Thought Leadership Discussion

Climate Change and Business Valuation

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Following the departure of three ExxonMobil board members in an environmental, social, and governance ("ESG") proxy fight, interest has increased in ESG procedures and processes, for both defensive and offensive board applications. ESG business valuation considerations can vary based on numerous factors. Adding to these differences are regional governmental policies. Europe has taken a firm stance in applying a more rigorous ESG framework, and it is a major force in industry rules creation. Each year, governing ESG authoritative entities, from across the world, along with their procedural frameworks, continue to coalesce in their processes. One framework is available for the valuation analyst's consideration. This framework is incorporated in the Essential Guide to Valuations and Climate Change, *produced by the Chartered Professional Accountants of Canada. This discussion looks at this Canadian framework and also considers other frameworks.*

Engine No. 1

In May of last year, a small startup hedge fund ("Engine No. 1"), launched with just $250 million in assets, succeeded in replacing three members on ExxonMobil's board of directors. At the time, ExxonMobil had a market value of about $265 billion.

Engine No. 1 gathered some of the most powerful institutional investors and public pension funds to its cause, with a dissident message, asking for increased climate change spending and initiatives. Engine No. 1 invested $12.5 million in their proxy effort, while ExxonMobil spent over $100 million defending against it.

Given the ExxonMobil proxy loss, clearly there was a shareholder audience for the insurgent climate change message. This upset reflects increasing shareholder engagement and social activism, by those looking to change the landscape of corporate governance to something much greener.[1,2]

Engine No. 1 has flourished from an increased investor interest in environmental, social, and governance ("ESG") mandates and initiatives, and the ever-growing money flow drawn to those causes.

The Engine No. 1 analysis models use a research-based approach integrating nonmaterial but financially material ESG data, methods, and systems into traditional analysis. The requirements are that data be objective, replicable, and auditable.

The framework model structure is based on a scenario, with analysis applied to areas believed relevant, and meeting the above reporting constraints. Using independent sources, as well as estimates, they assess firm-level costs of emissions, waste, resource use, as well as other ESG factors.

Though proprietary, the Engine No. 1 analysis model is drawn from years of ESG study, analysis, and governance.[3]

The ESG Sovereigns

An abundance of ESG advising and governing bodies exist today. But what is changing is a growing consensus and consolidation in these governing bodies.

Larger, more established oversight groups are taking the reins in constructing the ESG analysis models of the future and in their future governance.

One of the major organizations involved in consolidation and uniform standards development is the United Nations Environment Program Finance Initiative ("UNEP FI"). UNEP FI developed a series

of working papers which outline methodologies for analysis and reporting.

Goldman Sachs has created a business unit purposed to study and advise on ESG issues, as they apply to investment decisions, called the GS Sustain Program.

The Chartered Professional Accountants of Canada have created a concise handbook for ESG analysis and reporting, the *Essential Guide to Valuations and Climate Change,* referred to going forward as "A4S." The Society of Chartered Financial Analysts has developed white papers, as has the Financial Accounting Standards Board.

But what is changing is the cooperation between these entities. Recently, the International Financial Reporting Standards Board began working jointly with the Financial Accounting Standards Board on a set of ESG analysis and reporting standards.[4]

A4S is a publication produced in association with the Chartered Professional Accountants of Canada and is the product of both business valuation professionals and industry participants.

Comparing the A4S model to other frameworks, the A4S framework proves to be both adaptable and well featured. It includes Excel tools supporting risk and opportunity identification, a scorecard, discounted cash flow integration, and market valuation, as well as adjustments guidance.

None of the reviewed ESG frameworks offer a one-size-fits-all formula that addresses climate change. Climate risks and opportunities vary significantly by region, asset class, and governance.

All the frameworks reviewed recommend that ESG data be captured based primarily on relevance and on a unique per-case basis. The general outline for analysis is relatively consistent across frameworks.

The number of ESG reporting agencies is considerable, with a depth of scientific expertise and information, allowing practitioners to both find and validate data.

