Overview of "ESG Integration Framework" for Investment Analysis

Presenters:
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Mary Leung, CFA, Head, Advocacy, APAC, CFA Institute
Hardik Shah, CFA, ESG Practice Lead, GMO
Sineerat Chakrabandhu Na Ayudhya, CFA, Investment Product Strategist, KTBST Securities Public Company Limited
Sineerat Chakrabandhu Na Ayudhya, CFA
Investment Product Strategist
KTBST Securities Public Company Limited
WELCOMING REMARKS

Ruenvadee Suwanmongkol,
Secretary-General,
The Securities and Exchange Commission
Thailand
ESG Integration Framework

In partnership with Thai SEC and CFA Society Thailand

September 2021
Mary Leung, CFA
Head, Advocacy, Asia Pacific
CFA Institute
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1. Global and regional trends in sustainable investing
2. ESG integration
3. CFA Institute resources on ESG and sustainability
Global and regional trends in sustainable investing
Sustainable investing: on a tear

Key drivers

• **Increased awareness** by investors of the potential impact that ESG factors have on value

• **Greater availability of ESG disclosures** by issuers, as well as ESG data and information from third-party providers that aid in investment decision making

• **Intensifying regulatory scrutiny of “greenwashing”**—that is, investment products that make claims around being green, meeting ESG criteria, or being sustainable, more so than they really are
ESG integration is now the most popular strategy

Sustainable assets under management by strategy (US$ trillion)

- ESG integration: $25.2 trillion (2020)
- Negative / exclusionary screening: $15.0 trillion (2020)
- Corporate engagement: $10.5 trillion (2020)
- Norms-based screening: $4.1 trillion (2020)
- Sustainability themed investing: $1.9 trillion (2020)
- Positive / best-in-class screening: $1.4 trillion (2020)
- Impact / community investing: $0.4 trillion (2020)

Source: Global Sustainable Investment Review, 2020
<table>
<thead>
<tr>
<th>Region</th>
<th>AUM (US$ billion)</th>
<th>Percentage of total</th>
<th>Number of funds</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>1,625.3</td>
<td>81.9%</td>
<td>3,444</td>
<td>76.1%</td>
</tr>
<tr>
<td>United States</td>
<td>265.8</td>
<td>13.4%</td>
<td>409</td>
<td>9.0%</td>
</tr>
<tr>
<td>Asia (excluding Japan)</td>
<td>36.7</td>
<td>1.8%</td>
<td>237</td>
<td>5.2%</td>
</tr>
<tr>
<td>Australia and New Zealand</td>
<td>21.2</td>
<td>1.1%</td>
<td>129</td>
<td>2.9%</td>
</tr>
<tr>
<td>Japan</td>
<td>21.2</td>
<td>1.1%</td>
<td>149</td>
<td>3.3%</td>
</tr>
<tr>
<td>Canada</td>
<td>14.2</td>
<td>0.7%</td>
<td>156</td>
<td>3.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,984.5</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>4,524</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Note: As of March 2021
Source: “Global Sustainable Fund Flows: Q1 2021 in Review,” Morningstar
ESG is no longer confined to active investing

Source: “ETFGI Reports Assets Invested in ESG ETFs and ETPs Listed Globally Reached a Record US$280 Billion at End of May 2021,” ETFGI News, 24 June 2021
ESG in the time of COVID-19

Bloomberg
ESG a Win for Stocks, Less So for Bonds Amid Covid-19

The Wall Street Journal
Coronavirus Pandemic Could Elevate ESG Factors

Financial Times
ESG passes the Covid challenge

South China Morning Post
Coronavirus strengthens case for sustainable investing as ESG stocks outperform market in crisis

ET Markets
Covid-19 is proving to be the litmus test for ESG investing

Forbes
Covid-19 Is Accelerating ESG Investing And Corporate Sustainability Practices

ETF Trends
ESG Investing Could Get a Lift From Retirement Plan Focus

Global Capital
Covid cuts flow of green bonds and loans, but not their appeal

Funds Europe
Covid-19 could shape ESG investing “for years to come”

The Asset
Covid-19 crisis could turn into the ESG era

Asian Private Banker
PB CEOs optimistic about growth of ESG investment in Asia after COVID-19
Drivers of ESG integration

Why do you and your organization take any ESG issues into consideration?

