Measuring Corporate Sustainable Performance in Monetary Terms

Application of the Sustainable Value Approach

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Why should we talk about Sustainable Value?

- There is a growing consensus that businesses need to deal with their sustainability performance.
- But how should managers deal with environmental and social aspects?
- Existing research and practice suggests to concentrate on the burden of a poor environmental and social performance.
- This is not in line with modern management thinking and it is therefore likely to fail.
- Managers tend to think in a value-oriented rather than a burden-oriented way.
- Sustainable Value, the concept we are about to introduce, appeals to what managers do best – create value.

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What is this presentation about

- Introducing the Sustainable Value approach.
- Results of the assessment of 65 European companies in the ADVANCE project.
- Outlining another study that was conducted using the Sustainable Value approach.

Why do companies use resources?

- Companies create a return.

More return preferred to less return.

- Companies need resources.

Less resource use preferred to more resource use.

Financial market perspective vs. Sustainability perspective

- Financial markets only focus on economic capital.
- Objective: above average (risk-adjusted) return on capital.

- This falls short of the sustainability concept!
- Companies not only use economic capital but also environmental and social resources.
- Without environmental and social resources there is no return.
- From the viewpoint of sustainability focusing only on return on capital is insufficient.

➔ How can we determine if a company has created value with its economic, environmental and social resources?

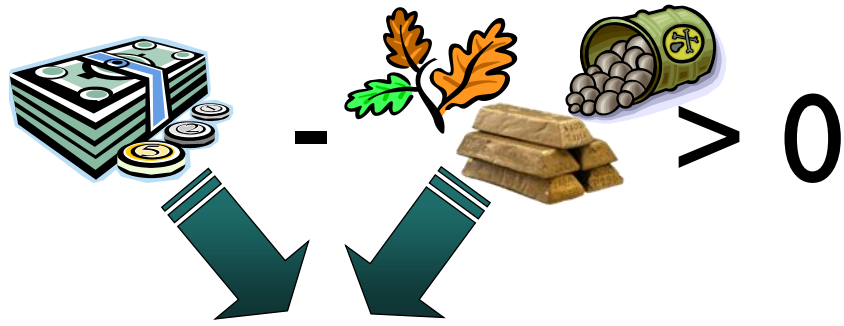
When are resources used in a value-creating way?

- In general, value is created whenever the return exceeds costs:

$$\text{Value} = \text{Return} - \text{Costs}$$

- This rule is fundamental to any economic assessment of corporate performance.
- Sustainable Value extends this basic rule to environmental and social resources.

Easy in theory – difficult in practice



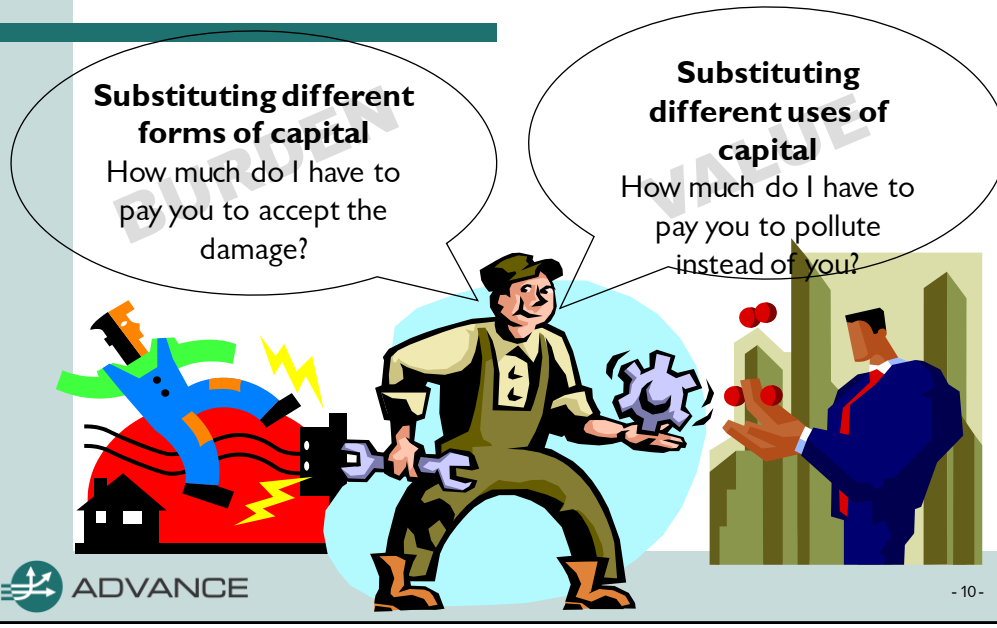
Challenge: We need to express this in the same unit!

Some things do not add up easily.

