



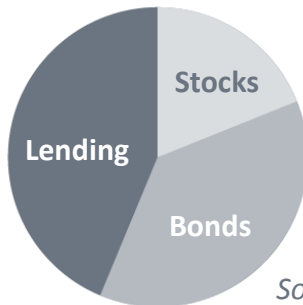
Integrating Water in Financial Decision-Making

Simone Dettling, 4th April 2016



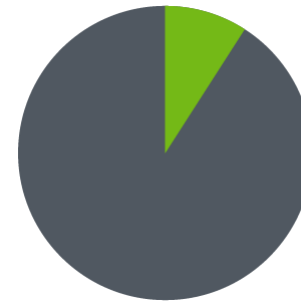
Financing the Green Transformation

Global Financial Markets:
255 trillion USD

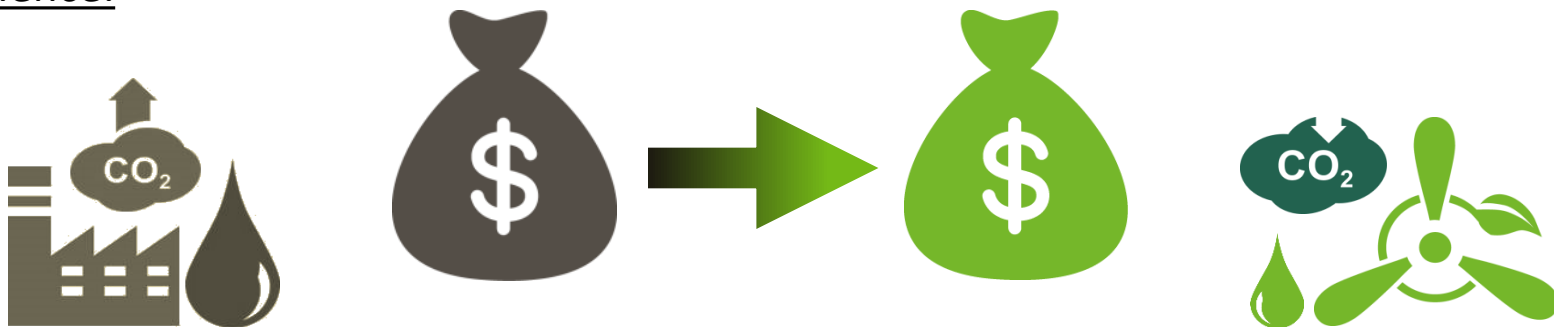


Source: IMF 2013

Annual need additional climate
investments ca. **1.5 trillion USD** (IEA) and
investments in water ca. **1 trillion USD**
(McKinsey)



Hence:





Emerging Markets Dialogue on Green Finance

Objective

redirect capital flows away from assets that deplete natural capital towards climate- and eco-friendly investments.



Approach

Work with financial institutions from G20 economies to integrate environmental indicators in lending and investment decisions, product development and risk management.

Joint Development of
Tools and Methodologies

Research and Capacity
Building

Market Development for
Green Bonds:
Strategic Alliance



Participating Financial Institutions



UBS



ROBECOSAM
Sustainability Investing



J. SAFRA SARASIN

Sustainable Swiss Private Banking since 1841



FIRA

FIDEICOMISOS INSTITUIDOS EN RELACION CON LA AGRICULTURA



EMPRESA
SOCIALMENTE
RESPONSABLE

Calvert
INVESTMENTS®



an Ameritas company

ICBC



PAX

Pax World Investments



Banamex



Santander

CAIXA
CAIXA ECONÓMICA FEDERAL

Bancolombia



Total Assets
10 trillion USD

Tool for Integrating Water Risk in Corporate Bond Valuation



Bundesministerium für
wirtschaftliche Zusammenarbeit
und Entwicklung



Natural
Capital
Declaration
Financial sector leadership
on natural capital

Secretariat:



EMERGING
MARKETS
DIALOGUE
ON FINANCE





Approach

Combine Three Sources of Data

**Global data
on water stress
(WRI)**

**Data on location of
operations (Bloomberg)**

**Corporate credit
Information**

WATER VALUE



Calculate shadow prices

COSTS FOR WATER



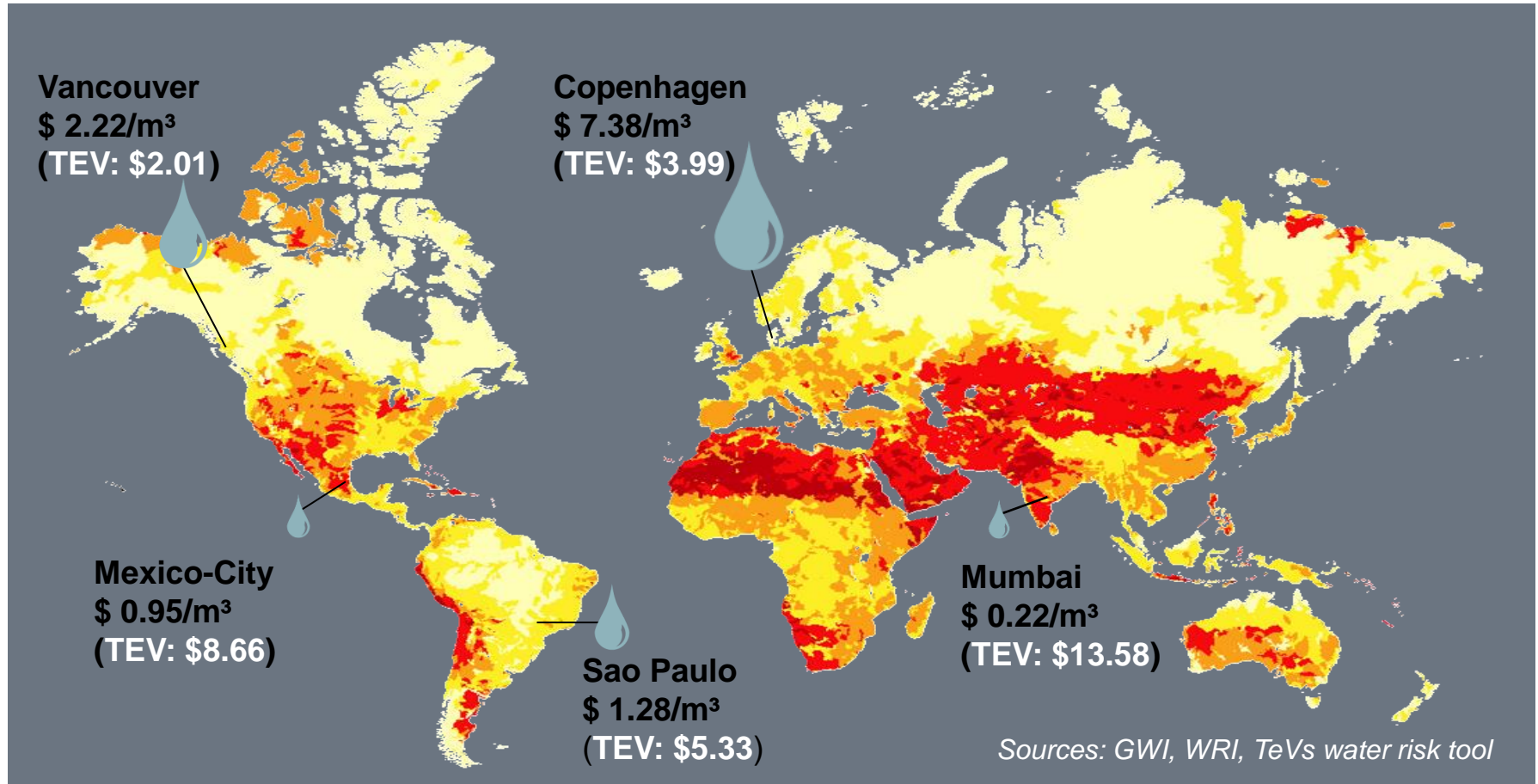
**Combine company data
with location-specific price**

COMPANY FINANCIAL SPREADSHEET X	
P&L, US \$ DOLLARS MILLION	2014
REVENUES	30,222
OPERATING COSTS	-27,474
ADDITIONAL WATER OPEX	-298
NON OPERATING SPECIAL ITEMS	-469
SHARE OF NET INCOME FROM ASSOCS AND JVS	168
OTHER SPECIAL ITEMS	4,514
EBIT UNDERLYING	6663