- To help manage investment risks: 65% (2017), 64% (2020)
- Clients/investors demand it: 45% (2017), 59% (2020)
- It's our fiduciary duty: 36% (2017), 43% (2020)
- My firm derives reputational benefits: 32% (2017), 41% (2020)
- To improve financial returns: 35% (2017), 0% (2020)
- To help identify investment opportunities: 35% (2017), 33% (2020)
- ESG performance is a proxy for management quality: 41% (2017), 32% (2020)
- Regulation requires it: 6% (2017), 16% (2020)

Source: “Future of Sustainability in Investment Management,” CFA Institute
The evolving risk landscape

- Asset price collapse
- Major financial system failure
- Water crises
- Weapons of mass destruction
- Climate action failure
- Infectious disease
- Chronic disease
- Extreme energy price volatility
- Climate action failure
- Severe energy price shock
- Water crises
- Natural disasters
- Natural resource crises

The business opportunity

Retail investors interested in ESG strategies, by age

<table>
<thead>
<tr>
<th>Age</th>
<th>2018</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>77%</td>
<td>75%</td>
</tr>
<tr>
<td>35-44</td>
<td>76%</td>
<td>75%</td>
</tr>
<tr>
<td>45-54</td>
<td>65%</td>
<td>71%</td>
</tr>
<tr>
<td>55-64</td>
<td>56%</td>
<td>63%</td>
</tr>
<tr>
<td>65+</td>
<td>56%</td>
<td></td>
</tr>
</tbody>
</table>

Retail investors currently employing ESG strategies, by age

<table>
<thead>
<tr>
<th>Age</th>
<th>2018</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>14%</td>
<td>19%</td>
</tr>
<tr>
<td>35-44</td>
<td>9%</td>
<td>13%</td>
</tr>
<tr>
<td>45-54</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>55-64</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>65+</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Note: N = 2,430 in 2018 and N = 2,840 in 2020
Source: “Future of Sustainability in Investment Management,” CFA Institute
### Barriers to ESG integration

**Why do you and your organization not take any ESG issues into consideration?**

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Percentage</th>
<th>Region</th>
<th>Change 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of demand from clients</td>
<td>52%</td>
<td>Americas</td>
<td>+5</td>
</tr>
<tr>
<td>Insufficient knowledge of how to consider these issues</td>
<td>33%</td>
<td>APAC and EMEA</td>
<td>+16</td>
</tr>
<tr>
<td>Lack of information/data</td>
<td>26%</td>
<td>APAC</td>
<td>+7</td>
</tr>
<tr>
<td>These issues are not material</td>
<td>26%</td>
<td>APAC</td>
<td>-17</td>
</tr>
<tr>
<td>Inability to integrate ESG information into my quantitative models</td>
<td>21%</td>
<td>EMEA</td>
<td>+6</td>
</tr>
<tr>
<td>Market practices require me to focus on short-term performance</td>
<td>12%</td>
<td>APAC</td>
<td>+7</td>
</tr>
<tr>
<td>Others</td>
<td>19%</td>
<td>Americas and EMEA</td>
<td>+6</td>
</tr>
</tbody>
</table>

- **Source:** “Future of Sustainability in Investment Management,” CFA Institute
Gold star in sustainability reporting