The Value-Oriented Approach

- How much value is created?
  - How much € return is created per ton of CO_2?
  - How much € return is created per ton of VOC?
- Compare the return of alternative uses (opportunity costs)
  - When used in another place – how much more return is created (opportunity cost)?
  - Value is created only if the return exceeds the opportunity costs.
- It's
  - Focused on how much value is created.
  - Easy to do.
  - Using the logic of the financial markets.
  - Compatible with managerial thinking.

How is Sustainable Value different?



Performance assessment in financial markets…

	BP	FTSE100
Return on investment	12.5%	11.5%
Value spread	1%	
Investment	€ 1,000	
Value created	€ 10	

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… and how Sustainable Value works (example of BP in 2003)

	BP	Benchmark EU-15
Return on CO_2-investment [€/t of CO_2]	345	2,701
Value spread [€/t of CO_2]	-2,356	
CO_2-investment [t]	88,890,000	
CO_2-Value contribution	-€ 209,479,086,247	

By investing CO_2 in BP rather than the EU15 average company our investor loses about € 209 billion per year.

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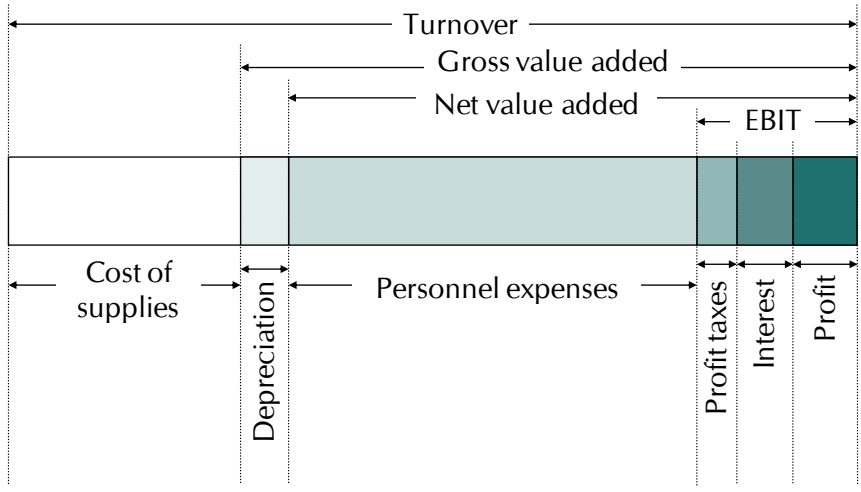
Preparing the assessment

- Which indicators should be taken into account?
  - Economic resources
    Capital employed, (fixed) assets
  - Environmental aspects
    Emissions, wastes, resources consumption, etc.
  - Social aspects
    Number of accidents, employment
- Which return figure should be chosen?
  - Profits, value added, ...
- Which benchmark should be chosen?

Choice of the return figure



Choice of the benchmark

- The choice of the benchmark heavily influences the explanatory power of the results.
- Cross-sector vs. sector-specific benchmark?
  - Different explanatory power
    Best in class vs. best in economy
  - Integrated assessment is possible
- Past-oriented vs. future-oriented benchmark?
  - Target efficiencies as benchmark
  - → Policy objectives as benchmark
- Possible benchmarks:
  Company level, regional level, national economy, industry sector, efficiency targets

Data collection and verification

- Collect data for the indicators that have been defined before.
  - on the company level
  - on the benchmark level
- Data has to be consistent:
  - Definition of indicators
    e.g. waste definitions, direct vs. indirect emissions, definition of assets for measuring capital use, etc.
  - Scope of the data
    Does the scope of environmental data match the scope of financial data?
  - Return figure on company and benchmark level has to be consistent.
- If necessary: Correct or amend data.

The ADVANCE Survey

- Scope of the survey
  - 65 European companies
  - Time frame 2001-2003, as well as 2010
  - Seven environmental indicators (CO_2-emissions, NO_x-emissions, SO_x-emissions, CH_4-emissions, VOC-emissions, water use, waste generation)
  - Return figures used: Gross value added (company level) and Gross domestic product (benchmark level)
- Benchmark: EU15, past and future performance scenario
- Data has been collected from publicly available sources
  - Corporate data: reports, websites
  - Benchmark data: statistical offices, international organisations, EU-policies

Calculation of Sustainable Value

1. How efficiently does the company use its resources?
2. How efficiently does the benchmark use the resources (opportunity costs)?
3. How much more or less efficiently does the company use its resources compared to the benchmark (value spread)?
4. How much more or less return does the company create in comparison to the benchmark with each resource (value contribution)?
5. How much Sustainable Value does the company create with its set of resources used?

