



From Theory to Practice: A Case Study in ESG Integration

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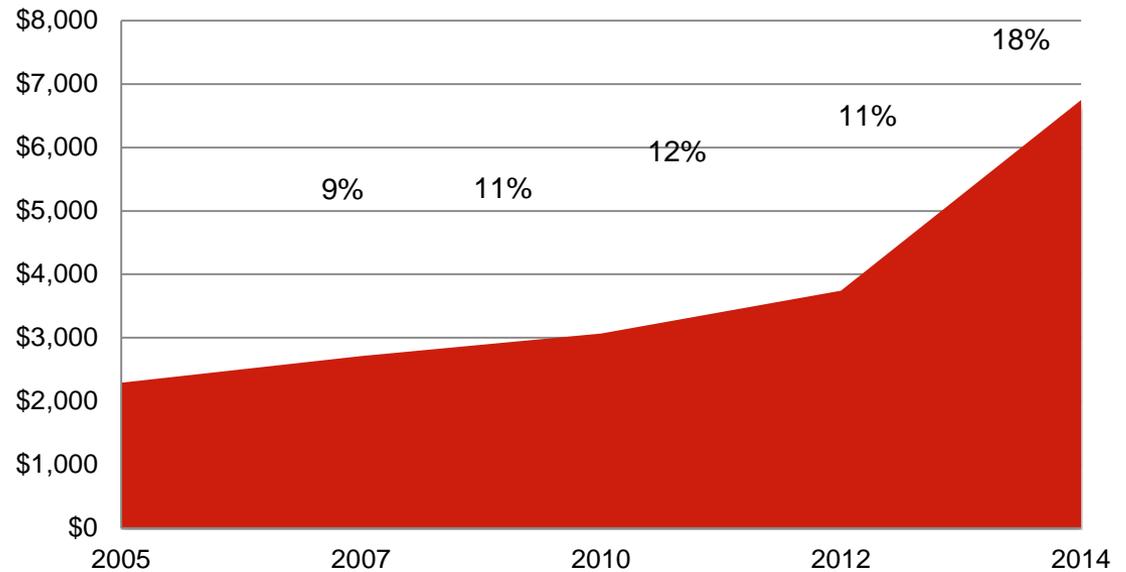
Investors Care about Sustainability

A rapidly increasing share of global assets are managed with ESG issues in mind

Key sustainability-related investor initiatives:

Initiative	AUM (US \$)
United Nations Principles for Responsible Investment	\$59 trillion
Carbon Disclosure Project	\$95 trillion
International Corporate Governance Network	\$26 trillion
Investor Network on Climate Risk	\$13 trillion

U.S. Sustainable & Responsible Investing (in billions)



Source: Forum for Sustainable and Responsible Investment

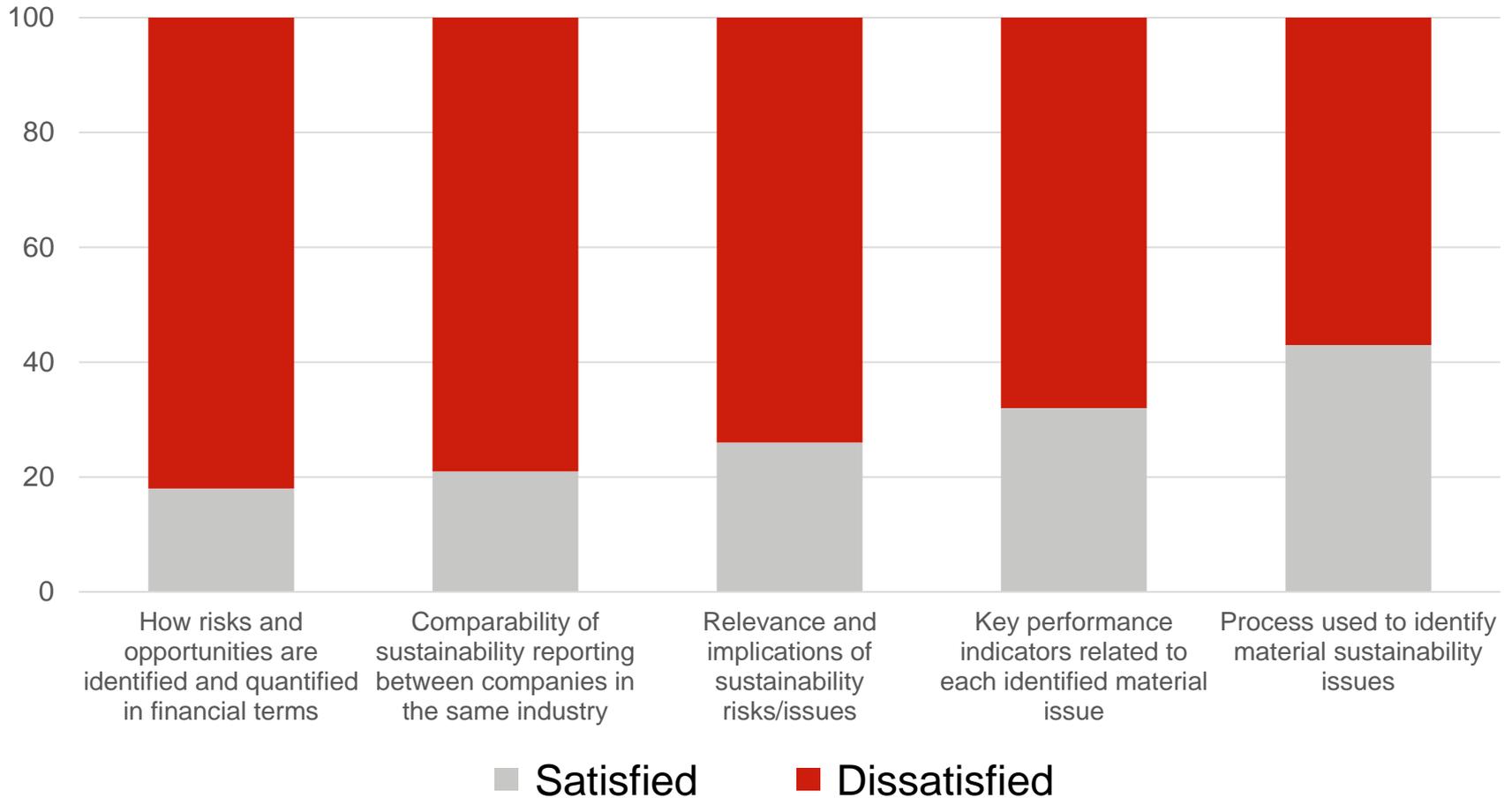
In 2014, sustainable and responsible investment strategies applied to more than *one out of every six dollars* under professional management in the U.S.



The Pain Point for Investors

Investors lack the tools needed to integrate sustainability into investment decisions

Focusing specifically on US-listed companies, how satisfied are you with the information currently being provided by these companies on the following topics?



Source: PwC
Sustainability Goes Mainstream, May 2014



The SASB Mission

Improved sustainability disclosure enhances market efficiency

The mission of SASB is to develop and disseminate sustainability accounting standards that help companies disclose material, decision-useful information to investors in a cost-effective way.

That mission is accomplished through a rigorous, transparent process that includes evidence-based research and broad, balanced stakeholder participation.

