

GS SUSTAIN: Net Zero Guide

Climate Transition Tool 2.0: Bridging gaps, enhancing sectoral scope, highlighting performance links



Rising investor focus to quantify corporate decarbonization combined with increased disclosure/data availability results in opportunities for evolving frameworks to measure corporate climate transition progress based on the 3 Ps — Plan, Path and Performance. We update our Climate Transition Tool, which continues to be applied across more than 7,000 publicly-traded companies.

What has changed: We update our tool to introduce: (1) new data sources to enhance assessment of targets in the Oil & Gas sector, sustainable and coal lending for the Financials sector, climate policy engagement for the Oil & Gas and Financials sectors, and 'Just Transition' considerations for select sectors; and (2) methodology and metric updates to further improve the assessment and distribution across all companies.

Links to performance: We see clear preference for greater ESG fund ownership of Climate Transition Transparency/Performance leaders, with Top Quintile (Q1) companies +49%/+60% overweight in ESG funds vs. benchmark weighting, respectively. Bottom Quintile (Q5) companies are -41%/-37% underweight, respectively. We observe valuation signals for Climate Transition Performance, with sector relative EV/EBITDA premiums of 16% for Q1, more than 5x the 3% premium for Q5 companies. Interestingly, this correlation does not hold for Transparency.

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Decarbonisation strategies becoming more nuanced

Over the past year, we have observed rising debates among Sustainable Investors on how to best measure climate transition progress at the company and asset manager portfolio level. As Sustainable Investing becomes more mature, we are in the early stages of greater realization among investors that “ESG Accounting” — a singular focus on implications for a company’s scores/metrics/exposure — may not be the right ones to best measure Impact — real economy outcomes — where a more nuanced approach is warranted. This, in our view, is leading to greater adoption of more holistic net zero investment frameworks to assess company transition plans **based on the 3 Ps — Plan, Path and Performance**, that leverage a range of qualitative and quantitative indicators to assess companies in transition, instead of looking at metrics, e.g. carbon intensity, target, etc, in isolation.

The three P's key for measuring climate transition progress



Plan

Transparency of climate transition goals regardless of what the specific goal may be.



Path

Understanding timing/catalysts for lower corporate emissions.



Performance

How greenhouse gas emissions intensity and business mix compares with peers.



GS SUSTAIN Climate Transition Tool

Our tool provides a view on companies' climate transition efforts through two lenses: (1) our Transition Plan Transparency Score and (2) our Transition Performance Score.

- 1. Transition Plan Transparency Score:** An **absolute assessment** of companies' disclosures across metrics which demonstrate if a company has a transition strategy in place, how integrated the strategy is with the broader business strategy, and the quality of their reporting.
- 2. Transition Performance Score:** A **sector-relative assessment** across indicators which demonstrate how companies are performing relative to peers on reducing their carbon emissions footprint and how they are shifting their product mix or business models towards lower carbon outcomes..

Market trends suggest that investors are focusing more on forward-looking strategies, and increasingly looking to drive impact through engagement. We find that the number of funds focused on forward change (i.e., 'Transition', 'Paris-aligned', 'Improvers') continues to grow (up 12% ytd as of end-July 2023), with consistently positive monthly flows. Our ESG fund ownership work has similarly pointed to rising engagement (i.e., less underweights) by sustainable assets in critical carbon-intensive industries such as Energy and Metals & Mining. We believe these trends will only continue, particularly with greater market realisation that existing investor decarbonisation targets call for 2x the pace of reduction vs. country-level goals.

Our Climate Transition Tool, which measures (1) Transparency of companies’ transition plans, and (2) Performance of companies decarbonising and shifting business model exposures, aims to provide investors with a more holistic view.

Initially launched in mid-2022, our Tool aims to provide investors with data that can provide an assessment of company transition progress. Outside of leveraging our framework to identify transition leaders within sectors, investor feedback points to two additional key use-cases for our tool -

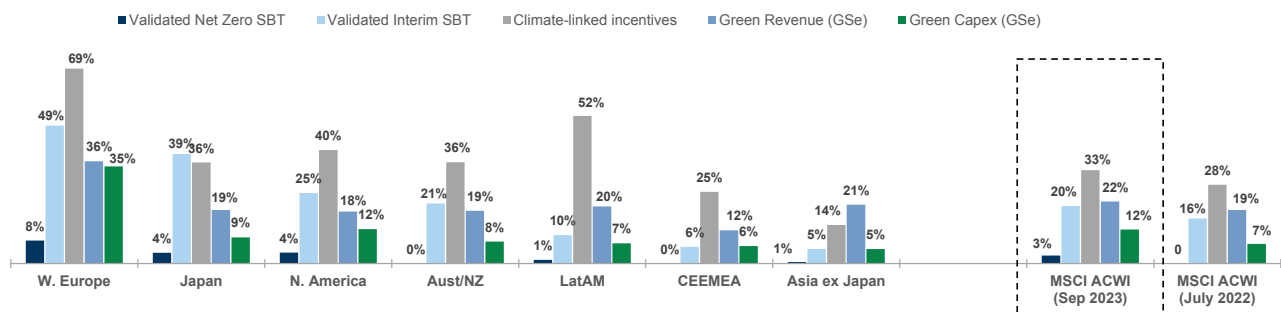
- **Engagement:** Our tool provides metric disclosure rates by sector and region, which can be helpful when having dialogue with companies which have not yet started on their transition journey. For example, when engaging with companies on their climate roadmap to implement interim targets and tie these in with management compensation plans, investors can cite disclosure data around the percentage of the company’s industry or regional peers that have these measures in place.
- **Forward-looking metrics:** While some investors already have developed in-house net zero frameworks, they often lack more forward-looking indicators, such as Green Revenue and Green Capex exposures. Our tool leverages estimates from our GS covering analysts, as well as our proprietary tools on the EU Taxonomy and UN SDGs to help fill some of these existing data gaps. We have positive green revenue/capex alignment data for 22%/12% of companies in the MSCI ACWI.

We note a rapid acceleration in companies setting targets over the past year.

As of September 2023, **54% of companies in the MSCI ACWI now have a Net Zero Target** (3% of companies with SBTi verification), which is a **+50% increase since July 2022**. Additionally, **55% of MSCI ACWI companies now have an Interim Target** (25% of companies with SBTi-verification), a **+25% increase since July 2022 (Exhibit 2)**. Notably, more than two-thirds of Energy and Utilities companies now have targets in place, while Financial companies are behind other eligible sectors on setting verified Science-Based targets (Exhibit 3).