Ranking of the world’s top 10 exchanges based on ESG disclosures

<table>
<thead>
<tr>
<th>Stock exchange</th>
<th>Disclosure Rate</th>
<th>Disclosure Growth</th>
<th>Disclosure Timeliness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helsinki Stock Exchange</td>
<td>80.6%</td>
<td>3.6%</td>
<td>126</td>
</tr>
<tr>
<td>BME Spanish Stock Exchanges</td>
<td>77.7%</td>
<td>2.3%</td>
<td>181</td>
</tr>
<tr>
<td>Euronext Lisbon</td>
<td>73.8%</td>
<td>3.7%</td>
<td>205</td>
</tr>
<tr>
<td>Euronext Paris</td>
<td>68.6%</td>
<td>2.2%</td>
<td>190</td>
</tr>
<tr>
<td>Johannesburg Stock Exchange</td>
<td>68.1%</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Borsa Italiana</td>
<td>66.3%</td>
<td>10.7%</td>
<td>149</td>
</tr>
<tr>
<td>Euronext Amsterdam</td>
<td>64.9%</td>
<td>6.6%</td>
<td>134</td>
</tr>
<tr>
<td>Bolsa De Valores De Colombia</td>
<td>64.6%</td>
<td>11.8%</td>
<td>124</td>
</tr>
<tr>
<td>Stock Exchange of Thailand</td>
<td>60.3%</td>
<td>8.5%</td>
<td>105</td>
</tr>
<tr>
<td>Nasdaq Stockholm / Nasdaq Copenhagen</td>
<td>60.0%</td>
<td>5.1% / 2.1%</td>
<td>98 / 73</td>
</tr>
</tbody>
</table>

Source: 2019 Measuring Sustainability Disclosure: Ranking the World’s Stock Exchange, Corporate Knights
The ESG integration framework

Source: See, for example, “ESG Integration in Asia-Pacific,” CFA Institute and Principles of Responsible Investment
A simplified view

- Inner circle
  - Research

- Middle circle
  - Securities analysis for equities
  - Securities analysis for fixed income

- Outer circle
  - Portfolio construction
  - Scenario analysis
  - Risk management
## The ESG integration framework: a closer look

### Inner circle: Research
- **Qualitative analysis**
  - Materiality framework
  - Red-flag indicators
  - Company questionnaires
  - ESG-integrated research note
- **Active ownership**
  - Voting
  - Engagement

### Middle circle: Security level
- **Equities valuation**
  - Forecasted financials
  - Valuation multiples
  - Sensitivity / scenario analysis
- **Fixed income valuation**
  - Credit assessments
  - Duration analysis
  - Relative value / spread analysis

### Outer circle: Portfolio level
- **Risk management**
  - VAR analysis
  - ESG and financial risk exposures and limits
- **Portfolio construction**
  - Portfolio weights
  - Portfolio scenario analysis
- **Asset allocation**
  - Strategic / tactical asset allocation
Examples of applying ESG analyses

• The ESG analysis is studied alongside the investment analysis of to inform a “buy / sell / hold / don’t invest” decision
• The ESG analysis can be the deciding factor between otherwise identical opportunities, all other factors being equal
• Engagement with a company that has subpar ESG performance can give rise to improvements, resulting in a buy/hold decision
• Temporary or permanent adjustments to forecasted financials, modeling assumptions, valuation multiples, forecasted financial ratios, and/or portfolio weightings are made for ESG analysis
• The ESG analysis can influence the maturity of the bond that an investor invests in
ESG myth busters

ESG integration does not mean that:

• investment in certain sectors, countries, and companies is prohibited
• portfolio returns are sacrificed to perform ESG integration techniques
• immaterial ESG factors affect investment decisions and traditional financial factors are ignored
• major changes to the investment process are necessary
Closing thoughts

• There is a structural shift into allocating assets into sustainability or ESG investments
• Passive ESG investments have increased significantly in the last few years
• There is no “one best way” to do ESG integration and no “silver bullet” to ESG integration
• Portfolio managers and analysts are more frequently integrating ESG into the investment process
• ESG integration is further along in the equity world than in fixed income
• Capacity building across the eco-system is key to harnessing the structural shift
CFA Institute resources on ESG and sustainability
Information needs across the value chain

CFA INSTITUTE STRATEGY

SUPPORT
Company reporting
Participate in advisory committees

EDUCATE
Investor analysis and decisions
CFA UK ESG certificate
New CFA Program readings
Research and events
Industry engagement

CREATE
Investor reporting
CFA Institute ESG Disclosure Standards for Investment Products
(under development)
Our library of ESG-related publications