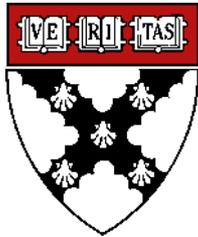
Facts about SASB

- Independent 501(c)(3) non-profit
- Develops & maintains industry-specific standards for 79 industries in 10 sectors
- Intended for use in mandatory SEC filings such as the Form 10-K and 20-F



Why It Matters To Companies And Investors

Harvard research provides initial validation of SASB's standards-setting process

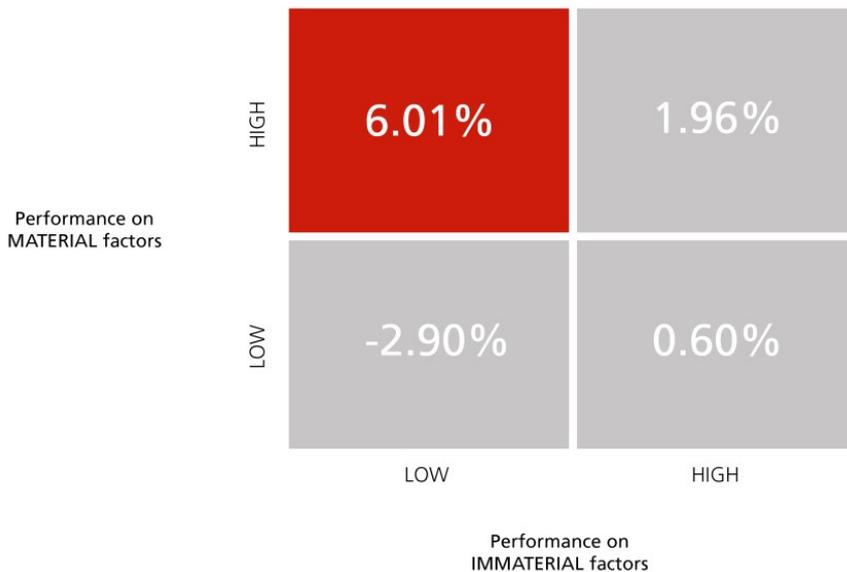


“Corporate Sustainability: First Evidence on Materiality,”

Working Paper by Mozaffar Khan, George Serafeim, and Aaron Yoon

Harvard Business School, 2015

Stock Returns (in annualized alpha) by Type of Sustainability Performance



Findings:

- Using SASB sustainability disclosure topics
 - good performance** on *material* issues + **poor performance** on *immaterial* issues = **strongest financial returns**
- Efficiency of firms' sustainability investments
- Implications for asset managers

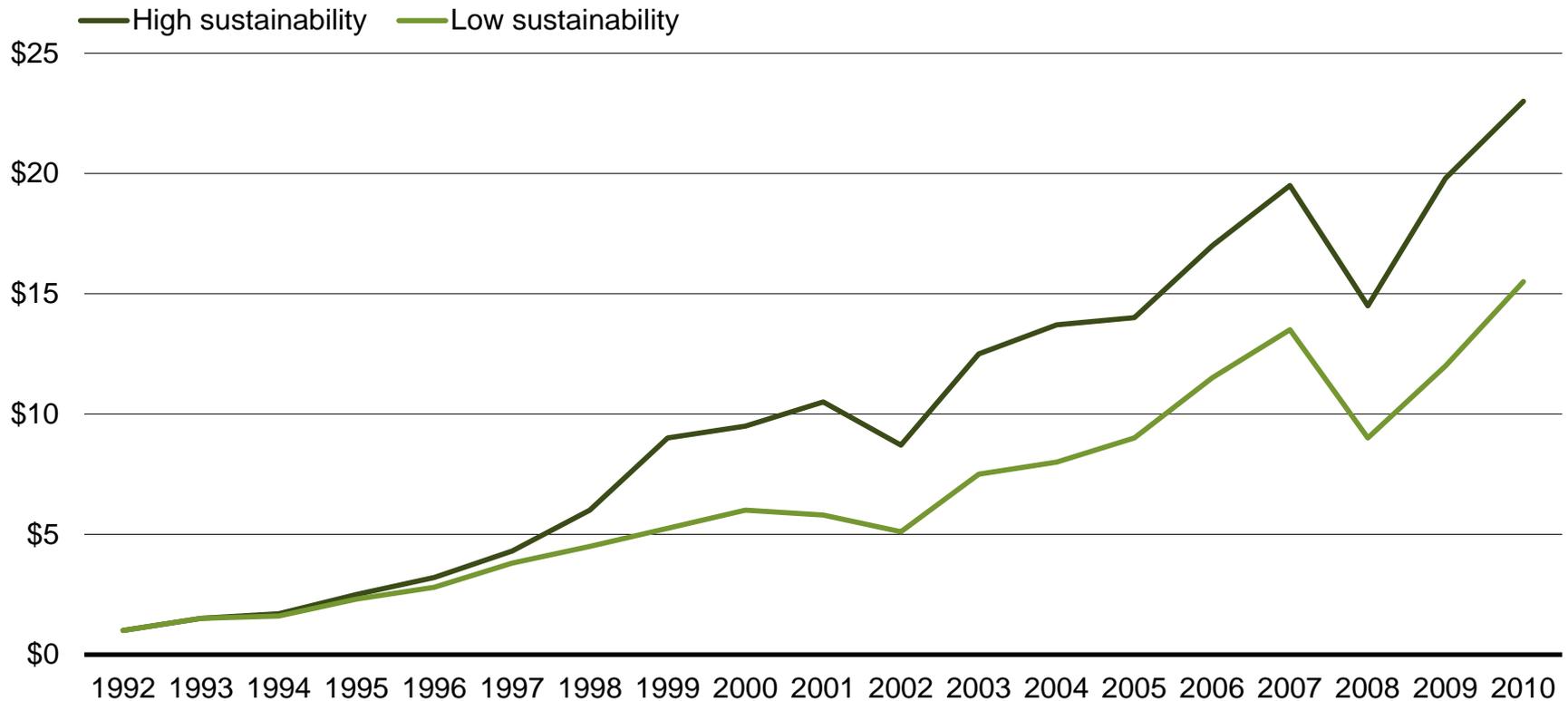
Bruno Bertocci, UBS Asset Management

Head of Sustainable Investors Team and Senior Portfolio Manager



Research from Harvard shows that highly sustainable companies outcompete and outperform

Growth of 1 USD invested in an equally weighted portfolio of high sustainability firms vs. low sustainability firms



Note: The "High Sustainability group," as defined by the study's authors are companies that adopted all or most of certain environmental and social policies, outperformed the "Low Sustainability group," as defined by companies that adopted almost none of these policies. Total sample 180 US companies. For illustrative purposes only. This does not represent the performance of any particular investment, and does not take into consideration any applicable fees, taxes or expenses. Past performance is not a reliable indicator of future returns. Eccles, Robert G., Ioannis Ioannou, and George Serafeim. ["The Impact of Corporate Sustainability on Organizational Processes and Performance."](#) *Management Science* 60, no. 11 (November 2014): 2835–2857.

Sustainability factors are indicators of operating activity and competitive positioning

- Sustainability factors create operating efficiencies, support value creation and create brand equity
- Shared value = creates value inside and outside the company
- Modern way to manage all corporate resources—tangible and intangible

