

IMPACT-WEIGHTED FINANCIAL **ACCOUNTS:**

The Missing Piece for an Impact Economy

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IMPACT-WEIGHTED FINANCIAL ACCOUNTS

The Missing Piece for an Impact Economy

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"Most of the things worth doing in the world had been declared impossible before they were done."

U.S. Supreme Court Justice Louis D. Brandeis (1913)

Executive Summary

Reimagining capitalism is an imperative. We need to create a more inclusive and sustainable form of capitalism that works for every person and the planet. Massive environmental damage, growing income and wealth disparity, stress, and depression within developed economies amid a substantial economic boom are examples of how our current system of creating and distributing value is broken. We need to be able to factor into our decision-making the consequences of our actions not only for financial and physical capital but also for human, social and natural capital.

All companies have impacts, defined as changes in important positive or negative outcomes for people or the planet, almost all of which are not currently measured in a comparable or comprehensive way.¹ Measuring and valuing the impacts that companies have on society and the environment, while not itself a sufficient condition, is a necessary one for reimagining capitalism. In the absence of clearly defined impact metrics and transparency, these considerations are likely to be absent from decisionmaking. Decisions will continue to be made on existing financial metrics that do not reflect a holistic view of how an organization creates value as they ignore impacts on employees, customers, the environment and the broader society.

In order to provide actionable signals for business leaders, these impacts must be connected to accounting statements. Monetary valuation of impacts and their incorporation into accounting statements will explore whether monetization, as a form of valuation:

- 1. Translates all types of social and environmental impact into comparable units that business managers and investors intuitively understand.
- 2. Can be meaningfully aggregated and compared without obscuring important details needed for decisionmaking
- 3. Displays financial and impact performance in the same accounts, allowing for the use of existing financial and business analysis tools to assess corporate performance.

Just as the development of the financial accounting infrastructure has been a necessary condition for the development of large-scale capital markets, the development of impact-weighted financial accounts ("impact-weighted accounts") is a necessary condition for the development of capital markets driven by sustainability considerations.

What are impact-weighted accounts? Impact-weighted accounts are line items on a financial statement, such as an income statement or a balance sheet, which are added to supplement the statement of financial health and performance by reflecting a company's positive and negative impacts on employees, customers, the environment and the broader society.

The aspiration is an integrated view of performance which allows investors and managers to make informed decisions based not only on monetized private gains or losses, but also on the broader impact a company has on society and the environment.

Investors

Investors with more than \$80 trillion in assets under management have committed to integrate environmental, social and governance (ESG) data in their investment process.² By some estimates, more than \$22 trillion in assets under management are now labeled as ESG, reflecting widespread interest among asset owners in investing in sustainable enterprises.³

However, most of these asset owners and managers do not measure or report any impacts associated with their holdings. Moreover, the ESG metrics used in decision making primarily measure inputs and activities (i.e. policies, management systems, disclosures, investments) rather than outcomes and impacts on their stakeholders.⁴ Our aim is that investors labeling their products as ESG use companies' impact-weighted accounting numbers as part of their due diligence, underwriting, engagement and reporting efforts. Asset owners could use these impact-weighted accounts as a monitoring and manager selection tool to ensure that their allocations are aligned with impact. Rating agencies and data providers could integrate them in their own data products.

Companies

The number of publicly listed companies reporting ESG data has grown exponentially in the last two decades. While only 12% of the largest 100 companies in each of 49 countries (4,900 companies) issued sustainability reports in 1993, that number grew to 75% in 2017.⁵

We found 56 companies that have experimented with monetary impact valuation, producing environmental or total profit and loss accounts. Of these, 86% are measuring environmental impacts, 50% are estimating employment/ social impacts, and 20% are estimating product impacts. There is broad representation across GICS Industry Sectors, however, the materials sector was represented the most with 12 companies performing monetary valuation, most from the chemicals industry. However, as in the case of many ESG managers, most companies are measuring inputs and activities rather than impacts. With the exception of a few companies that have published environmental or total profit and loss accounts, impacts are not valued nor integrated in accounting statements to illustrate their value implications. Our aim is that companies measure and disclose impact through impact-weighted accounts that eventually become standard management and governance tools.

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Introduction

apitalism and globalization have, by many measures, been huge successes. Indeed, over the past 200 years, substantial progress has been made in almost every single measure of human well-being.⁶ Since 1820, the share of those living in extreme poverty, defined as living on less than \$1.90 per day, has fallen dramatically from just under 90% to less than 10% of the population in 2015, the last year for which data is available. This change is especially dramatic given the 7-fold increase in population.⁷ Additionally, there have been huge global increases in literacy, health, and education. Today, child mortality in the worst-off places is between 10-13%, far lower than the global estimates of 43% child mortality by the age of 5 in the early 19th century.⁸

However, these gains are not without costly challenges, the scale of which has become unmanageable. Today, the very systems which brought such tremendous growth are also the cause of negative environmental, employment and product level impacts which cannot be solved within the current information and incentive structures.

Environmental Challenges

The planet and its climate are at a turning point. Today, the concentration of CO2 is at its highest level in over 800,000 years, at 413 parts per million, which substantially exceeds all natural fluctuations and the prior high of 300 parts per million, reached over 300,000 years ago.⁹ A preponderance of evidence suggests that this rise is a direct result of human economic activities since the Industrial Revolution. This has already led to an increase of 1.0 degree Celsius in average global temperature since 1880 and an average sea-level rise of over 2.6 inches with an accelerating rate of annual increases.¹⁰ Global leaders met in Paris in 2016 and made voluntary commitments in an attempt to limit global temperature rise to 2.5 degrees Celsius. However, the 2014 release of the Fifth Intergovernmental Panel on Climate Change (IPCC) forecasts between 2 and 4 degrees Celsius rise by 2100, and a 2018 special report by the panel suggested that the commitments under the Paris Agreement would likely need to be significantly increased given current trends in CO2 output.¹¹ This will have profound effects on

sea-levels, storm intensity, and water and food availability. Sea levels are expected to rise by between 0.52 and 0.98 meters by 2100, while more recent projections show as much as a 2 meter rise, displacing hundreds of millions globally.¹² Further, the UN has already linked climate change with increasing land degradation, desertification and rising hunger, as exemplified by severe water shortages in major metropolitan areas of Cape Town and Chennai.¹³ Globally, we are now consuming 1.7 times the annual production of the planet and it is estimated that if the entire world's population had the same consumption levels as those in the United States, it would take five planets to support it.¹⁴ Finally, extinction rates are rising and stand between 1,000 and 10,000 times the natural extinction rate.¹⁵ Many studies have shown substantial declines in insect populations globally, representing an enormous risk at the base of the food chain.¹⁶