Capital markets / Corporate and investor governance

Future of Finance / Research Foundation

CFAI / PRI series
Webinar series on integration of ESG in fixed income

Partnership with Fitch Ratings

Part 1: Fundamentals and Basics
https://cfainst.is/2PHu6sq

Part 2: Case Studies and Practicalities
https://cfainst.is/3pRW2KS

Part 3: Green, Social and Sustainability Bonds
https://cfainst.is/3lx2lSw

Part 4: ESG Integration in Sovereign Bonds
https://cfainst.is/2RQUAfU
Sustainable and responsible investment series 2021

In partnership with CFA Society Malaysia and World Bank Group Malaysia

4 February 2021
Watch Recorded Webinar Now

https://cfainst.is/3qBbmf3

28 June 2021
Watch Recorded Webinar Now

https://cfainst.is/3i95Vkx

SUSTAINABLE & RESPONSIBLE INVESTMENT SERIES 2021 PART 2:
SRI INTEGRATION INTO INVESTMENT DECISION MAKING
28 JUNE 2021, MONDAY
12:00 PM-1:30 PM (MYT)
Islamic Finance series

In partnership with APAC and MENA Societies

Part 1: Islamic Finance Fundamental Principles

Watch the Webinar

Duration: 1 hr 11 mins.
Recorded: 25 August 2021.

Watch Now

https://cfainst.is/3i4xdKh

Part 2: Innovation in Islamic Banking

Watch the Webinar

Duration: 1 hr 35 mins.
Recorded: 11 October 2020.

Watch Now

https://cfainst.is/2R7nAPX

Part 3: Practices and Opportunities in Islamic Capital Markets

Watch the Webinar

Duration: 1 hr 21 mins.

Watch Now

https://cfainst.is/3wLwdyM

Part 4: Social Impact Sukuk

Watch the Webinar

Duration: 1 hr 14 mins.
Recorded: 3 June 2021.

Watch Now

https://cfainst.is/3xErqzU

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Impact investing series

In partnership with Global Impact Investing Network (GIIN)

Part 1:
The Future Trends of Impact Investing in Asia

Part 2:
Financial Performance of Impact Investing

Watch Now

https://cfainst.is/3fo1kuF

Watch Now

https://cfainst.is/3fETCwo
Resources available

**ESG Page on CFA Institute:**

- ESG Investing and Analysis

**ESG thematic page on ARX:**

- Environmental, Social, and Governance Issues

**Recorded webinars on ARX:**

- ARX Series Overview
  - Analysis of environmental, social, and governance (ESG) issues is an important part of the investment process. CFA Institute encourages all investment professionals to consider material ESG factors when making investment decisions. The Institute is also strongly focused on developing educational tools on
Thank you!
Hardik Shah, CFA
ESG Practice Lead,
GMO
ESG INTEGRATION IN EM EQUITY AND EM SOVEREIGN DEBT INVESTING

Hardik Shah, CFA

September 2021
Hardik Shah

Mr. Shah leads the ESG practice at GMO and is responsible for building GMO’s ESG capability across investment product areas. Prior to joining GMO in 2017, he led a global team of analysts focused on ESG ratings and thematic research at Sustainalytics. Previously, he was an ESG Ratings associate at MSCI and, as a senior climate change consultant with Ernst & Young, has helped register a wide variety of projects with the UNFCCC under the Clean Development Mechanism (CDM) defined in the Kyoto Protocol. In 2015 and 2016, Mr. Shah was voted #1 research firm analyst who understands the challenges & opportunities facing companies in the Independent Research in Responsible Investment (IRRI) Survey. He earned his Bachelor of Engineering in Electronics from University of Mumbai and holds a post-graduate diploma in management (Finance) from We School. Mr. Shah holds the Fundamentals of Sustainability Accounting (FSA) credential issued by SASB, Sustainability and Climate Risk (SCR) credential by GARP, and the CFA charter.
FIRM OVERVIEW

Experienced, Focused, Independent
- Privately owned and founded in 1977, managing client assets is our only business

Long-term, Valuation-based Investing
- Investment teams use quantitative techniques and fundamental judgment

Differentiated Research that Drives Conversations
- Well known for our candid, academically-rigorous market insights and advice

Global in Presence and Perspective
- Boston (HQ)
- Amsterdam
- London
- San Francisco
- Singapore
- Sydney
- Tokyo*

As of 6/30/21 | Source: GMO | Assets: USD
AUM may not sum to Firm Total due to rounding. The AUM figures shown here represent all data available as of the reporting date. Please know that early AUM figures may change throughout the reporting period due to custodian reporting schedules. Final AUM figures are posted on GMO’s website.