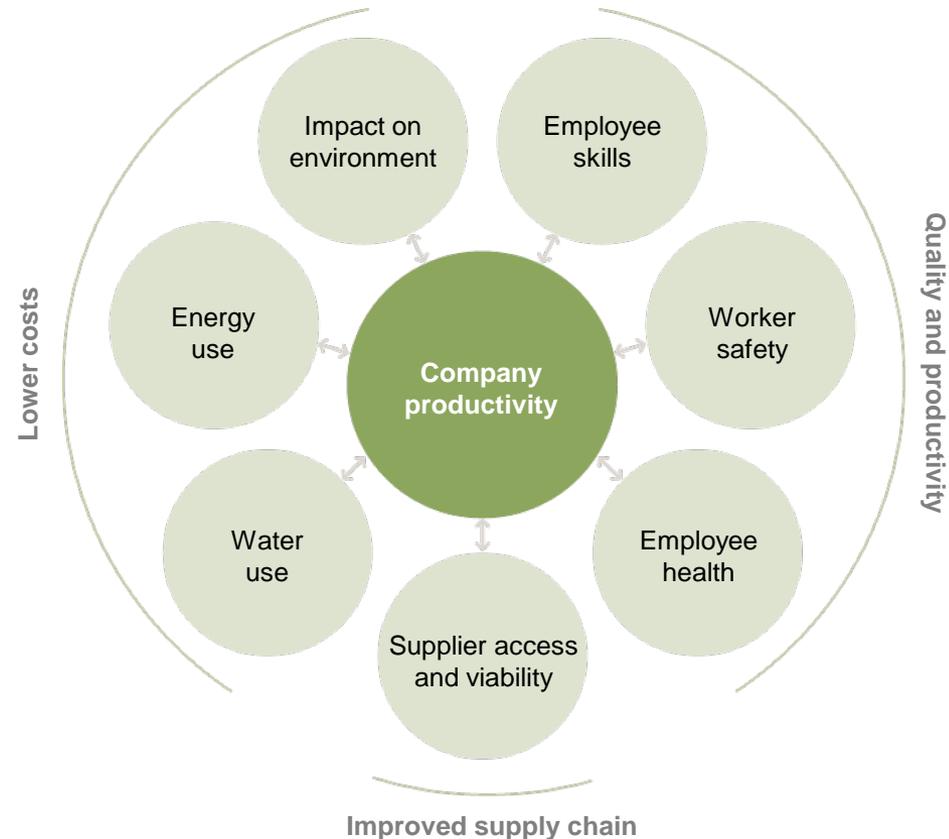
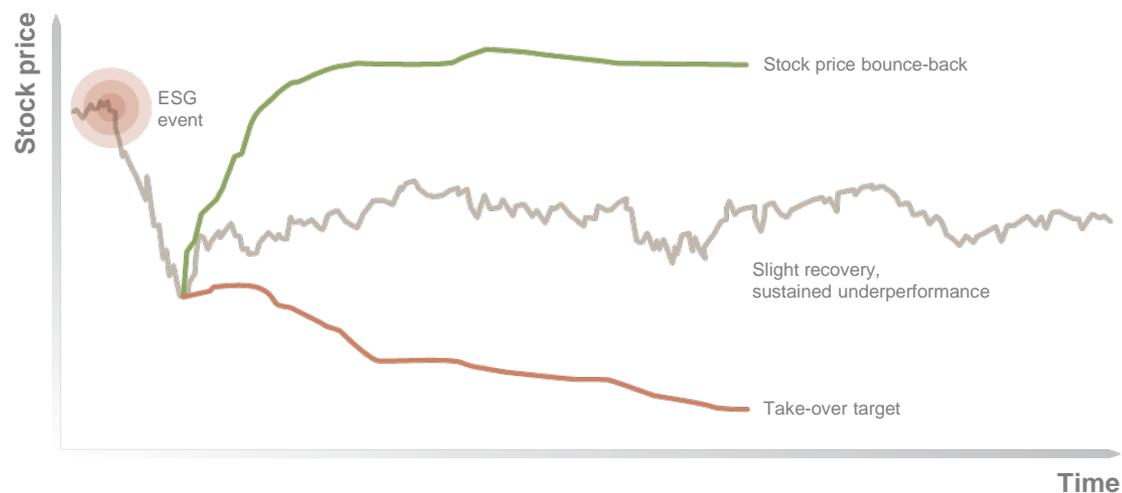


Diagram based on Michael E. Porter and Mark R. Kramer, "Creating Shared Value", Harvard Business Review, January 2011

Sustainability factors affect equity prices

Examples of ESG materiality

- Labor practices—e.g. Collapse of clothing factory in Bangladesh
- Extreme weather—e.g. flooding in Thailand and chip manufacturers
- Drought—e.g. bottling plants in Karala, India
- Environmental fines, penalties—e.g. chemical accidents, oil spills
- Earnings fraud
- Product quality lapses, boycotts and recalls
- Local community relations

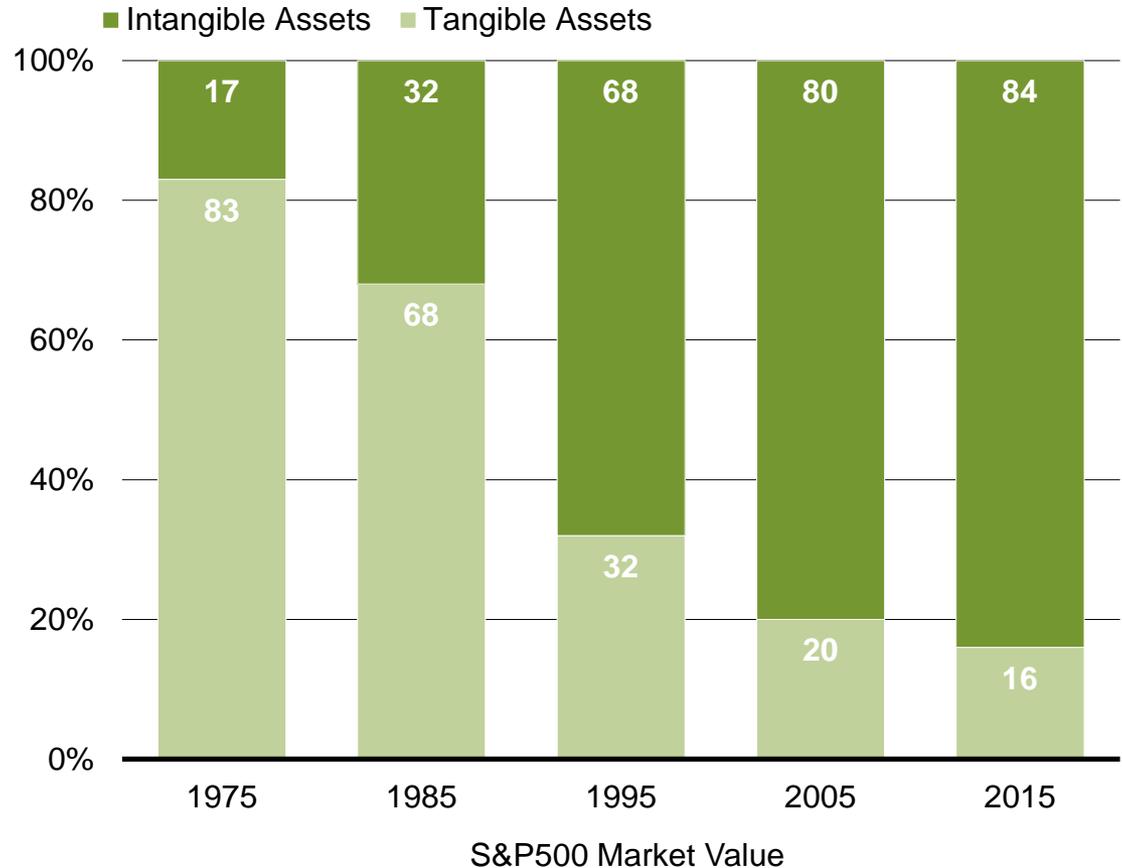


Source: Dinah A. Koehler and Eric J. Hespenheide, "Finding the value in environmental, social and governance performance," Deloitte University Press, 2013. For illustrative purposes only.

Sustainability: A fundamental approach adapted to modern companies

Sustainability factors drive market value

- Brand value (price premium, brand awareness)
- Reputation (social media profile, opinion research)
- R&D pipelines (# patents)
- Customer satisfaction (retention, loyalty programs, boycotts)
- Health and safety record (incidents, accidents, near misses)
- Environmental performance (pollution, penalties, fines)
- Social license to operate (production delays, cost overruns, labor protests)
- Governance (board composition, bribery, ethics charges)



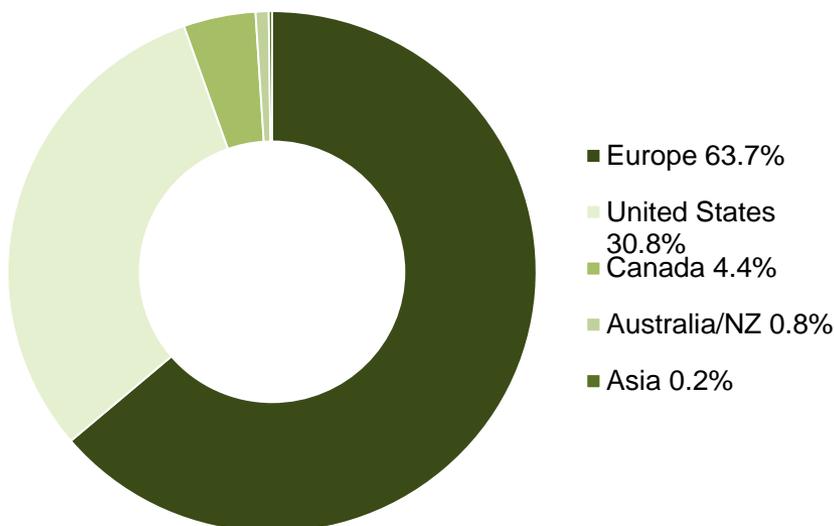
Source: Ocean Tomo, "Ocean Tomo's Intangible Asset Market Value Study," January 2015.

