Environmental Credit Risk

Presentation to UNEP-FI Workshop

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“We are convinced that in a more globalized, interconnected and competitive world the way that environmental, social, and corporate governance issues are managed is part of the companies’ overall management quality needed to compete successfully.

Companies that perform better with regard to these issues can increase shareholder value.”

Goldman Sachs, Morgan Stanley, et al.
June, 2004
“Who Cares Wins” Report

The Investment Thesis

- **Traditional financial analysis cannot provide a complete picture of companies' true competitive risks, value potential, and future performance. Typically, at least 70% of a company's value is driven by "intangibles", and by cash flows from beyond Year 5; i.e. *long*-term[1].**
- **Management quality is the #1 intangible – the factor most critical to companies' competitiveness, profitability, and share price performance.**
- **In spite of this, however, "management quality" is very rarely defined, measured, or analyzed systematically by analysts. It is, therefore, the "Holy Grail" of 21st century investing.**
- **Investors who can and do develop robust, forward-looking measures of management quality will gain an enormous information advantage – and therefore a <u>financial</u> edge.**
- **Management quality is increasingly linked to environmental factors[2].**

1. Pricewaterhouse Coopers (2005) " Reporting the Value of Acquired Intangible Assets."
2. UNEP Finance Initiative Working Group (2004) members included Goldman Sachs, HSBC, Deutsche Bank and UBS.

ESG Hits the Mainstream: What's Changed?

A "perfect storm" of catalytic developments:

- **Significantly increased societal and customer expectations for companies' ESG performance.**
- **Rapid expansion of both investment and industrial competition to emerging markets, where ESG risks are highest.**
- **Powerful new ESG performance and disclosure legislation for investors – e.g. U.K, European, Australian pension legislation**
- **Fresh attention from the sell side – Goldman Sachs, UBS, Morgan Stanley, etc.**
- **Pressure from NGO's with unprecedented resources, sophistication, communications capability, and influence.**
- **New legitimacy for ESG issues for fiduciaries – not only permissible but recommended (Mercer, Freshfields reports).**
- **Dramatic growth in institutional investor activism on ESG issues – Carbon Disclosure Project, Investor network on Climate Risk, IIGCC, etc.**
- **Concrete actions by leading public funds – ABP, CalPERS, CalSTRS, FRR, PGGM, CPPIB, etc.**

What Are the Principal Credit Risks?

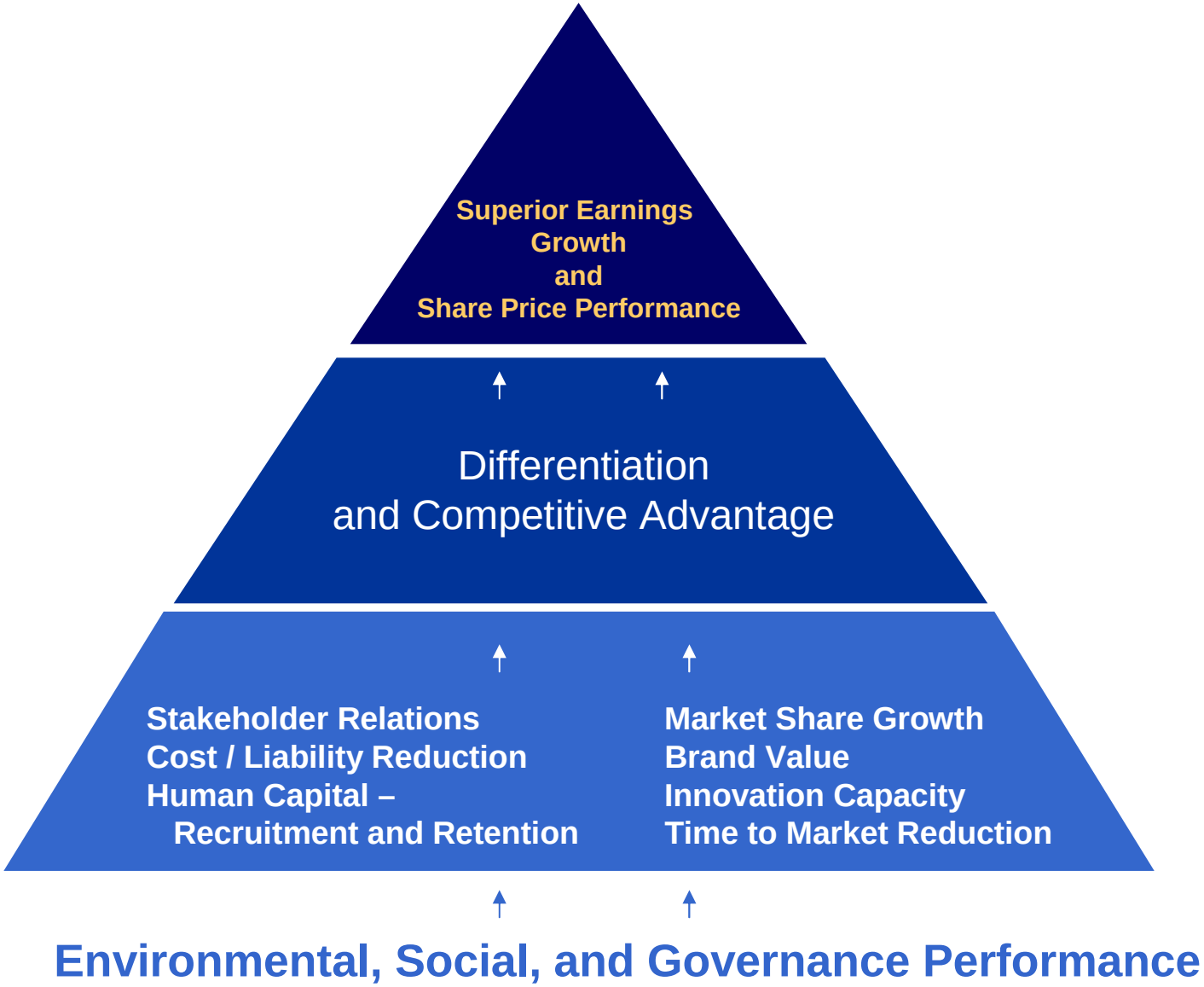
- **Litigation (eg. climate risk – utilities)**
- **Project and transaction delays – eg. Three Gorges, BTC pipeline, OCP pipeline**
- **"Long-tailed" liabilities – eg. Contaminated land/buildings**
- **Impaired competitiveness and cash flow of obligor (eg. Climate risk)**
- **Opportunity cost – "missing the boat" on cleantech**
- **Reputational/brand risk**

Where are the Risks?

Across the entire portfolio of banks' activities:

- **Corporate loans**
- **Project finance**
- **Investment banking**
- **Asset management**
- **Retail products**
- **Special situations – eg. brownfields**

What Makes ESG Leaders Better Credit Risks?