Sustainable Value of BP in 2003

	Amount of resources used in 2003		Efficiency of BP		Efficiency of the benchmark EU15		Value Contribution
CO_2-emissions [t]	88,890,000 *	(	345 €/t	-	2,701 €/t	) =	-€ 209,479,086,247
NO_x-emissions [t]	220,318 *	(	139,125 €/t	-	1,004,300 €/t	) =	-€ 190,613,662,029
SO_x-emissions [t]	150,895 *	(	203,132 €/t	-	1,779,304 €/t	) =	-€ 237,836,359,349
Waste generated [t]	526,749 *	(	58,190 €/t	-	6,270 €/t	) =	€ 27,349,021,775
Water used [m³]	516,922,761 *	(	59 €/m³	-	41 €/m³	) =	€ 9,213,251,654
VOC-emissions [t]	268,785 *	(	114,038 €/t	-	970,676 €/t	) =	-€ 230,251,578,888
CH_4-emissions [t]	235,400 *	(	130,211 €/t	-	586,083 €/t	) =	-€ 107,312,253,695
Sustainable Value 2003							**-€ 134,132,952,397**

Explanatory power of the absolute Sustainable Value

- A company creates Sustainable Value whenever it uses its resources more efficiently than a benchmark.
- In ADVANCE a positive Sustainable Value shows which companies use their environmental resources more efficiently than the EU15 economy on average.
- The absolute Sustainable Value shows the monetary value that is created or lost compared to the benchmark due to the use of the resources by a company.

Return to Cost Ratio (RCR)

- To compare companies we take into account company size.
  → Return to Cost Ratio
- Return to Cost Ratio = Ratio between the return of the company (gross value added) and the opportunity costs, i.e. the return that the benchmark *would have* achieved with the company's resources.
- Return to Cost Ratio > 1
  → Company is more eco-efficient than the benchmark (EU15)
- Return to Cost Ratio < 1
  → Company is less eco-efficient than the benchmark (EU15)
- Return to Cost Ratio 2 : 1
  → Company is twice as eco-efficient as the benchmark (EU15)

Return to Cost Ratio of BP in 2003

	Efficiency of BP		Efficiency of the benchmark EU15			Return to Cost Ratio
CO_2-emissions [t]	345	€/t :	2,701	€/t	==>	1 : 7.8
NO_x-emissions [t]	139,125	€/t :	1,004,300	€/t	==>	1 : 7.2
SO_x-emissions [t]	203,132	€/t :	1,779,304	€/t	==>	1 : 8.8
Waste generated [t]	58,190	€/t :	6,270	€/t	==>	9.3 : 1
Water used [m³]	59	€/m³ :	41	€/m³	==>	1.4 : 1
VOC-emissions [t]	114,038	€/t :	970,676	€/t	==>	1 : 8.5
CH_4-emissions [t]	130,211	€/t :	586,083	€/t	==>	1 : 4.5
Return to Cost Ratio 2003						**1 : 5.4**

Explanatory power of the Return to Cost Ratio

- The Return to Cost Ratio shows by which factor the efficiency of the company exceeds or falls short of the benchmark efficiency.
- The Return to Cost Ratio is an integrative measure of corporate efficiency and can include the use of economic, environmental and social resources.
  → Indicator of corporate eco- and sustainable efficiency
- The Return to Cost Ratio can be used for comparing companies of different sizes.
- The Return to Cost Ratio allows to compare corporate eco-efficiency in a Factor X style.

RCR: Two cases

a) Return > Opportunity costs

Positive Sustainable Value: Pirelli				
Return	-	*Sustainable Value*	=	*Opportunity cost*
€ 2,026,000,000	-	€ 484,840,349	=	€ 1,541,159,651

€ 2,026,000,000 / € 1,541,159,651

RCR **1.3** : 1

Negative Sustainable Value: Royal DSM				
Return	-	*Sustainable Value*	=	*Opportunity cost*
€ 1,938,000,000	-	-€ 2,362,906,433	=	€ 4,300,906,433

€ 4,300,906,433 / € 1,938,000,000

RCR 1 : **2.2**

b) Opportunity costs > Return

Absolute Sustainable Value (i)

