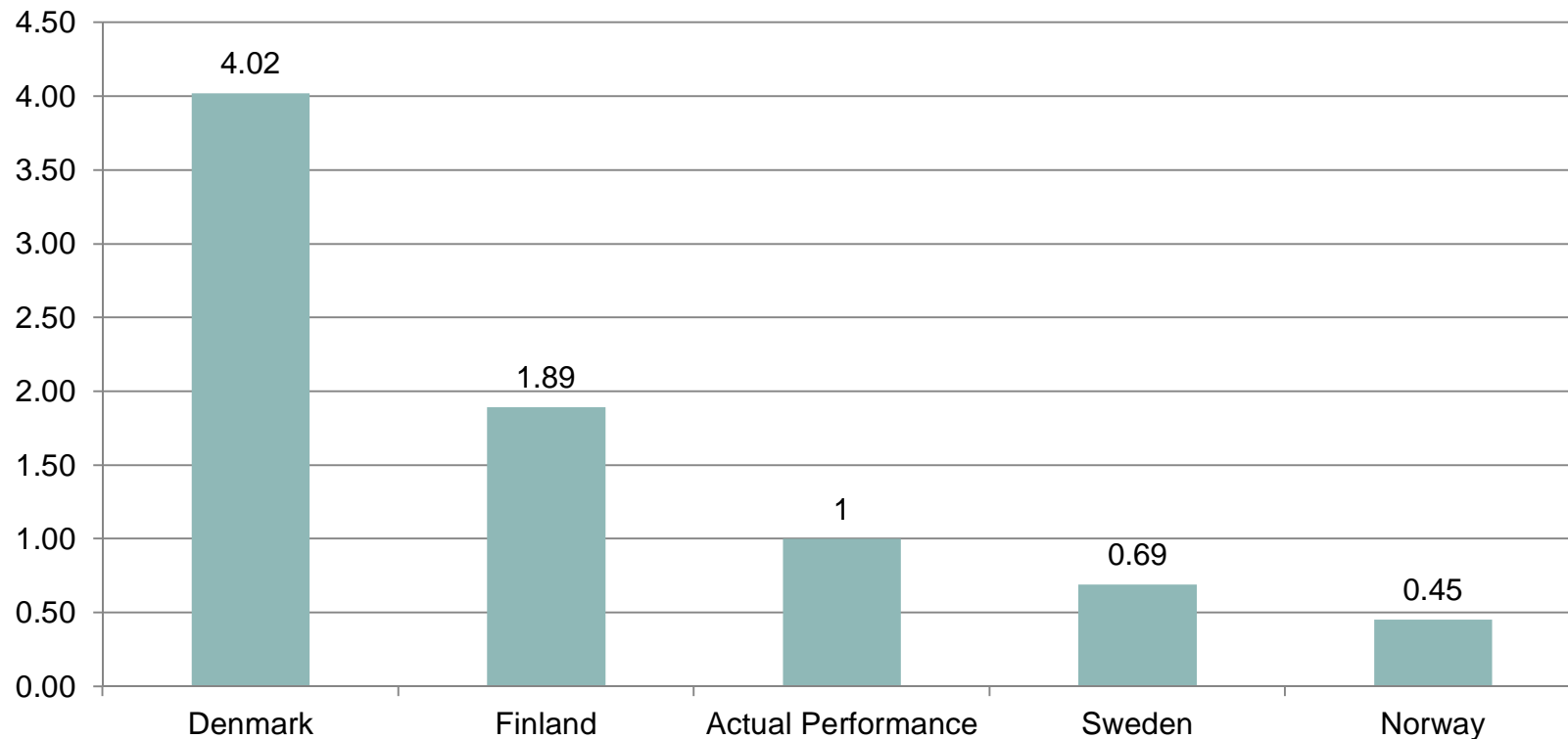
# Biogenic Emissions

- Biogenic emissions as a multiple of scope 1&2 emissions: selected companies (2009)



# Indirect Emissions

- Hypothetical example of Holmen in 2009
  - Holmen's overall emissions in 2009 if electricity use had exclusively taken place in Denmark, Finland, Sweden or Norway (compared to actual performance)



# Data Quality

- One of our pet topics.
- Data quality and reliability of published data is the elephant in the room.
- They have done it again – published data is not very reliable. We had to
  - Correct data
  - Eliminate some companies
  - ...
- Happy to talk about this – makes a nice lunch conversation.