Exhibit 1: Investors looking for companies with low/improving greenhouse gas emissions intensity may prioritize focus on those with related targets, management incentives/accountability, Green Revenue, Green Capex

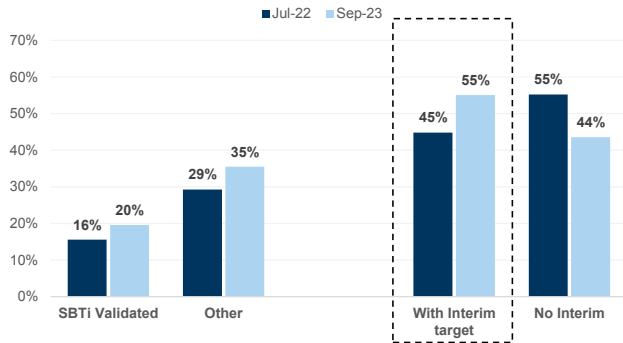
Disclosure rate by region among companies in the MSCI ACWI (as at Sep 2023)



Source: Bloomberg, Refinitiv, Factset, Goldman Sachs Global Investment Research

Exhibit 2: More than 55% of companies now have an interim target in place, with 20% having SBTi-validation

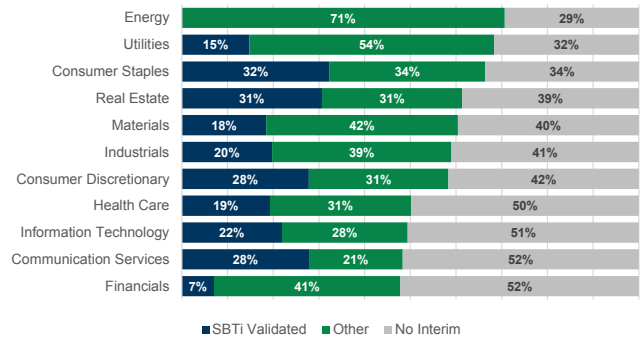
Proportion of companies in the MSCI ACWI Index with Interim Emission Reduction targets, as of Sep 2023



Source: Bloomberg, Refinitiv Eikon, Net Zero Tracker, Goldman Sachs Global Investment Research

Exhibit 3: We see more interim commitments from Energy and Utilities, with Staples and Real Estate leading on the number of SBTi validated commitments

Proportion of companies within each sector with interim targets, MSCI ACWI, as of Sep 2022



Note that Oil and Gas companies cannot currently set SBTs

Source: Bloomberg, Refinitiv Eikon, Net Zero Tracker, Goldman Sachs Global Investment Research

Bridging data gaps: Key methodology updates to our GS SUSTAIN Climate Transition Tool

Explore our GS SUSTAIN data in Marquee.

With continued improvement in the disclosure and availability of climate-related data, we introduce the second edition of our GS SUSTAIN Climate Transition Tool. Our tool is intended as a starting point in investor due diligence and as such it should not be considered a final view on the overall quality of a company's transition strategy, which we believe should warrant further bottom up analysis. This framework should not be viewed as static, as we continue to search for new data that can help to bridge data gaps. In this section, we discuss both the three key structural changes to our framework methodology, and then detail the new metrics that have been added under both our Transition Plan Transparency and Transition Performance Frameworks. We also highlight our positive links to ESG fund ownership and valuation.

Overview of Climate Transition Tool

- **Transition Plan Transparency Framework:** Absolute assessment of company disclosures on metrics demonstrating whether a company has a transition strategy in place (e.g., targets), how integrated the strategy is with the broader business strategy (e.g., climate-linked compensation incentives), and consideration for the quality of reporting (e.g., granularity of data, verification).
- **Transition Performance Framework:** Sector-relative assessment, measuring the performance of a company's emissions/energy profile and Green Revenue and Green Capex mix.

Three structural changes to our Climate Transition Tool

1. **Financials companies now have Performance rankings.** With the addition of new metrics tracking coal financing and climate solutions investment, we now have more meaningful data points for the Financials sector which makes assessing Performance more meaningful. Previously, we did not have a Performance score for the Financials sector.
2. **Final rankings are now percentiles, where previously they were percentages.** To bring the scoring output in line with our broader GS SUSTAIN data tools, the final output rankings for our Transparency Score and our Performance Score now reflect percentiles. As we continue to iterate and enhance our Climate Transition Tool, we now have more data which enables a wider percentile distribution across our universe. Companies are percentile ranked relative to all global companies in the MSCI ACWI in our Transparency framework and relative to all global GS SUSTAIN sector peers in the MSCI ACWI in our Performance framework. See [Exhibit 5](#) for details on the calculation.
3. **Denominator in final ranking calculation is now adjusted for data coverage.** To limit biases in our scores based on the coverage of alternative datasets we are introducing with this next iteration, we now adjust our company scores prior to percentile ranking to adjust for the level of data coverage in both our Transparency

and Performance frameworks.

Refinements to our framework, detailed below, along with newly reported company data, have resulted in some company movements across our scores. Please see [Exhibit 16](#) in the Appendix for the full details of score movements.

Exhibit 4: Overview of the Climate Transition Tool 2.0 Framework methodology and metrics

