Global ESG 2023 Outlook

January 2023

Bloomberg Intelligence

Contents

Executive Summary

In politicized times, ESG reframes markets and becomes pivotal. In 2023, we expect more pressure for stewardship accountability as activism builds, credible disclosure shifts the focus to performance and regulatory scrutiny in Europe prompts stronger products and flows while the US faces rockier roads. Although fossil fuels are hard to quit, energy security fuels the green transition, climate commitments and carbon pricing. And, after the Great Resignation, employee-friendly companies gain a competitive advantage.

Greenwashing, energy security and geopolitical concerns raised questions about ESG's efficacy, leading to a two-year decline in net inflows. However imperfect, we believe ESG comes into a recovery to assess long-term risks and changing industry landscapes as markets recognize a key framework in those three letters.

ESG ETF Sentiment

Europe Resilient Despite Weak Global ESG ETF Sentiment

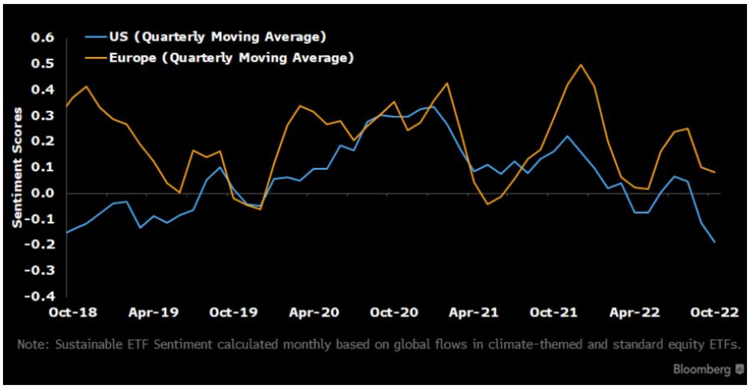
ESG ETF sentiment in Europe remains positive for 2023, defying a global declining trend of the last two years. Our 2023 global view remains neutral as SFDR Article 9 funds and a MiFID II sustainability amendment can support continued appetite for European funds, while global demand will likely stabilize following weaker short-term flows and momentum.

ESG Sentiment Holds Up in Europe, Defying Global Slump

ESG ETF sentiment remains positive in Europe, while the US has seen a decline mirroring the global trend. European ETFs may continue to see inflows, especially with funds seeking Article 9 labels under the European Union's Sustainable Finance Disclosure Regulation (SFDR) and an amendment in MiFID II regulations on disclosing investors' sustainability preferences.

Our sentiment score is based on a regression of flows into ESG and non-ESG global ETFs. The model calculates the impact of ESG or sustainability goals on flows while controlling for fund volatility, returns and net asset values.

Europe vs. US Sustainable Sentiment



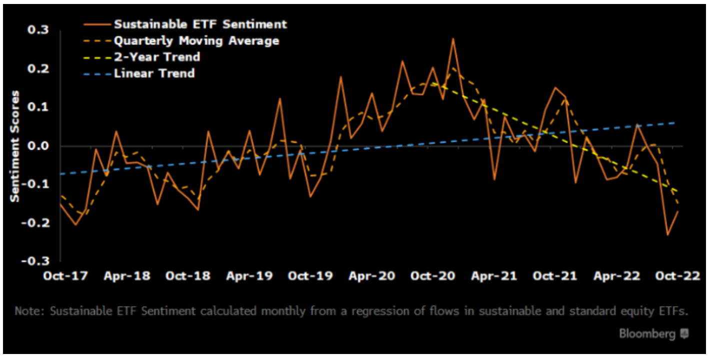
Source: BQNT <GO>, Bloomberg Intelligence

2023 Recovery Plausible for Global ESG ETF Sentiment

The global appetite for ESG ETFs (those incorporating ESG, sustainable or climate themes in their objectives) is in the midst of a two-year decline, but a 2023 rebound remains plausible if the long-term growth trend remains intact. The ongoing sentiment dip represents a sharp deviation from a longer-term upward trajectory. A 2023 reversion to this growth path may be possible as investors globally continue to demand ESG-informed products.