Sustainable Assets are growing in every region

Europe is leading but US is the fastest growing region

Europe is the leader

Proportion of sustainable assets by region



Proportion of sustainable assets relative to total managed assets

	2012	2014
Europe	49.0%	58.8%
Canada	20.2%	31.3%
United States	11.2%	17.9%
Australia	12.5%	16.6%
Asia	0.6%	0.8%
Global	21.5%	30.2%

Fastest growing region is the US

Growth of sustainable assets by region (in billions)

	2012	2014	Growth
Europe	\$8,758	\$13,608	55%
United States	\$3,740	\$6,572	76%
Canada	\$589	\$945	60%
Australia/NZ	\$134	\$180	34%
Asia	\$40	\$53	32%
Total	\$13,261	\$21,358	61%

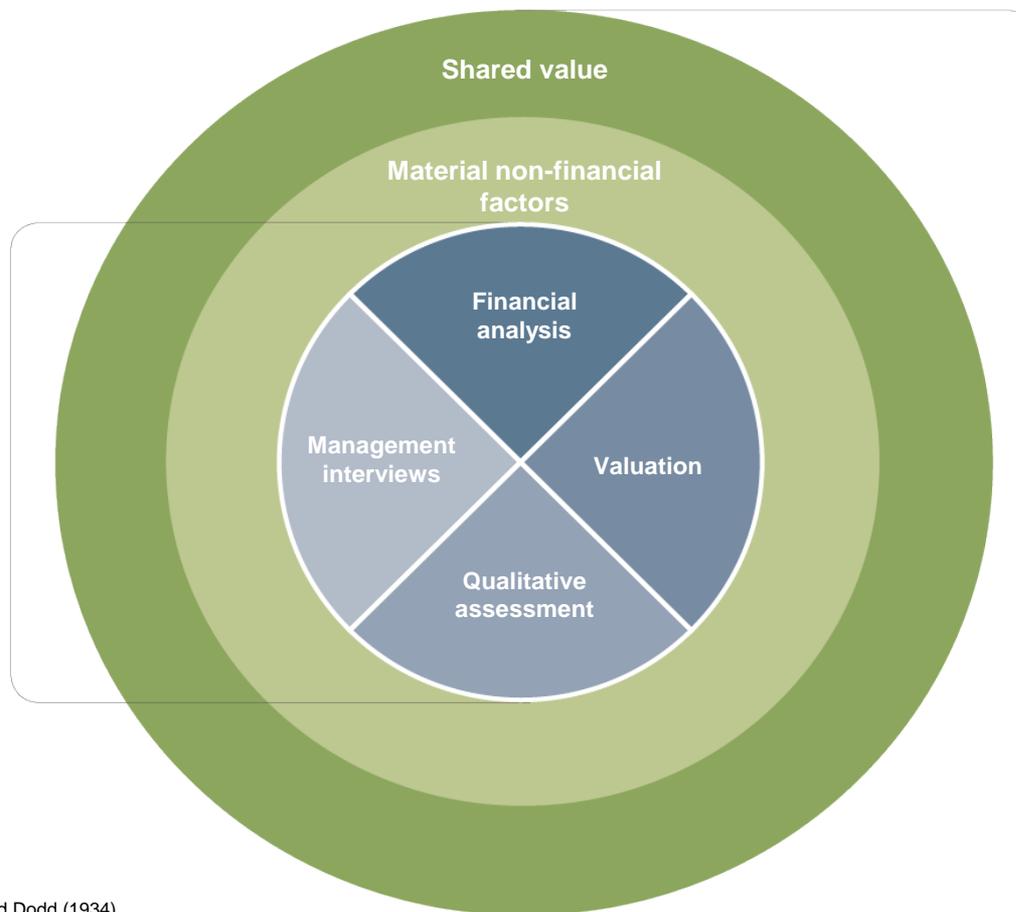
Source: Global Sustainable Investment Alliance from their 2014 Global Sustainable Investment Review. Normally updated every 2 years.

Modern (sustainable) investing

Traditional Investment Process

*Based on Security Analysis (1934)*¹

- Built for companies with physical assets
- Book value = market value



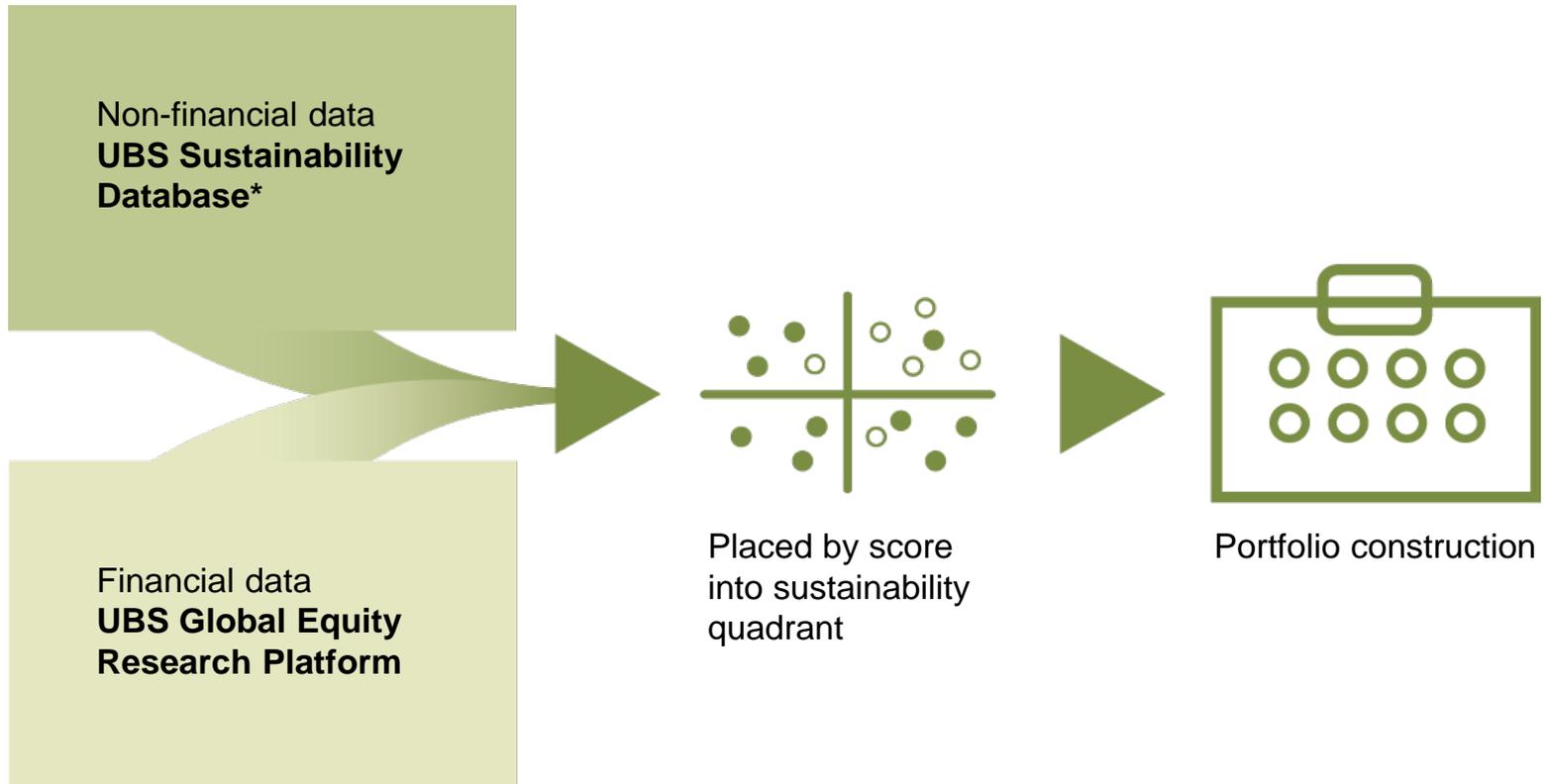
Modern Sustainable Investment Process

Based on evolution of company strategy

- Built for “asset light” companies
- Market value is a multiple of book value

¹ Security Analysis, Benjamin Graham and David Dodd (1934)

Investment process

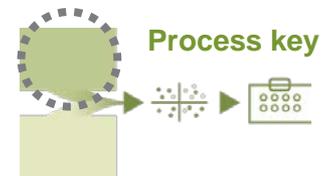


* Based on the SASB Materiality Map™
For illustrative purposes only.