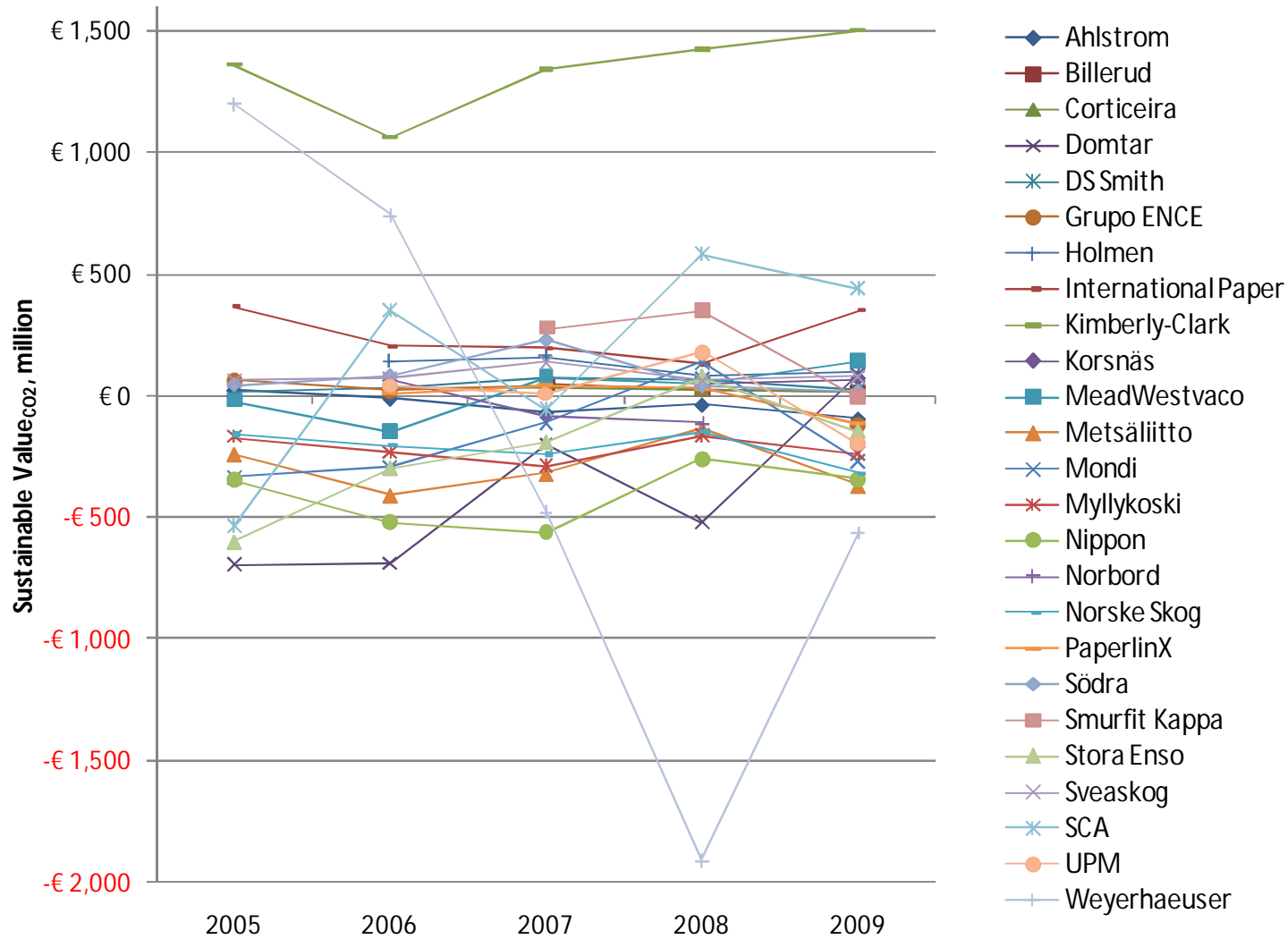
# Absolute Sustainable Value (EBIT Scenario)

|                     | 2005        | Rank  | 2006        | Rank  | 2007        | Rank  | 2008         | Rank  | 2009        | Rank  |
|---------------------|-------------|-------|-------------|-------|-------------|-------|--------------|-------|-------------|-------|
| Ahlstrom            | € 20,007    | 7/17  | -€ 14,588   | 14/22 | -€ 73,638   | 15/24 | -€ 40,052    | 18/25 | -€ 97,957   | 14/24 |
| Billerud            | N/A         | N/A   | N/A         | N/A   | € 45,214    | 9/24  | € 20,348     | 17/25 | € 12,445    | 12/24 |
| Corticeira          | N/A         | N/A   | € 27,992    | 11/22 | € 31,540    | 12/24 | € 22,504     | 16/25 | € 13,358    | 11/24 |
| Domtar              | -€ 697,036  | 17/17 | -€ 692,875  | 22/22 | -€ 201,805  | 19/24 | -€ 523,240   | 24/25 | € 85,594    | 6/24  |
| DS Smith            | € 15,196    | 8/17  | € 35,037    | 10/22 | € 75,157    | 7/24  | € 63,749     | 9/25  | € 20,217    | 9/24  |
| Grupo ENCE          | € 61,691    | 4/17  | € 18,466    | 12/22 | € 37,441    | 11/24 | € 31,993     | 14/25 | -€ 122,545  | 16/24 |
| Holmen              | N/A         | N/A   | € 140,696   | 5/22  | € 157,216   | 5/24  | € 78,163     | 7/25  | € 97,460    | 5/24  |
| International Paper | € 360,431   | 3/17  | € 197,053   | 4/22  | € 190,715   | 4/24  | € 125,831    | 6/25  | € 344,008   | 3/24  |
| Kimberly Clark      | € 1,362,069 | 1/17  | € 1,060,360 | 1/22  | € 1,340,261 | 1/24  | € 1,422,580  | 1/25  | € 1,500,688 | 1/24  |
| Korsnas             | N/A         | N/A   | N/A         | N/A   | N/A         | N/A   | € 45,345     | 12/25 | € 66,424    | 8/24  |
| MeadWestVaco        | -€ 20,274   | 9/17  | -€ 148,519  | 15/22 | € 72,887    | 8/24  | € 50,313     | 11/25 | € 141,509   | 4/24  |