	Company	Sustainable Value 2003	Sustainable Value 2002	Sustainable Value 2001
1	DaimlerChrysler	**29,876,257,351 €**	31,896,158,886 €	30,077,701,600 €
2	Robert Bosch GmbH	**9,831,338,053 €**	9,848,159,729 €	8,781,223,889 €
3	BMW	**9,510,633,231 €**	9,229,109,374 €	8,936,911,302 €
4	Volkswagen	**8,059,197,491 €**	9,524,622,621 €	9,476,251,319 €
5	Philips	**7,598,054,795 €**	7,819,713,882 €	7,062,910,654 €
6	PSA	**6,768,651,026 €**	7,354,519,022 €	6,369,181,491 €
7	Airbus	**4,979,414,025 €**	4,946,677,601 €	4,919,428,944 €
8	ABB	**4,864,578,563 €**	4,629,687,169 €	5,351,681,013 €
9	AstraZeneca	**4,751,779,963 €**	5,234,319,758 €	5,157,364,953 €
10	Renault	**4,033,665,898 €**	3,994,028,068 €	3,342,565,031 €
11	Unilever	**3,936,173,454 €**	4,099,071,601 €	3,741,605,198 €
12	Volvo	**3,396,583,146 €**	3,341,355,994 €	3,163,639,310 €
13	MAN	**2,911,193,152 €**	2,999,267,056 €	N/A
14	STMicroelectronics	**1,864,722,805 €**	2,151,281,043 €	1,983,089,745 €
15	Schering	**1,856,454,221 €**	2,000,508,333 €	1,932,729,530 €
16	Novonordisk	**1,803,753,359 €**	1,662,704,380 €	1,454,469,452 €
17	Henkel	**1,727,305,657 €**	1,808,526,836 €	1,979,307,081 €
18	Agfa-Gevaert	**1,414,583,745 €**	1,375,236,353 €	979,533,009 €
19	Electrolux	**1,344,258,783 €**	1,602,891,149 €	1,299,950,346 €
20	Heidelberger Druck	**1,045,327,850 €**	1,269,945,673 €	1,602,529,592 €
21	Heineken	**945,376,403 €**	1,075,800,503 €	904,335,303 €
22	Scania	**918,892,898 €**	814,196,290 €	659,556,811 €

Absolute Sustainable Value (ii)

	Company	Sustainable Value 2003	Sustainable Value 2002	Sustainable Value 2001
23	Atlas Copco	**764,760,925 €**	833,335,269 €	886,664,786 €
24	Pirelli	**484,840,349 €**	565,728,852 €	628,655,253 €
25	SKF	**462,421,338 €**	444,516,507 €	486,362,570 €
26	NedCar	**332,640,428 €**	373,256,227 €	377,900,637 €
27	Novozymes	**188,204,358 €**	181,084,299 €	141,987,196 €
28	Gorenje	**173,345,874 €**	153,711,847 €	130,261,422 €
29	Richter	**65,527,374 €**	59,266,260 €	44,893,450 €
30	Acea	**-92,371,263 €**	-369,997,290 €	-173,807,935 €
31	Crown van Gelder	**-155,668,471 €**	-168,012,961 €	-156,963,500 €
32	AEM Torino	**-454,372,273 €**	-575,779,231 €	-450,622,442 €
33	Holmen	**-686,700,910 €**	-616,926,138 €	-485,243,089 €
34	ICI	**-1,179,280,321 €**	-387,434,350 €	-541,029,421 €
35	ASM	**-1,627,498,489 €**	-1,649,438,188 €	-1,629,457,399 €
36	SCA	**-2,053,526,721 €**	-1,473,676,237 €	-1,180,348,962 €
37	Royal DSM	**-2,362,906,433 €**	-2,217,345,664 €	-3,776,538,401 €
38	M-Real	**-3,484,338,448 €**	-3,095,686,977 €	-3,116,670,554 €
39	Pilkington	**-4,271,035,368 €**	-4,708,240,192 €	-4,814,993,723 €
40	BG Group	**-4,664,900,505 €**	-6,694,706,346 €	-5,349,553,626 €
41	FIAT	**-5,167,821,763 €**	-8,213,636,833 €	-5,142,150,044 €
42	Slovnaft	**-5,612,746,855 €**	-5,211,931,865 €	-5,382,274,790 €
43	UPM-Kymmene	**-5,896,828,632 €**	-5,604,587,018 €	-4,062,897,272 €
44	Kemira	**-6,383,372,500 €**	-6,167,231,721 €	-6,221,841,861 €

Absolute Sustainable Value (iii)

	Company	**Sustainable Value 2003**	Sustainable Value 2002	Sustainable Value 2001
45	Centrica	**-6,484,312,051 €**	-12,834,638,423 €	-5,430,386,355 €
46	AEM	**-7,142,337,483 €**	-6,510,858,118 €	-8,614,154,252 €
47	OMV	**-7,462,535,912 €**	-3,553,659,898 €	-3,069,629,435 €
48	Celanese	**-7,553,743,315 €**	-8,793,888,967 €	-8,614,673,206 €
49	Degussa	**-8,294,523,146 €**	-8,360,879,211 €	-7,326,879,643 €
50	Unipetrol	**-9,494,288,327 €**	-9,440,175,071 €	-7,623,798,440 €
51	Scottish & Southern Energy	**-12,309,698,069 €**	-11,081,817,768 €	-10,309,334,324 €
52	BASF	**-13,872,669,586 €**	-13,800,774,004 €	-11,914,484,411 €
53	ERG	**-13,934,166,613 €**	-5,645,405,911 €	-5,403,881,658 €
54	Stora Enso	**-14,082,317,266 €**	-12,631,904,344 €	-12,041,859,643 €
55	Edison	**-22,242,425,384 €**	-21,589,281,668 €	-17,387,026,298 €
56	Fortum	**-40,000,506,604 €**	-33,187,790,518 €	-28,988,448,020 €
57	Energias de Portugal	**-47,855,870,740 €**	-42,134,764,406 €	-44,333,288,178 €
58	MVM	**-49,084,322,299 €**	-47,474,419,831 €	-45,101,727,657 €
59	ENEL	**-53,148,520,028 €**	-83,332,940,631 €	-98,816,528,577 €
60	Repsol YPF	**-55,854,211,710 €**	-54,537,662,628 €	-50,291,816,234 €
61	Union Fenosa	**-56,413,585,743 €**	-57,593,090,048 €	-51,017,351,104 €
62	ENI	**-76,763,875,489 €**	-79,336,466,007 €	-71,445,300,635 €
63	Suez	**-110,625,047,824 €**	-103,839,466,449 €	-115,264,987,660 €
64	BP	**-134,132,952,397 €**	-146,524,592,820 €	-154,568,271,662 €
65	Shell	**-180,917,018,746 €**	-176,538,205,610 €	-169,296,409,283 €