As of Sep 2023

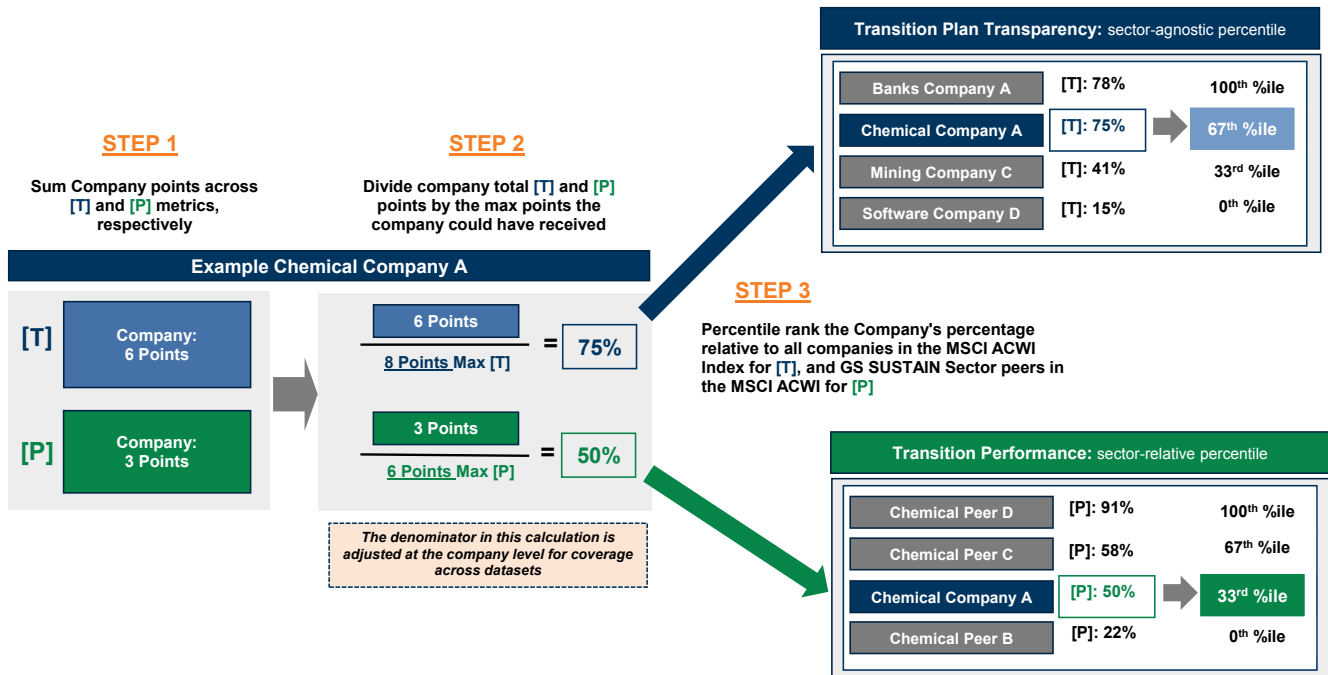
IIGCC mapping	GS SUSTAIN Framework Metrics	Methodology	Points	
			T	P
1) Ambition	Net zero target	SBTi Validated (+0.50pts), Committed (+0.25), and Other (+0.25)	0.5	
2) Targets	Interim target	SBT 1.5C & O&G WBA Scope1-3: 75-100pts (+1pts); WB2C & O&G WBA Scope1-3: 50-75pts (+0.75); 2C & O&G WBA Scope1-2: 75-100pts (+0.50); Committed, O&G WBA Scope1-2: 50-75pts, Other (+0.25).	1.0	
3) Emissions Performance	Total CO2 (Scopes 1 + 2) intensity (per rev)	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+1pts), Q2 (+0.50), Q3 (+0), Q4 (-0.50), Q5 (-1).		1.0
	Total CO2 (Scopes 1 + 2) momentum (per GFA)	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+1pts), Q2 (+0.50), Q3 (+0), Q4 (-0.50), Q5 (-1).		1.0
	Energy intensity (per revenue)	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+0.50pts), Q2 (+0.25), Q3 (+0), Q4 (-0.25), Q5 (-0.50).		0.5
	Renewable Energy Mix %	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+0.50pts), Q2 (+0.25), Q3 (+0), Q4 (-0.25), Q5 (-0.50).		0.5
	For Financials: Intensity on Coal financing (per rev)	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+1pts), Q2 (+0.50), Q3 (+0), Q4 (-0.50), Q5 (-1).		1.0
	For Financials: Absolute Momentum on Coal Financing	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+1pts), Q2 (+0.50), Q3 (+0), Q4 (-0.50), Q5 (-1).		1.0
4) Emissions Data Disclosure & Verification	Scope 1 and 2 disclosures	Y (+0.5pts), N (0)	0.5	
	Scope 3 disclosure	Y (+0.5pts), N (0)	0.5	
	Granular Scope 3 disclosures	Y (+0.5pts), N (0)	0.5	
	Emissions verification - any Scope 1, 2, 3, General ESG Audit	Scopes 1-3 (1pts), Scopes 1,2 (0.75), Scope 1 (0.50), General ESG Audit (0.25)	1.0	
5) Decarb. Strategy	GS estimated green revenue mix	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+1pts), Q2 (+0.75), Q3 (+0.50), Q4 (+0.25), Q5 (0).		1.0
	For Financials: Investment in climate solutions	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+1pts), Q2 (+0.75), Q3 (+0.50), Q4 (+0.25), Q5 (0).		1.0
6) Capital Allocation Alignment	GS estimated green capex mix	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+1pts), Q2 (+0.75), Q3 (+0.50), Q4 (+0.25), Q5 (0).		1.0
7) Climate Policy Engagement	For O&G: WBA Policy Engagement Score	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+0.50pts), Q2 (+0.25), Q3 (+0), Q4 (-0.25), Q5 (-0.50).	0.5	
	For Financials: WBA Policy Engagement Score	Points awarded based on sector-relative Quintile performance. Q1 (Top) (+0.50pts), Q2 (+0.25), Q3 (+0), Q4 (-0.25), Q5 (-0.50).	0.5	
8) Climate Governance	Management Compensation Incentives	Climate-linked incentives (+1pts), ESG incentives (0)	1.0	
	Sustainability Committee	Y (+0.5pts), N (0)	0.5	
9) Climate risk and accounts	TCFD Supporter	Y (+0.5pts), N (0)	0.5	
	Climate Scenario Analysis	Y (+0.5pts), N (0)	0.5	
	Discusses how climate is integrated into business	Y (+0.5pts), N (0)	0.5	
	Discusses the impact of climate risks	Y (+0.5pts), N (0)	0.5	
	Internal carbon pricing	Y (+0.5pts), N (0)	0.5	
10) Just Transition	WBA Just Transition Score	Points awarded based on global-relative Quintile performance. Q1 (Top) (+0.50pts), Q2 (+0.25), Q3 (+0), Q4 (-0.25), Q5 (-0.50).	0.5	
GS SUSTAIN Transition Plan Transparency Rank (absolute)			Varies	
Company total points are added and divided by the maximum points that company could have received (adjusted for sector and coverage). We then percentile rank a company's % against all global companies in the MSCI ACWI Index.				
GS SUSTAIN Transition Performance Rank (sector-relative)			Varies	
Company total points are added and divided by the maximum points that company could have received (adjusted for on sector and coverage). We then percentile rank a company's % against all GS SUSTAIN sector peers in the MSCI ACWI Index.				

Green shaded metrics are new in this update, Blue shaded metrics have an update, Grey shaded metrics are unchanged.

Source: IIGCC, Goldman Sachs Global Investment Research

Exhibit 5: Summary of how our Transparency and Performance final percentiles are calculated

Stepped theoretical example for a Chemicals company, translating from points, to a company percent of possible points, to a ranking percentile



Source: Goldman Sachs Global Investment Research

See Exhibit 14 in the Appendix for additional details on the framework updates, including new metrics and metric removals.