Some of the main sources of ESG reported data and guidance are as follows:

- Sustainability Accounting Standards Board – The intended goal is the development of industry-specific ESG standards.
- CDP Disclosure Insight Action – This organization draws information from the largest organizations worldwide for detailed information on climate risks and low-carbon opportunities. These efforts support large institutional investors.
- TCFD Task Force on Climate-Related Financial Disclosures – This organization works to create and maintain climate-related financial-risk disclosures that are both voluntary and consistent. These disclosures support companies, asset managers, and asset owners.
- Global Reporting Initiative and the Global Sustainability Standards Board – These organizations develop and maintain standards for the measurement of an organization's impact on the economy, environment, or people, and contributions to sustainable development.
- Green House Gas ("GHG") Protocol – GHG supplies the most widely used greenhouse gas accounting standards, including definitions of Scope 1, 2, and 3 emissions.

  All other major climate-related reporting standards draw on, and align with, the GHG protocol definitions.

  - Scope 1 standards cover the GHG emissions that a company makes directly—for example, emissions while running company equipment and vehicles.
  - Scope 2 standards cover the emissions the organization makes indirectly—for example, power usage purchased to electrify buildings that it owns. This identifies emissions being created on behalf of the entity.
  - Scope 3 standards are all the emissions associated (not with the company itself) but that the organization is indirectly responsible for, up and down its value chain.

    An example would be emissions produced from purchased products from suppliers, or conversely, the emissions produced by products sold by the organization to others. It is a category that draws litigation.

ESG Through a Lens

It is not enough to observe changes in an entity's ESG inputs or outputs. The practitioner may look at the interactions across a variety of connected viewpoints.

The A4S model describes these in terms of a viewer's lens, as presented below:

- Policy Lens – This is in reference to climate policies, carbon pricing, and regulations that encourage sustainable business operating changes. These policies may lead to increased costs and complexity for the organization.

- Legal Lens – This is in reference to litigation that could occur involving parties who claim loss or damage from the effects of climate change. These organizations end up seeking compensation from those that they hold responsible.

  The list of potential claims could allege climate negligence (willful actions that cause harm), failure to act on evidence, and a public company's failure to disclose material risks.

- Technology Lens – This is in reference to the disruption driven by the development of new technology, specifically to support a low-carbon economy.

  In broader terms, the pace of technology development that has the potential to affect the magnitude of climate policy response by lowering the required future carbon price.

  Given the high degree of uncertainty in estimating future technology costs and deployment, it becomes increasingly important to monitor ongoing progress.

  One method is through a regular review of cost projections for renewables relative to fuels.

- Market Lens – This refers to supply and demand changes from economic and social factors.

  These include changing consumer preferences, environmental impact of resources used, competitor landscape, and uncertainty in market signals.

- Reputational Lens – This is in reference to how a firm's reputation impacts value.

In addition, ESG changes often affect risks and opportunities outside the expected scope.

The A4S ESG Framework

The A4S ESG framework, much like other frameworks observed, follows a scientific method, building upon measurable data, economic relevance, and potential likelihood.

Using the A4S framework, and following a series of five steps, valuation analysts can add ESG data findings into their valuation process.

The steps are as follows:

1. Identify the key value drivers of the organization. Identifying the key business value drivers assists in finding which climate-related risks or opportunities the company is exposed to, and what adjustments, if any, should occur to the valuation.

2. Assess the sources of ESG risks and opportunities. Once key drivers have been identified, an assessment of ESG risks and rewards can occur. This includes identifying existing or potential sources of mitigation or enablement and relating those findings to the key drivers.

   The process often includes discussions with management, review of corporate reporting, external data providers, equity analyst reports, credit rating agencies, geospatial data, and sector-specific ESG reporting.

3. Filter the assessed ESG risks. All relevant risks and opportunities should be examined for both likelihood and materiality. A ranged value is applied to both likelihood and materiality, to be used in the valuation adjustments to come.

   Using available information and best judgement, the practitioner should arrive at both expected and significant ESG impacts.

   Some examples of filtering questions could include the following:

   a. What are the costs of reacting to an ESG change after it has occurred?

b. What is the cost to mitigate before change occurs?

c. What are the revenue opportunities operating in a new market?

d. How soon will the ESG change occur (in years, months)?

4. Integrate (where appropriate) the risks and opportunities into valuation models. This should include both the income and the market approaches to value.

Once the risks and opportunities associated with climate change have been filtered, the next point for consideration is how those risks and opportunities translate to value.