Interpretation

- Overall, in ADVANCE 29 of the 65 companies under analysis create a positive Sustainable Value between 2001 and 2003.
- DaimlerChrysler achieves the biggest positive Sustainable Value in our survey.
- With its environmental resources DaimlerChrysler creates about € 29.9 billion more return than the EU15 on average.
- This represents the monetary value of DaimlerChrysler using its environmental resources more eco-efficiently than the EU15 on average.
- Shell yields the lowest absolute Sustainable Value of about € –180.9 billion in 2003.

Return to Cost Ratio (i)

Rank 2003	Company	RCR 2003	RCR 2002	Rank 2002	RCR 2001	Rank 2001
1	Airbus	4.5 : 1	4.7 : 1	1	4.6 : 1	1
2	Novonordisk	4.4 : 1	4.4 : 1	2	4.3 : 1	4
3	Gorenje	4.3 : 1	4.1 : 1	4	3.8 : 1	6
4	BMW	3.9 : 1	4.1 : 1	5	4.3 : 1	3
5	Schering	3.8 : 1	4.2 : 1	3	4.4 : 1	2
6	Philips	3.6 : 1	3.2 : 1	8	3.2 : 1	8
7	DaimlerChrysler	3.6 : 1	3.7 : 1	6	3.6 : 1	7
8	Heidelberger Druckmaschinen	3.4 : 1	3.7 : 1	7	3.9 : 1	5
9	Agfa-Gevaert	3.1 : 1	2.8 : 1	12	2.5 : 1	14
10	PSA	3 : 1	3.2 : 1	9	2.9 : 1	10
11	NedCar	2.9 : 1	3 : 1	10	3 : 1	9
12	ABB	2.8 : 1	2.6 : 1	13	2.8 : 1	12
13	Robert Bosch GmbH	2.7 : 1	2.9 : 1	11	2.8 : 1	11
14	MAN	2.5 : 1	2.5 : 1	15	N/A	N/A
15	Volvo	2.5 : 1	2.5 : 1	16	2.5 : 1	15
16	Henkel	2.5 : 1	2.6 : 1	14	2.8 : 1	13
17	STMicroelectronics	2.2 : 1	2.3 : 1	17	2.3 : 1	16
18	AstraZeneca	2.1 : 1	2.1 : 1	18	2.1 : 1	17
19	Scania	2 : 1	1.9 : 1	19	1.8 : 1	19
20	Renault	1.9 : 1	1.9 : 1	20	1.9 : 1	18
21	Novozymes	1.7 : 1	1.7 : 1	21	1.6 : 1	22
22	Electrolux	1.6 : 1	1.6 : 1	22	1.5 : 1	23

Return to Cost Ratio (ii)

Rank 2003	Company	RCR 2003	RCR 2002	Rank 2002	RCR 2001	Rank 2001
23	Atlas Copco	1.6 : 1	1.6 : 1	24	1.6 : 1	21
24	Richter	1.5 : 1	1.4 : 1	26	1.4 : 1	25
25	Volkswagen	1.5 : 1	1.6 : 1	23	1.6 : 1	20
26	Unilever	1.4 : 1	1.4 : 1	27	1.4 : 1	27
27	Heineken	1.3 : 1	1.5 : 1	25	1.4 : 1	24
28	Pirelli	1.3 : 1	1.4 : 1	28	1.4 : 1	26
29	SKF	1.3 : 1	1.3 : 1	29	1.3 : 1	28
30	Acea	1 : 1.2	1 : 2.1	33	1 : 1.3	30
31	Imperial Chemical Industries	1 : 1.4	1 : 1.1	30	1 : 1.2	29
32	SCA	1 : 1.6	1 : 1.4	31	1 : 1.3	31
33	FIAT Group	1 : 1.8	1 : 3.3	39	1 : 1.6	32
34	Holmen	1 : 2.1	1 : 1.9	32	1 : 1.8	33
35	BASF	1 : 2.2	1 : 2.2	35	1 : 2.1	35
36	Royal DSM	1 : 2.2	1 : 2.1	34	1 : 2.9	39
37	Centrica	1 : 2.6	1 : 4.4	45	1 : 2.9	38
38	Degussa	1 : 2.7	1 : 2.7	38	1 : 2.4	36
39	BG Group	1 : 2.7	1 : 3.9	43	1 : 3.3	41
40	UPM-Kymmene	1 : 2.7	1 : 2.5	36	1 : 2	34
41	AEM Torino	1 : 3.2	1 : 3.8	41	1 : 4.2	44
42	M-Real Corporation	1 : 3.2	1 : 2.7	37	1 : 2.6	37
43	Pilkington	1 : 3.9	1 : 4	44	1 : 3.9	43
44	Stora Enso	1 : 4.6	1 : 3.9	42	1 : 3.4	42