Social Welfare Challenges

Numerous employment trends are also creating welfare dispersions. Even in the wealthiest developed economies, there are massive disparities in wealth and income that have substantial consequences for the health, happiness, and security of workers. In the United States, income inequality has risen in every state since the 1970s, and the top 1% of families captured 58.7% of all income growth from 1973 to 2007 and 41.8% of income growth from 2009 to 2017.¹⁷ Increasingly, workers are subjected

to low wages, poor job training, meager benefits, and uncertain work hours as corporations try to cut costs.¹⁸ Some estimates place the number of working poor at 12 million and 40% of Americans cannot absorb an unexpected \$400 expense.¹⁹ These pressures have resulted in epidemics of stress and depression. In its 12th annual survey on Stress in America,™ the American Psychological Association continued to document worrying levels of stress. Generation Z, comprising those born between 1997 and 2003, is more likely than all other generations to be diagnosed with an anxiety disorder (18%) and depression (23%). 91% of those in Generation Z report having experienced at least one physical symptom of stress in the past month compared to 74% of adults overall.²⁰ For two years in a row, life expectancy in the United States has declined, attributable to opioid deaths and suicides.²¹ While many of the precise mechanisms behind these trends are still being investigated, the presence of such trends within a country as developed and wealthy as the United States point to underlying challenges within the current economic system.

Product Challenges

Many products that companies produce and sell have far ranging impacts that may be challenging to directly attribute, but which are very real nonetheless. Tobacco and cigarettes are among the most obvious for the externalities they impose. Other examples of products' negative externalities can be found in the food industry and its role in the huge increase in obesity to 61.1% in the Americas, 54.8% in Europe and 46.0% in the Eastern Mediterranean, as well as the associated increases in heart disease and diabetes.²²

A Changing Paradigm

Amid these challenges, many leaders in the business, economic, nonprofit, investing, NGO sectors and beyond have begun work to quantify the impacts of their activities and to shift the balance of their impacts from negative to positive. Among the most notable changes are the shifting awareness and proactivity among entrepreneurs, business leaders and investors. As previously described, many companies are now reporting ESG and sustainability factors. The largest 100 companies in each of 49 countries (4,900 companies) that issue sustainability reports grew from 12% in 1993 to 75% in 2017.²³ Further, the 2017 Task Force on Climate-related Financial Disclosures (TCFD) Recommendations received public expressions of support from over 617 organizations with more than \$8 trillion in market capitalization, though a recent review by the Climate Disclosure Standards Board suggested only a small minority of these have authentic TCFD disclosures in their recent reports.²⁴ However, the substantial number of firms supporting these recommendations suggests that firms see a value in signaling their desire for sustainability to the market. Increased investor interest in such practices is likely to reinforce the value of authentic signaling by companies.

Over the course of a decade, the impact investing universe has gone from a small subset of investors to a substantial investment base. The Global Impact Investing Network (GIIN), estimates that the impact investment sector stood at \$502 billion at the end of 2018.²⁵ The IFC estimated that approximately \$34 trillion of investor assets have some ESG screening or engagement.²⁶ To date, over 2,300 asset managers have signed the UN Principles of Responsible Investing which offer a set of six actions for incorporating ESG issues into investment practice.²⁷ In 2018, iShares reported that there are over 1,000 ESG indices, a major increase from 1990 when the First ESG Index, the MSCI KLD 400 Social Index, was launched.²⁸ The IFC estimates that there are \$71 billion of assets invested in private investment funds with intent for and measurement of impact across 417 funds.²⁹ Additionally, hundreds of investors and other financial institutions with over \$100 trillion in assets under management have supported the TCFD recommendations.³⁰

Today, the very systems which brought such tremendous growth are also the cause of negative environmental, employment and product level impacts which cannot be solved within the current information and incentive structures.

Value Orientation and the Legitimacy of Business

he legitimacy of a business depends on its ability to create value for society. Companies that create value for investors, workers, customers, suppliers and the larger ecosystem are evidence of businesses' power to increase collective wellbeing. Directors and executives who manage companies aim to combine resources (raw materials and labor) in strategic ways that create more value than they consume. Once they have developed a business model that creates significant value, a company's managers decide how to allocate this value among stakeholders, including workers, suppliers, investors and customers. Managers are constantly making these complex and interdependent resource allocation decisions to optimize the company's performance.

We measure a company's performance by the value that accrues to its shareholders. In simple terms, we can think of conventional valuation methods as a ruler. We use Generally Accepted Accounting Principles (GAAP) within the US and International Financial Reporting Standards (IFRS) elsewhere across the globe to distill a company's revenues and expenses into a single figure that represents the value accrued to the company's owners during a given period—earnings—in dollar (or other currency) terms.

Consider an alternative way of assessing a firm's performance that measures the total value created by the firm in multiple dimensions. Such an assessment framework may be depicted as in **Figure I**.