Transition Plan Transparency Framework metric updates

- **Net Zero Targets:** Both “Validated” and “Committed” targets under the Science-Based Targets initiative (SBTi) are now incorporated into our Net Zero Targets metric. We note that Oil & Gas companies are still unable to obtain SBTi validation. However, in our framework they can still receive credit for “Other” Net Zero Targets they have publicly stated.
- **Interim Targets:** Companies that have “Committed” SBTi targets will now receive credit. To address the inability for Oil & Gas companies to set SBTi verified targets, we now also incorporate inputs from the World Benchmark Alliance (WBA) 2023 Oil and Gas Benchmark, which helps to provide a lens on the alignment of O&G company Scope 1, 2, and 3 targets (where they exist) with a climate pathway by applying the ACT (Assessing low Carbon Transition) methodology for O&G. This dataset covers over 90% of the combined market cap of O&G Producers and O&G Refiners in the MSCI ACWI Index.
- **For Financials: Client Engagement aligned with 1.5C.** Recognising the role Financials companies have as an intermediary and facilitator in financial markets to help address climate change, we now include a new metric from the WBA 2022 Financial System Benchmark on Paris-aligned client engagement (metric A5). This dataset covers more than 67% of the total market cap of Financials companies in the MSCI ACWI.

- **For Financials and Oil & Gas: Climate Policy Engagement.** We believe transparency around policy and lobbying activities are important for investors to determine the extent of alignment with company and broader climate objectives. Leveraging both the WBA 2022 Financial System and WBA 2023 Oil and Gas Benchmarks, we now include metrics related to Climate Policy Engagement. We leverage the singular output for Financials, which is focused on transparency and disclosure. For Oil and Gas, we are more selective with the Climate Policy Engagement sub-metrics, capturing only those related to transparency and disclosure.
- **Just Transition.** We now include select components of the WBA Just Transition Benchmark in our framework, where we have selected what we believe to be the most applicable sub-components of the Benchmark for measuring corporate Transparency on the topic. In [Exhibit 6](#), we highlight the relevant sub-components of the framework that we equally weight in our framework.

Exhibit 6: We equally weight 10 selected sub-components of the WBA Just Transition Score

Components of WBA Just Transition Score that our Climate Transition Tool leverages

<p>3. Fundamentals of creating and providing or supporting access to green and decent jobs for an inclusive and balanced workforce</p>	<p>a. The company has a public commitment to create and provide or support access to green and decent jobs as part of the low carbon transition.</p> <p>b. The company assesses and discloses the risks of employment dislocation caused by the low carbon transition and related impacts on workers and affected stakeholders.</p>
<p>4. Fundamentals of retaining and re- and/or up-skilling workers for an inclusive, balanced workforce</p>	<p>a. The company has a public commitment to re- and/or up-skill workers displaced by the transition to a low carbon economy.</p> <p>b. The company discloses its process(es) for identifying skills gaps for workers and affected stakeholders in the context of the low carbon transition, which involves engaging with unions (or equivalent worker bodies where the right to freedom of association and collective bargaining is restricted) and communities.</p>
<p>5. Fundamentals of social protection and social impact management for a just transition</p>	<p>b. The company discloses its process(es) for identifying the impacts of the low carbon transition on workers' and affected stakeholders' social protection.</p> <p>c. The company demonstrates how it contributes to addressing the impact of the low carbon transition on workers' social protection in the contexts in which it operates.</p> <p>d. The company demonstrates how it contributes to addressing the impact of the low carbon transition on affected stakeholders' social protection in the contexts in which it operates.</p>
<p>6. Fundamentals of advocacy for policies and regulation on green and decent job creation; employee retention, education and reskilling, and social protection supporting a just transition.</p>	<p>a. The company discloses its process(es) for understanding the alignment of its lobbying activities with policies and regulation that support the just transition.</p> <p>b. The company discloses where its lobbying activities do not align with policies and regulation that support the just transition.</p> <p>c. The company discloses its action plan to address any misalignment of its lobbying activities with policies and regulation that support the just transition.</p>

We do not include the following items from the WBA Just Transition Benchmark: 1.a,b,c,d // 2.a,b,c,d // 3.c,d // 4.c,d // 5.a; // 6.d

Source: World Benchmark Alliance, Data compiled by Goldman Sachs Global Investment Research

Transition Performance Framework metric updates

- **Energy Intensity & Renewable Energy Mix.** As second derivatives to Scopes 1-2 emissions reductions, we now incorporate metrics to assess companies' sector-relative energy intensity performance and renewable energy mix. This is applied to all sectors.
- **Coal financing added for Financials.** We now incorporate input on coal financing from the 2023 Banking on Climate Chaos report, which analyses fossil fuel financing of the world's 60 largest banks (by assets) to over 2,000 group-level companies that are involved in the extraction, transportation, transmission, distribution, combustion, trade, or storage of any fossil fuels or fossil-based electricity. This covers ~40% of the aggregated market cap of Banks and Diversified Financials companies in the

MSCI ACWI. We adjust for non-covered companies in the final performance score rank.

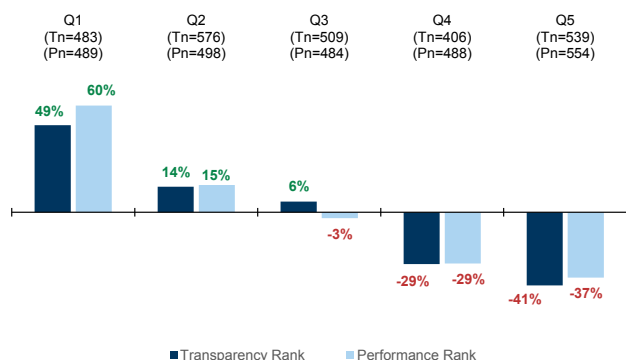
For our Performance score, we sector-relative rank companies on both their latest coal financing intensity (per US\$ mn of revenue) and on companies' Absolute Momentum trend. Note that this is the only metric in our framework where we rank performance is relative to GICS1 sectors instead of our GS SUSTAIN sector classification, to accommodate for coverage.

- **Green revenue - SDG 12 on Responsible Production & Consumption a new input.** We believe companies that are providing more circular products and solutions, have a significant role to play in achieving global decarbonisation. According to the Circularity Gap, around 70% of GHG emissions are directly linked to material handling and use (extraction, transport, processing, use and end of life), with circular solutions potentially able to reduce emissions by 39% from 2019 levels. Given the linkages with decarbonisation, we now classify company revenues aligned to SDG 12 from our GS SUSTAIN UN SDG tool as "Green" in our Climate Transition Tool framework. We also continue to include our estimates on EU Taxonomy Alignment (includes company reported data where available), UN SDG 7 (Clean & Affordable Energy) revenue alignment, and GS analyst Green Revenue estimates in our Green Revenue metric (our framework takes the maximum across these four inputs).
- **For Financials: Climate Solutions Investment.** Recognising the challenges with standardising green and climate financing, we now include the WBA 2022 Financial System Benchmark metric on Climate Solutions, which helps to provide a baseline assessment on companies' disclosures on their amount of financing activities for climate solutions, how they define climate solutions, targets around climate solution investing, and progress against the targets.
- **Green Capex capturing EU Taxonomy alignment.** We now include our estimates and company reported figures of EU Taxonomy Alignment to the climate change mitigation activities, as captured by our GS EU Taxonomy Tool. We continue to also leverage our GS covering analysts' estimates for Green Capex.