The decision whether to include climate change risks and/or opportunities in either the discount rate or cash flow is affected by the ability to quantify and reflect the risk in cash flow, the reliability of estimates used to perform that quantification, and the certainty with which the risks will affect the business.

Generally, as quantifiability, reliability, and certainty of risks and opportunities increase, it is preferable to include these risks/opportunities in the cash flow rather than the discount rate.

Certain risks and opportunities may affect the discrete cash flow, the terminal value considerations, or both, depending on the time horizon of the forecasts and the climate change impacts.

When adjusting the discount rate, it is important to assess whether the risk or opportunity presented exists industry wide. If so, it could already be priced into the discount rate by the market.

At the current time, there has been little evidence that the market is pricing in these risks and opportunities.

As climate change increasingly becomes a focus, it is likely to be considered and priced in by the market. It is important to ensure no double counting of risks or opportunities occurs among the discrete cash flow, terminal value, or discount rate assessment.

5. Perform triangulation. This process examines the risks or opportunities and their related impact on the subject entity versus its peers.

Once the climate change risks and opportunities have been assessed, it is important for the practitioner to assess the estimated value of the subject entity in relation to market considerations.

Triangulation also includes iteration over time as risks and opportunities become more apparent and quantifiable with the improvement in data, disclosures, and information.

Considerations relating to terminal value, holding period, and exit strategy may be particularly sensitive to climate change risks, since climate change effects are expected to increase significantly in the decades to come.

Many cash flow forecasts are of shorter lengths (5 to 10 years) and may not fully reflect long-term climate change risks if near- term impacts are not as significant.

It is important to consider the inherent assumptions within the terminal value analysis such as the perpetual growth rate or a constant discount rate.

Businesses or assets may become stranded in the long term, and a perpetual going-concern assumption may not be appropriate. Investors in businesses more heavily exposed to climate change risks in the long term may face challenges in realizing desired exit strategies.

A4S Rationale for Adjustments

Adjusting the Discount Rate

An adjusted discount rate may be applied when the analyst cannot easily or reliably quantify the impact of climate change on the business. Such an adjustment may be appropriate if the analyst's belief is that it will probably have a significant impact on value and that the discount rate can be reasonably estimated.

The quantification of the adjustment may be implied by performing cash flow sensitivities. Arriving at a reasonable sensitivity analysis to quantify the discount rate adjustment could be challenging where uncertainty is high.

Scenario analysis may be used to reflect this uncertainty.

Adjusting the Cash Flow and/or Terminal Value

Climate change can affect all elements of the cash flow, including revenue, costs, and capital expenditures. The practitioner should be alert for regulation

that is affirmed in law, as well as moderate uncertainty around timing and quantification.

Highly measurable and certain, immediate, and known impact to cash flow should be calculated.[5]

The International Valuation Standards Council

The International Valuation Standards Council ("IVSC") follows a different format/framework for the inclusion of ESG data in valuation. The IVSC states that ESG disclosures are typically nonfinancial by nature and, therefore, do not have a financial impact.

In the IVSC framework, specifically in the market approach, the IBSC suggests a three-step method:

1. Assess the relevant ESG criteria for a given sector
2. Compare the performance of the subject company to such criteria
3. Calibrate the valuation parameters (such as market multiples) to the subject company to consider its relative performance against market peers based on selected ESG criteria

In the IVSC framework, specifically in the income approach, the challenge to incorporate ESG criteria assessment comes from the reliability of future cash flow and the inherent risks that management (in their efforts to achieve their forecasts) might coax data.

As in the A4S framework, an important point of attention is avoiding double counting of ESG valuation impacts. ESG risks and opportunities may or may not be already reflected in the forecast business plan.[6]

Summary and Conclusion

Globally, the modeling and application of ESG data in business valuation continues to increase. The number of governing bodies has remained stable, but look to be consolidating.

ESG methodologies have found a consistent form, and the available data to build and support conclusions continues to improve.

Based on reporting trends in Europe, the future of ESG reporting and usage in U.S. business valuation may continue to expand.

Global Legislation and Valuation Guidance—Supplemental

There is a great deal of legislation and guidance available on ESG methods.

The following is a sampling of guidance either queued for passage or already in use. The European governing agencies are currently much more rigorous than U.S. agencies, but trends indicate that there is a leveling of activities and expectations of governing agencies moving forward, with greater structure and guidance likely for the U.S. market.