Value to Non-Equity Stakeholders

FIGURE 1 A firm's total value production is inclusive of all stakeholders

Here, the measure becomes two-dimensional to incorporate value beyond owners' equity. The Y-axis represents value that accrues to owners of the companyin other words, it is the conventional "ruler" used to measure business performance. The X-axis represents value to non-owner stakeholders, including workers, suppliers, customers, the community in which the firm operates, and the environment. With owners on the Y-axis and non-owners on the X-axis, the steepness of the line from the origin to a firm's plotted coordinates indicates the proportion of value allocated to the two groups. Assuming a common unit of measurement between the X and Y axes (a condition that will be explored in more detail in subsequent sections of this paper), one can visualize a zone on the chart around a 45-degree angle from the origin whereby a company creates value for all stakeholders and thereby earns a legitimate place in society. See Figure II for a stylistic representation of two firms that create value for the two stakeholder groups in different proportions.

FIGURE II A firm's choices result in differing combinations of stakeholder value.

A firm that draws too steep of a line – meaning a firm that captures outsized value for its owners at the expense of other stakeholders – is problematic. It may be technically legal, but it is the manifestation of the abuse of power, or greed, that has drawn increasing scrutiny and eroded public faith in capitalism's ability to increase collective wellbeing. Traditional accounting methods that use only a single dimension to measure firms – namely financial value to owners – ignore this imbalanced distribution when it arises. Businesses that maximize earnings by exploiting non-owner stakeholders are not held accountable for doing so. The results include worker exploitation and environmental degradation.

It should be noted that non-equity stakeholders have diverse needs and the above diagram greatly simplifies the non-equity stakeholder value by aggregating it into one number. Care must be taken when aggregating impacts to not obscure material impacts to stakeholders through netting. Additionally, while the above diagram may seem to imply that there is a tradeoff between shareholder and non-equity shareholder value, it is actually quite possible that monetary valuation of inputs helps to clarify opportunities and risks, creating synergistic value creation for all constituents.

Value Creation and Destruction

In the preceding section, we assumed that companies create positive value for their owners and other stakeholders. In the two-dimensional graph shown in Figure I, this assumption places the company in the first quadrant. However, this is not a necessary condition for a company to be viable in today's capital markets. Some businesses deemed successful by owner-centric measures may destroy value for other stakeholders. Figure III illustrates the different positions companies may occupy on a two-dimensional map of value creation.

FIGURE III Inclusive stakeholder value creation map.

To clarify this concept, consider quadrants II, III, and IV and illustrative examples of an enterprise that might occupy each:



QUADRANT II Positive owner value, negative non-owner stakeholder value

Example: A company that extracts value from non-owner stakeholders and delivers it to the company owners.

This quadrant is the most nefarious. By conventional measures of value, this is a 'successful' firm because it generates financial returns for its owners (e.g., shareholders of a public enterprise). Consequently, it attracts investment from capital markets. However, this firm is destroying value for non-owners. For example, a cigarette company might be returning significant cash to owners while triggering huge public costs in the form of medical care, decreased productivity, missed workdays, and individual suffering associated with lung disease. Not every example is as obvious as cigarettes. Any business that profits via rent-seeking or by 'cornering the market' to fabricate scarcity and increase price is in this quadrant as well.

QUADRANT III Negative owner value, negative non-owner stakeholder value

Example: A company in Chapter 7 bankruptcy, that has destroyed equity value, laid off employees, and breached contracts with suppliers.

Without such a transformation in business accounting, strategic analysis will continue to ignore, or at best wade through the vagaries of, both negative and positive externalities.

QUADRANT IV Negative owner value, positive non-owner stakeholder value

Example: An effective nonprofit whose beneficiaries cannot or do not pay for its goods and services that collects donations outside its core operations to fill a funding gap.

Understanding the potential for businesses to profit from the destruction of non-owner stakeholder value without repercussion underscores the need to hold businesses accountable for their impact. Without a measurement framework that weighs a firm's impact along with its conventional financial value, we cannot measure a company's true performance, its value to society. We cannot make informed tradeoffs between value-generating investment opportunities. We cannot distinguish between firms that are 'growing the pie' through innovative business models and those whose owners are merely taking an increasingly large slice of a stagnant or shrinking pie.

The key to understanding the total value of a company is the ability to measure its impact along multiple dimensions using the same units. In graphical terms, this means we need a way to represent impact as tick marks on the X-axis in Figures I and II. In order to determine units of impact, we need an accounting system to convert impacts of diverse nature and origin into a common currency that can be evaluated alongside conventional financials and to determine how these can be meaningfully aggregated to inform decision making. Without such a transformation in business accounting, strategic analysis will continue to ignore, or at best wade through the vagaries of, both negative and positive externalities.

The momentum behind impact management is growing, but before we can manage impact, we must find a better way to measure it.

The Complexity in Producing Impact-Weighted Accounts

Understanding the firm's value along the new second dimension introduces layers of complexity. To build this understanding in a simple manner, we first consider value accrued to stakeholders that is easily quantifiable in dollar or other currency terms. A straightforward way to represent value to *employees* might include the amount spent on employee wages, benefits, and training. To expand the impact measure further to include value to the *community*, we might add direct spending on public service programs. These examples of how we might represent stakeholder value are instructive because they are simple to understand, but they raise several important questions about how and what we measure.

The first question is, what types of business activities are value-creating vs. value-destroying? For example, is advertising value-creating? Does it matter if it is educational or manipulative? A second question considers impact beyond a company's activities and asks, what value does the company's product create for its consumers and society as a whole? In the healthcare sector, for example, a preventive medical service might avoid future treatment costs, adjusted for probability, in excess of that service's price. A measure of the service's value therefore might incorporate the avoided cost (this is particularly salient under a public-payer scheme where all healthcare costs accrue to one constituent, the government). As another example, the value created by a fast-food manufacturer could be offset by the public health costs associated with saturated fats that are incurred by society but not included in existing accounting paradigms-i.e., negative externalities.