Transition rewards: Links to ESG fund ownership and stock valuations

We now see a clear preference by ESG investors for greater ownership in companies that are the most Transparent on their transition strategies, and those that are demonstrating sector-leading Performance on decarbonisation and business model transformation (Exhibit 7). Companies scoring in the top Quintile on our Transparency / Performance Frameworks on average are +49%/+60% overweight in ESG funds versus their benchmark weighting, respectively. Meanwhile, companies in the bottom Quintile on our Transparency / Performance Frameworks on average are -41%/-37% underweight in ESG funds, respectively.

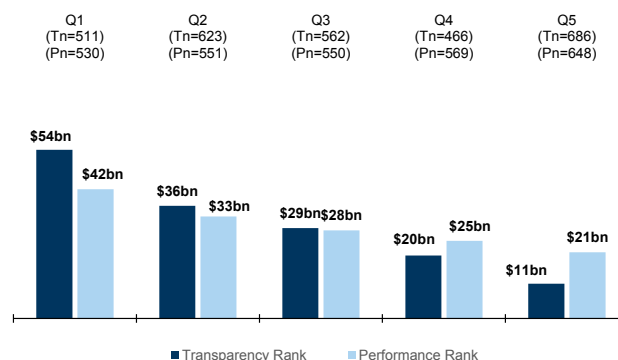
Exhibit 7: A clear preference by ESG investors to be overweight companies that are leading on Transparency and Performance
Average global ESG fund relative weighting of companies within each respective ranking Quintiles (where Q1 is best), MSCI ACWI universe



Analysis only considers companies with global ESG fund ownership data, with a fund factor (measure for the concentration of ESG fund ownership) less than 40%.

Source: Morningstar, Refinitiv Eikon, Goldman Sachs Global Investment Research

Exhibit 8: Top ranked companies tend to be larger, though the bias is much more subdued in the Performance framework
Average market capitalisation (USD \$bn) of companies within each respective ranking Quintiles (where Q1 is best), MSCI ACWI universe



Source: Refinitiv Eikon, Goldman Sachs Global Investment Research

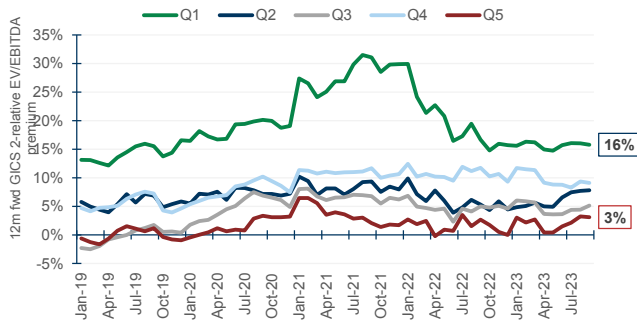
Historical valuation trends show positive signals with companies leading on Performance. However, we see an inverse relationship with valuations based on Transparency. While multiple factors drive equity valuations, companies with favorable Performance on our Climate Transition Tool vs. peers are receiving premium valuations, while companies with favorable Transparency on our tool vs. peers are not. We note that this assessment takes the current Quintiling of companies and considers their performance going back to Jan-2019.

- When looking at 12m fwd EV/EBITDA GICS 2-sector relative premiums, top Quintile (Q1) companies on our Performance framework trade at a 16% premium vs only a 3% premium for bottom Quintile (Q5) companies (Exhibit 9).
- Meanwhile, on Transparency, we find that Q1 companies actually have a discount of -2% versus 27% premium for Q5 companies (Exhibit 10).

Consistent with our views on broader ESG integration, we believe this supports the notion that the market is far more willing to reward favorable performance driven outcomes from companies, rather than just disclosure alone.

Exhibit 9: We observe valuation signals for companies based on Performance...

Trimmed mean 12m-fwd GICS 2 sector-relative EV/EBITDA premiums, ex-Financials, of companies in the respective Quintile (Q1 is best) on Performance Ranking, MSCI ACWI, Jan 2019 to Sep 2023

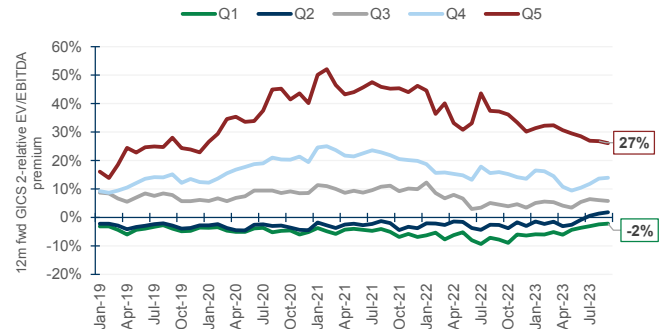


Our Performance Rank is sector-relative to GS SUSTAIN E&S sector peers in the MSCI ACWI.

Source: Factset, Goldman Sachs Global Investment Research

Exhibit 10: ... However, not for Transparency alone

Trimmed mean 12m-fwd GICS 2 sector-relative EV/EBITDA premiums, ex-Financials, of companies in the respective Quintile (Q1 is best) on Transparency Ranking, MSCI ACWI, Jan 2019 to Sep 2023



Our Transparency Rank is sector-agnostic and ranked relative to all global companies in the MSCI ACWI.