The current lows in our ESG ETF sentiment metric are likely the result of short-term performance-driven reactions to energy prices and economic growth risks. The scores turned negative in early 2022 and continued falling to minus 0.17 in October, from a 0.28 peak in December 2020.

Global Sustainable ETF Sentiment



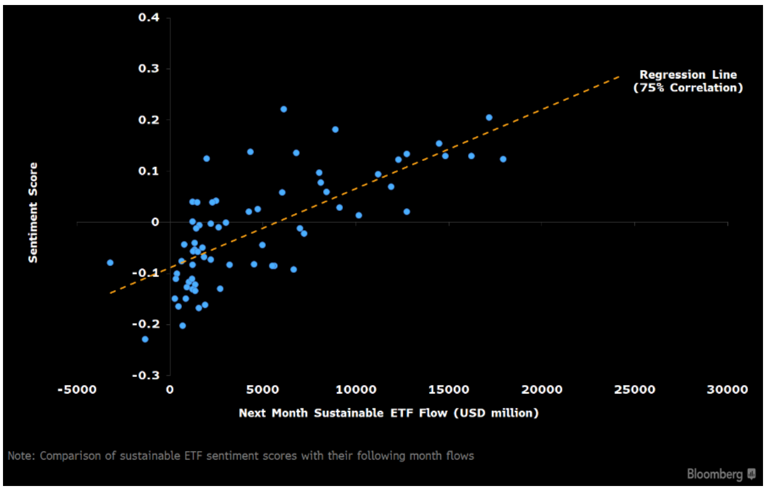
Source: BQNT <GO>, Bloomberg Intelligence

Flows to Remain Low Until ESG ETF Sentiment Recovers

Negative sentiment scores for ESG ETFs signal that flows may remain weak in the near term, both by historical standards and in comparison to peers. Based on our model, we would expect sentiment to return to positive territory before a recovery in ESG ETF flows.

The model produces a strong correlation of 0.75 between sentiment and the following month's ESG ETF flows, indicating that depressed current scores will likely weigh on near-term flows. Moreover, the negative figure indicates that ESG ETFs may experience weaker flows than their non-sustainable peers.

Sentiment vs. Next Month Sustainable ETF Flows

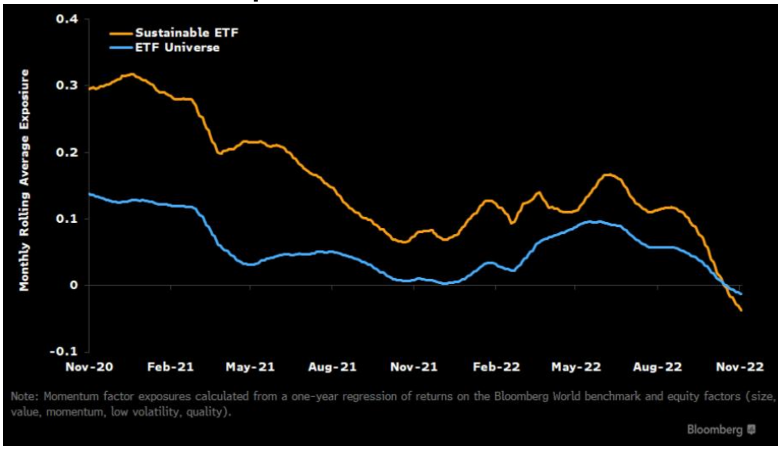


Source: BQNT <GO>, Bloomberg Intelligence

Momentum Fades With Near-Term Performance Headwinds

Ebbing momentum may also reflect the performance headwinds for ESG ETFs. Their median exposure to momentum – a factor that captures the spread between past-year high- and low-performing equities – fell below zero in September from a peak of 0.3 in December 2020. The ESG ETFs' momentum tilt no longer exceeds that of peers, representing a break from the previous two years when the momentum factor was a key performance driver.