The third question is, what is the right indicator of value creation? For example, if a firm spends money on employee training, but the training in fact has no effect on their skill-level, is the amount spent on training really the right proxy for value created for employees? This evokes the classic debate over measuring inputs vs. outcomes, and the tradeoff between simplicity and accuracy. Finally, after solving the three challenges already mentioned, we must convert these indicators of value for different stakeholders into a common and universally understood unit—dollars or other currencies. This raises the question, how do we express an amount of impact from such diverse sources along a single dimension?

These questions underscore the complexity of measuring a firm's value to all stakeholders in monetary terms. While complex, several developments suggest that an answer is attainable.³¹ Consider that scientists and economists have developed methods of estimating the social cost of carbon. Although the exact cost remains a matter of debate, the public nature of the debate itself is raising awareness for the need to factor environmental costs into business management decisions where they were once externalities. Additionally, consider the advances in technology that are making monitoring and evaluation more sophisticated and less expensive over time – e.g., sensors and largescale data processing. Recognizing the magnitude of the challenge, the following section makes a case for why it is worthwhile to tackle.

These questions underscore the complexity of measuring a firm's value to all stakeholders in monetary terms. While complex, several developments suggest that an answer is attainable. "Transformational change requires that impact measurement be scalable. To be scalable it needs to be actionable and cost-effective."

George Serafeim

The Opportunity

hat is the opportunity provided by the creation of impact-weighted accounts? The answer has four elements: *Changing our intuition about what creates impact.* To build an impact economy, we need to ensure that all participants understand that every action has consequences and produces impact. In the absence of impact-weighted accounts, we are creating the illusion that most commercial activities have no impact and the false impression that impact is irrelevant when it comes to an individual's choice of where to work, what to consume, and how to invest. Consequently, most people relegate impact considerations to philanthropic or volunteering activities. Impact-weighted accounts could increase the salience of business impacts and therefore change our intuition about when and how we are all having impact. All companies generate impact and investors can contribute to that impact in different ways.

Bringing impact to the ESG investing market. As ESG investing continues to grow its share of capital marketsand indeed, if it follows its current trajectory and becomes the new status guo—we need to understand the actual impact of this transformation. To the extent investors incorporate existing ESG metrics into their investment decisions today, they are investing based on inputs or outputs, not impact, forcing an assumption that similar inputs produce equal impacts across funds. Additionally, many types of impact are not covered by routine ESG measurement, including most consumer impacts. Impactweighted accounts would allow for a better understanding of the societal and environmental effects of ESG investing. Equally important is enabling cost effective characterization and classification of funds that label themselves as ESG or impact/SDG enabling funds. Today, many ESG funds purport to align investment decisions with asset owners' values, but asset allocators have a difficult time assessing the claims of investment managers and to what extent inputs lead to the presumed impact. Producing portfolio-level price-to-impact-weightedearnings metrics could create the same level of clarity in the marketplace as size- or growth-vs.-value-classifications historically created.

In addition to providing a better understanding of investment impact, impact-weighted accounts would decrease transaction costs in ESG capital markets. Over \$20 trillion is invested globally by funds claiming to consider ESG metrics in their investment decisions. Many of these funds – passively or actively managed, public equity or private equity or debt investments -establish their own method of evaluating impact. Familiar problems arise, such as the potential for portfolio managers to introduce personal bias or to manipulate performance figures. The lack of standardization makes investment diligence more difficult, thereby increasing transaction costs. For asset owners, the lack of standardization prohibits benchmarking funds against one another and makes it nearly impossible to hold advisors accountable to their impact promises. Ultimately, the assets under management fall short of their value creation potential. Impact-weighted accounts would ease the flow of accurate information for a more efficient allocation of ESG assets.

Allowing managers to make better informed decisions.

Impact-weighted accounting standards give corporate managers new information about the costs and benefits of their actions. With better information, managers might start changing their decisions towards choices that produce more positive impact. In fact, a methodology that measures holistic impact in monetary terms is useful to assess and compare *all* strategy options for better management. A European bank, ABN AMRO, used monetary impact valuation as a tool to analyze decisions, such as interest rate averaging where mortgage clients could reduce their interest rate to reflect lower market rates. The decision to accept interest rate averaging led to customer savings and improved customer satisfaction.³² A Belgian chemicals firm, Solvay, has constructed the sustainable portfolio management tool, which assesses the monetized environmental manufacturing footprints of products and has become an input in strategy development, research and innovation, capital budgeting and due diligence in Mergers and Acquisitions (M&A).³³

Consider the following examples of business decisions using the framework depicted in Figure I. A decision to donate to a philanthropic cause unrelated to the firm is a move to the right and downward whereas donating to a cause that indirectly helps the firm is an opportunity to expand the impact 'frontier' by moving to the right and upward simultaneously. Cutting employee health benefits to increase profits is a move to the left and upward whereas a more impact-efficient option might be to invest in preventive care to keep employees healthier (at a lower cost). As these examples illustrate, adding the second stakeholder dimension brings to light the consequences of business strategies beyond strict financials, which allows for better outcome optimization at any given cost to firm owners.

The ability to articulate the benefits of decisions in the common language of monetary value is a way for businesses to justify investing in long-term value creation. Many of these investments, such as the example of preventive care, require time for their impact to be realized and may come at the expense of near-term profits. Monetary valuation provides managers with an extra tool to forestall short term market pressures.

Strengthening incentives. Once we have impact-weighted accounts, the data can be used to create incentives for companies to improve their impact. As implied in our discussion of the growing ESG investing sector, companies with positive impact will be more likely to attract financial capital. In addition, governments and regulators could create incentives for companies and talent to improve their impact by tying tax rates or procurement requirements to impact-weighted accounting performance thresholds. For example, in the construction sector, the inclusion of lifecycle analysis (LCA) in public tenders to promote green procurement has been used increasingly in recent years. Customers in businessto-business or business-to-consumer transactions may tie their own purchasing decisions to these metrics as well, thereby rewarding the suppliers with the greatest

impact. One report found approximately half of U.S. consumers say they "would definitely or probably change their consumption habits to reduce their impact on the environment."³⁴ How consumers will interact with information received from impact-weighted accounts is unknown, but regardless, the transparency of how companies and products impact society will add another dimension in the customer choice set.