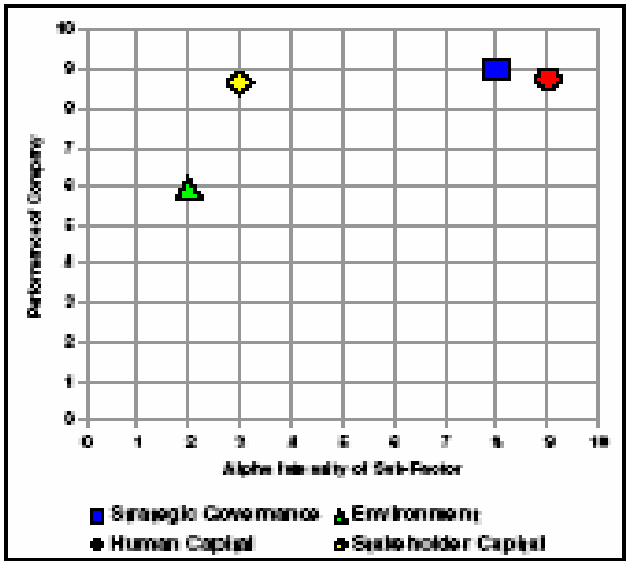


Environmental, Social, and Governance Performance

ESG Risk Varies by Sector

Pearson Plc

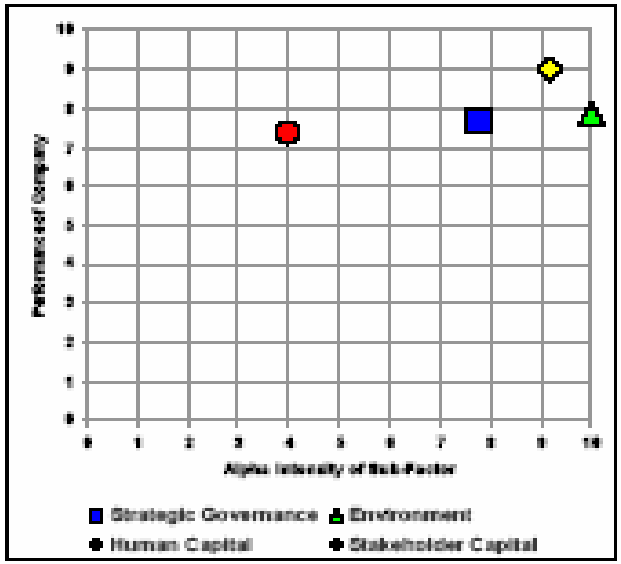
PERFORMANCE /
ALPHA INTENSITY MATRIX



This matrix situates the four key intangible value drivers along 2 dimensions:
1. How well or poorly the company performs on each of the 4 key factors.
2. How much impact that particular factor has on financial performance in that industry sector; its "alpha intensity".

Royal Dutch Shell Plc

PERFORMANCE /
ALPHA INTENSITY MATRIX



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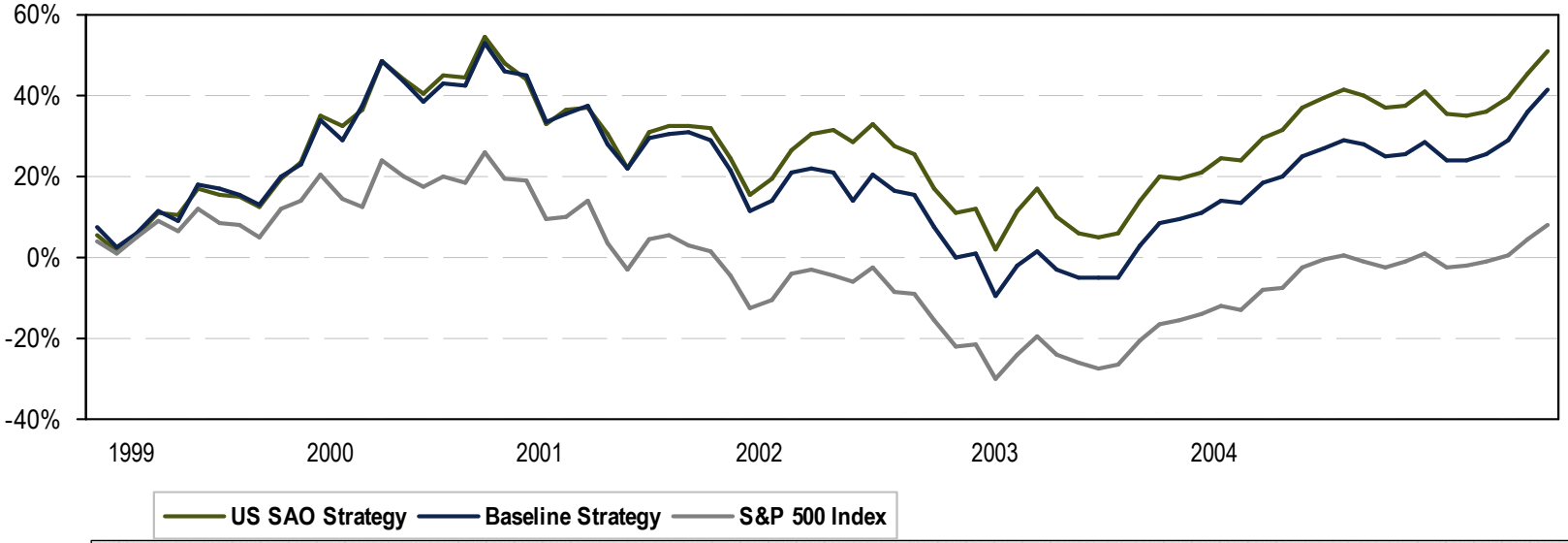
The Equities Experience is Instructive. . .

. . . Including the latest from SSgA's Advanced Research Center*

Incorporating Sustainable Alpha™ overlay with financial inputs adds value - (January 1999 to December 2004)



Performance Results	Cumulative Return	Annual Return	Cum Ex Return	Annual Ex Return	Tracking Error	Info Ratio	Annual Turnover
US SAO Overlay	51.21%	7.13%	43.07%	5.88%	4.81%	1.22	102%
Baseline	41.35	5.94	33.21	4.69	5.48	0.86	102
S&P 500 Index	8.14	1.25					

K. Gluck and Y.Becker (2005) "The Impact of Eco-Efficiency Alphas" Journal of Asset Management. Similar results were found in an academic study by the Head of Research of ABP, one of the three largest pension funds in the world. * See Rob Bauer et al (2005) The Eco-Efficiency Premium Puzzle in the U.S. Equity Market" Financial Analysts Journal.

The performance shown does not represent actual performance, but is hypothetical performance created through a back-test. The results shown do not represent the results of actual trading but were achieved by means of the retroactive application of a hypothetical model that was designed with the benefit of hindsight. These hypothetical results should not be considered indicative of the skill of the adviser.
Historic performance is not necessarily indicative of future performance, which could differ substantially. The performance figures are reported on a gross basis, but net of transaction and custody charges. Additional fees, such as the advisory fee, would reduce the return. For example, if an annualized gross return of 10% was achieved over a 5-year period and a management fee of 1% per year was charged and deducted annually, then the resulting return would be reduced from 61% to 54%. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in U. S. dollars.

Climate – the "Mother" of all Credit Risks

What determines companies' Carbon Beta™?