Return to Cost Ratio (iii)

Rank 2003	Company	RCR 2003	RCR 2002	Rank 2002	RCR 2001	Rank 2001
45	ENEL	1 : 5	1 : 8.3	54	1 : 9.1	54
46	Crown van Gelder	1 : 5	1 : 5	46	1 : 5.3	45
47	BP	1 : 5.4	1 : 6.1	48	1 : 5.5	46
48	OMV	1 : 5.8	1 : 3.7	40	1 : 3.1	40
49	Shell	1 : 5.9	1 : 6	47	1 : 6.1	48
50	ASM	1 : 6	1 : 7.2	49	1 : 6	47
51	ENI	1 : 7.1	1 : 7.8	52	1 : 6.4	50
52	Celanese	1 : 7.8	1 : 7.7	51	1 : 7.2	52
53	Repsol YPF	1 : 8.7	1 : 8.7	55	1 : 6.2	49
54	Suez	1 : 8.9	1 : 7.5	50	1 : 8.4	53
55	Scottish & Southern Energy	1 : 9	1 : 8	53	1 : 7.2	51
56	Kemira	1 : 9.2	1 : 8.9	56	1 : 9.4	55
57	AEM	1 : 14.2	1 : 17	58	1 : 23.5	60
58	Fortum	1 : 16.3	1 : 13.1	57	1 : 14.1	56
59	Edison	1 : 18.8	1 : 19.5	59	1 : 15.6	57
60	Energias de Portugal	1 : 21	1 : 21.9	60	1 : 24	61
61	Slovnaft	1 : 26.1	1 : 25.6	61	1 : 19.6	59
62	ERG	1 : 27.9	1 : 32.8	63	1 : 19.1	58
63	Union Fenosa	1 : 29.7	1 : 28.9	62	1 : 26.7	62
64	Unipetrol	1 : 40	1 : 42.3	64	1 : 27.6	63
65	MVM	1 : 188.3	1 : 341.5	65	1 : 150.4	64

Interpretation

- The leading companies in the ADVANCE survey use their environmental resources more than 4 times more eco-efficiently than the EU15 on average.
- Top performing companies in 2003 are Airbus, Novonordisk, Gorenje, BMW and Schering.
- The laggards among the companies use their environmental resources at least 30 times less eco-efficiently than the EU15 on average.
- Slovnaft, ERG, Union Fenosa, Unipetrol, and MVM are the laggards of the ranking.

A different benchmark: EU target efficiencies for 2010

- Target efficiencies are calculated in the following way:

  Target efficiency = targeted GDP / targeted emission level

	Target efficiency of the EU15 for 2010	Efficiency of EU15 in 2003	Targeted improvement
CO_2-emissions	3,733 €/t	2,701 €/t	38.2 %
NO_x-emissions	1,933,747 €/t	1,004,300 €/t	92.6 %
SO_x-emissions	3,151,784 €/t	1,779,304 €/t	77.1 %
Waste generated	9,802 €/t	6,270 €/t	56.3 %
Water used	53 €/m³	41 €/m³	26.6 %
VOC-emissions	2,052,246 €/t	970,676 €/t	111.4 %
CH_4-emissions	579,704 €/t	586,083 €/t	-

The top 20 companies

	Company	RCR 2003 > 2010	Sustainable Value 2003 > 2010
1	Novonordisk	3.6 : 1	1,675,499,967 €
2	Gorenje	3.5 : 1	162,107,899 €
3	Airbus	3.4 : 1	4,523,246,485 €
4	Schering	3 : 1	1,677,996,126 €
5	BMW	3 : 1	8,514,813,453 €
6	Philips	2.7 : 1	6,660,947,431 €
7	NedCar	2.7 : 1	318,600,391 €
8	DaimlerChrysler	2.7 : 1	26,133,559,478 €
9	ABB	2.5 : 1	4,564,400,666 €
10	Heidelberger Druckmaschinen	2.5 : 1	896,414,327 €
11	Robert Bosch GmbH	2.4 : 1	9,127,352,912 €
12	MAN	2.2 : 1	2,630,188,140 €
13	Agfa-Gevaert	2.2 : 1	1,126,670,350 €
14	AstraZeneca	2 : 1	4,570,525,310 €
15	Volvo	2 : 1	2,882,359,807 €
16	STMicroelectronics	1.9 : 1	1,612,847,924 €
17	Henkel	1.8 : 1	1,280,626,186 €
18	Scania	1.8 : 1	818,437,840 €
19	PSA	1.6 : 1	3,665,294,761 €
20	Atlas Copco	1.5 : 1	697,900,393 €