Monetization of Impact

There are several reasons why it is important to distill impact into monetary units as an indicator of value rather than use a diverse collection of observable metrics. First, currency is already used in the context of managing firms and investments. Accounting systems and analytical tools (e.g., internal rate of return and net present value) are configured to handle currency. Converting impact metrics into dollars or other monetary equivalent helps managers place impact into the greater business context seamlessly. It follows that the instrumental value of money is easy to understand. Everyone can convert currency into virtually any good or service they value, at a rate clearly indicated by a price. In contrast, the impact represented by nonfinancial metrics is either of inherent value – for example, a number of acres of preserved wilderness - or is of instrumental value for something less familiar or intangible - for example, an amount of carbon emissions avoided, which is instrumental in stemming climate change. Either way, it is simply harder for people to wrap their minds around the value of something non-financial. Royal Philips noted the difference in resonance in their Environmental Profit and Loss Accounting Whitepaper (2018) noting that the commonly constructed life-cycle assessment metrics were "barely understandable for non-expert readers." However, when these impacts were monetized, it was clear that the environmental damage caused by their business operations exceeded the profits of the company.³⁵

Additionally, using a common currency for all impact metrics enables sophisticated decision making around the tradeoffs between different types of impact and the tradeoff between impact goals and financial goals. By converting different sources of impact – hours of employee training, tons of waste generated, workplace injury rate – into currency, it is possible to do comparative analysis and make informed, strategic decisions. Because the 'conversion rate' from impact to dollars would be prescribed by universal impact accounting standards, managers would not have to grapple with defining their own 'rates,' which dramatically simplifies their analysis as well as comparisons between products and companies. While expressing impact in monetary terms dramatically increases the usefulness of impact accounting, it is not without risks. Assigning a monetary value to a formerly "priceless" social or environmental outcome runs the risk of capping its perceived value. Putting a price tag on impact seems to give a sufficiently wealthy buyer carteblanche to capture or destroy it. This risk must be weighed against an arguably greater risk of maintaining the status quo in which social and environmental value is destroyed freely because we have no mechanism to price it. Another risk is that continuing to train business leaders to focus on monetary figures may erode their intuition about the inherent value of things such as social and economic inclusion or biodiversity. It is an empirical question whether and how monetary impact accounting standards would change how people value social and environmental impact. Certainly, implementing monetary impact accounting involves risk, but the benefits are potentially enormous.

SUMMARIZING:

To better illustrate the goal of the Impact-Weighted Accounts Initiative, it is helpful to visualize another four-quadrant grid which plots a causal value chain on one axis and distinguishes between financial and non-financial valuations on the other. The examples provided are just to illustrate the concept and are not intended to be exhaustive or normative.

FIGURE IV The metrics landscape classified by two characteristics

The current reporting landscape provides examples for each of the quadrants:

QUADRANT I

Represents the goal of the Impact-Weighted Accounts Initiative to both link outputs and outcomes to impact through tested theories of change and monetize those impacts. Examples are cost of goods sold and revenues that are adjusted for the environmental impacts of the firm.

QUADRANT II

Characterized by easily monetized inputs and outputs. Examples include environmental research and development or environmental risk mitigation expenditure.

QUADRANT III

Aligns with most ESG and corporate sustainability reporting. An example is the percentage of energy sourced from renewable energy.

QUADRANT IV

Distinguished from III by measurement of outcomes which are linked to outputs by a tested theory of change. An example is the reduction in CO2 emission as a result of renewable energy sourcing.

While many companies are pursing important sustainability initiatives and are quantifying and reporting outputs in annual sustainability reports, efforts to monetize these impacts are far fewer. We found 56 companies had undergone some process to monetize an aspect of their business impacts. A few key conclusions can be drawn from the table below. First, a disproportionate number of companies are headquartered in Europe. Second, most of the companies that have claimed to have measured employment and social capital impact so far have focused primarily on monetizing inputs/ activities rather than impacts. Third, product impact is much less often measured.



	COMPANY NAME		ENVIRC	ISOCIAL SOCIAL	APTAL PRODUCT PRODUCT	i.	OF RESULT VERE	STEPS COUNTRY
			EMPLOYM	int.	EAR.	STAP	s"	HEADOUL
Infosys	Infosys				Full company	2003	IT Services	India
PUMA	Puma	(@)			Full company and upstream supply chain	2011	Textiles, Apparel & Luxury Goods	Germany
Levis	Levi Strauss				Project level	2011	Textiles, Apparel & Luxury Goods	United States
	Crown Estate				Full value chain	2011	Equity Real Estate Investment	United Kingdom
	Sompo Japan Nipponkoa				Project level	2011	Insurance	Japan
novo nordisk [®]	Novo Nordisk				Full company	2011	Pharmaceuticals	Denmark
K E R I N G	Kering Global				Group and supply chain	2012	Textiles, Apparel & Luxury Goods	France
Interface	Interface Global				Two carpet tile products; one manufactured in North America one in Europe	2012	Commercial Services & Supplies	United States
Ambuja Cement	Ambuja Cement				Full company	2012	Construction Materials	India
	Veolia UK				Key activities	2012	Multi-Utilities	France
Ŵ	Danish Apparel Sector				All apparel companies operating in Denmark	2012 & 2013	N/A	Denmark