| Metsäliitto         | -€ 240,958  | 12/17 | -€ 410,915  | 20/22 | -€ 322,167  | 22/24 | -€ 135,414   | 20/25 | -€ 371,820  | 23/24 |
| Mondi               | -€ 337,198  | 13/17 | -€ 292,514  | 18/22 | -€ 115,252  | 17/24 | € 135,567    | 5/25  | -€ 269,400  | 20/24 |
| Myllykoski          | -€ 170,947  | 11/17 | -€ 235,556  | 17/22 | -€ 289,888  | 21/24 | -€ 165,831   | 22/25 | -€ 242,707  | 19/24 |
| Nippon              | -€ 347,629  | 14/17 | -€ 522,515  | 21/22 | -€ 564,071  | 24/24 | -€ 259,893   | 23/25 | -€ 343,694  | 22/24 |
| Norbord             | N/A         | N/A   | € 60,447    | 8/22  | -€ 90,540   | 16/24 | -€ 113,428   | 19/25 | N/A         | N/A   |
| Norske Skog         | -€ 161,827  | 10/17 | -€ 206,521  | 16/22 | -€ 242,846  | 20/24 | -€ 150,834   | 21/25 | -€ 319,048  | 21/24 |
| Paperlinx           | N/A         | N/A   | € 9,250     | 13/22 | € 41,814    | 10/24 | € 29,353     | 15/25 | -€ 116,226  | 15/24 |
| Sodra               | € 41,880    | 6/17  | € 77,881    | 6/22  | € 226,425   | 3/24  | € 36,064     | 13/25 | € 13,859    | 10/24 |
| Smurfit Kappa       | N/A         | N/A   | N/A         | N/A   | € 275,115   | 2/24  | € 347,224    | 3/25  | -€ 9,736    | 13/24 |
| Stora               | -€ 602,306  | 16/17 | -€ 300,432  | 19/22 | -€ 194,750  | 18/24 | € 73,976     | 8/25  | -€ 147,794  | 17/24 |
| Sveaskog            | € 59,598    | 5/17  | € 70,700    | 7/22  | € 134,455   | 6/24  | € 59,391     | 10/25 | € 75,581    | 7/24  |
| SCA                 | -€ 540,045  | 15/17 | € 349,641   | 3/22  | -€ 58,345   | 14/24 | € 581,364    | 2/25  | € 438,265   | 2/24  |
| UPM                 | N/A         | N/A   | € 36,990    | 9/22  | € 4,754     | 13/24 | € 178,301    | 4/25  | -€ 202,608  | 18/24 |
| Weyerhaeuser        | € 1,197,348 | 2/17  | € 739,920   | 2/22  | -€ 479,690  | 23/24 | -€ 1,913,375 | 25/25 | -€ 565,871  | 24/24 |