*Representative office.

Firm Assets Under Management: $70 Billion
How our clients are invested:

- Equities, $30
- Fixed Income, $7
- Alternatives, $8
- Multi-Asset Class, $25

$70 Billion

464 | Employees
133 | Investment professionals
11 | Investment teams with deep asset class experience

Employees
Investment professionals
Investment teams with deep asset class experience
# INVESTMENT CAPABILITIES: SELECT OFFERINGS

<table>
<thead>
<tr>
<th>Multi-Asset</th>
<th>Equities</th>
<th>Fixed Income</th>
<th>Alternatives</th>
</tr>
</thead>
</table>

*GMO acquired Usonian Investments in 2020
The above capabilities may not be offered at all times due to capacity or vehicle restrictions.
Numbers in parentheses indicate inception date.*

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ESG AT GMO
GMO’S COMMITMENT TO ESG

Firm-level ESG integration is a strategic focus

**Public Commitments**
- Firm support of Principles for Responsible Investment (PRI)
- Support of Sustainability Accounting Standards Board (SASB)
- Support of Task Force on Climate-related Financial Disclosures (TCFD)
- Support of Transition Pathway Initiative

**Active Ownership**
- **Company Engagement:** Encourage better ESG disclosure and sustainable practices
- **Proxy Voting:** Use of Institutional Shareholder Services Sustainability Policy across the firm

**Leadership Support**
- Jeremy Grantham on Barron’s “The 20 Most Influential People in ESG Investing” list
- ESG Oversight Committee comprising of senior business and investment professionals
ESG RESOURCING AND OVERSIGHT

CEO
Scott Hayward

ESG OVERSIGHT COMMITTEE:

Holly Carson, Head of North America Consultant Relations
Anna Chetoukhina, Head of Asset Allocation Quantitative Research
Jon Feigelson, General Counsel
Carolyn Haley, Head of Operations and Finance
Jason Harrison, Head of Product Development

Roy Henriksson, Head of Investment Risk and Trading
Andy Martin, Head of Investment Product Strategy
George Sakoulis, Head of Investment Teams
Hardik Shah, ESG Practice Lead
Hylton Socher, Chief Technology Officer

SUB-COMMITTEE FOCUS AREAS:

Investments
- Data & Infrastructure
- Research & Materiality
- Investment Integration

Stewardship & Corporate Leadership
- Corporate Engagement & Active Ownership
- Public Commitments
- GMO Sustainability

Client Communication & Product Strategy
- Client Reporting
- Marketing & Communications
- Product Development
**UN PRI ASSESSMENT**

*Continuously strengthening our ESG efforts*

<table>
<thead>
<tr>
<th>Module Name</th>
<th>2018 ASSESSMENT</th>
<th>2020 ASSESSMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GMO Score</td>
<td>Median Score</td>
</tr>
<tr>
<td>1. Strategy &amp; Governance</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>10. Listed Equity – Incorporation</td>
<td>C</td>
<td>B</td>
</tr>
<tr>
<td>11. Listed Equity – Active Ownership</td>
<td>C</td>
<td>B</td>
</tr>
<tr>
<td>12. Fixed Income – SSA</td>
<td>C</td>
<td>B</td>
</tr>
</tbody>
</table>

- Currently at par or better than median global peers (signatories)
- Need to further strengthen our active ownership and firmwide integration efforts to become a global leader

UN PRI assessment scores are on a scale of A+ (top band) to E (lowest band).
### CONSENSUS VS. OUR VIEW