	CONFRANCING	r.	ENURC OLOMA	NMENT SOCIAL	PRODUCT PRODUCT PRODUCT	STA	A OF RESULTS VER. BICS® MULSTRY	HEADOWRIES COUNTRY
			EMI					
STELL/ McCirtney	Stella McCartney				Company level	2013	Textiles, Apparel & Luxury Goods	United Kingdom
Sir Robert M ^c ALPINE	Robert McAlpine				Activities at two sites in the UK	2013	Construction & Engineering	United Kingdom
The Chemical Company	BASF	()			Full supply chain and customers	2013	Chemicals	Germany
Hammerson	Hammerson				Activities at two sites in the UK	2013	Equity Real Estate Investment	United Kingdom
νти	TUI				Full value chain for one year in 8 hotels	2013	Hotels, Restaurants & Leisure	Germany
natura	Natura				Comparison of palm oil cultivation methodologies	2013	Personal Products	Brazil
ALGIX [®]	Algix				Full lifecycle impacts for two types of plastic	2013	Food Products	United States
MONSANTO	Monsanto				Comparison of soybean cultivation methodologies	2013	Chemicals	United States
SKANSKA	Skanska				Pilot project	2014	Construction & Engineering	Sweden
LafargeHolcim	LafargeHolcim				Full company and third order community effects (salaries and dividend spending)	2014	Construction Materials	Switzerland
ABN·AMRO	ABN-AMRO				Company and customers	2014	Banks	The Netherlands

	COMPANY MAN	ές	ENVIRO	WHENT SOCIAL	PRODUCT PRODUCT ON SOPE		OF RESULS YERE BICS® MUSTRY	HETES COUNTRY
			EMPLOYM	an t		STAP	e -	HEADON
TOTAL	Volvo				Product level analysis	2014	Machinery	Sweden
\approx	Dutch Railways				Full company	2014	Road & Rail	The Netherlands
AkzoNobel	AkzoNobel				Full product value chain	2014	Chemicals	The Netherlands
YorkshireWater	Yorkshire Water				Full company	2014	Water Utilities	United Kingdom
United	United Utilities				Activities in a specific geographic region	2014	Water Utilities	United Kingdom
Arla	Arla Foods				Full company cradle-to-grave	2014	Food Products	Denmark
(oca:Cola	Coca-Cola Company				8 replenishment projects	2015	Beverages	United States
ARGOS	Cementos Argos				Company level	2015	Construction Materials	Colombia
* Soneva Fushi	Soneva				Full company direct and indirect impacts	2015	Health Care Equipment & Supplies	Maldives
American' Chemistry Council	American Chemistry Council				Plastic use in 16 consumer goods sectors for full lifecycle	2015	N/A	United States
NANIGATOR	The Navigator Company				Four processing plants in Portugal	2015	Paper & Forest Products	Portugal

	OBSTRAN	¢.	MRO	WINE WI INC	APTHL PRODUCT TIONSCOPE	i.	SUIS FAR MOSTRY	25 COMPR
	COM		ENV.	ENTI-SOCI	EXAMILA	STR	at of at orse	HERDOURATER
	Roche		EM		Swiss operations	2015	Pharmaceuticals	Switzerland
Koche	Dell				Lifecvle for two	2015	Technology Hardware.	United States
D¢LL					types of product component inputs		Storage & Peripherals	
Yarra Valley Water	Yarra Valley Water				Full value chain	2015	Water Utilities	Australia
Safaricom Twaweza	Safaricom				Full company in Kenya	2015	Wireless Telecommunication Services	Кепуа
O vodafone	Vodafone Netherlands				Full value chain for a number of business areas and products	2015	Wireless Telecommunication Services	The Netherlands
T irmenich	Firmenich				Cradle to gate for products	2015	Personal Products	Switzerland
eosta	Eosta				Lifecycle for nine fresh produce products	2015	Distributors	The Netherlands
BOSS	Hugo Boss				Select product level	2016	Textiles, Apparel & Luxury Goods	Germany
Dow	Dow Chemical				Cradle to gate for one site	2016	Chemicals	United States
S SOLVAY	Solvay				Cradle-to-gate for 80% of existing products	2016	Chemicals	Belgium
	Tata				Full value chain for five Tata Companies' select divisions	2016	Metals & Mining	India

	CONTRACTOR	÷	ENVIRO	NMENT ENTISOCIAL	PROPERTY PRODUCT PROPERTY PROP	-	TOF RESULT VER GES® MUSTRY	Thousand Southers
			EMPLOY					HU
Ødsm	Royal DSM	()			Internal carbon price applied to all growth projects	2016	Chemicals	The Netherlands
PHILIP MORRIS EESTI	Philip Morris International				GHG footprint of tobacco curing	2016	Tobacco	United States
MITSUBISHI	Mitsubishi Elevators				Unknown	2016	Trading Companies & Distributors	Japan
HEEREMA	Heerema Marine Contractors				Corporate office choice	2016	Energy Equipment & Services	The Netherlands
JAGUAR (AND)	Jaguar Land Rover				Full value chain	2016	Automobiles	United Kingdom
	International Paper				Three integrated paper/pulp mills	2017	Containers & Packaging	United States
PHILIPS	Philips				Entire lifecycle	2017	Healthcare Equipment & Supplies	The Netherlands
Nestle	Nestle				Limited to subset of employment pathways	2017	Food Products	Switzerland
Godrej	Godrej Consumer Products Limited				Limited scope on mosquito repellant in two Indian provinces	2017	Personal Products	India
NOVARTIS	Novartis	(()()			Global employment and environmental, pilot product valuation	2017	Pharmaceuticals	Switzerland
syngenta	Syngenta				Nine projects sites globally	2017	Chemicals	Switzerland



Note: The above list is not exhaustive. It was compiled by searching references to companies participating in impact industry collaborative efforts including the Natural Capital and Social & Human Capital Protocol Coalitions, the Product Social Impact Roundtable, the Prince's Accounting for Sustainability Project, and the findings of the Monetary Natural Capital Assessment in the Private Sector.³⁶ If your company is missing from this list, please contact DG Park (dpark@hbs.edu) of the Impact-Weighted Accounts Project Team in order for your company to be added.