Source: Factset, Goldman Sachs Global Investment Research

Appendix I - Summary of Metrics Changes

Exhibit 14: Detailed explanation of updates to the Climate Transition Tool 2.0

As of September 2023

IIGCC mapping	GS SUSTAIN Framework Metrics	Changes	Old Points		New points	
			T	P	T	P
1) Ambition	Net zero target	Now incorporates verified and committed SBTi	0.5		0.5	
2) Targets	Interim target	Now includes "Committed" SBTi and O&G WBA Target Performance. "Other" Interim now included - waterfall logic applied	2.0		1.0	
3) Emissions Performance	Total CO2 (Scopes 1 + 2) intensity (per rev)	Updated Airlines to include per RPM metric instead of per revenue		2.0		1.0
	Total CO2 (Scopes 1 + 2) momentum (per GFA)	-		2.0		1.0
	Total CO2 momentum reductions >7%	Removed given rate applicability across sectors		0.5		-
	Energy efficient operators with high Total CO2	Removed as now include Energy Intensity for all companies		0.5		-
	Energy intensity (per revenue)	New metric - all sectors				0.5
	Renewable Energy Mix %	New metric - all sectors				0.5
	For Financials: Intensity on Coal financing (per rev)	New metric - adjusts for companies not covered				1.0
	For Financials: Absolute Momentum on Coal Financing	New metric - adjusts for companies not covered				1.0
	For Financials: WBA 1.5C Aligned Engagement with Clients Score	New metric - adjusts for companies not covered			0.5	
4) Emissions Data Disclosure & Verification	Scope 1 and 2 disclosures	-	0.5		0.5	
	Scope 3 disclosure	-	0.5		0.5	
	Granular Scope 3 disclosures	-	0.5		0.5	
	Emissions verification - any Scope 1, 2, 3, General ESG Audit	*new* Breaks out scopes of emissions assured; Now includes "General ESG audit" - waterfall logic applied	1.0		1.0	
5) Decarbonisation Strategy	GS estimated green revenue mix	Now assessed on sector-relative quintile basis; *new* added SDG 12 on responsible production and consumption; *removed* estimates beyond 2023		2.0		1.0
	For Financials: Investment in climate solutions	New metric - adjusts for companies not covered				1.0
6) Capital Allocation Alignment	GS estimated green capex mix	Now assessed on sector-relative quintile basis; *new* added in EU Taxonomy Capex; *removed* estimates beyond 2023		2.0		1.0
7) Climate Policy Engagement	For O&G: WBA Policy Engagement Score	New metric - adjusts for companies not covered			0.5	
	For Financials: WBA Policy Engagement Score	New metric - adjusts for companies not covered			0.5	
8) Climate Governance	Management Compensation Incentives - (C-suite, Board, Other)	Now includes "ESG-linked incentives" - waterfall logic applied	1.0		1.0	
	Sustainability Committee	-	0.5		0.5	
9) Climate risk and accounts	TCFD Supporter	-	1.0		0.5	
	Climate Scenario Analysis	-	0.5		0.5	
	Discusses how climate is integrated into business	-	0.5		0.5	
	Discusses the impact of climate risks	-	0.5		0.5	
	Internal carbon pricing	-	0.5		0.5	
10) Just Transition	WBA Just Transition Score	New metrics - adjusts for companies not covered - derived output			0.5	
GS SUSTAIN Transition Plan Transparency Rank (absolute)			9.5		Varies	
Company total points are added and divided by the maximum points that company could have received (adjusted for sector and coverage). We then percentile rank a company's % against all global companies in the MSCI ACWI Index.						
GS SUSTAIN Transition Performance Rank (sector-relative)				8.5		Varies
Company total points are added and divided by the maximum points that company could have received (adjusted for on sector and coverage). We then percentile rank a company's % against all GS SUSTAIN sector peers in the MSCI ACWI Index.						

Source: Goldman Sachs Global Investment Research

Appendix II - Sector and Regional distribution of scores

Exhibit 15: With the change to Percentile outputs, we now see an even distribution globally across companies scoring within each Quintile (Q1 is best)

Distribution of companies across each region and sector within each ranking Quintile in our Transparency and Performance Frameworks, MSCI ACWI universe

		Transparency Framework					Performance Framework				
		Q1 (80%-100%)	Q2 (60%-80%)	Q3 (40%-60%)	Q4 (20%-40%)	Q5 (0%-20%)	Q1 (80%-100%)	Q2 (60%-80%)	Q3 (40%-60%)	Q4 (20%-40%)	Q5 (0%-20%)
Region											
W. Europe	455	45%	28%	18%	6%	2%	42%	25%	19%	10%	4%
N. America	688	22%	30%	26%	12%	10%	18%	23%	23%	20%	16%
Asia ex Japan	1159	6%	9%	15%	25%	46%	11%	15%	17%	25%	32%
LatAm	84	8%	42%	27%	11%	12%	27%	24%	19%	12%	18%
Aust/NZ	64	17%	41%	31%	8%	3%	23%	23%	16%	20%	17%
Japan	237	26%	39%	20%	9%	6%	11%	23%	27%	20%	19%
CEEMEA	161	8%	19%	20%	22%	31%	9%	13%	14%	17%	48%
Global	2848	18%	22%	20%	16%	24%	19%	19%	19%	20%	23%
GS SUSTAIN Sectors											
Aerospace & Defense	35	20%	31%	11%	14%	23%	20%	17%	23%	17%	23%
Airlines	21	24%	19%	19%	19%	19%	14%	24%	19%	19%	24%
Alcohol & Tobacco	45	29%	11%	11%	13%	36%	20%	18%	18%	24%	20%
Asset Management	27	7%	26%	37%	15%	15%	22%	19%	19%	19%	22%
Auto Parts	35	11%	29%	11%	23%	26%	17%	23%	17%	23%	20%
Automobile Manufacturers	46	20%	28%	9%	20%	24%	15%	24%	20%	20%	22%
Banks	201	8%	32%	24%	19%	15%	17%	21%	19%	15%	27%
Brands	41	32%	17%	24%	10%	17%	17%	22%	17%	22%	22%
Capital Goods	201	19%	16%	20%	15%	29%	18%	17%	22%	20%	22%
Chemicals	140	28%	18%	5%	9%	41%	19%	19%	16%	25%	21%
Construction Materials	25	36%	24%	16%	8%	16%	20%	20%	20%	20%	20%
Consumer Durables	23	22%	13%	9%	9%	48%	22%	17%	22%	17%	22%
Distributors	39	3%	18%	38%	15%	26%	21%	21%	18%	21%	21%
Diversified Financials	113	8%	16%	16%	26%	35%	17%	23%	19%	20%	21%
E-Commerce	24	13%	13%	46%	17%	13%	21%	8%	21%	29%	21%
Engineering & Construction	39	31%	18%	15%	10%	26%	21%	21%	18%	21%	21%
Financial Exchanges & Data	22	23%	23%	36%	0%	18%	14%	27%	18%	18%	23%
Food & Beverage	97	19%	24%	16%	21%	21%	18%	22%	21%	20%	21%
Gaming	17	12%	18%	24%	35%	12%	18%	18%	18%	12%	35%
Healthcare Services	38	5%	13%	18%	26%	37%	21%	18%	16%	21%	24%
Hospitality	24	13%	13%	33%	25%	17%	21%	21%	17%	21%	21%
Household & Personal Care	32	41%	28%	3%	22%	6%	22%	19%	19%	13%	28%
Insurance	98	10%	37%	28%	11%	14%	20%	19%	20%	18%	21%
Internet	33	6%	15%	33%	24%	21%	18%	21%	18%	21%	21%
IT Services	33	33%	15%	30%	6%	15%	21%	18%	21%	3%	36%
Logistics & Shipping	46	11%	35%	20%	15%	20%	17%	20%	15%	20%	28%
Marine Shipping	15	7%	40%	33%	13%	7%	20%	20%	13%	27%	20%
Med Tech	84	10%	18%	27%	25%	20%	20%	15%	21%	17%	26%
Media	59	8%	7%	19%	20%	46%	20%	20%	15%	19%	25%
Mining & Metals	81	15%	25%	17%	15%	28%	15%	20%	23%	21%	21%
Multi-Industry Services	19	11%	32%	26%	11%	21%	21%	0%	37%	21%	21%
Oil & Gas Midstream	13	46%	15%	23%	8%	8%	23%	15%	23%	15%	23%
Oil & Gas Producers	61	18%	23%	31%	11%	16%	20%	18%	15%	25%	23%
Oil Refiners	26	4%	31%	42%	12%	12%	19%	19%	19%	19%	23%
Oil Services	8	38%	13%	13%	25%	13%	25%	13%	25%	13%	25%
Paper & Packaging	27	41%	33%	11%	11%	4%	22%	19%	15%	22%	22%
Pharma & Biotech	120	17%	14%	13%	18%	38%	20%	14%	23%	23%	21%
Professional Services	37	22%	24%	22%	16%	16%	16%	22%	19%	22%	22%
Real Estate	123	16%	22%	29%	19%	14%	18%	20%	15%	27%	21%
Restaurants	17	18%	29%	12%	18%	24%	24%	12%	18%	24%	24%
Retail - Multiline & Specialty	42	10%	17%	36%	24%	14%	14%	24%	21%	17%	24%
Retail - Staples	52	21%	27%	15%	19%	17%	19%	17%	23%	19%	21%
Semiconductors	101	13%	16%	17%	17%	38%	16%	23%	20%	18%	24%
Software	68	16%	9%	13%	19%	43%	21%	19%	21%	16%	24%
Steel	31	13%	26%	19%	16%	26%	16%	16%	26%	19%	23%
Tech Hardware	126	23%	25%	12%	11%	29%	18%	21%	15%	23%	22%
Telecom Services	76	34%	26%	16%	13%	11%	18%	18%	21%	17%	25%
Transport Infrastructure	25	4%	20%	16%	28%	32%	16%	20%	20%	24%	20%
Utilities - Electric	98	28%	30%	16%	12%	14%	19%	19%	19%	21%	20%
Utilities - Gas	19	26%	16%	26%	16%	16%	21%	21%	16%	21%	21%
Utilities - Multi	18	50%	28%	17%	0%	6%	22%	17%	22%	17%	22%
Utilities - Water	7	29%	29%	14%	14%	14%	29%	14%	14%	14%	29%