Summarized below are various directives from a range of authoritative organizations.

EU Corporate Sustainability Reporting Directive

- Make reporting information material for enterprise value creation in the management report mandatory.
- Increase the current scope to include large undertakings with greater than 250 employees, as already defined in the accounting directive.
- Strengthen linkages between nonfinancial and financial information by ensuring the implementation of the Task Force on Climate-Related Financial Disclosures recommendations, including information on the financial impacts of climate on the business.[7]

Global ESG Disclosure Standards for Investment Products, CFA Society

If investments are made with the intention to generate positive, measurable social and environmental impact alongside a financial return, then the investment manager must disclose the following:

- The impact objectives in measurable or observable terms
- The stakeholders who will benefit from the attainment of the impact objectives
- The time horizon over which the impact objectives are expected to be attained
- How the impact objectives are related to other objectives that the investment product has and how the pursuit of the impact objectives could result in trade-offs with those other objectives
- How the attainment of the impact objectives will contribute to third-party sustainable development goals if there is a stated intention to do so

- The proportion of the portfolio committed to generating social and environmental impact
- How the impact objectives are expected to be attained
- The risks that could significantly hinder the attainment of the impact objectives, should they occur
- How progress toward, or attainment of, the impact objectives is measured, monitored, and evaluated
- How progress toward the attainment of the impact objectives is reported to investors
- The process for assessing, addressing, monitoring, and managing potential negative social and environmental impacts that may occur while attaining the impact objective[8]

UNEP-FI IIF-TCFD Report Playbook

- Disclosure of temperature scenarios (e.g., 1.5°C, 2°C, 4°C, etc.) and time frames (these temperature scenarios are standardized across the world, with most climate predictions utilizing these increments.)
- Disclosure of economic transition scenarios (e.g., orderly, disorderly, middle-of-the-road)
- Discussion of the climate model review process, as well as justification for choosing a climate model and provider
- Socioeconomic with regard to population peak, migration, gross domestic product growth, employment rate and discount rate
- Energy with regard to oil demand, fossil fuel use, reverse emissions, renewable usage, and projected energy mix by decade when possible
- Policy with regard to carbon tax with some form of regional granularity and subsidies for renewable energy sources
- Discussion of results of scenario analysis on specific industries, using quantitative variables when possible and relevant time frames
- Attempt portfolio impact assessment based on analyses of individual industries
- Disclosure of temperature scenarios used as well as time frames:
  - Discussion of data used, sources of data, and relevant tools used to calculate physical risks
  - Analysis of extreme weather events, including:
    - types of extreme weather events analyzed
    - tangible impact of extreme weather event (e.g., period of inoperability, asset loss)
    - relationship between tangible impact of extreme weather event and revenue
  - Incremental changes in weather, including:
    - changes in sector productivity
    - relationship between changes in productivity and revenue
  - Discussion of combined revenue/production loss due to physical risks, as well as an evaluation of whether the losses stemmed mainly from incremental or extreme changes in weather.[9]

Notes:

1. Svea Herbst-Bayliss, "Little Engine No. 1 Beat Exxon with Just $12.5 Mln - Sources," Reuters (June 29, 2021).
2. Cathy Bussewitz, "Board Fight at Exxon Intensifies Spotlight on Climate Change," Associated Press (May 25, 2021).
3. Steve Murray, "Engine No. 1 Unveils its Total Value Framework, which Ties ESG Impacts Directly to Financial Value Creation," BusinessWire (September 13, 2021).
4. "FSB Encourages the IFRS Foundation and Authorities to Use TCFD's Recommendations as the Basis for Climate-Related Financial Risk Disclosures," Financial Stability Board (December 21, 2020).
5. "Essential Guide to Valuations and Climate Change," A4S CFO Leadership Network (2020).
6. "Perspectives Paper: A Framework to Assess ESG Value Creation," International Valuation Standards Council (May 2021).
7. "EU Corporate Sustainability Reporting Directive (CSRD)," Climate Disclosure Standards Board (2021).
8. "Global ESG Disclosures Standards for Investment Products," CFA Institute (2021).
9. "TCFD Report Playbook," UNEP Finance Initiative (2020)

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