in million €



# Absolute Sustainable Value (EBIT Scenario)





# Sustainable Value and Company Size

- The absolute Sustainable Value shows the amount of value that has been created by the use of the set of environmental, social and economic resources by a company in comparison to the sector on average.
- Bigger companies tend to produce higher Sustainable Value indicators (positive as well as negative) as they produce more.
- To correct for firm size, Sustainable Value can be divided by sales (Sustainable Value Margin).
- The Sustainable Value Margin expresses Sustainable Value created by a company as the percentage of the sales of a company.

# Sustainable Value Margin (EBIT Scenario)

|                     | 2005    | Rank  | 2006    | Rank  | 2007    | Rank  | 2008    | Rank  | 2009    | Rank  |
|---------------------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|
| Ahlstrom            | 1.29%   | 7/17  | -0.91%  | 14/22 | -4.18%  | 17/24 | -2.22%  | 19/25 | -6.14%  | 19/24 |
| Billerud            | N/A     | N/A   | N/A     | N/A   | 5.39%   | 7/24  | 2.51%   | 10/25 | 1.64%   | 10/24 |
| Corticeira          | N/A     | N/A   | 6.33%   | 5/22  | 6.95%   | 5/24  | 4.81%   | 6/25  | 3.22%   | 7/24  |
| Domtar              | -25.17% | 17/17 | -27.60% | 22/22 | -4.64%  | 19/24 | -11.98% | 23/25 | 2.18%   | 8/24  |
| DS Smith            | 0.63%   | 8/17  | 1.47%   | 10/22 | 2.90%   | 9/24  | 2.56%   | 9/25  | 0.86%   | 11/24 |
| Grupo ENCE          | 10.80%  | 1/17  | 2.96%   | 9/22  | 5.88%   | 6/24  | 4.73%   | 7/25  | -22.88% | 24/24 |
| Holmen              | N/A     | N/A   | 6.84%   | 4/22  | 7.59%   | 4/24  | 3.88%   | 8/25  | 5.53%   | 4/24  |
| International Paper | 1.96%   | 6/17  | 1.18%   | 11/22 | 1.28%   | 11/24 | 0.71%   | 15/25 | 2.12%   | 9/24  |
| Kimberly Clark      | 10.10%  | 2/17  | 8.34%   | 2/22  | 10.80%  | 2/24  | 10.20%  | 1/25  | 11.31%  | 2/24  |
| Korsnas             | N/A     | N/A   | N/A     | N/A   | N/A     | N/A   | 5.89%   | 3/25  | 8.77%   | 3/24  |
| MeadWestVaco        | -0.41%  | 9/17  | -2.85%  | 16/22 | 1.44%   | 10/24 | 1.11%   | 14/25 | 3.25%   | 6/24  |
| Metsäliitto         | -2.79%  | 10/17 | -4.43%  | 17/22 | -4.20%  | 18/24 | -2.10%  | 18/25 | -7.69%  | 20/24 |
| Mondi               | -6.29%  | 15/17 | -5.09%  | 18/22 | -1.84%  | 16/24 | 2.14%   | 12/25 | -5.12%  | 18/24 |
| Myllykoski          | -11.76% | 16/17 | -15.37% | 21/22 | -20.06% | 24/24 | -11.27% | 22/25 | -20.03% | 23/24 |
| Nippon              | -4.29%  | 11/17 | -6.97%  | 20/22 | -7.37%  | 22/24 | -2.86%  | 20/25 | -3.94%  | 17/24 |
| Norbord             | N/A     | N/A   | 6.06%   | 6/22  | -11.22% | 23/24 | -17.60% | 24/25 | N/A     | N/A   |
| Norske Skog         | -5.04%  | 13/17 | -5.76%  | 19/22 | -7.18%  | 21/24 | -4.68%  | 21/25 | -13.05% | 21/24 |
| Paperlinx           | N/A     | N/A   | 0.20%   | 13/22 | 0.89%   | 12/24 | 0.64%   | 17/25 | -3.29%  | 16/24 |
| Sodra               | 2.47%   | 5/17  | 2.97%   | 8/22  | 8.40%   | 3/24  | 2.33%   | 11/25 | 0.85%   | 12/24 |
| Smurfit Kappa       | N/A     | N/A   | N/A     | N/A   | 3.78%   | 8/24  | 4.92%   | 5/25  | -0.16%  | 13/24 |
| Stora               | -4.57%  | 12/17 | -2.06%  | 15/22 | -1.46%  | 15/24 | 0.67%   | 16/25 | -1.65%  | 14/24 |
| Sveaskog            | 8.99%   | 3/17  | 10.85%  | 1/22  | 17.12%  | 1/24  | 7.88%   | 2/25  | 13.29%  | 1/24  |
| SCA                 | -5.20%  | 14/17 | 3.19%   | 7/22  | -0.51%  | 14/24 | 5.06%   | 4/25  | 4.05%   | 5/24  |
| UPM                 | N/A     | N/A   | 0.36%   | 12/22 | 0.46%   | 13/24 | 1.88%   | 13/25 | -2.62%  | 15/24 |
| Weyerhaeuser        | 7.50%   | 4/17  | 7.23%   | 3/22  | -6.46%  | 20/24 | -32.87% | 25/25 | -14.75% | 22/24 |