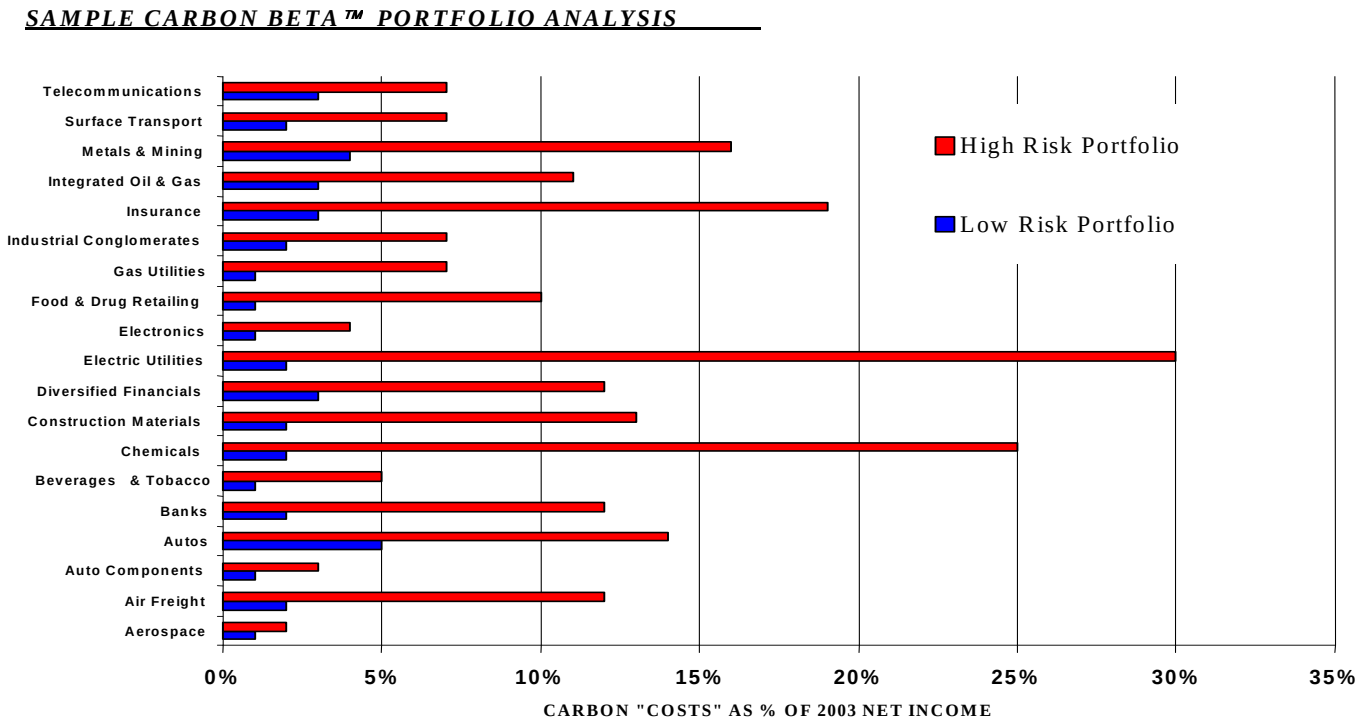
In addition to risk exposures driven by industry sector, individual corporates' financial exposures are essentially a function of seven company-specific key factors:

- **Energy intensity and fuel source mix and consumption patterns**
- **Geographic locations of production facilities relative to specific regulatory and tax liabilities and compliance schedules in different countries.**
- **Product mix – direct, indirect, and embedded carbon intensity**
- **Company-specific "marginal abatement" cost structures: some companies can reduce emissions at much lower cost than others**
- **Technology trajectory – level of progress which a company has already made in adapting/replacing its production technologies for a carbon-constrained environment**
- **Company-specific carbon risk management capability**
- **Ability to identify and capture upside and revenue opportunities, including new manufacturing cost efficiencies, new product/service opportunities, emissions trading, and clean technology investments.**

All seven of these factors are analyzed in Innovest's proprietary Carbon Beta™ analysis. The analysis is both "top down" and bottom up. At the company-specific level, risks and opportunities are analyzed and benchmarked, and individual company profiles are created.

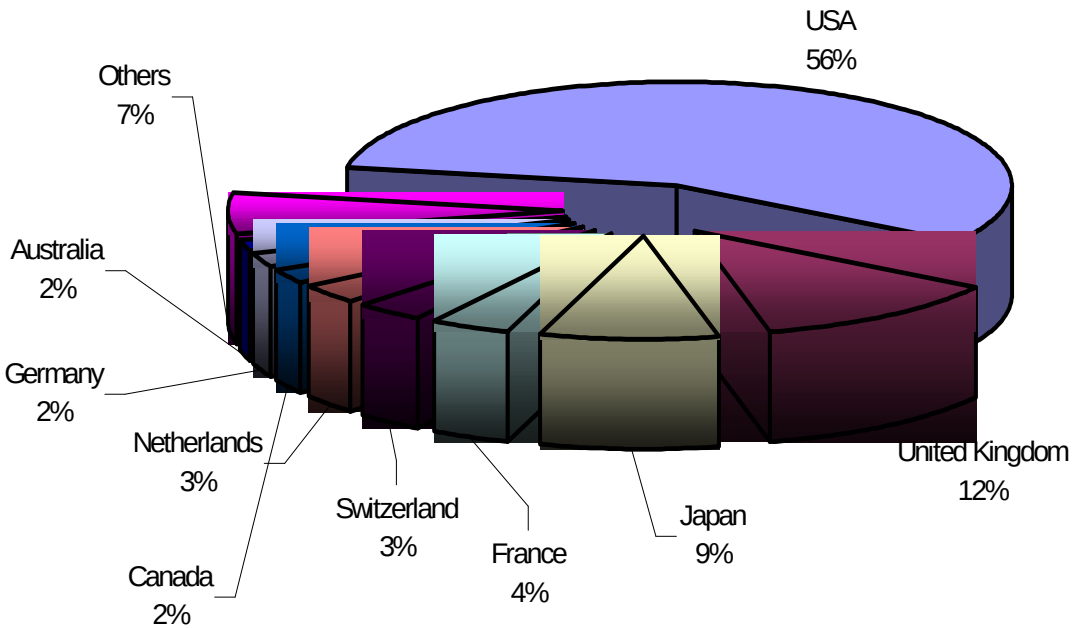
Carbon Beta™ Varies Among – and Within – Sectors

Investors Need to Know Which Companies Are Which!