UBS Sustainability Database

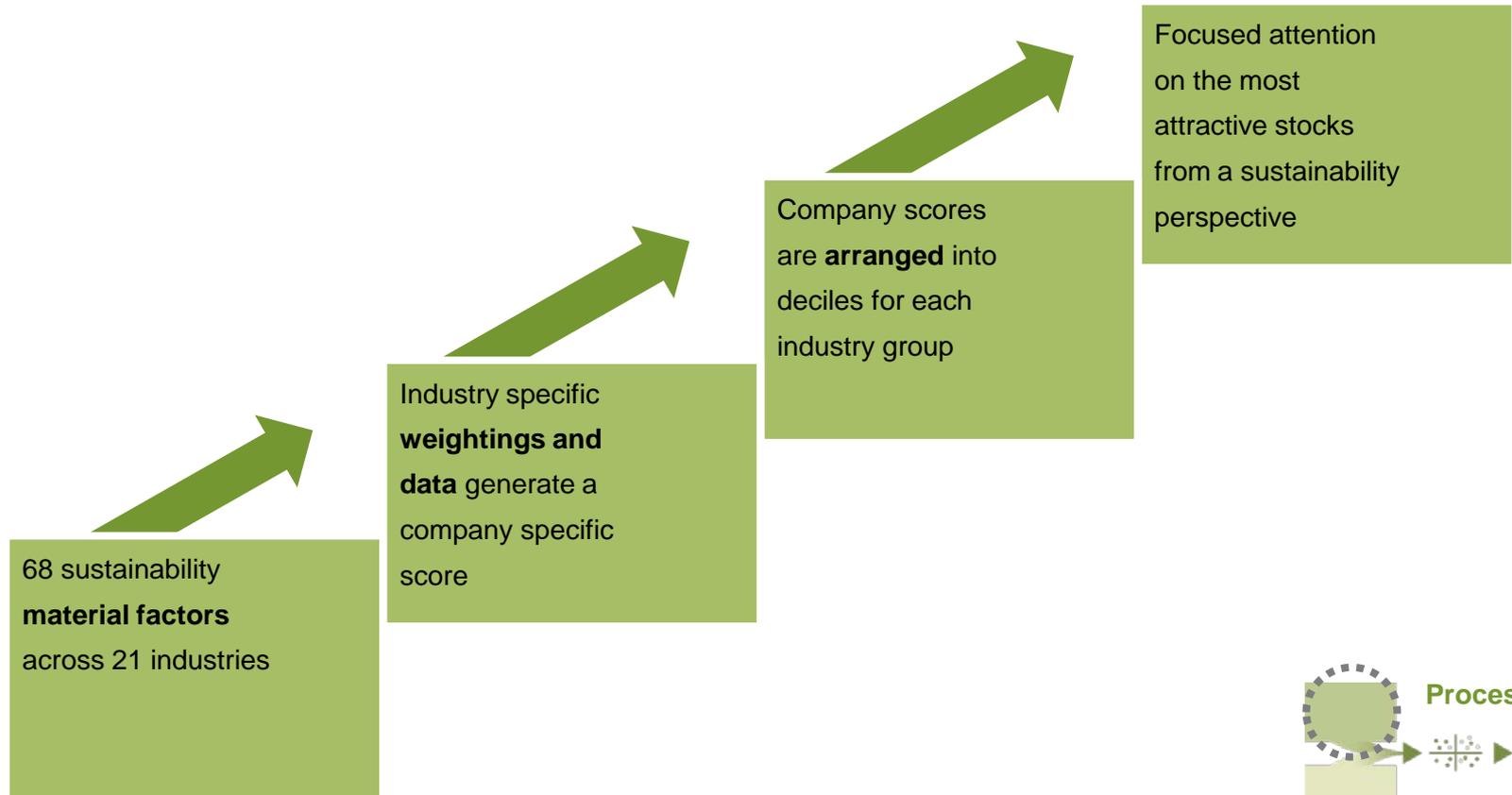
SASB Materiality Map™

- UBS Sustainability database was developed in line with SASB Materiality Map™
- Material information should be available to all investors
- Sustainability Accounting Standards Board (SASB) is developing material, non-financial, sustainability accounting standards
- Extends corporate disclosure to environmental, social and governance (ESG) factors
- Complements financial accounting standards
- The SASB Materiality Map analyzes the potential for material impacts of the industry specific sustainability issues
- Key Performance Indicators (KPI) listed in the SASB Materiality Map™: 78 industries in 10 sectors



UBS proprietary sustainability rankings system

UBS' proprietary framework is based on material, industry-specific data



Note: For illustrative purposes only.

UBS Sustainability Database: Apple Inc

Apple ESG Score is a "9" (out of 10 deciles)

Information Technology

Score	Priority	Sustainability KPI
95	1	Total Energy Use (kWh) / Revenue (USD)
100	1	Does the company have a written ethics policy? (Y/N)
94	1	Scope 1 GHG emissions (tonnes) / Revenue (USD)
100	1	Scope 2 GHG emissions (tonnes) / Revenue (USD)
27	1	Research and development expenditures / Revenue (USD)
73	1	CEO and other executive compensation (USD) / Net income (USD)
0	1	Are the roles of Chair and CEO split between two people? (Y/N)
73	1	Percent of independent directors on the Board
42	1	Percent of Board that is female
0	1	Does the company have a Board-level committee that explicitly oversees sustainability? (Y/N)
100	2	Does the company have a written resource reuse and recycling policy and/or management plan? (Y/N)
100	2	Does the company have specific programs to reduce the use and emissions of hazardous chemicals and waste? (Y/N)
100	2	Has the company implemented end-of-life product recycling or take-back programs? (Y/N)
100	2	Does the company adhere to an internationally accepted labor and human rights policy? (Y/N)
0	2	Does the company explicitly link Board compensation to sustainability performance? (Y/N)
0	2	Does the company explicitly link executive compensation to sustainability performance? (Y/N)

Key Components

- Energy, CO2 emissions (direct and indirect)
- Recycling
- Patents / Research and development expenditures
- Compensation practices
- Labor rights
- Governance issues for the Board

Source: UBS Asset Management, 2015. ESG scores are ranked by deciles from 1-10 where 10 is the best within the industry.
 Note: For illustrative purposes only. Not a recommendation to buy or sell any particular security.

UBS Sustainability Database: Taiwan Semiconductor

Taiwan Semiconductor ESG Score is a "7" (out of 10 deciles)

Semiconductor Sector

Score	Priority	Sustainability KPI
39	1	Total Energy Use (kWh) / Revenue (USD)
100	1	Does the company have a written ethics policy? (Y/N)
17	1	Scope 1 GHG emissions (tonnes) / Revenue (USD)
33	1	Scope 2 GHG emissions (tonnes) / Revenue (USD)
31	1	Research and development expenditures / Revenue (USD)
100	1	Does the company have a written water management plan that pertains both to its operations and suppliers? (Y/N)
0	1	Number of patents filed in past year / Revenue (USD)
0	1	Are the roles of Chair and CEO split between two people? (Y/N)
0	1	Percent of independent directors on the Board
0	1	Percent of Board that is female
0	1	Does the company have a Board-level committee that explicitly oversees sustainability? (Y/N)
100	2	Does the company have a written resource reuse and recycling policy and/or management plan? (Y/N)
100	2	Does the company have specific programs to reduce the use and emissions of hazardous chemicals and waste? (Y/N)
100	2	Does the company adhere to an internationally accepted labor and human rights policy? (Y/N)
0	2	Has the company had any instances of strikes or labor disputes at its supplier facilities in the past three years? (Y/N)
0	2	Does the company explicitly link Board compensation to sustainability performance? (Y/N)
0	2	Does the company explicitly link executive compensation to sustainability performance? (Y/N)

Key Components

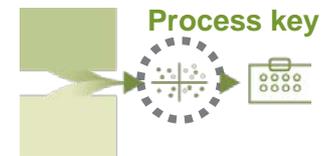
- Energy and GHG emissions management
- Water and materials recycling and management
- Toxic waste management
- Research and development expenditures
- Labor policy

Source: UBS Asset Management, 2015. ESG scores are ranked by deciles from 1-10 where 10 is the best within the industry.