Momentum Factor Exposures



Source: BQNT <GO>, Bloomberg Intelligence

ESG Performance and ETF Growth

ESG Faces Many Risks, Yet Europe May Show Strength in ETF Growth

ESG ETF assets and flows could continue to see strength from Europe in the year ahead, driven by favorable policies, while the US weakens. Fund launches are slowing, which could continue as the market matures. ETFs designated as Article 9, Europe's ESG class with the highest sustainability credentials, will likely drive flows. However, the ESG category risks being diluted as the number of funds increases that classify themselves as Article 8 but don't label themselves as ESG.

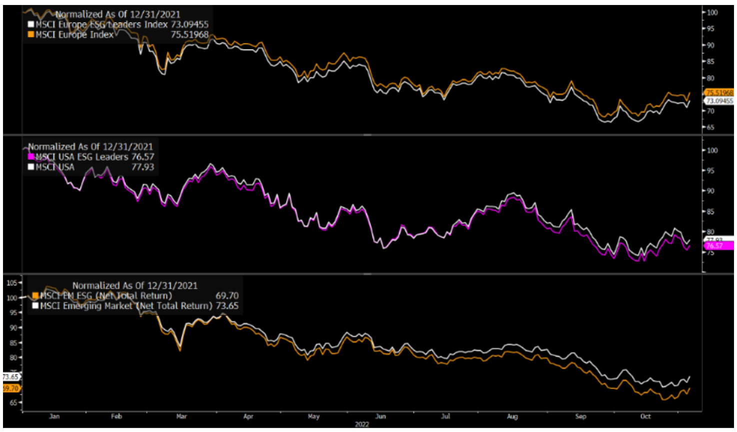
ESG returns have suffered this year largely due to low exposure to the energy sector's outperformance. In the US, ESG ETFs could continue to be hurt by a tilt away from the value factor but aided by low volatility exposures if market turbulence continues to increase.

ESG Performance: Factor Exposures a Mixed Bag

US ESG performance could continue to struggle because of the ETFs' tilt away from the value factor as elevated interest rates push a broader rotation from growth into value. Based on Bloomberg Intelligence's equity strategists, value's relative valuations look attractive, potentially setting the stage for a multi-year run. ESG's slightly low volatility exposure could benefit funds if market turbulence increases. Yet, if markets bounce back rapidly, as they did after Covid's lows, ESG returns could see headwinds.

US and European ESG indices have underperformed broader benchmarks this year, driven largely by their slightly lower exposure to energy. While the MSCI EM ESG Index has performed better over the long term, it trails its non-ESG variant by almost 400 bps this year. Only 20% of US ESG ETFs beat benchmarks this year, down from 65% in 2020.

Performance: ESG vs. Non-ESG Variant



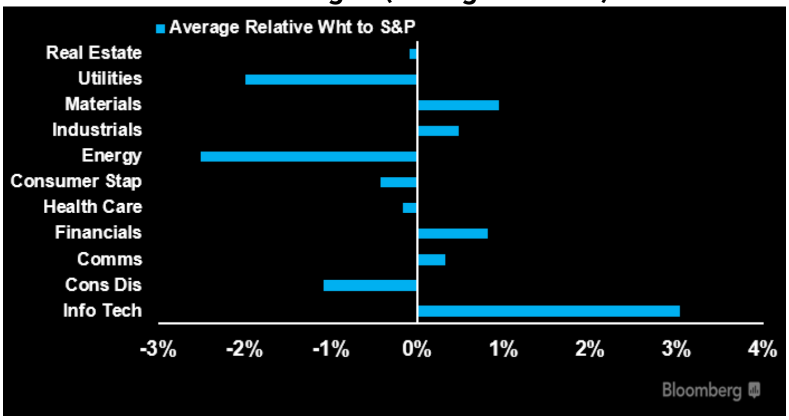
Source: Bloomberg Intelligence

US ESG Returns: A Rethink of Typical Sector Allocations Pivotal

US ESG funds tend to overweight technology and underweight energy, which could continue to hurt returns over the short term as energy tops the BI equity strategy team's scorecard while tech is in the middle. ESG funds could continue to be hurt if tech faces challenges in an economic slowdown, especially if interest rates continue to rise. Tech earnings have been knocked down and might not get up until 2024. Underweighting energy could be a mixed bag for ESG as an economic slowdown typically doesn't bode well for the sector, but elevated energy prices cushion the blow.