Source: Innovest Strategic Value Advisors, company data

Geographic Risk Exposures: WACCRT©

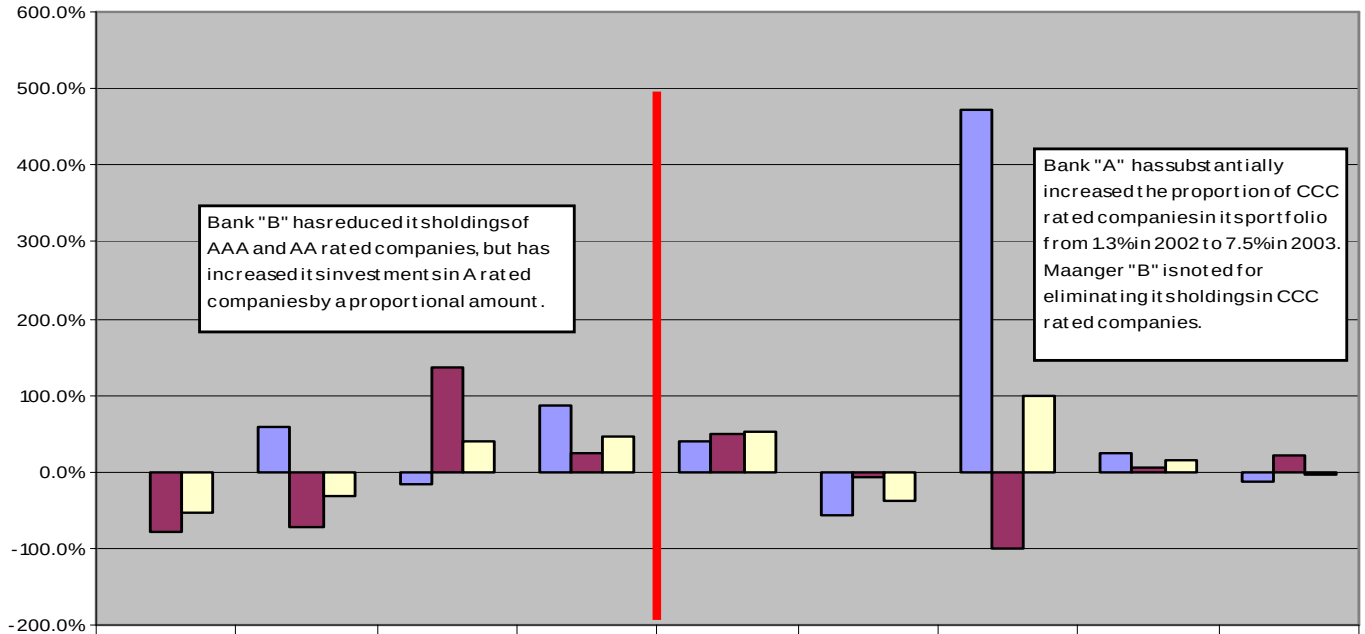


Based on the WACCRT model, for example, Honda's overall emissions reduction obligations could be:

Europe (5.6% x 8%) + U.S. (1.8% x 0%) + Canada (5% x 6%) + Japan (14.6% x 6%) + RoW (57.5% x 0%)=1.62%

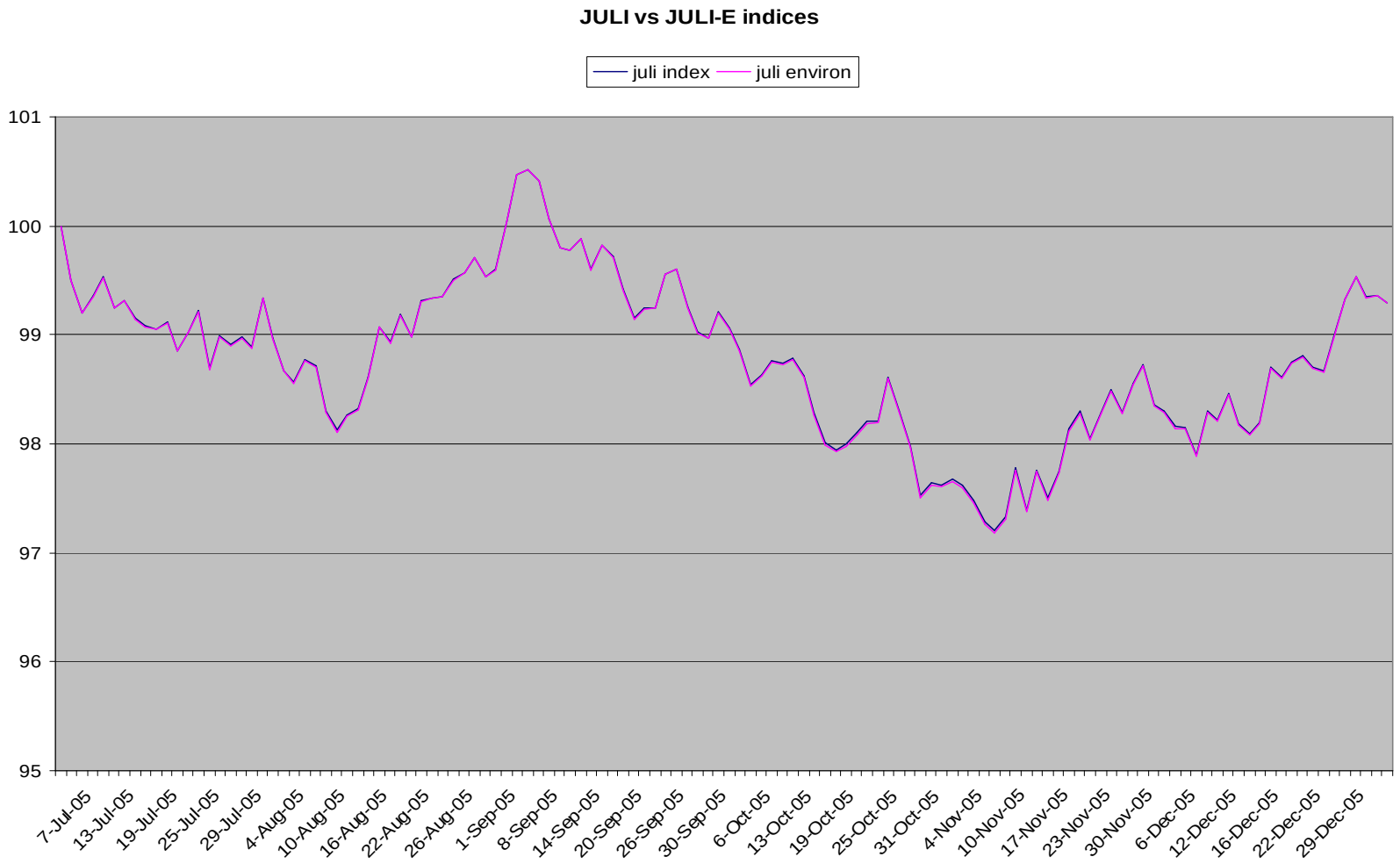
Risk Research Application: CV&R® Audit

Portfolio Breakdown by Innovest Rating Category
Comparison of managers' 12/04 portfolios vs 12/5 portfolios