Note: For illustrative purposes only. Not a recommendation to buy or sell any particular security.

Disciplined idea generation

Positive screening to construct portfolio



For illustrative purposes only.

Sustainability is fully integrated

Main Tool: Portfolio Optimization Platform

- ESG Scores / Custom baskets can be integrated and used in strategy constraints

gse* @ 1/15/2016					
Id	Name	EM 1 INTERNAL_ESG	EM 1 MSCI_ESG	EM 1 SA_ESG	EM 1 INVESTABLE
58130	AVIVA ORD 25P	10	9	10	1
45009	FORD MOTOR COMPANY	10	3	9	1
47673	METLIFE INC.	10	3	6	1
47502	SOUTHWEST AIRLINES	10	7	7	1
50200	US BANCORP	10	3	7	1
57753	CITIGROUP INC	10	5	7	1
77139	BRAMBLES LTD NPV	10	10	9	1
44387	WALT DISNEY CO	10	7	7	1
70529	KONINKLIJKE DSM NV EUR1.50	10	9	10	1
57087	INTESA SANPAOLO EUR0.52	10	9	9	1
56682	AMERICAN EXPRESS CO	10	9	6	1
48136	PRAXAIR INC.	10	6	10	1
55631	HESS CORP	10	9	9	1
48869	SAP SE	10	10	10	1
47820	PROCTER & GAMBLE CO	9	7	9	1
46894	NEXT ORD 10P	9	7	9	1
83154	ALNYLAM PHARMACEUTICALS INC	9	5		1
47734	NORDEA BANK AB ORD NPV	9	7	9	1
56220	AMAZON.COM INC	9	3	5	1

Characteristic	Index	Initial	Final
Category : Buys By Country (%) - 1 item(s)			
Category : Sells By Country (%) - 1 item(s)			
Category : Trades By Region - 1 item(s)			
Category : Buys By Region - 1 item(s)			
Category : Sells By Region - 1 item(s)			
Category : Buys By Region (%) - 1 item(s)			
Category : Sells By Region (%) - 1 item(s)			
Category : Factor Exposures - 153 item(s)			
Category : Factor Exposure (%Total Risk) - 153 item(s)			
Category : Common Risk Blocks (Std.Dev.) - 5 item(s)			
Category : Common Risk Blocks (%) - 5 item(s)			
Category : Quintile Bets - 6 item(s)			
Category : Tertile Bets - 4 item(s)			
Category : Sector Bets - 24 item(s)			
Category : Sector Specific Risk (%) - 24 item(s)			
Category : Sector Contribution to Active Risk - 24 item(s)			
Category : Exposure Model Bets: SRI_Ranks - 4 item(s)			
INTERNAL_ESG	734.71	-18.18	18.95
MSCI_ESG	585.15	-0.62	20.66
SA_ESG	675.62	-56.68	-34.44
INVESTABLE	81.13	13.08	17.08

Name	EM 1 CLIMATE	EM 1 WATER	EM 1 HEALTH	EM 1 FOOD	IN
Uninvestable Hong Kong Dollar					
DAVITA HEALTHCARE PARTNERS INC	0	0	1	0	
KONINKLIJKE AHOLD NV	0	0	0	1	
GENERAL ELECTRIC CO	1	0	0	0	
CHINA EVERBRIGHT INTL LTD	1	0	0	0	
AES TIETE SA-ADR	1	0	0	0	
BASF SE	0	0	0	1	
GILEAD SCIENCES INC.	0	0	1	0	
JOHNSON CONTROLS	1	0	0	0	
DOW CHEMICAL	0	0	0	1	
HEXAGON AB B SER B POST SPLIT	0	0	0	1	
Uninvestable Japanese Yen					
GEA GROUP AG NPV	0	0	0	1	
SABESP CIA SANEAME ADR	0	1	0	0	
IPSEN EUR1	0	0	1	0	
ECOLAB	0	1	0	0	
BIOMERIEUX NPV	0	0	1	0	
TESCO ORD	0	0	0	1	
BORG WARNER INC	1	0	0	0	

Characteristic	Index	Initial	Final
Category : Alpha - 8 item(s)			
Category : Optimization - 8 item(s)			
Category : Portfolio - 28 item(s)			
Category : Portfolio Cash - 12 item(s)			
Category : Trades - 14 item(s)			
Category : Factor Exposures - 153 item(s)			
Category : Factor Exposure (%Total Risk) - 153 item(s)			
Category : Common Risk Blocks (Std.Dev.) - 5 item(s)			
Category : Common Risk Blocks (%) - 5 item(s)			
Category : Quintile Bets - 6 item(s)			
Category : Tertile Bets - 4 item(s)			
Category : Sector Bets - 16 item(s)			
Category : Sector Specific Risk (%) - 16 item(s)			
Category : Sector Contribution to Active Risk - 16 item(s)			
Category : Exposure Model Bets: SRI_Impact - 5 item(s)			
PUREPLAY	74.76	-18.78	-18.78
CLIMATE	34.56	1.01	1.01
WATER	14.78	-4.56	-4.56
HEALTH	28.06	-0.45	-0.45
FOOD	21.77	4.43	4.43

UBS is a leader in sustainability

We demonstrate and actively pursue our beliefs through a range of internal and external commitments and initiatives

Internal Commitments

Sustainable Investors Team

- Dedicated Sustainable Equities Team formed in 1996
- Manages USD 2.90 billion as of March 31, 2016 in a broad range of strategies that endorse sustainable investing
- Bruno Bertocci, Head of Sustainable Equities, represents UBS on committees such as the Sustainability Accounting Standards Board and the Global Initiative for Sustainability Ratings
- Leader in sustainability data – our proprietary sustainability ratings database has evolved and is constantly being enhanced

Robust environmental policy since 1993

Strong track record in managing environmental challenges

- Sustainable Supply Chain Guideline introduced 2008
- UBS Climate Change Strategy implemented since 2006
- UBS Statement on Human Rights adopted in 2006
- UBS Position on Controversial Activities adopted 2011

External Commitments



Participant in the UN Global Compact since its inception in 2000



Founding member of the Wolfsberg Group in 1999



Independent assurance of the GRI (Global Reporting Initiative) based sustainability disclosure



Founder of the UBS Optimus Foundation



First environmental certification (ISO 14001) in 1999



Founding signatory of the Carbon Disclosure Project (CDP)



One of the first signatories of UN Environment Program Finance Initiative (UNEP FI) in 1992



UBS Asset Management signatory to Principles for Responsible Investment (PRI)