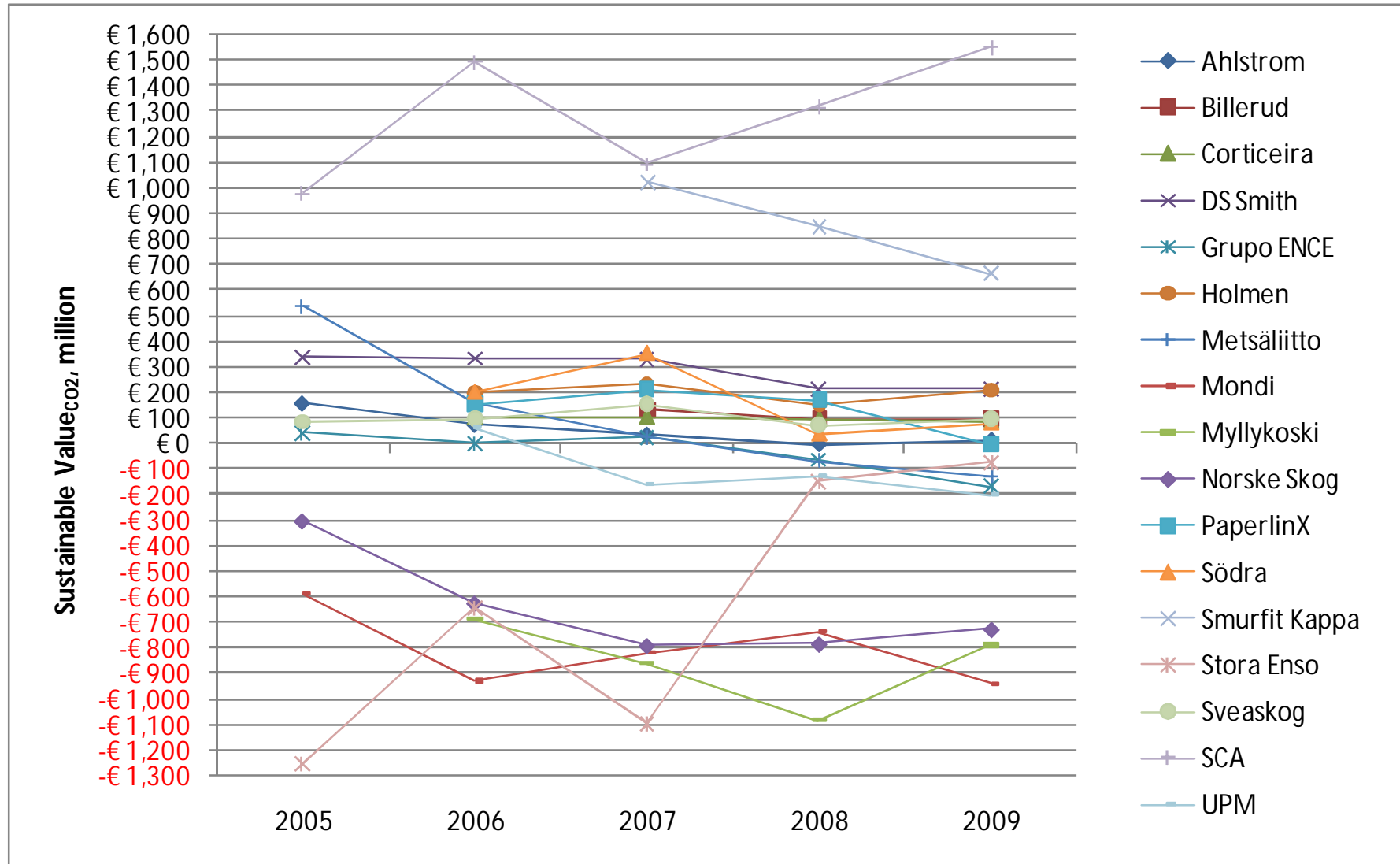


# Absolute Sustainable Value (NVA Scenario)

|               | 2005         | Rank | 2006        | Rank  | 2007         | Rank  | 2008         | Rank  | 2009        | Rank  |
|---------------|--------------|------|-------------|-------|--------------|-------|--------------|-------|-------------|-------|
| Ahlstrom      | € 158,882    | 4/9  | € 75,471    | 9/15  | € 35,782     | 10/17 | -€ 845       | 10/17 | € 15,767    | 9/17  |
| Billerud      | N/A          | N/A  | N/A         | N/A   | € 134,352    | 8/17  | € 98,050     | 6/17  | € 101,351   | 5/17  |
| Corticeira    | N/A          | N/A  | € 105,741   | 7/15  | € 105,002    | 9/17  | € 97,510     | 7/17  | € 89,910    | 7/17  |
| DS Smith      | € 337,651    | 3/9  | € 333,087   | 2/15  | € 326,248    | 4/17  | € 214,141    | 3/17  | € 214,125   | 3/17  |
| Grupo ENCE    | € 41,272     | 6/9  | -€ 91       | 11/15 | € 23,596     | 12/17 | -€ 63,287    | 11/17 | -€ 168,468  | 13/17 |
| Holmen        | N/A          | N/A  | € 199,410   | 4/15  | € 233,849    | 5/17  | € 154,584    | 5/17  | € 211,695   | 4/17  |
| Metsäliitto   | € 538,042    | 2/9  | € 163,909   | 5/15  | € 26,430     | 11/17 | -€ 68,776    | 12/17 | -€ 125,984  | 12/17 |
| Mondi         | -€ 587,344   | 8/9  | -€ 926,847  | 15/15 | -€ 817,957   | 15/17 | -€ 734,202   | 15/17 | -€ 938,436  | 17/17 |
| Myllykoski    | N/A          | N/A  | -€ 689,871  | 14/15 | -€ 862,418   | 16/17 | -€ 1,081,157 | 17/17 | -€ 790,239  | 16/17 |
| Norske Skog   | -€ 304,532   | 7/9  | -€ 624,554  | 12/15 | -€ 789,814   | 14/17 | -€ 783,882   | 16/17 | -€ 726,735  | 15/17 |
| Paperlinx     | N/A          | N/A  | € 152,452   | 6/15  | € 212,020    | 6/17  | € 168,623    | 4/17  | -€ 4,910    | 10/17 |
| Sodra         | N/A          | N/A  | € 201,355   | 3/15  | € 353,182    | 3/17  | € 36,462     | 9/17  | € 80,445    | 8/17  |
| Smurfit Kappa | N/A          | N/A  | N/A         | N/A   | € 1,022,885  | 2/17  | € 849,459    | 2/17  | € 665,620   | 2/17  |
| Stora         | -€ 1,250,761 | 9/9  | -€ 642,155  | 13/15 | -€ 1,091,924 | 17/17 | -€ 147,762   | 14/17 | -€ 70,783   | 11/17 |
| Sveaskog      | € 85,372     | 5/9  | € 97,880    | 8/15  | € 155,250    | 7/17  | € 72,282     | 8/17  | € 95,202    | 6/17  |
| SCA           | € 981,419    | 1/9  | € 1,494,026 | 1/15  | € 1,092,857  | 1/17  | € 1,316,585  | 1/17  | € 1,550,157 | 1/17  |
| UPM           | N/A          | N/A  | € 60,185    | 10/15 | -€ 159,341   | 13/17 | -€ 127,784   | 13/17 | -€ 198,720  | 14/17 |