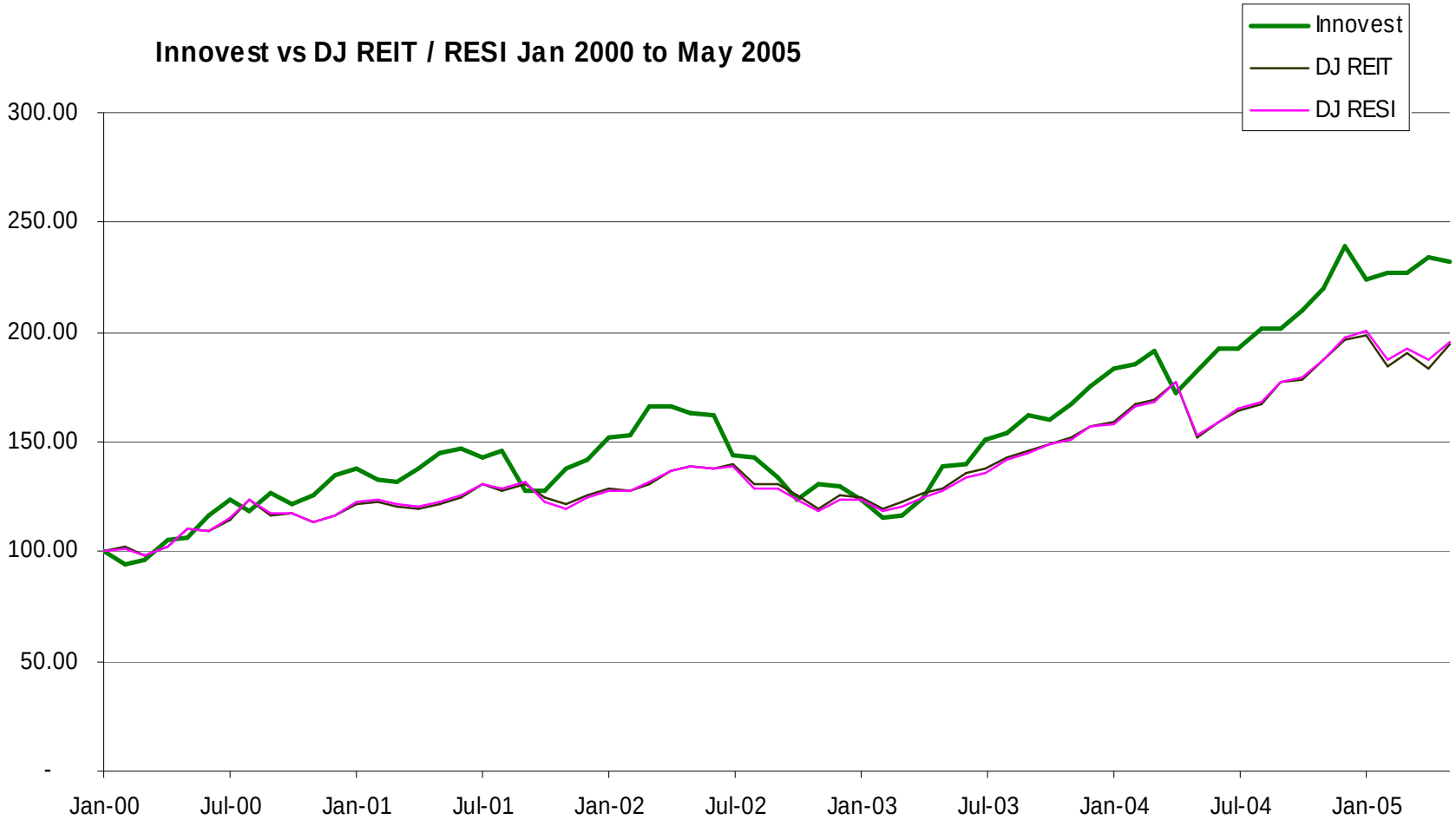


	AAA	AA	A	BBB	BB	B	CCC	Below BBB	Non-Intensive Sectors
Manager "A" '04 vs '03	0.2%	59.6%	-16.0%	85.5%	38.4%	-56.3%	472.3%	24.6%	-13.5%
Manager "B" '04 vs '03	-78.9%	-71.3%	136.5%	23.9%	50.0%	-5.9%	-100.0%	6.6%	19.7%
Portfolio '04 vs '03	-53.0%	-31.3%	39.2%	46.1%	51.3%	-38.0%	99.1%	15.7%	-2.9%

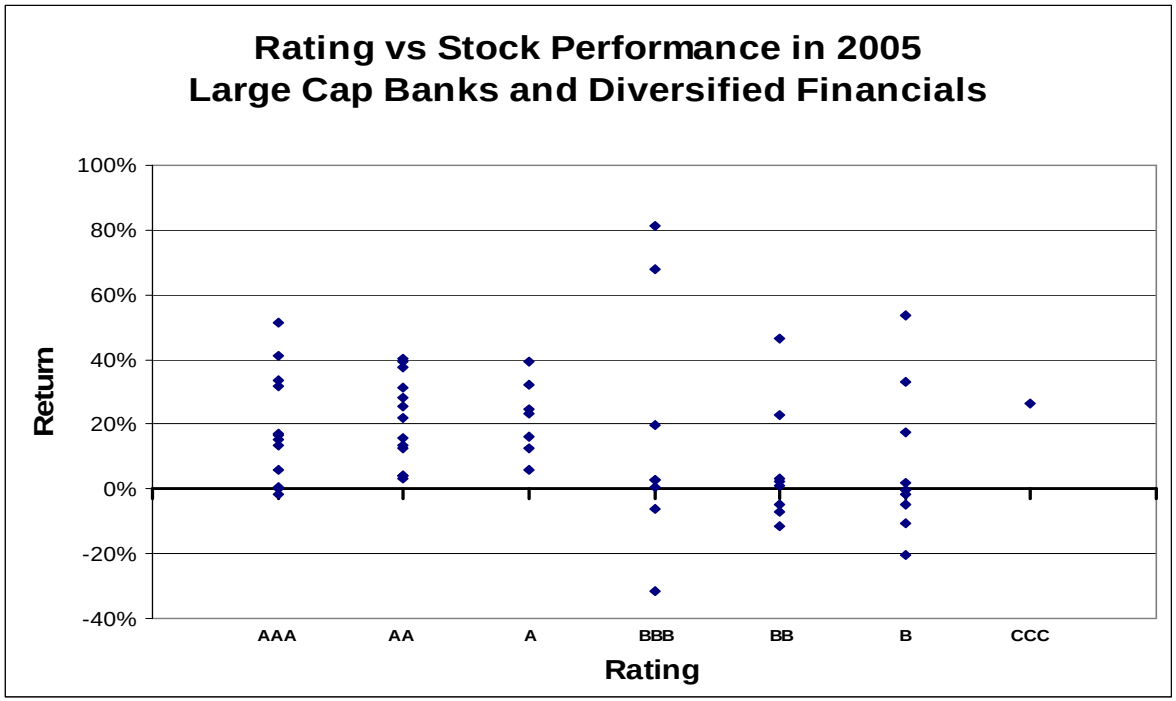
Some Product Applications: Carbon Risk-Adjusted Bond Funds. . .



Some Product Applications: "Green" Real Estate Securities Funds



Summary: Environmental Performance *Does* Matter



Comment:
This is an indicative graph we have put together as part of our current research for the global banking sector report due out in May. There will be further graphs in the report but we are currently organizing the data for proper comparability. This graph is interesting because although it shows a few below average firms performed well in 2004, the majority of the firms with above average ratings had positive stock price performance while below average rated firms tended to have negative stock price performance.

Please note:

(1) The stock price is in local currency.

(2) The firms were compared within their regional sub-category and include firms from both the Innovest banks and diversified financials sectors. The firms included in this graph were not all rated directly with each other according to Innovest's best of sector approach (this is due to the large number of banks and diversified financials firms in our universe, about 200).

(3) This is an indicative graph. While ratings do not change significantly year over year, we are currently collecting the data for ratings as of all previous year ends. This graph contains ratings given during 2005.

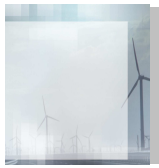
(4) This graph includes the largest firms by market cap (approx. 60). There are over 200 firms are included in the Innovest banks and diversified financials sectors, however numerous are small regional banks.

"It is becoming increasingly clear that sustainable development will be one of the major drivers of industrial change over the next 50 years, and that there is a growing demand from both companies and institutional investors to understand its financial impacts."