Global Initiative for Sustainability Ratings steering committee



Sustainability Accounting Standards Board™

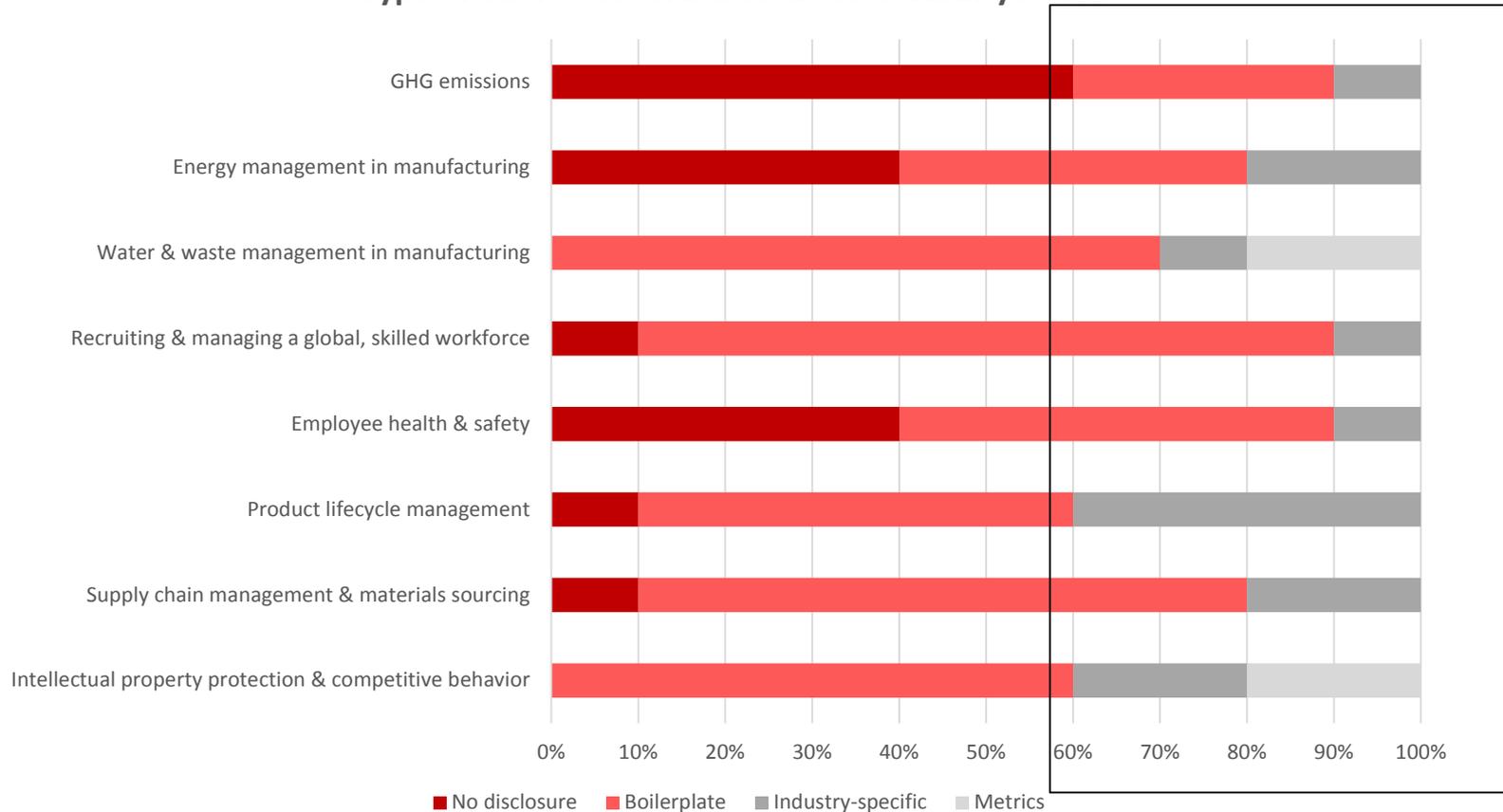
The Forum for Sustainable and Responsible Investing

Quinn Underriener
SASB Sector Analyst, Technology & Communications



Top Semiconductor Companies Have Low Sustainability Disclosure

Type of disclosure on material sustainability issues



Analysis based on 2015 10-K/20-F filings from the 10 largest Semiconductor companies by market cap

Some Semiconductors are Thirstier Than Others

SASB metric: (1) Total water withdrawn, percentage recycled, percentage of each in regions with High or Extremely High Baseline Water Stress



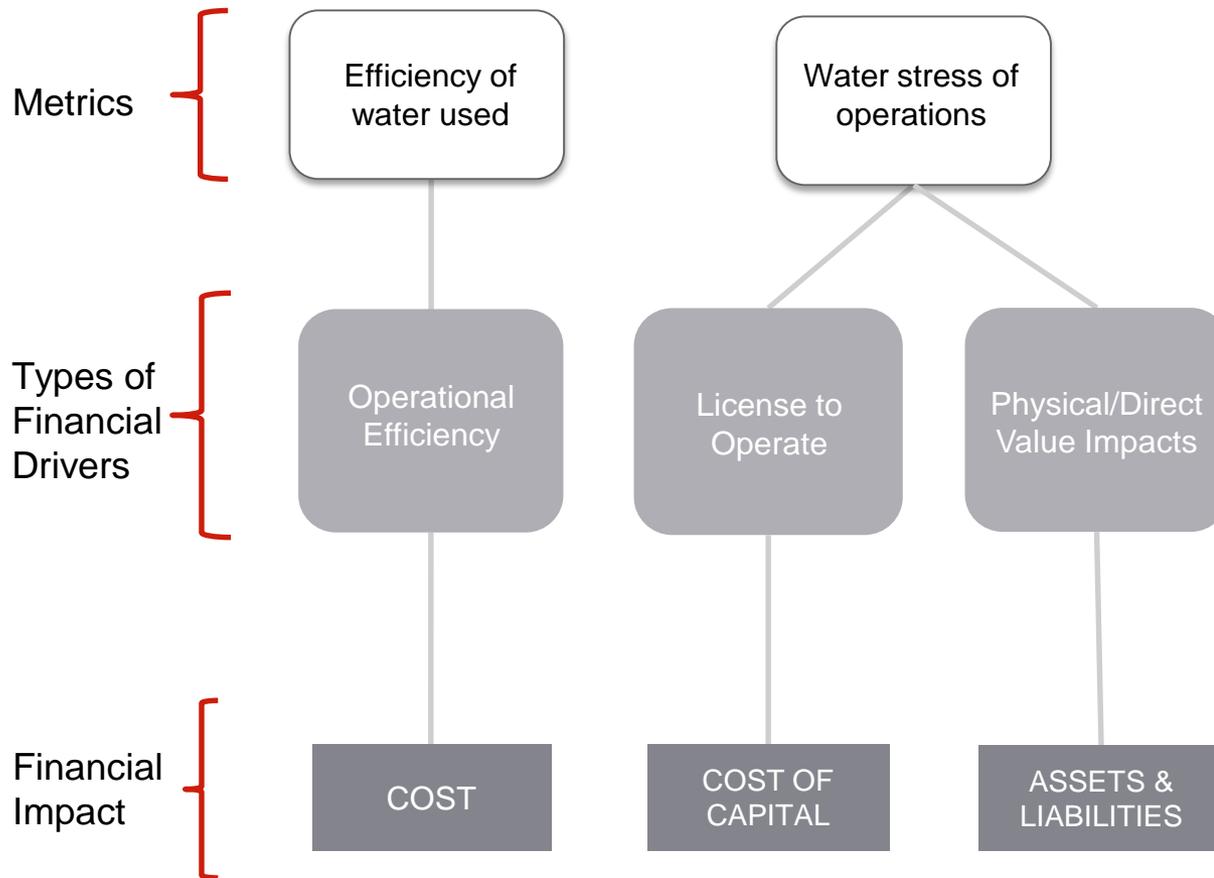
Water use intensity for **three large Semiconductor manufacturers**

Units: Water withdrawal (liters) / revenue (\$M)