Risk, Return, and Impact

To highlight the catalytic potential of impact-weighted accounts, we believe it is appropriate to draw a parallel to the development of modern financial infrastructure and its effects. Prior to the enactment of the Securities Act of 1933 and the Securities Exchange Act of 1934 in the US, there were no financial accounting disclosure standards for public offerings. Over the next decades, the development of US GAAP created uniform and comparable financial disclosures, a notable improvement over the previous system in which each company picked its own accounting principles with its own accounting firm. Globally the adoption of International Financial Reporting Standards (IFRS) has moved the field of accounting measurement and disclosure towards increased comparability and unification. This in turn has enabled more cost effective investment diligence and analysis. Impact-weighted accounts will provide a similar benefit by unifying the myriad of environmental and social disclosure methodologies and formats into a uniform framework that is easily digestible and comparable by investors.

Built atop the uniform financial disclosures frameworks is the development of asset and portfolio risk measurement and quantification. These developments in the second half of the twentieth century, which included the concepts of aggregate portfolio risk, risk-adjusted returns, riskreturn optimization, and value-at-risk, provided investors, corporate officers, and financial advisors with a systematic way of optimizing return for a given level of risk. This had dramatic implications for asset allocation. As a result of better risk quantification, the nascent industries of venture capital and private equity saw remarkable inflows from the 1970s onward. Both industries in turn drove catalytic economic developments by supporting the technological revolution.

Monetization of social and environmental impacts represents a critical next step in portfolio theory and will permit the development of effective risk-return-impact optimization tools and the identification of a new efficient investment frontier. The potential to systematically model and optimize impact in similar metrics to those used for risk and returns, versus current market practice of disregarding impact completely or by conducting separate overlay qualitative and quantitative assessments, has the potential to dramatically change capital flows throughout our system.

As stated in the introduction to this paper, it is imperative that we design a sustainable capitalism. Ensuring that capital flows in ways that deliver sustainable growth, improves lives, and regenerates the planet is critical in this process. Impact-weighted accounts provide the underlying structure for such a change.

Designing a Methodology for Impact-Weighted Accounts

n the same way that accounting standards define which financial transactions to capture and how to account for them within financial statements, we need a methodology that reveals a firm's overall value to society through its impact. Accrual accounting effectively facilitates the evaluation for firms because it strives to reflect the economics of a firm's activities, it is well-understood, and it is standard across companies and industries. These qualities create transparency into the economics of firms, which helps external parties evaluate and compare economic opportunities. It allows financial benchmarking of firms with very different business models, products, geographies, etc. – an important tool for both internal managers and external parties. It also is easier for external parties to hold firms accountable to financial targets because it limits discretion in reporting results. Creating a GAAP or IFRS analogue for impact accounting would generate benefits: transparency, comparability, accountability.

As discussed above, this impact accounting methodology should take shape through a series of choices about how to define value. The inclusion or exclusion of different stakeholders is a choice. The inclusion or exclusion of different sources of impact is a choice. The tradeoff between accuracy and generalizability of impact metrics is a choice. There has already been a great deal of work by the Organisation for Economic Co-operation and Development (OECD), Sustainability Accounting Standards Board (SASB), Global Reporting Initiative (GRI), Principles for Responsible Investing (PRI), Social Value International and others in partnership with the Impact Management Project (IMP) through the Structured Network to provide a framework for managing these choices. The impact accounting methodology should build upon this prior work.

Preliminary Design Principles

Before designing the specific measurement and reporting standards, we must establish a set of guiding principles for impact-weighted accounts. Drawing upon existing principles and norms where possible, below are a set of initial design principles meant to guide our decisions about accounting standards, along with the associated benefits and costs of choosing different configurations:

DIMENSION	BENEFITS OF LOW	BENEFITS OF HIGH	OUR THINKING	
Scope of source of impact	Reduces cost of monitoring and measuring firm behavior and products Simplifies and accelerates design and implementation	Maximizes potential to change firms' impact creation – e.g., by incorporating not only the impact of business activities, but also the impact of the goods and services a	Start Low; Aim High. Begin with a small set of simple, important, non-controversial metrics to test implementation. Grow the scope over time	
	Lowers barriers to adoption	business produces	to be comprehensive.	
Scope of stakeholders included in impact accrual	Reduces 'noise' associated with measuring indirect effects on remote stakeholders	Increases relevance of IWA to a broader range of stakeholders	Start Low; Aim High. Begin with a small set of directly impacted stakeholders to test	
impact accidai	Reduces inaccuracy that results from assuming outcomes, given demonstrated inputs	Maximizes potential to change firms' impact creation by taking into account a greater number of, and more diverse, stakeholders	implementation. Grow the scope over time to be comprehensive.	
	Simplifies and accelerates design and implementation			
Specificity of impact metrics	Can be customized at a company by company level	Increases comparability across companies	High. While material impacts	
	Reduces resistance to adoption from opponents of one-size-fits-all standards	Leaves less room for discretion in definition/ measurement	industries, common impacts, as determined by various impact	
		Increases confidence of a user and credibility of metrics	bodies, should be measured and reported with standardized metrics and methodology.	
Monetization of impact metrics	Preserves objective meaning (e.g., # metric tons of water used, # product recalls issued)	Maximizes contextual meaning by translating the objective measure into dollars and cents, which are	High. All impact metrics should be expressed in dollar terms (or other currency).	
	Avoids putting a price tag on hard-to-value goods	universally understood and simple to compare		
		Allows 'conversion rate'/'impact coefficient' updates as needed		
Scope of value	Measures value that is financially material to the firm.	Measures value created for society and the environment.	High. Accurately capturing the	
	Captures long-term financial value to owners that is currently hard to quantify because it is indirect or too far in the future	Captures value to non-owner stakeholders independent of whether it might increase profits in the future.	a firm is having on the world requires a broad definition of value.	