**Macro ESG risks matter, go beyond third party ESG scores**

#### CONSENSUS
- Disregard top-down and focus on selecting ESG best-in-class or screening out ESG worst-in-class businesses
- Solely rely on third party company ESG Ratings
- Third party ESG Ratings can directly be applied to both equities and fixed income

#### OUR VIEW
- Fair value levers are significantly impacted by country and global drivers.
- Even the most sustainably managed companies are hostage to changing macro conditions
- Third party ratings try to be ‘all things to all people’
- Therefore, they need to be substantiated with proprietary analysis
- Third party ratings are typically organized around equity issuers
- Proprietary materiality maps and scores are necessary for fixed income application
PROPRIETARY COUNTRY ESG ASSESSMENT FRAMEWORK

Illustrative results for select EM countries

- Identified more than 50 material ESG indicators across 17 themes
- Framework integrated in EM Equities and EM Sovereign Debt strategies

Source: Worldbank, WEF, Germanwatch Climate, Factset, GMO
Select material ESG indicators

- # of deaths linked to air pollution
- Economic impact to increasing temperatures
- Forest cover change 5-yr trend
- Co2 emissions (kg per US$ of GDP)
- National climate policy and targets

- Access to electricity
- Poverty headcount ratio
- Higher education enrolment rates
- GINI income inequality
- Hospital beds, physicians

- Judicial independence
- Control of corruption
- Ease of doing business
- Democracy / Voice and accountability

Source: Worldbank, WEF, Germanwatch Climate, Factset, GMO
ESG INTEGRATION IN EM EQUITY
ESG INTEGRATION FRAMEWORK:
GMO EMERGING DOMESTIC OPPORTUNITIES STRATEGY

RESOURCES

- Financials
- Channel Checks
- Forensic Accounting
- ESG Repository

Investment Analyst

Assessing Stock’s IRR

Equity Portfolio

ESG Team

- Customize third-party ESG data
- Monthly portfolio ESG risk assessments
- Bi-weekly controversy alerts
- Engagement support

Portfolio Implementation Team

- Hard limits
- Macro exposures
- Position sizing
- Risk buckets
- Liquidity

Country ESG Framework
- Macro ESG signals integrated in long-term country evaluation framework.

Stock ESG Analysis
- At stock level, ESG signals are integrated in bear, base & bull investment scenarios.
ESG INTEGRATION EXAMPLE: GMO’S EDO STRATEGY

A top-down, fundamentally driven process

<table>
<thead>
<tr>
<th>Step 1: Country Selection</th>
<th>Step 2: Sector Selection</th>
<th>Step 3: Stock Selection</th>
<th>Step 4: Portfolio Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Long-term potential and favorable conditions now</strong></td>
<td><strong>Industry structure conducive to sustained profitable growth</strong></td>
<td><strong>A deep and wide moat around the company</strong></td>
<td><strong>Risk is NOT a single number</strong></td>
</tr>
<tr>
<td>• Long-term framework</td>
<td>• Porter framework</td>
<td>• Business model</td>
<td>• Country risk controls</td>
</tr>
<tr>
<td>- Addressable market</td>
<td>- Industry attractiveness</td>
<td>- Proven/scalable business model</td>
<td>- Election risks</td>
</tr>
<tr>
<td>- Vulnerability</td>
<td>- Sustainable growth</td>
<td>- High return on capital and ability to deploy capital</td>
<td>- Rising ESG risks</td>
</tr>
<tr>
<td>- Global dependency</td>
<td>- Quality</td>
<td>- Revenue/costs predictability</td>
<td>- Dependency on external savings</td>
</tr>
<tr>
<td>- Earning potential</td>
<td>- Valuation</td>
<td>- Low leverage</td>
<td>- Rise in leverage</td>
</tr>
<tr>
<td>• Cyclical framework</td>
<td>- Risks</td>
<td>- Treatment of minority shareholders</td>
<td>• Overall risk controls</td>
</tr>
<tr>
<td>- Valuation</td>
<td></td>
<td>• Valuation</td>
<td>- Country, sector and stock limits</td>
</tr>
<tr>
<td>- Quality</td>
<td></td>
<td>- Expected IRR</td>
<td>- “Right sizing” position sizes</td>
</tr>
</tbody>
</table>
Integrating ESG into EDO long-term country framework