Colin Monks

Head of European Equity Research,

HSBC



Appendix

The Momentum is Building. . .Some Recent Chronology

2003

- U.S. institutional investors launch Investor Network on Climate Risk (today: $3 trillion in assets)
- Global institutional investors launch Carbon Disclosure Project (today: $21 trillion in assets)
- U.K. and European investors launch Institutional Investors Group on Climate Change (today: $4 trillion)
- U.K., European legislation pension mandates greater ESG disclosure by both investors and corporates

2004

- Goldman Sachs, UBS, Citigroup and others create dedicated “extra-financial” research teams and publish research
- Morgan Stanley, HSBC, ABN AMRO and others launch “Who Cares Wins” report, documenting industry shift
- Enhanced Analytics Initiative launched by institutional investors specifically to stimulate more “extra-financial” research (current assets $500 billion)
- California Treasurer Angelides launches 4-pronged, billion-dollar “Green Wave” initiative
- Former Goldman Sachs Asset Management CEO launches Generation
- 8 U.S. State Attorneys General sue major electric utilities, demanding reductions in greenhouse gas emissions

The Momentum is Building . . .Some Recent Indicators

2005

- Kyoto Protocol on climate change comes into effect, EU carbon limits and trading system begin
- World Economic Forum publishes “Mainstreaming Responsible Investment”
- UN launches Principles for Responsible Investments initiative, with substantial support/participation from major institutional investors
- “Sustainability” research reports published by: Merrill Lynch, Goldman Sachs, UBS, Deutsche Bank, Citigroup, etc.
- JP Morgan, Citigroup, Bank of America and other banks make public commitments to monitor environmental risk in loan portfolios more aggressively
- General Electric launches $1 billion “Ecomagination” investment program
- Leading U.S. pension funds write SEC demanding better company disclosure of climate risks
- Climate Change Capital in London raises £10 million from hedge funds at a valuation of £30 million
- Fonds de Reserve pour les Retraites (FRR) in France launches €600 million RFP for “SRI” mandate
- CalPERS launches $500 million RFP for “environmentally-enhanced” strategies
- INCR “Call for Action” - $3 trillion in U.S. institutional investors demand greater climate risk analysis and accountability from their money managers
- Goldman Sachs publishes the first, Environmental Policy from a leading investment bank.

The Momentum is Building . . .Some Recent Indicators

2006

- Carbon Disclosure Project increases its committed institutional asset backing substantially – to $30 trillion. Innovest wins 4th consecutive mandate as lead research and analysis team.
- UN Secretary General Kofi Annan launches Global Principles for Responsible Investment at the New York Stock Exchange. Supporting signatories include major pensions funds and mainstream investment houses.
- Mercer Investment Consultants conducts 2006 “Fearless Forecast” global survey of 157 investment management firms, with over $20 trillion in managed assets. Overall, more than 38% anticipate growing client demand for the systematic integration within 3 years. In Australia, the U.K., and Europe, the average is over 42%.

Innovest Industry-Specific Data

- **Analyst assembles and analyses industry specific data**
- **Example of Strategic Profit Opportunities in the Auto sector**

Ticker	Name	# of AFV on the Market	Hybrid Electric Vehicles (HEV)	Fuel Cell Electric Vehicle (FCEV)	Battery Electric Vehicle (BEV)	Nat.Gas/ LP G Car (AFV)	Ethanol/ Methanol Car (AFV)	Hydrogen Fueled Vehicle	Small Urban Vehicles	Fuel Efficient Vehicle (3 l Car)	Smart Mobility Systems	Total Scores
BMW	Bayerische Motoren Werke	2	0	1	3	10	0	3	0	0	7	138
DCX	Daimler Chrysler	11	3	5	10	10	0	0	10	0	10	482
VOW	Volkswagen Group	2	0	3	0	10	10	0	3	10	10	393
7203	Toyota Motor	6	10	5	10	10	0	0	10	0	10	660
7267	Honda Motor	3	10	0	10	10	0	0	0	0	5	463
GM	General Motors	12	5	3	10	10	0	0	0	0	0	388
F	Ford Motor Company	21	3	3	10	10	10	0	10	0	7	550
7201	Nissan Motors	5	10	0	10	0	0	0	5	0	5	521
FIA	Fiat SPA	2	3	1	5	10	10	0	10	0	9	363
UG	Peugeot SA	4	3	3	10	5	5	0	5	0	0	312
RNO	Renault SA	3	3	3	10	5	0	0	1	0	5	263
7211	Mitusbishi Motors	1	3	3	5	5	0	0	3	5	5	319
POR3	Porsche	0	0	0	0	0	0	0	0	0	0	0
7270	Fugi Heavy Industries	1	3	1	10	5	10	0	0	0	10	259

Min	**0**	**Research**	**1**	**Min**	**0**
Max	**21**	**Concept**	**3**	**Max**	**660**
Avg	**5.2**	**Prototype**	**5**	**Avg**	**365.1**

In this case, we have analyzed the research & development activities of the major auto manufacturers and evaluated them in terms of their potential positive environmental impact and how soon the technologies would come to market

Preliminary Work on Rating Matrix

- **Analyst reviews rating categories and weights, modifying necessary to reflect data availability and industry specific issues**

Industry — Automobiles

Category		Category	BMW Bayerische Motoren Werke Raw Score	BMW Bayerische Motoren Werke Weighted Score	BMW Bayerische Motoren Werke Relative Performance	DCX Daimler Chrysler Raw Score	DCX Daimler Chrysler Weighted Score	DCX Daimler Chrysler Relative Performance
OPERATING RISK	A. Spills and Releases	0.000%	0.0	0		0.0	0	
	B. Regulatory Compliance	0.000%	0.0	0		0.0	0	
	C. Toxic Emissions	10.000%	9.0	54	Top Tier	7.0	42	Top Tier
	D. Hazardous Waste	5.000%	9.0	27	Top Tier	6.5	20	Middle Tier
	E. Other Operating Risk	0.000%	0.0	0		0.0	0	
	Total		**9.0**	**81**	**Top Tier**	**6.8**	**62**	**Top Tier**
LEADING/SUSTAINABILITY RISK INDICATORS	A. Resource Use Efficiency/ Recycling	7.500%	9.0	41	Top Tier	7.0	32	Top Tier
	B. Energy Efficiency	7.500%	9.0	41	Top Tier	9.0	41	Top Tier
	C. Market Risk	10.000%	9.0	54	Top Tier	4.0	24	Middle Tier
	D. Regulatory/Legal Risk	0.000%	0.0	0		0.0	0	
	E. Vehicle Emissions Risk	10.000%	5.9	35	Middle Tier	0.0	0	Worst in Class
	F. ELV regulatory risk	10.000%	9.0	54	Top Tier	8.0	48	Top Tier
	Total		**8.3**	**224**	**Top Tier**	**5.3**	**144**	**Middle Tier**
INDUSTRY SPECIFIC RISK	A. Global Warming	40.000%	3.0	72	Bottom Tier	0.0	0	Worst in Class
	B. Industry Specific Risk	0.000%	0.0	0		0.0	0	
	C. Industry Specific Risk	0.000%	0.0	0		0.0	0	
	D. Industry Specific Risk	0.000%	0.0	0		0.0	0	
	Total		**3.0**	**72**	**Bottom Tier**	**0.0**	**0**	**Worst in Class**

Completion of Rating Matrix

After interviews, analyst finalizes the company rating. When all company ratings are complete, the analyst compares the competitive set on all parameters to ensure that the relative 0 to 10 scores properly reflect the quantitative and qualitative data