The 20 worst performing companies

	Company	RCR 2003 > 2010	Sustainable Value 2003 > 2010
46	OMV	1 : 7.9	-10,660,067,507 €
47	ENEL	1 : 8	-92,696,195,508 €
48	BP	1 : 9.1	-248,473,202,187 €
49	ASM	1 : 9.7	-2,823,001,775 €
50	Shell	1 : 9.9	-331,423,483,150 €
51	ENI	1 : 11.3	-130,652,388,317 €
52	Celanese	1 : 13.1	-13,559,572,503 €
53	Suez	1 : 13.6	-175,345,711,302 €
54	Kemira	1 : 13.8	-9,979,144,884 €
55	Scottish & Southern Energy	1 : 14.3	-20,507,824,481 €
56	Repsol YPF	1 : 15.2	-102,177,853,981 €
57	AEM	1 : 18.1	-9,297,562,895 €
58	Fortum	1 : 24.7	-61,912,703,062 €
59	Edison	1 : 26.2	-31,542,932,659 €
60	Energias de Portugal	1 : 35.8	-83,343,912,554 €
61	ERG	1 : 44.5	-22,544,233,829 €
62	Slovnaft	1 : 45.1	-9,852,893,473 €
63	Union Fenosa	1 : 51.5	-99,263,349,894 €
64	Unipetrol	1 : 65.8	-15,800,783,469 €
65	MVM	1 : 303	-79,145,245,744 €

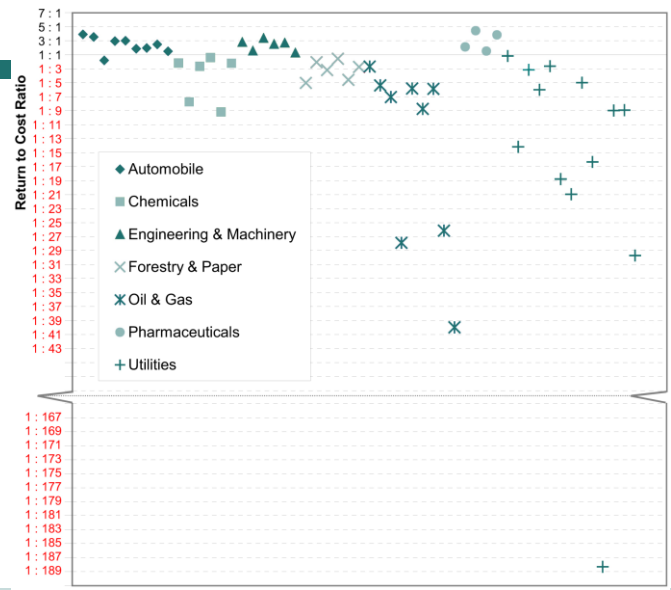
Interpretation

- The results now show by how much companies contribute to the achievement of EU policy targets.
- The best performing companies clear the hurdle of the European target efficiencies by a factor of 3 or more.
- The Danish pharmaceutical company Novonordisk is the top performing company with regard to the EU performance targets with a RCR of 3.6 : 1.
- Numerous oil & gas companies and utilities produce Return to Cost Ratios between 1 : 35 and 1 : 65.
- Even if we turn away from the absolute extreme, there is a considerable performance differential of a factor of 135 between the top performing companies and the laggards.

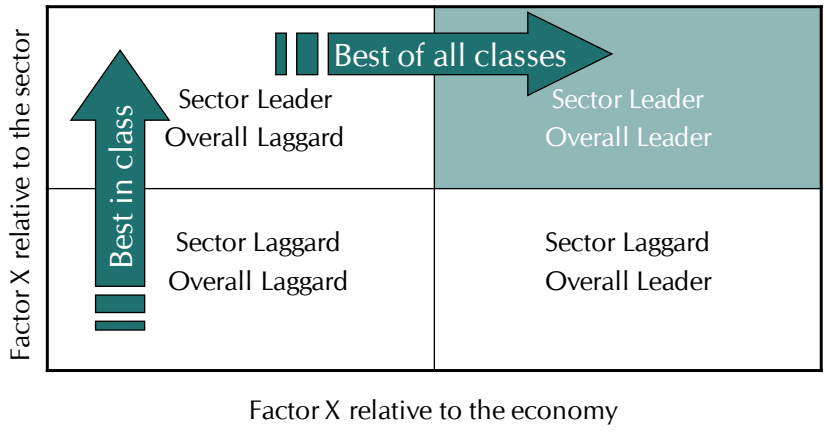
In-depth analysis: Trends in performance between 2001 and 2003