% = operations in regions with High or Extremely High Water Stress

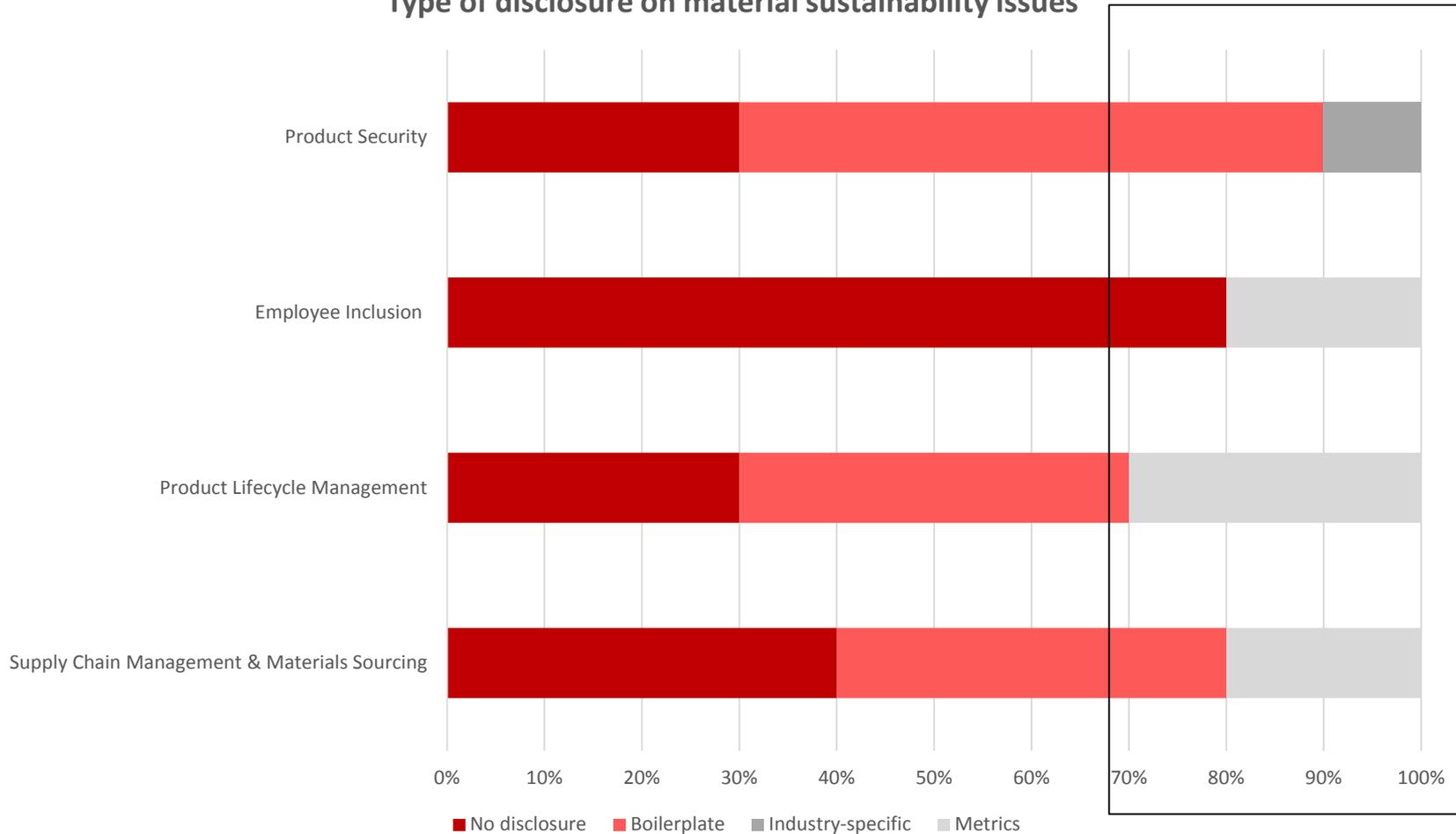
SASB's Process Identifies Material Sustainability Issues

Only topics with demonstrated evidence of impacts on the financial condition, operating performance, and/or risk profile are included in the standards



Top Hardware Companies Have Low Sustainability Disclosure

Type of disclosure on material sustainability issues

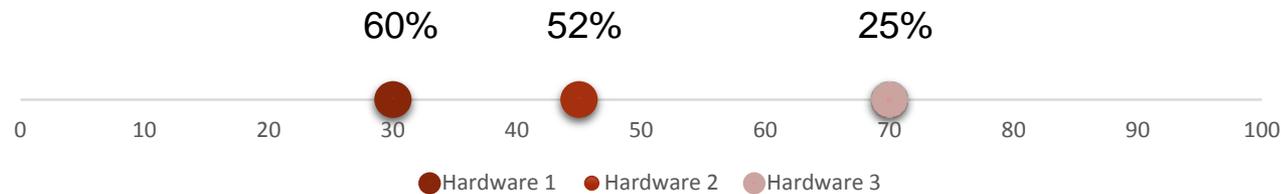


Analysis based on 2015 10-K/20-F filings from the 10 largest Hardware companies by market cap



In Hardware Supply Chain Management, Conformance is Key

SASB metric: (1) priority non-conformance rate and associated corrective action rate, and (2) other non-conformances rate and associated corrective action rate



Supplier audit rate for “(1) priority non-conformance rate and associated corrective action rate” for **three large Hardware manufactures**

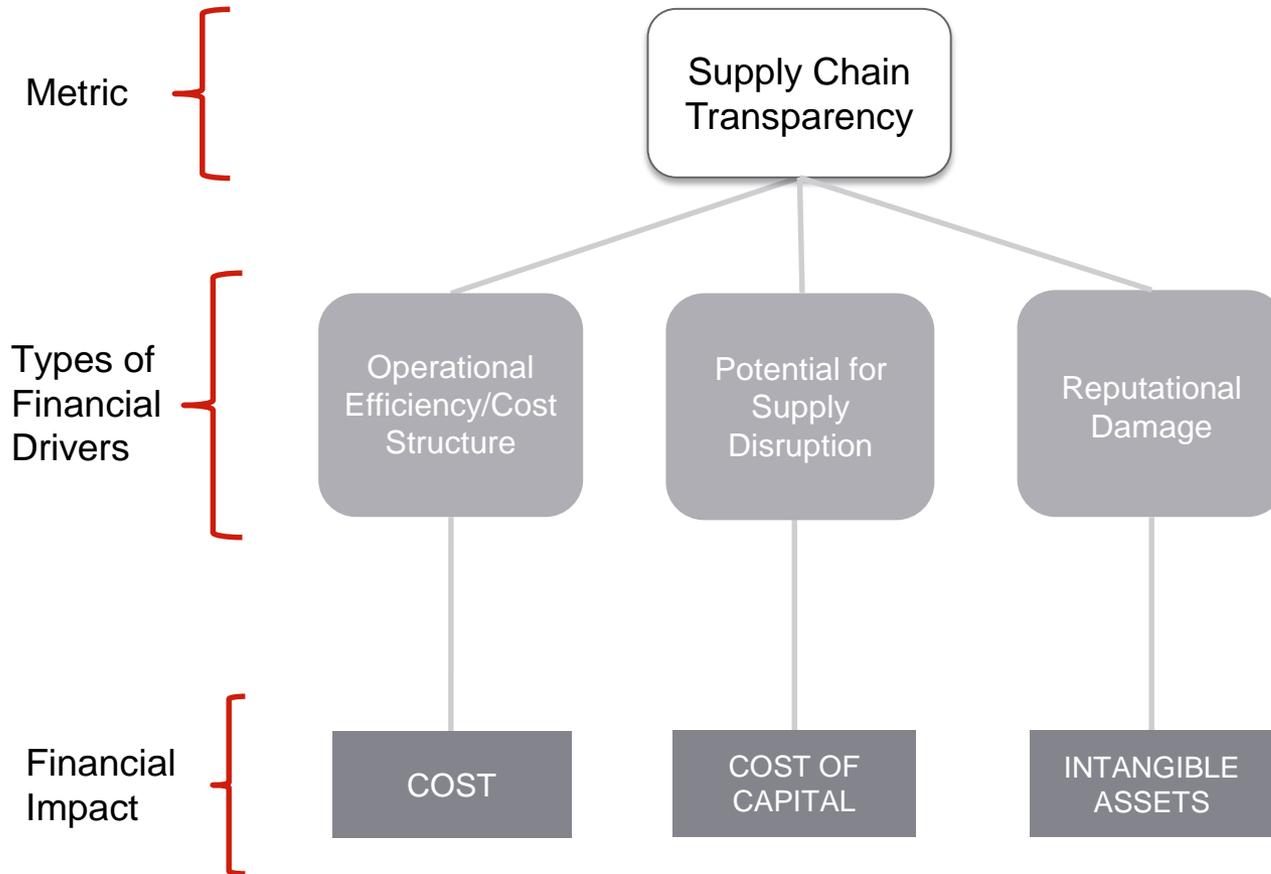
Units: Number of audited facilities with a priority noncompliance/ total number of suppliers audited

% = the number of corrective action plans completed within 30 days to address priority non-conformances/ total number of priority non-conformances that have been identified

Limited to Tier 1 suppliers that, at a minimum, represents 80 percent of supplier spending related to manufacturing

SASB's Process Identifies Material Sustainability Issues

Only topics with demonstrated evidence of impacts on the financial condition, operating performance, and/or risk profile are included in the standards



Moving the Market: The SASB 2016 Symposium

The only convening to explore the unique intersection between sustainability, finance, accounting, and law.



December 1, 2016

Park Central Hotel

New York City

Speakers to include:

- Mary Schapiro, Former Chair, SEC
- Keith Higgins, Director of the Division of Corporate Finance, SEC
- Chris Ailman, CIO, CalSTRS
- Ted Eliopoulos, CIO, CalPERS
- Bruno Bertocci, Managing Director, UBS
- Tom Quaadman, SVP, U.S. Chamber Center for Capital Markets Competitiveness
- Alan Beller, Partner, Cleary Gottlieb
- Jeanette Franzel, Board Member, PCAOB

Questions?



Quinn Underminer
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