			Environmental Strategy			
			Policies	Comment	Integration with Core Business	Comment
		Possible Points —	4.0%		6.0%	
Symbol	**Company Name**	**Overview**	**1A**	**1A-C**	**1B**	**1B-C**
BMW	Bayerische Motoren Werke	BMW has adopted solid environmental practices for its activities worldwide, strong EMS, ELV, compliance record, etc. However, BMW remains stuck in a low fuel efficiency bracket as a producer of large upper-end sedan cars. Despite numerous R&D projects, BMW has taken a very conservative approach with respect to eco-efficient vehicles.	10	BMW revised its environmental guidelines in 1998 to adapt to its international operations. Follows the ICC Charter for Sustainable Development. Objectives focus on efficient use of resources. Beyond compliance when technically and economically feasible. Alternative fuel vehicle concepts are mainly focused on combustion engine, using natural gas or hydrogen. BMW does not believe in the 3liter concept as a viable strategy.	6	BMW has a high environmental culture and has adopted high eco-efficiency standards across entire value chain. BMW plants are all state of the art, probably one of the best in industry. Yet, BMW remains on the high end segment of luxury sport sedan. The corporate average fuel efficiency remains well above other European companies. BMW has done a lot of research into AFV. Yet it believes that the future lies in the combustion engine, be it with natural gas or hydrogen. This change of fuel would require the implementation of a new fuel infrastructure which is not likely to happen without a strong political commitment.
DCX	Daimler Chrysler	Daimler Chrysler is applying the best practices from either Chrysler or Daimler. Daimler-Benz environmental guidelines are applied group-wide. Fuel-efficiency as improved by 1.4l/100 km since 1996 thanks to use of CDI diesel, class-A and Smart. Environmental criteria with suppliers has been reinforced.	8	DCX has made a strong strategic move by pulling out of the Global Climate Coalition. The smart and the Class A CDI exemplify efforts made by DCX to curb its impact on GW. However, DCX remains focused on the high end market segment. The Environmental Protection Guidelines laid down by the board of management and are binding for all employees and at all corporate locations. Fundamental corporate objectives. Environmental Protection Process Development people involved since 1970. DaimlerChrysler followed Ford in Spring 2000 by pulling out of GCC.	7	DCX demonstrates patently the environment is at the core of its business strategy. However, most of DCX vehicles still operate in the high end, less sustainable segment. Fuel efficiency improvement is a major focus. Smart and Class A contribute positively to diversifying the market segments. DfE, LCA, and life cycle environmental costing techniques are spread out. Env training has high integration. EMS now covers central divisions such as development. ELV recycling goals are 95% by 2005. Also, the NECAR 5 is a viable fuel cell concept.

Reality Check

- **Analyst defends final ratings in front of MD or a regional Director of Research**

Ticker	Company	Rating Matrix Score	Rating	Rank
7203	Toyota Motor	1556	AAA	1
7267	Honda Motor	1529	AAA	2
VOW	Volkswagen Group	1454	AA	3
RNO	Renault SA	1304	A	4
UG	PSA Peugeot Citroen	1280	A	5
7201	Nissan Motor	1266	BBB	6
FIA	Fiat SPA	1266	BBB	7
F	Ford Motor Company	1258	BBB	8
DCX	Daimler Chrysler	1244	BBB	9
BMW	Bayerische Motoren Werke	1157	BB	10
GM	General Motors	1136	BB	11
7270	Fuji Heavy Industries	1132	B	12
7211	Mitsubishi Motors	1125	B	13
POR3	Porsche	1112	CCC	14

Final scores and ratings are discussed between the analyst and the Directors or MD of Research for the final reality check.

Analysts defend their analysis as would an analyst presenting to credit committee or investment committee.

Ratings are made public via press releases and other means.

Innovest

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INTANGIBLE VALUE ASSESSMENT

May –03

Aracruz Celulose S.A.

Country:	Brazil
Ticker Symbol:	AA
Industrial Sector:	Forest products
Combined Rating: IVA	AA
Rank:	6 of 29
Sub-Factors:	
Environment:	9.0
Human Capital:	9.5
Stakeholder Capital:	9.0
Strategic Governance:	8.0
Analyst:	Juan D. Silva (+) 905.707.0876 x. 310

Intangible value comprises a growing percentage of companies' market capitalization. Innovest's IVA™ ratings analyze relative corporate performance on intangible value drivers related to the strength and sustainability of companies' competitive advantage. By assessing differentials typically not identified by traditional securities analysis, IVA™ ratings uncover hidden risks and value potential for investors.

COMPANY OVERVIEW

Core Business: Aracruz produces, distributes, and exports bleached eucalyptus pulp. The Aracruz Produtos de Madeira subsidiary produces eucalyptus hardwood lumber for the flooring and furniture markets. Geographic Focus: Aracruz own a port terminal, Portocel, and exports 97% of its product to the following markets: 37% to North America; 37% to Europe; and, 23% to Asia. Revenue Breakdown: 2002 revenues totaled US$680 million. The Lorentzen, Votorantim, and Safra groups each own 28% of Aracruz's shares. The Brazilian National Economic and Social Development Bank holds 12.5%. Operations: Facilities consist of three pulp mills, one sawmill, and a port terminal in the state of Espirito Santo. The company's forest plantations cover 0.7 million acres with 51% in the state of Bahia, and 49% in Espirito Santo. Workforce: Aracruz has 4,831 employees, including 3,037 permanent outsourced workers.

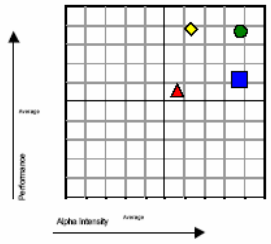
INDUSTRY DRIVING FORCES

Industry Consolidation: Tightening environmental regulations, increasing energy costs, and newly imposed duties on lumber have increased cost and capacity pressures and reduced profit margins, creating conditions conducive to mergers and acquisitions. Value Addition: On average, forest products companies generate at least two-thirds of their sales in paper and wood products manufacturing. Firms are adding value to final products, transforming them into high demand office products and building materials to increase net margins and sales volumes. Product Specialization: Engineered Wood Products (EWPs) provide a market for a wider range of species and grades, harvesting costs are often reduced, and additional silvicultural operations become economic. EWPs also allows for a high rate of waste recovery.

INTANGIBLE VALUE DRIVERS

Brand Value: Increasing demand rates from environmentally sensitive markets have driven companies to invest in brand value enhancement through sustainable forestry operations. Resource Efficiency: Companies are increasingly driven by both customer demand and tightening environmental regulations to become more resource efficient, chiefly by increasing their emphasis on recycling wood and paper products. This approach has also led to reductions in manufacturing costs. Shift to Plantations in the South: Plantations have reduced pressure on natural forests and have gained a good reputation among certification bodies when developed on barren land, with due environmental considerations. By following these guidelines, firms are still able to access environmentally sensitive markets.

PERFORMANCE / ALPHA INTENSITY MATRIX



This matrix situates the four key intangible value drivers along 2 dimensions: 1. How well/poorly the company performs on each of the 4 key factors; 2. How much impact that particular factor has on financial performance in that industry sector, its "alpha intensity".

Ideally, investors will find all four factors clustered in the north-east (upper-right) quadrant – indicating strong performance on factors with a high impact on financial returns.