As these typical sector allocations come under criticism, we expect a rethink around ESG being more of a fundamental decision, regardless of the sector, becoming increasingly important in the year ahead.

U.S ESG Sector Relative Weights (Average 15 Funds)



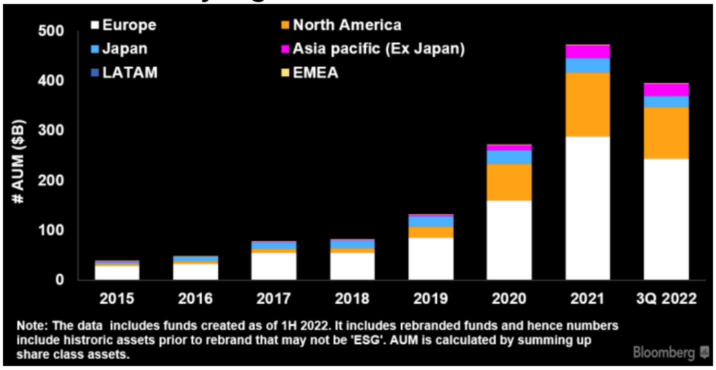
Source: Bloomberg Intelligence

ESG ETF Assets to Continue to Be Fed by Europe

ESG and values-based ETF assets slid around 16% this year to $395 billion in 3Q, driven by market contraction and large one-off outflows that also dominated 1H. We think concentration risks – not skepticism – drove the outflows. And while this eased into 3Q, we think the concentrated nature of inflows and outflows may result in continued swings in flows, which could slow asset growth in the long run if large investors exhaust allocations. While US assets weakened, Europe showed comparative strength.

Fund launches showed signs of slowing and are likely to continue to deaccelerate as an economic downturn dominates fears and the ESG market matures, with most large asset managers having strategies in place.

ESG ETF Assets by Regions



Source: ETF <GO>, Bloomberg Intelligence

Climate ETFs Face Risk of Oversupply: ESG ETF Flow Tracker

The potential liquidations among climate ETFs we have called out are materializing, with at least five shutting shop, and could continue as oversupply tests demand and slower flows drive less-competitive strategies to close. Clean-energy flows spiked in 1Q21 but have cooled, according to our tracker. Flows into low-carbon/fossil-free ETFs have slowed, as well. While the Inflation Reduction Act supports clean-energy flows over the long term, we don't think it will be enough to sustain last year's pace. About 100 climate ETFs have launched until through 3Q, fewer than the 180 in 2021, though it's still double any other year. Low carbon/fossil-free climate themes that aren't as impacted by the act may face higher liquidation risks.

Our tracker covers equity flows to various strategies, painting a picture of market demand.

ESG ETF Flow Tracker

Strategy	Flows ($M) 2015	2016	2017	2018	2019	2020	2021	1Q - 3Q 2022	1Q - 3Q 2021
Exclusionary (Inc Religious)	833	1,139	3,663	5,769	21,336	61,634	89,904	25,948	62,935
ESG	632	852	3,368	5,715	19,315	57,185	81,677	26,823	57,030
Controversies	644	1,258	3,636	5,519	19,298	54,544	78,899	24,049	54,124
Low CO2, Fossil Fuels	198	114	1,258	2,159	3,962	19,262	32,654	18,058	22,675
Clean Energy/Tech	181	38	230	126	877	12,027	16,431	1,517	13,214
Governance	2,663	2,601	2,785	1,531	2,835	1,873	1,581	(184)	1,195
Gender	-	252	53	252	(199)	410	826	797	509
SDG/Impact	-	-	1	111	167	266	568	49	493
Other Environmental	(166)	(44)	(89)	16	166	187	1,733	123	1,330
Diversity & Inclusion	-	-	-	2	3	38	91	74	78
Human Capital	-	896	(148)	(569)	(123)	(63)	(83)	(1)	(72)

Our tracker reflects flows to strategies such as ESG, those that exclude "sin stocks" (like tobacco) and themes like gender. It includes equity ETFs created as of Q4 2020. Funds can have multiple strategies with flows being counted for each. Many combine bans on certain assets with other strategies, boosting the exclusionary category. Other Environmental themes include organic food, sustainable water etc & exclude clean energy, low CO2, fossil free ETFs.