Adjust credit ratios



Water Stress vs. Water Prices

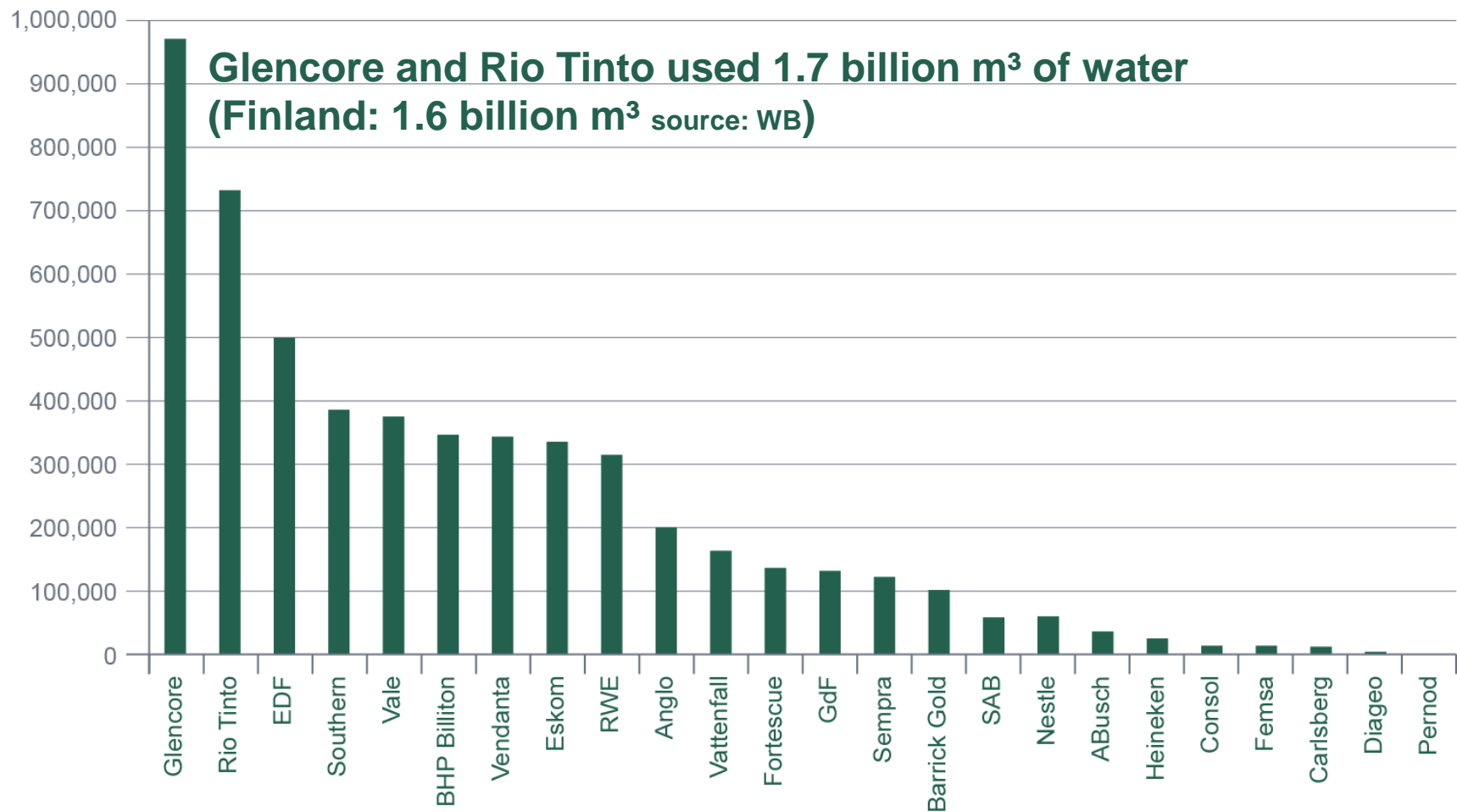


→ Gap between shadow price and current cost as measure for risk



Annual Water Use

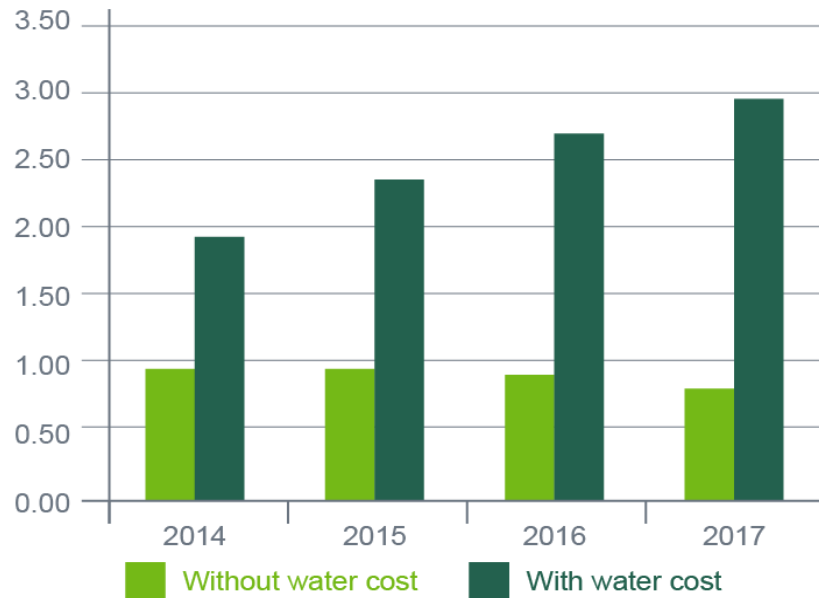
In thousand cubic meters; for 24 companies in three sectors: mining, power, food&beverage





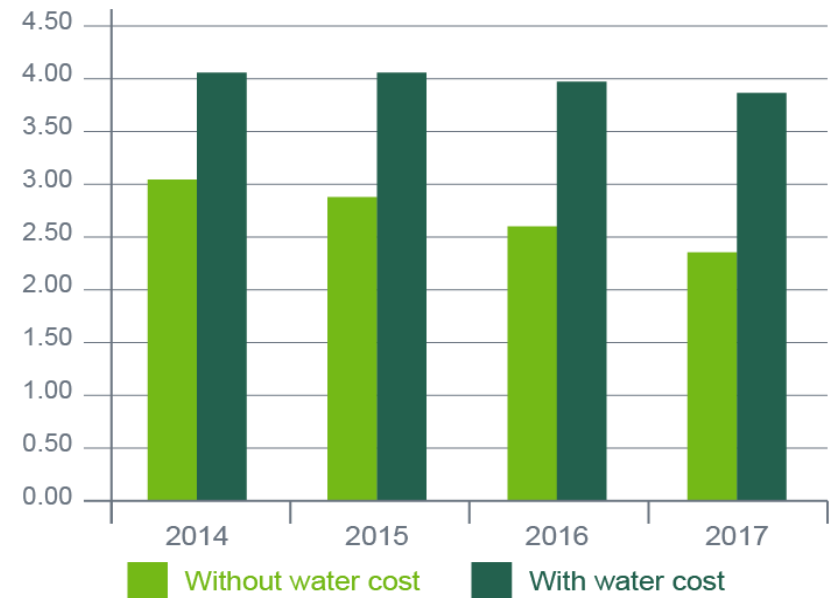
Highlighted Results: Mining

Net debt/EBITDA



Rio Tinto: ratio rises by 200% to 2.96x in 2017

Net debt/EBITDA



Vedanta: ratio rises to 4 in 2014
→ non-investment grade?

→ Higher cost of capital incentivizes investments
in water efficiency and supply security



Application by Financial Institutions



**Corporate Due
Diligence**



**Portfolio
Review**



Engagement



**Product
Development**

Environmental Stress Testing Drought Risk



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Pilot Project Environmental Stress Testing

Objective

Develop and test an analytical framework and model that allows banks to assess the potential impact of environmental shocks on the performance of their corporate loan portfolio.



2-3 **drought scenarios** per focus country (Mexico, Brazil, China, India, US) that simulate the impact of drought on water availability, taking into account local water infrastructure



Model to estimate the effects of drought on up to 8-12 industries in country reflecting direct and indirect impacts as well as macro-economic feedbacks/political decisions.



Model that **links drought impacts to drivers of corporate credit quality** (such as profitability, leverage) and can be plugged into or inform banks' internal stress testing models.



Thank you for your kind attention.

www.emergingmarketsdialogue.org

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