Environment
Human Capital
Stakeholder Capital
Strategic Governance

AREAS OF POTENTIAL RISK

International Reputation: Despite intense investments and partnerships to maintain good community relations, opposition to eucalyptus plantations still exists in Brazil. Several groups maintain minor campaigns against Aracruz with frequent support from international organizations, somewhat damaging the company's international reputation. This may be an impediment for earning eco-logo certification, such as the Nordic Swan.

AREAS OF COMPEITIVE ADVANTAGE

- Leader in Brazil in employee motivation programs and benefit packages, reducing turnover and enhancing local reputation.
- Strong R&D investment in improving environmental performance of plantations and sharing this knowledge through stakeholder programs.
- Sound business development policies that integrate sustainability, enhancing performance and reducing regulatory risk exposure.
- Proactive participation in the World Business Council for Sustainable Development and in local regulatory bodies has led to the implementation of proactive policies and state-of-the-art technology.

STRATEGIC PROFIT OPPORTUNITIES

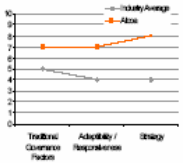
- Aracruz has invested significantly in R&D programs focusing on the following in eucalyptus plantations: minimization of environmental impact, biodiversity protection, hydrological cycles, plant growth improvement, and nutrient balance. These initiatives are considered vital to ensuring the company's core business by making it sustainable. Implementation of R&D results has improved Aracruz's production and corporate reputation for sustainability.
- Aracruz's most recent innovation, Lyptus®, consists of a high-grade hardwood product line. These products are marketed as being derived from environmentally responsible forest plantations and manufacturing operations with state-of-the-art technology. FSC certification and possible eco-labeling of products could give Aracruz a premium on international markets.

RATING OUTLOOK: POSITIVE

Aracruz has been at the forefront of corporate sustainability initiatives in Brazil for some time, and continues to drive innovation in many areas. The company has been investing in reducing its exposure to regulatory and market risk, especially since its exports to North America and Europe have increased. However, the firm will need to implement an internationally recognized forest certification system in order to sustain international credibility for sound forestry practices. Aracruz is currently working on mutual recognition mechanisms for its CERFLOR forest certification system. This would help Aracruz to gain more international market share.

INTANGIBLE VALUE ASSESSMENT

STRATEGIC GOVERNANCE: 8.0

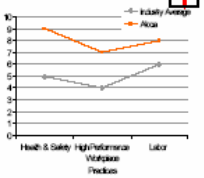


Strategy: Aracruz has evolved as a company and now includes sustainability issues in its business development strategies. Policies, programs, annual goals and indicators are in place to demonstrate its commitment. Current environmental policies cover forestry, R&D, chemical pulping activities, and energy and resource efficiency. Social issues, which are an important part of plantation development, are also integral to business at Aracruz. The company not only focuses on workers' safety but also on professional development, training, and life quality improvement. Special attention is taken to develop strategic partnerships with local communities. This policy exceeds compliance. Aracruz also works with local government and non-governmental organizations, and with international institutions such as the World Business Council for Sustainable Development to enhance and re-shape its policies and programs. Aracruz has a hard-won reputation as a progressive company with good environmental and social practices.

Adaptibility/Responsiveness: Aracruz has set up a strong governance structure not only to implement strategies that enhance its sustainability performance, but also to receive feedback from stakeholders and other external organizations. This is important in order to be able to continually monitor the accomplishment of its social and environmental goals. The company's sustainability executive positions include: Environmental Affairs, Licensing, Health & Safety, Community Relations, and R&D. The highest-ranking environmental officer is the Deputy Director of Environment.

Traditional Governance Factors: Aracruz's board of directors consists of ten independent members elected by the shareholders, at the Shareholders Meeting, for a three-year term. The board does not have an environmental committee. The Chair of the board and CEO positions are separate, reducing the chances for conflict of interest at the executive level. It is important to implement formal and inclusive mechanisms at the board level to further improve responsiveness to corporate social responsibility concerns in view of continuous regulatory changes in Brazil. It is expected that environmental regulations, and in particular regulations related to forestry, will become more stringent in the country.

HUMAN CAPITAL: 9.5



Labor Relations: Aracruz has been working to improve its recruitment strategies and its image as an employer of choice. Initiatives such as online job applications, a comprehensive benefits program, and investments in employee training and development have helped to reduce turnover and retain qualified professionals.

A total of 67% of Aracruz's employees are represented by eight labor unions in the states of Bahia, Espirito Santo, and Rio de Janeiro. Labor relations have improved through partnerships focusing on health, professional training, and employee education.

The majority of employees are male (90%). However, Aracruz promotes equality between men and women and has been the first company in the Brazilian pulp and paper sector to have women in operational jobs inside pulp plants. Women comprise 20% of the enrollment in training course conducted in partnership with government institutions. The percentage of women graduating from these courses with professional certification is even higher (26% on average).

High-Performance Workplace Practices:

Aracruz has different employee incentive programs in place. One of them is its Profit-Sharing Plan (PLR), which ensures financial recognition of the efforts of employees for six factors: pulp production, quality, workplace safety, diligence, the environment and production costs. Parameters are established annually in negotiations with labor unions. In 2001, approximately US$4 million was distributed through this program.

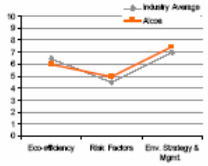
Aracruz's Social Security Foundation (ARUS) is a non-profit private pension institution that supplements the benefits provided under the federal pension plan. In 2001, Aracruz contributed nearly US$1 million. These funds enhance pension reserves throughout the active lifetime of participants and augment the benefits available upon retirement, disablement or death, as well as providing free life insurance. Currently, 417 individuals are covered under this plan.

The company is well known in Brazil for its comprehensive medical, hospital, and dental assistance programs available for employees. Additional benefits offered include: transportation, reimbursement of day-care center costs, group life insurance, medicine costs assistance, eye care loans, emergency loans, funeral assistance, salary supplements for disabled employees and basic food provisions.

A consulting firm, Hay do Brasil, ranks Aracruz among the top five Brazilian companies for organizational climate management. In a number of aspects surveyed, Aracruz was considered a national benchmark with the market's best practices, and a higher employee satisfaction index than the market average.

Health & Safety: Aracruz has a wide variety of health and safety programs aiming to improve employees' well-being and occupational health in operations. Despite the fact that positive esults have been achieved, the lost time accident frequency rate in 2002 was higher than the previous year, though the measured rate of severity of the accidents fell 4.6% over the same period. Company programs include: Internal Accident Prevention Commissions (CIPAs); Support Program for Smokers; Chemical Dependency Support Program; sexually transmissible diseases (STD) information sessions; and, the Professional Rehabilitation Program, which seeks new job positions for employees whose capacity to work has been reduced due to health problems.

ENVIRONMENTAL PERFORMANCE: 9.0



Environmental Strategy & Management: Strategy: Aracruz integrates sustainability in its core business development plan. The current policy covers forestry activities, R&D, chemical pulping, and resource efficiency. Aracruz cooperates with local and international NGOs to enhance and re-shape its environmental policy. Governance: The company does not have an environmental committee on the board. However, the CEO is sensitive to sustainability and initiated company participation in the World Business Council for Sustainable Development. Environmental Management Systems (EMS): All operations are ISO14001 certified. Aracruz is involved in Brazil's FSC standards development and has created its own forestry standards, CERFLOR, based on FSC principles. The company is looking for