The Impact-Weighted Accounts Initiative

he Impact-Weighted Accounts Initiative (IWAI) is a research-led joint effort by the Global Steering Group (GSG) and the IMP, being incubated at Harvard Business School in the Impact-Weighted Accounts Project under the leadership of Professor George Serafeim, to drive the creation of financial accounts that reflect a company's financial, social and environmental performance. Our ambition is ultimately to create accounting statements that transparently capture external impacts in a way that drives investor and managerial decision making. We aspire to create a methodology that is adopted and widely used by investors and companies in making their business decisions.

Drawing from the existing network of organizations already advancing standards, impact metrics and impact valuation estimates, we focus on addressing the critical question of how an organization could integrate a financial expression of impact into accounting statements.

Perhaps more simply, we intend to *capture* existing, usable impact and outcome-based metrics, *apply* existing, usable monetary valuation coefficients, and *identify* a complementary accounting treatment. We intend to make real progress through our emphasis on research, accounting and application as well as our deliberate coordination with existing leading initiatives to measure and value impact.



"Nothing is as powerful as an idea whose time has come."

Victor Hugo

"It is better to be roughly right than precisely wrong."

John Maynard Keynes

Our Principles

Every successful effort organizes around a core set of beliefs and principles. The following are ours:

- Impact can be measured and compared
- Impact should be measured within an accounting framework with the aim of harnessing our economy to improve our society and planet
- Transformational change requires that impact measurement be scalable
- To be scalable it needs to be actionable and costeffective

Realism as our Compass

We recognize that we will not be able to research, analyze, and incorporate all possible impacts in our work. We also recognize that some of the impact metrics and monetary valuation coefficients are far from perfect. But so are the financial accounting numbers that we have been using for thousands of years. They rely on judgements, managerial discretion, and forecasts of the future. They are noisy estimates of the underlying economic reality. Often, simple changes in accounting rules change balance sheets by trillions of dollars, as has been the case with leases, pensions and equity investments, and give rise to income statements that portray a fundamentally different picture of the organization's performance.

We do not allow these limitations to constrain our ambitions. Fully recognizing the inherent tradeoff between impact measurement accuracy and scalability of application, we aim to create both dependable and scalable measurements of impact.

Our Plan

During the next two years, we will focus our efforts on key areas that can have impact at scale. In addition, we will develop theory and data that underpin our current efforts and establish the infrastructure for future adoption. Our work is structured around three key themes:

Articulate the Theory of Change

Publish work that outlines the theory of change related to IWAI. It will seek to provide a framework on what change might look like if we are successful in creating IWAs. How might companies, investors, regulators, governments, consumers, employees and other members of the community change behavior? What might be the plausible effects? What might be the obstacles to behavioral change? What might be the unintended consequences? How might we be able to avoid perverse incentives?



Conduct Empirical Research on Employment, Product and Environmental Impact

Identify metrics and related monetary valuation coefficients to measure and value employment impact as a result of wages paid, training provided, turnover rates, diversity (including but not limited to gender, ethnic, disability, sexual orientation, and religious diversity) and other workplace characteristics; environmental impact as a result of carbon emissions, water, plastic waste, land degradation and product impact as a result of consumption of a firm's products. This process will be accelerated by close engagement with leading standard-setting organizations, through the IWAI's participation in the IMP Structured Network.³⁷

Use existing data to quantify employment and environmental impacts for thousands of organizations that form the basis of empirical analysis of the variation across companies, industries, time and countries. For product impacts, which are more idiosyncratic and for which less data is available, IWAI will conduct feasibility and pilot studies. Finally, IWAI will analyze the relationship of such numbers to other outcomes of interest.



Conduct Field Research on How Managers Use Impact-Weighted Accounts

Establish field research sites, working closely with companies to write cases, design experiments and share data to understand how information provided by impact-weighted accounts changes the way managers make decisions and allocate resources and how those outcomes might affect their organizations and their stakeholders.

Notes

George Serafeim is the Charles M. Williams Professor of Business Administration at Harvard Business School. Robert Zochowski is the program director at Harvard Business School. Jen Downing (MBA 2019) is with Bain & Company. The IWAI's research effort will develop its findings in close partnership with its initiators, the Global Steering Group for Impact Investment (GSG) and the Impact Management Project (IMP).

In addition to its Board of Advisors (Chair Sir Ronald Cohen-GSG, Vice-Chair Clara Barby-IMP), the IWAI will rely on an Advisory Council comprising groups of experts from the investment and corporate community. Contact: Rob Zochowski (rzochowski@hbs.edu). ¹"What Is Impact?," Impact Management Project, accessed July 9, 2019.

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FAQ

What we do

We are closely examining and compiling impact activity metrics and monetary impact valuation coefficients from existing efforts, to form the basis for valuing the positive and negative impact of corporate activity.

These landscaping and aggregation efforts are critical inputs into our core research: developing the intellectual framework and prototypes to reflect the social and environmental effects of a business in its financial statements.

We will produce research showing how impact-weighted accounts draw a different picture of the performance and position of a business and, in aggregate, of economies.

We will produce research that examines the properties and behaviors of impact-weighted accounting numbers and their relation to important economic variables.

Our aim is to demonstrate the feasibility, to clarify the technical challenges and gaps, and to create a framework which enables reliable and comparable accounting metrics that reflect a company's social and environmental impact.

What we do not do

We are not developing new impact or ESG metrics or seeking to develop a new set of standards for impact or ESG reporting, but we are working with the IMP Structured Network who are doing so.

We are not conducting experiments to develop new estimates of the financial benefit or cost to society of certain social or environmental impact.

We are not endeavoring to unilaterally develop and promote new accounting standards.









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