in million €

# Absolute Sustainable Value (NVA Scenario)



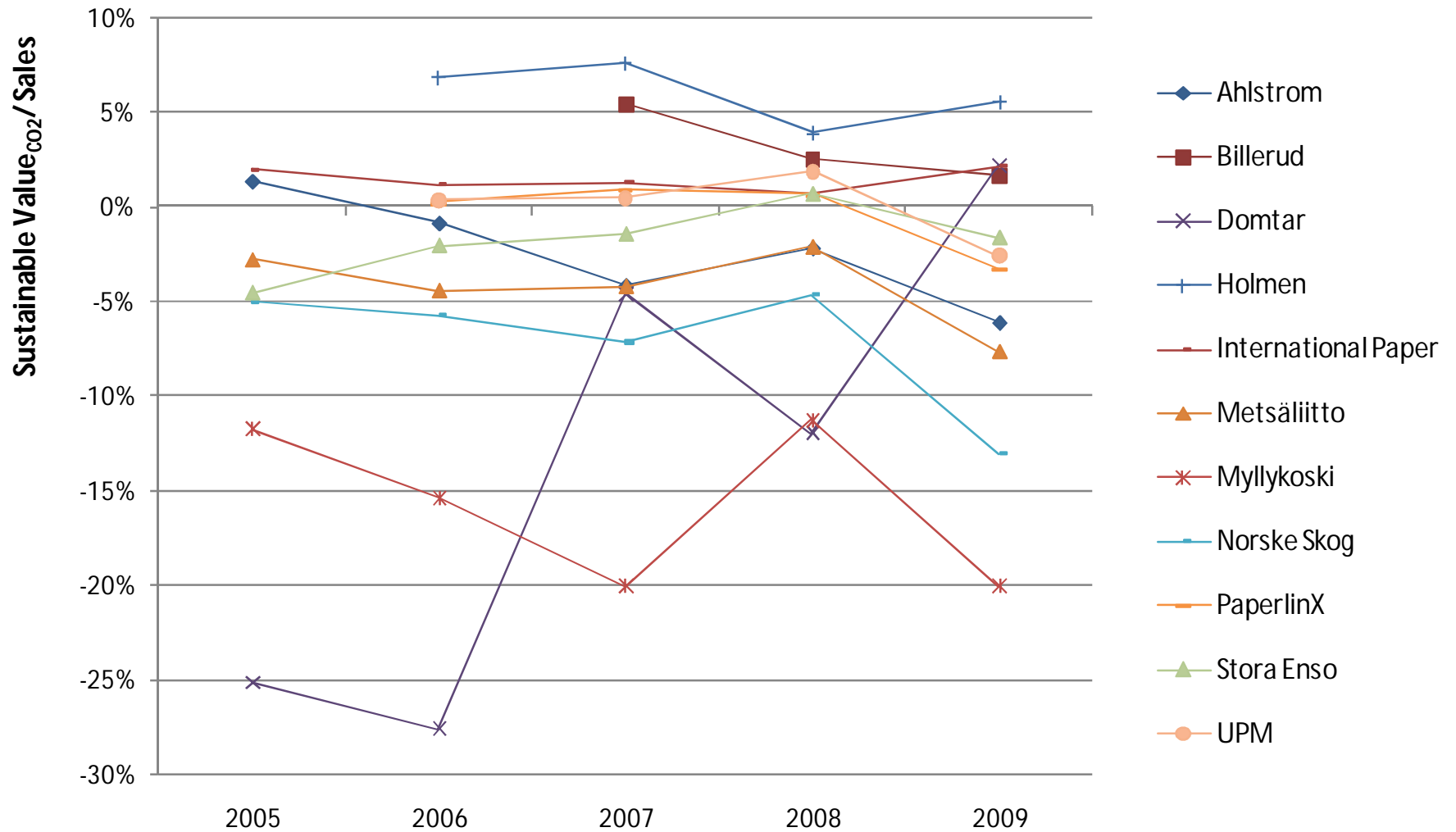
# Sustainable Value Margin (NVA Scenario)

|               | 2005    | Rank | 2006    | Rank  | 2007    | Rank  | 2008    | Rank  | 2009    | Rank  |
|---------------|---------|------|---------|-------|---------|-------|---------|-------|---------|-------|
| Ahlstrom      | 10.23%  | 3/9  | 4.72%   | 7/15  | 2.03%   | 11/17 | -0.05%  | 10/17 | 0.99%   | 9/17  |
| Billerud      | N/A     | N/A  | N/A     | N/A   | 16.01%  | 3/17  | 12.08%  | 2/17  | 13.39%  | 4/17  |
| Corticeira    | N/A     | N/A  | 23.89%  | 1/15  | 23.14%  | 1/17  | 20.82%  | 1/17  | 21.65%  | 1/17  |
| DS Smith      | 14.08%  | 1/9  | 13.97%  | 3/15  | 12.60%  | 6/17  | 8.60%   | 6/17  | 9.10%   | 7/17  |
| Grupo ENCE    | 7.23%   | 5/9  | -0.01%  | 11/15 | 3.70%   | 10/17 | -9.36%  | 14/17 | -31.46% | 16/17 |
| Holmen        | N/A     | N/A  | 9.70%   | 5/15  | 11.29%  | 7/17  | 7.68%   | 7/17  | 12.01%  | 5/17  |
| Metsäliitto   | 6.23%   | 6/9  | 1.77%   | 9/15  | 0.34%   | 12/17 | -1.07%  | 11/17 | -2.60%  | 13/17 |
| Mondi         | -10.95% | 9/9  | -16.12% | 13/15 | -13.05% | 14/17 | -11.57% | 15/17 | -17.85% | 14/17 |
| Myllykoski    | N/A     | N/A  | -45.00% | 15/15 | -59.68% | 17/17 | -73.50% | 17/17 | -65.20% | 17/17 |
| Norske Skog   | -9.48%  | 7/9  | -17.43% | 14/15 | -23.34% | 16/17 | -24.30% | 16/17 | -29.72% | 15/17 |
| Paperlinx     | N/A     | N/A  | 3.36%   | 8/15  | 4.51%   | 9/17  | 3.69%   | 8/17  | -0.14%  | 10/17 |
| Sodra         | N/A     | N/A  | 7.69%   | 6/15  | 13.11%  | 5/17  | 2.35%   | 9/17  | 4.94%   | 8/17  |
| Smurfit Kappa | N/A     | N/A  | N/A     | N/A   | 14.07%  | 4/17  | 12.03%  | 3/17  | 10.99%  | 6/17  |
| Stora         | -9.48%  | 8/9  | -4.40%  | 12/15 | -8.16%  | 13/17 | -1.34%  | 12/17 | -0.79%  | 11/17 |
| Sveaskog      | 12.87%  | 2/9  | 15.02%  | 2/15  | 19.77%  | 2/17  | 9.59%   | 5/17  | 16.74%  | 2/17  |
| SCA           | 9.45%   | 4/9  | 13.63%  | 4/15  | 9.54%   | 8/17  | 11.45%  | 4/17  | 14.34%  | 3/17  |
| UPM           | N/A     | N/A  | 0.59%   | 10/15 | -15.40% | 15/17 | -1.35%  | 13/17 | -2.57%  | 12/17 |