Company	Change in Performance 2001 - 2003 Δ RCR	Value Driver / Critical Resource
ENEL	+ 81%	SO_x
AEM	+ 66%	SO_x
(...)	(...)	
UPM-Kymmene	-26%	CO_2,NO_x
Repsol YPF	- 29%	(GVA)
ERG	- 31%	SO_x Water
Unipetrol	- 31%	SO_x Water
OMV	- 46%	CH_4

Return to Cost Ratio – Seven Sectors in 2003



Choice of the benchmark: Best in Class oder Best in Economy?



Other possible applications

- **Sector studies**
  - **Industry average is used as benchmark**
- **Triple bottom line assessments**
  - **Integration of economic, environmental and social resources**
- Integration into financial analysis
  - Environment and social performances as a complement to financial performance information
- Socially Responsible Investing
  - Assessment of corporate sustainable performance within and across sectors based on the logic of financial analysis.

Sustainable (Shareholder) Value of the automobile sector - a wide & focused study

- ADVANCE looks
  - at the environmental performance of companies
  - of different sectors
  - from the perspective of providers of capital, personnel and government.
- As mentioned the scope of the approach can be custom-tailored.
- Our automobile study looks at
  - the economic, environmental and social performance
  - of one sector (automobile)
  - from the perspective of the providers of capital.

Application to the automobile sector

- Car manufacturers:
  BMW Group, Daihatsu, DaimlerChrysler, Fiat Auto, Ford, GM, Honda, Hyundai, Isuzu, Mitsubishi, Nissan, PSA, Renault, Suzuki, Toyota, Volkswagen.
- Indicators:

Environmental Indicators	Social Indicators	Economic indicators
CO_2-Emissions	No. of work accidents	Operating profit
NO_x-Emissions	No. of employees	Total assets
SO_x-Emissions		
VOC-Emissions		
Waste generated		
Water use		

What are the results?

- The study shows how much more EBIT – Earnings before interest and taxes – could be earned with a constant use of
  - Economic,
  - Environmental and
  - Social capital.
- Results vary between about +6% Sustainable Value per sales (BMW) and -10% Sustainable Value per sales (FIAT) in 2004.
- The study demonstrates that a value-orientated approach to corporate sustainability management can create significant Sustainable Value.
- Put differently, economic, environmental and social resources could be used more efficiently from a shareholder perspective than they are used today.

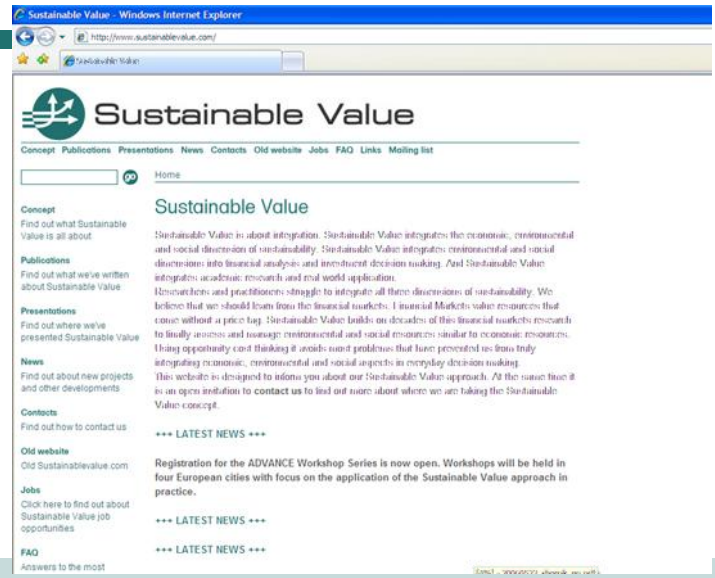
Conclusions (i)

- Sustainable Value applies the logic of investment performance assessment to environmental and social resources.
- To create value the return on environmental resources must cover the costs of the resources.
- Sustainable Value compares the resource use of a company to a benchmark and thus defines the cost of a resource via opportunity costs.
- A company creates Sustainable Value whenever it uses its resources more efficiently than a benchmark.
- As a result, Sustainable Value expresses corporate environmental or sustainable performance in monetary terms.

Conclusions (ii)

- Sustainable Value can cover the use of economic, environmental and social resources.
  → Integrated triple bottom line assessment
- Sustainable Value can be used with different benchmarks.
- The Return to Cost Ratio provides a comparative measure of corporate eco- and sustainable efficiency.
- Sustainable Value assessments can be used in different contexts as well as for in-depth analyses of corporate environmental and sustainable performance.

www.SustainableValue.com



Thank you very much!