Source: Goldman Sachs Global Investment Research

Appendix III - Distribution of Movement in Scores

Exhibit 16: Transparency Framework changes resulted in a fairly even positive/negative distribution of changes, while the Performance Framework changes resulted in more positive scoring outcomes.

Summary of score changes due to methodology updates across our Transparency Framework and Performance Framework, MSCI ACWI universe

Region	Count	Transparency Framework										Performance Framework									
		-75 to -100%	-50 to -75%	-25 to -50%	0 to -25%	0%	0 to +25%	+25 to +50%	+50 to +75%	+75 to +100%	-75 to -100%	-50 to -75%	-25 to -50%	0 to -25%	0%	0 to +25%	+25 to +50%	+50 to +75%	+75 to +100%		
W. Europe	455	0%	0%	2%	50%	2%	46%	1%	0%	0%	0%	0%	0%	10%	4%	34%	29%	3%	0%		
N. America	688	0%	0%	3%	52%	1%	44%	0%	0%	0%	0%	0%	1%	12%	3%	41%	24%	2%	0%		
Asia ex Japan	1159	0%	0%	2%	31%	0%	67%	0%	0%	0%	0%	0%	1%	13%	3%	45%	21%	3%	0%		
LatAm	84	0%	0%	1%	32%	1%	64%	1%	0%	0%	0%	0%	0%	11%	4%	40%	19%	5%	0%		
Aust/NZ	64	0%	0%	6%	59%	0%	33%	2%	0%	0%	0%	0%	2%	14%	2%	38%	17%	11%	0%		
Japan	237	0%	0%	2%	60%	0%	38%	0%	0%	0%	0%	0%	2%	19%	4%	46%	18%	2%	0%		
CEEMEA	161	0%	0%	1%	32%	0%	65%	2%	0%	0%	0%	0%	2%	16%	4%	31%	13%	1%	0%		
Global	2848	0%	0%	2%	42%	0%	55%	0%	0%	0%	0%	0%	1%	13%	0%	44%	23%	3%	0%		
GS SUSTAIN Sectors																					
Aerospace & Defense	35	0%	0%	0%	54%	0%	46%	0%	0%	0%	0%	0%	0%	11%	6%	60%	23%	0%	0%		
Airlines	21	0%	0%	0%	48%	0%	52%	0%	0%	0%	0%	0%	14%	29%	0%	29%	14%	5%	5%		
Alcohol & Tobacco	45	0%	0%	0%	24%	2%	73%	0%	0%	0%	0%	0%	0%	11%	4%	56%	29%	0%	0%		
Asset Management	27	0%	0%	4%	63%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
Auto Parts	35	0%	0%	0%	37%	0%	63%	0%	0%	0%	0%	0%	0%	23%	3%	54%	17%	3%	0%		
Automobile Manufacturers	46	0%	0%	2%	57%	0%	41%	0%	0%	0%	0%	0%	4%	52%	2%	30%	11%	0%	0%		
Banks	201	0%	0%	10%	60%	0%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
Brands	41	0%	0%	0%	24%	0%	76%	0%	0%	0%	0%	0%	2%	17%	5%	51%	24%	0%	0%		
Capital Goods	201	0%	0%	0%	38%	2%	59%	1%	0%	0%	0%	0%	0%	9%	0%	53%	33%	5%	0%		
Chemicals	140	0%	0%	0%	35%	0%	65%	0%	0%	0%	0%	0%	0%	6%	1%	53%	38%	2%	0%		
Construction Materials	25	0%	0%	4%	48%	8%	40%	0%	0%	0%	0%	0%	0%	12%	8%	44%	36%	0%	0%		
Consumer Durables	23	0%	0%	0%	26%	0%	74%	0%	0%	0%	0%	0%	4%	4%	9%	48%	30%	4%	0%		
Distributors	39	0%	0%	0%	44%	0%	56%	0%	0%	0%	0%	0%	0%	21%	3%	46%	28%	3%	0%		
Diversified Financials	113	0%	0%	4%	42%	0%	54%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
E-Commerce	24	0%	0%	0%	29%	0%	71%	0%	0%	0%	0%	0%	0%	13%	4%	46%	33%	4%	0%		
Engineering & Construction	39	0%	0%	0%	59%	3%	38%	0%	0%	0%	0%	0%	0%	21%	5%	51%	23%	0%	0%		
Financial Exchanges & Data	22	0%	0%	0%	14%	5%	82%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
Food & Beverage	97	0%	0%	0%	51%	0%	49%	0%	0%	0%	0%	0%	0%	12%	3%	59%	24%	2%	0%		
Gaming	17	0%	0%	0%	41%	0%	59%	0%	0%	0%	0%	0%	6%	29%	12%	29%	18%	6%	0%		
Healthcare Services	38	0%	0%	0%	32%	0%	68%	0%	0%	0%	0%	0%	0%	8%	5%	58%	18%	11%	0%		
Hospitality	24	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	8%	8%	4%	50%	29%	0%	0%		
Household & Personal Care	32	0%	0%	0%	53%	3%	44%	0%	0%	0%	0%	0%	0%	22%	6%	44%	28%	0%	0%		
Insurance	98	0%	0%	11%	60%	0%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
Internet	33	0%	0%	0%	33%	0%	67%	0%	0%	0%	0%	0%	0%	12%	6%	42%	27%	9%	0%		
IT Services	33	0%	0%	0%	30%	3%	67%	0%	0%	0%	0%	0%	0%	15%	6%	61%	18%	0%	0%		
Logistics & Shipping	46	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	0%	13%	7%	39%	35%	7%	0%		
Marine Shipping	15	0%	0%	0%	40%	0%	60%	0%	0%	0%	0%	0%	7%	13%	13%	40%	20%	0%	0%		
Med Tech	84	0%	0%	0%	30%	1%	68%	1%	0%	0%	0%	0%	1%	25%	4%	38%	31%	1%	0%		
Media	59	0%	0%	0%	31%	0%	69%	0%	0%	0%	0%	0%	0%	14%	5%	31%	49%	2%	0%		
Mining & Metals	81	0%	0%	0%	48%	0%	51%	1%	0%	0%	0%	0%	5%	22%	1%	48%	16%	4%	0%		