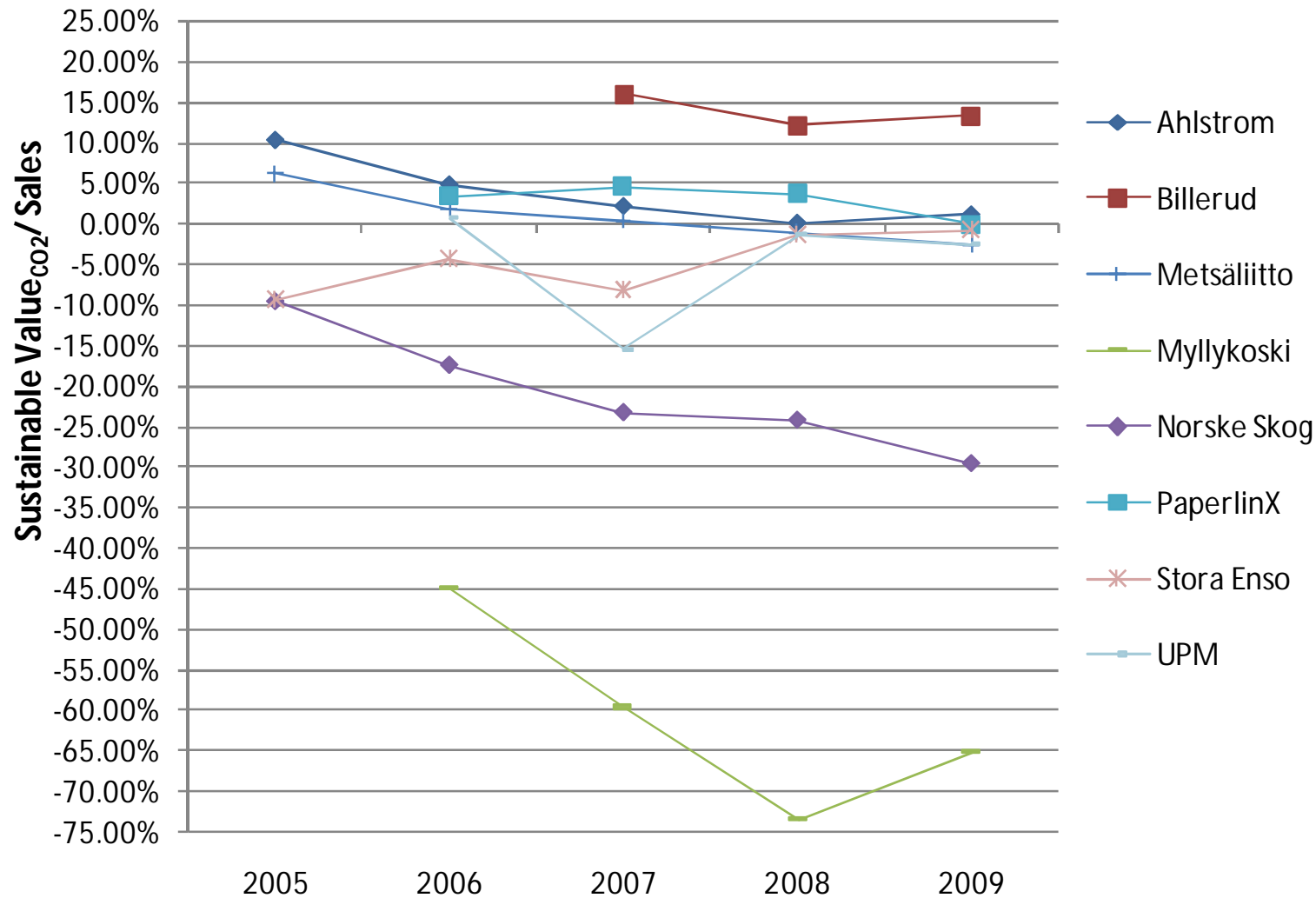
# Sustainable Value Margin (EBIT Scenario): Paper Mills

|             | 2005    | Rank  | 2006    | Rank  | 2007    | Rank  | 2008    | Rank  | 2009    | Rank  |
|-------------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|
| Holmen      | N/A     | N/A   | 6.84%   | 4/22  | 7.59%   | 4/24  | 3.88%   | 8/25  | 5.53%   | 4/24  |
| Domtar      | -25.17% | 17/17 | -27.60% | 22/22 | -4.64%  | 19/24 | -11.98% | 23/25 | 2.18%   | 8/24  |
| Internation | 1.96%   | 6/17  | 1.18%   | 11/22 | 1.28%   | 11/24 | 0.71%   | 15/25 | 2.12%   | 9/24  |
| Billerud    | N/A     | N/A   | N/A     | N/A   | 5.39%   | 7/24  | 2.51%   | 10/25 | 1.64%   | 10/24 |
| Stora Enso  | -4.57%  | 12/17 | -2.06%  | 15/22 | -1.46%  | 15/24 | 0.67%   | 16/25 | -1.65%  | 14/24 |
| UPM         | N/A     | N/A   | 0.36%   | 12/22 | 0.46%   | 13/24 | 1.88%   | 13/25 | -2.62%  | 15/24 |
| PaperlinX   | N/A     | N/A   | 0.20%   | 13/22 | 0.89%   | 12/24 | 0.64%   | 17/25 | -3.29%  | 16/24 |
| Ahlstrom    | 1.29%   | 7/17  | -0.91%  | 14/22 | -4.18%  | 17/24 | -2.22%  | 19/25 | -6.14%  | 19/24 |
| Metsäliitto | -2.79%  | 10/17 | -4.43%  | 17/22 | -4.20%  | 18/24 | -2.10%  | 18/25 | -7.69%  | 20/24 |
| Norske Skog | -5.04%  | 13/17 | -5.76%  | 19/22 | -7.18%  | 21/24 | -4.68%  | 21/25 | -13.05% | 21/24 |
| Myllykoski  | -11.76% | 16/17 | -15.37% | 21/22 | -20.06% | 24/24 | -11.27% | 22/25 | -20.03% | 23/24 |