**COUNTRY FRAMEWORK PILLARS**

- **Addressable Market**
  - Questions Addressed: 
    - Good demographics?
    - Fast income growth? Within the S-Curve?
    - Social Conditions? Ability to Discretionary Spend?
  - ESG Indicators Added: 
    - # of deaths linked to air pollution
    - Access to electricity
    - GINI income inequality

- **Vulnerability**
  - Questions Addressed: 
    - Solid financial-fiscal system? Currency risks?
    - Political-social risks?
    - What is the exposure to extreme weather risk?
  - ESG Indicators Added: 
    - Extreme weather risk
    - Number of demonstrations / social unrest
    - National climate policy & targets

- **Global Dependency**
  - Questions Addressed: 
    - Energy dependent for economic growth?
    - How well diversified is the trade basket?
  - ESG Indicators Added: 
    - Available water resources
    - Sensitive to commodity price changes?

- **Long-Term Earnings Growth**
  - Questions Addressed: 
    - Drivers for investment
    - Quality of institutions and human capital?
    - Political stability policies with long-term business?
  - ESG Indicators Added: 
    - Corruption perception index
    - Regulatory quality
    - Democracy/voice and accountability
ESG INTEGRATION: TOP-DOWN

Impact of ESG integration on long-term country attractiveness

AFTER INTEGRATING ESG FACTORS

Source: Worldbank, WEF, Germanwatch Climate, Factset, GMO
ESG INTEGRATION EXAMPLE: BOTTOM-UP

ESG integration at a company level: Case study (January 2020)

Company Background

- Global building materials company
- 80% of the company's assets are in locations with existing or impending carbon regulations

Regulatory Scenario

- In Oct 2019, Mexico announces ETS plans and introduces a carbon tax
- EU carbon prices hit an 11-year high of €28 per ton in July 2019 as reforms to reduce the carbon trading system's number of excess permits in the system kick in

Key ESG Risks

- Despite some aggressive initiatives, company has not been able to reduce its carbon intensity and is exposed to the risk of increased costs linked to carbon regulations
ESG INTEGRATION EXAMPLE: BOTTOM-UP

Pre-ESG integration: lackluster but positive IRR in base case

<table>
<thead>
<tr>
<th></th>
<th>Bear Case</th>
<th>Base Case</th>
<th>Bull Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue Growth</td>
<td>-10%</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>Margin Improvement</td>
<td>-10%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Cash Dividend</td>
<td>0%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Multiple Expansion</td>
<td>-5%</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>IRR</td>
<td>-25%</td>
<td>7%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Investment thesis for base case:

- Slight recovery in volumes in Mexico due to gradual implementation of infrastructure plan.
- Some reduction in leverage due to asset sale program, but it remains vulnerable.
- Selling profitable plants in US and not selling stressed assets in EU could lead to negative carry.
- The cash dividend may be at risk if leverage crosses 4x (bank covenant). Next year leverage is expected to be ~3.8x.
## ESG INTEGRATION EXAMPLE: BOTTOM-UP

### Post-ESG integration: base case IRR worsens into negative territory

<table>
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<tr>
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<td>8%</td>
</tr>
<tr>
<td>Margin Improvement</td>
<td>-19%</td>
<td>-6%</td>
<td>-3%</td>
</tr>
<tr>
<td>Cash Dividend</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Multiple Expansion</td>
<td>-10%</td>
<td>-5%</td>
<td>0%</td>
</tr>
<tr>
<td>IRR</td>
<td>-39%</td>
<td>-6%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Changes in base case due to ESG factors:

- Possibility of imposition of carbon tax to significantly dent margins. Assumed carbon tax of USD10/t (base case).
- The company might be required to incur additional capex to bring down its carbon intensity.
- Higher capex may lead to higher leverage (possibly above 4x), this may lead to no cash dividends.
- With the increasing leverage and contracting margins, the stock may face multiple derating.
ESG INTEGRATION INTO EM SOVEREIGN DEBT INVESTING
SOVEREIGN RISK ANALYSIS AT GMO

Our goal is to establish a score for each country, helping us to identify which are “rich” or “cheap”
**ESG AND THE NATURE OF EMERGING ECONOMIES**

*Challenge #1: Emerging countries tend to be worse on ESG than their developed counterparts*

**SHARE OF TOTAL EXPORTS: MINERAL FUELS, LUBRICANTS, AND RELATED MATERIALS (2019 DATA)**

- EMBIG Countries: 18.0%
- Advanced Economies (IMF Definition): 7.6%

**CORRUPTION PERCEPTIONS INDEX, WEIGHTED AVERAGE SCORE (2020 DATA)**

- EMBIG Countries: 70.1
- Advanced economies (IMF definition): 41.8

Source: (Left) UNCTAD, J.P. Morgan, IMF; (Right) Transparency International, J.P. Morgan, IMF
ESG AND THE NATURE OF EMERGING ECONOMIES

Challenge #2: Within EM, better ESG performers tend to offer lower bond yields

Source: World Bank, Bloomberg, MSCI, J.P. Morgan
## HOW WE APPROACHED THE PROBLEM

**How do we involve ESG in our analysis while maintaining our focus on alpha?**

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
<th>Strategic Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Continuity</strong></td>
<td>Maintain the basic structure of our existing quantitative process. That is, establish “pillar” scores based on various inputs, and distill these into a final metric for creditworthiness.</td>
<td>Move from a 3-pillar to a 4-pillar approach, with the fourth representing a country's overall ESG quality.</td>
</tr>
<tr>
<td><strong>Relevance</strong></td>
<td>Avoid the use of pre-packaged, third-party measures of ESG quality, as well as subjective judgment calls on how to weight each ESG-related factor, in favor of an approach more closely connected to our asset class and investment philosophy.</td>
<td>Create our own E, S, and G scores using publicly available, granular data. Assign weights based on each variable’s statistical relationship to sovereign spreads.</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td>Integration of ESG metrics should contribute to assessing sovereign risk, rather than simply serving as a signal of our values and priorities.</td>
<td>Use a regression approach to “roll up” our proprietary E, S, and G scores into a new ESG pillar, which can then be used as a fourth input in the final step of our process.</td>
</tr>
</tbody>
</table>
PRINCIPLE #1: CONTINUITY

We added a fourth “pillar” representing ESG, keeping the structure of our process intact.

Systematic Risk Factors ("Pillars")

- **Economic Structure**
  - Strength of Economic Institutions
  - Economic Volatility
  - Human Capital and Development

- **Fiscal Sustainability**
  - Fiscal Trends
  - Debt Burden
  - Fiscal Flexibility

- **External Liquidity**
  - Balance of Payments
  - External Debt
  - Foreign Reserves

- **ESG**
  - Environmental
  - Social
  - Governance

Qualitative Factors

- Willingness to Pay
- Quality of Policymakers
- Political Regime Shifts
- ESG engagement insights

EXISTING FACTORS

NEW FACTOR
PRINCIPLE #2: RELEVANCE

We elected to establish our own ESG scores based on granular, publicly available data.

OUR COUNTRY-LEVEL ESG SCORES ARE CORRELATED WITH THIRD-PARTY DATA

CORRELATION BETWEEN MSCI AND GMO EMERGING DEBT ESG SCORES (2019 DATA)

Source: GMO, MSCI
PRINCIPLE #3: PERFORMANCE

Some countries saw meaningful shifts in their country scores with the addition of ESG

Source: GMO
PRINCIPLE #3: PERFORMANCE

Some countries saw meaningful shifts in their country scores with the addition of ESG

As of January 2021

Note: GMO’s Proprietary Credit Score incorporates measures of fundamental credit quality.
THANK YOU
Overview of "ESG Integration Framework" for Investment Analysis

Panel Discussion

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Thank You