Multi-Industry Services	19	0%	0%	0%	53%	0%	47%	0%	0%	0%	0%	0%	21%	21%	5%	32%	21%	0%	0%		
Oil & Gas Midstream	13	0%	0%	0%	62%	0%	38%	0%	0%	0%	0%	0%	0%	8%	15%	54%	23%	0%	0%		
Oil & Gas Producers	61	0%	0%	31%	43%	0%	25%	2%	0%	0%	0%	0%	0%	11%	5%	57%	21%	3%	0%		
Oil Refiners	26	0%	0%	19%	50%	0%	31%	0%	0%	0%	0%	0%	0%	8%	12%	54%	27%	0%	0%		
Oil Services	8	0%	0%	0%	13%	0%	88%	0%	0%	0%	0%	0%	0%	0%	25%	50%	25%	0%	0%		
Paper & Packaging	27	0%	0%	4%	44%	4%	48%	0%	0%	0%	0%	0%	0%	19%	11%	52%	19%	0%	0%		
Pharma & Biotech	120	0%	0%	0%	28%	2%	70%	0%	0%	0%	0%	0%	1%	12%	2%	51%	31%	4%	0%		
Professional Services	37	0%	0%	0%	19%	0%	78%	3%	0%	0%	0%	0%	0%	19%	5%	46%	27%	3%	0%		
Real Estate	123	0%	0%	0%	51%	0%	48%	1%	0%	0%	0%	0%	2%	16%	1%	56%	21%	4%	0%		
Restaurants	17	0%	0%	0%	29%	0%	71%	0%	0%	0%	0%	0%	0%	24%	12%	29%	29%	6%	0%		
Retail - Multiline & Specialty	42	0%	0%	0%	36%	0%	64%	0%	0%	0%	0%	0%	2%	10%	5%	57%	21%	2%	2%		
Retail - Staples	52	0%	0%	0%	46%	0%	52%	2%	0%	0%	0%	0%	4%	15%	6%	54%	17%	4%	0%		
Semiconductors	101	0%	0%	0%	29%	0%	71%	0%	0%	0%	0%	0%	5%	19%	2%	46%	23%	6%	0%		
Software	68	0%	0%	0%	31%	0%	69%	0%	0%	0%	0%	0%	0%	6%	3%	43%	44%	4%	0%		
Steel	31	0%	0%	0%	42%	0%	58%	0%	0%	0%	0%	0%	0%	0%	6%	55%	29%	10%	0%		
Tech Hardware	126	0%	0%	0%	39%	0%	61%	0%	0%	0%	0%	0%	1%	10%	2%	56%	26%	6%	0%		
Telecom Services	76	0%	0%	0%	29%	1%	68%	1%	0%	0%	0%	0%	0%	17%	1%	55%	26%	0%	0%		
Transport Infrastructure	25	0%	0%	0%	32%	0%	68%	0%	0%	0%	0%	0%	0%	20%	8%	40%	28%	4%	0%		
Utilities - Electric	98	0%	0%	2%	59%	1%	38%	0%	0%	0%	0%	0%	0%	32%	0%	48%	20%	0%	0%		
Utilities - Gas	19	0%	0%	5%	42%	0%	53%	0%	0%	0%	0%	0%	5%	37%	11%	32%	16%	0%	0%		
Utilities - Multi	18	0%	0%	6%	61%	0%	33%	0%	0%	0%	0%	0%	0%	33%	6%	33%	22%	6%	0%		
Utilities - Water	7	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	29%	14%	14%	29%	14%	0%	0%		

This chart is taking the difference between the new Percentile rankings for companies, minus the previous framework versions Percentage output. We acknowledge that this is not a directly comparable output.

Source: Goldman Sachs Global Investment Research

Disclosure Appendix

Reg AC

We, Emma Jones, Xavier Zhang and Brian Singer, CFA, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

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Growth is based on a stock's forward-looking sales growth, EBITDA growth and EPS growth (for financial stocks, only EPS and sales growth), with a higher percentile indicating a higher growth company. **Financial Returns** is based on a stock's forward-looking ROE, ROCE and CROCI (for financial stocks, only ROE), with a higher percentile indicating a company with higher financial returns. **Multiple** is based on a stock's forward-looking P/E, P/B, price/dividend (P/D), EV/EBITDA, EV/FCF and EV/Debt Adjusted Cash Flow (DACF) (for financial stocks, only P/E, P/B and P/D), with a higher percentile indicating a stock trading at a higher multiple. The **Integrated** percentile is calculated as the average of the Growth percentile, Financial Returns percentile and (100% - Multiple percentile).

Financial Returns and Multiple use the Goldman Sachs analyst forecasts at the fiscal year-end at least three quarters in the future. Growth uses inputs for the fiscal year at least seven quarters in the future compared with the year at least three quarters in the future (on a per-share basis for all metrics).

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Distribution of ratings/investment banking relationships

Goldman Sachs Investment Research global Equity coverage universe

	Rating Distribution			Investment Banking Relationships		
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Global	48%	36%	16%	63%	56%	47%

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Regulatory disclosures

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