# Sustainable Value Margin (EBIT Scenario): Paper Mills



# Sustainable Value Margin (NVA Scenario): Paper Mills

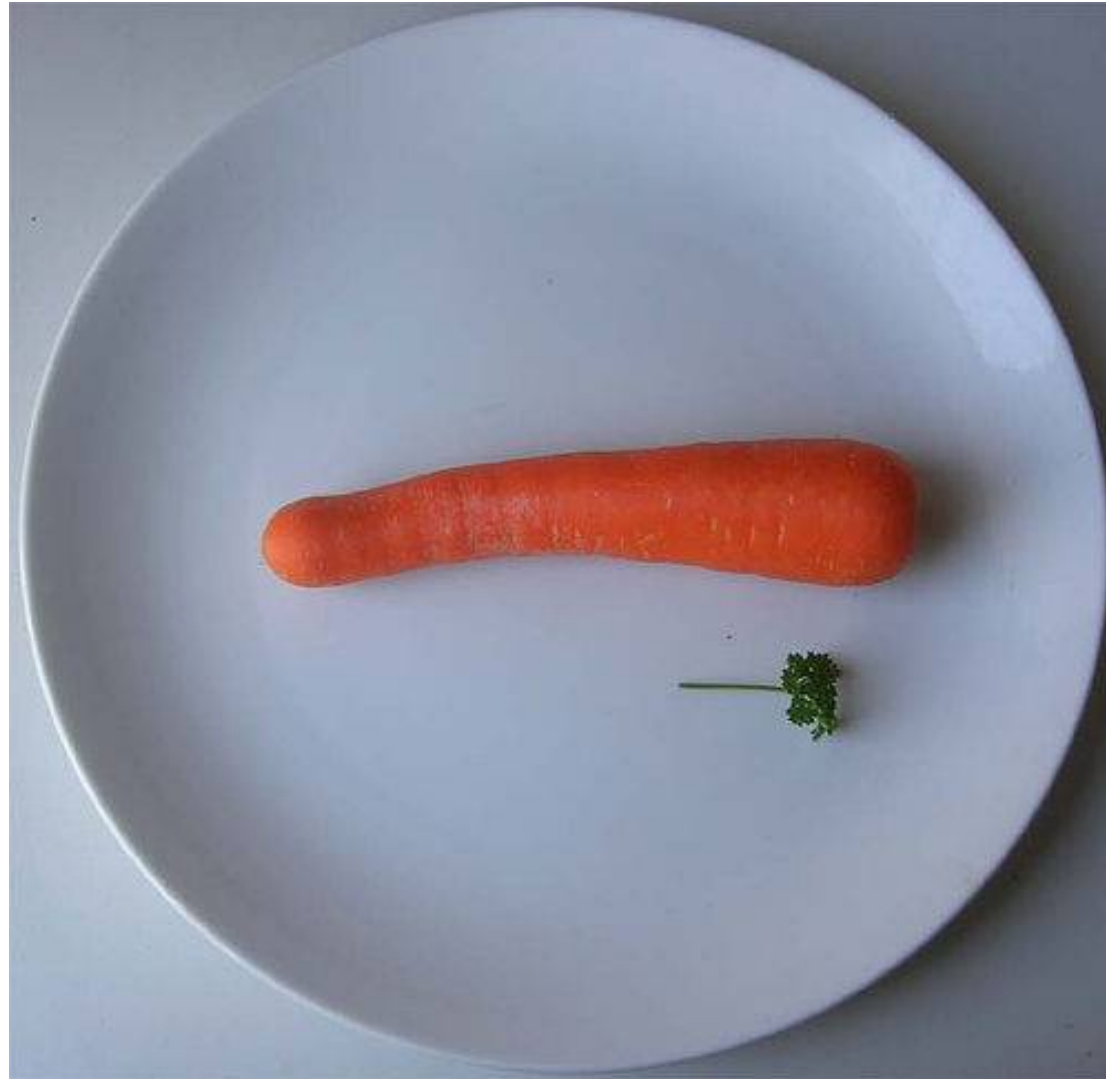




# Preliminary Conclusions

- Sustainable Value applies the logic of investment performance assessment to environmental resources
- Sustainable Value compares the resources use of a company to a benchmark and thus defines the cost of a resource via opportunity costs
- In our forthcoming study, we assess the Sustainable Value<sub>CO<sub>2</sub></sub> of 25 pulp & paper companies worldwide (focusing on the Nordic countries)
- Sustainable Value<sub>CO<sub>2</sub></sub> expresses corporate CO<sub>2</sub> performance in monetary terms
- It shows which companies have outperformed the sector benchmark – and which companies have not

# Discussant...Questions...and then: Lunch





**SustainableValue**  
Research Ltd

<http://www.sustainablevalue.com>