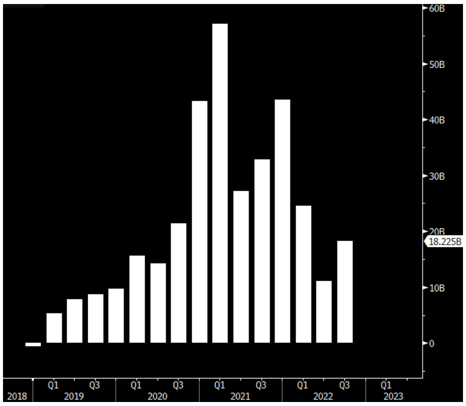
Source: Bloomberg Intelligence

Article 9 ETFs May Gain Flows as Investors Seek Most Sustainable

ESG and values-based ETF flows slid more than broader funds through 3Q than the same period a year ago, driven by weakening in the US as Europe showed strength. Based on our sentiment model, flows could slow further. Funds in Europe classified as Article 8 that don't label themselves as ESG will likely grow and risk diluting the category. Flows were about $53 billion, with Article 9 taking 36% as investors look to the most-sustainable funds, which could continue. However, funds are being downgraded to Article 8, and that may gain pace as more transparency under reporting rules invites scrutiny in 2023.

Under the EU's Sustainable Finance Disclosure Regulation, managers must classify funds into one of three categories. Article 8 funds promote environmental or social characteristics. Article 9 targets sustainable investment.

ESG ETF Flows



Source: Bloomberg Intelligence

ESG Regulation

More Transparency – and Yet Inconsistency

More ESG transparency driven by multiple stakeholders is likely next year across the globe, but inconsistencies may bring short-term confusion, we believe. The EU will impose new rules to bring greater corporate disclosure on climate and ESG while Asia is catching up. But the US will have a rockier road with political opposition from Republicans gaining more power in Congress.

US Climate Rules Take Shape Amid Delays

The SEC's proposed climate disclosure rules will likely be watered down when they go into effect and still have a tough path through the courts. A final rule has been delayed by significant public feedback, strained agency resources amid aggressive rulemaking and a technical glitch that extended the comment period. We believe the rule will be released in the near term with a 2023 effective date – without requiring disclosure of Scope 3 (or indirect) emissions – but its journey through the courts may slow implementation.

The rule will standardize disclosure around the framework of the Task Force on Climate-Related Financial Disclosures and mandate the release of their audited Scope 1 and Scope 2 greenhouse gas (GHG) emissions. It may also include requirements for making reasonable assurances.

Proposed Timeline

Registrant Type	Disclosure Compliance Date	
	All proposed disclosures, including GHG emissions metrics: Scope 1, Scope 2, and associated intensity metric, but excluding Scope 3	GHG emissions metrics: Scope 3 and associated intensity metric
Large Accelerated Filer	Fiscal year 2023 (filed in 2024)	Fiscal year 2024 (filed in 2025)
Accelerated Filer and Non-Accelerated Filer	Fiscal year 2024 (filed in 2025)	Fiscal year 2025 (filed in 2026)
SRC	Fiscal year 2025 (filed in 2026)	Exempted

Filer Type	Scopes 1 and 2 GHG Disclosure Compliance Date	Limited Assurance	Reasonable Assurance
Large Accelerated Filer	Fiscal year 2023 (filed in 2024)	Fiscal year 2024 (filed in 2025)	Fiscal year 2026 (filed in 2027)
Accelerated Filer	Fiscal year 2024 (filed in 2025)	Fiscal year 2025 (filed in 2026)	Fiscal year 2027 (filed in 2028)

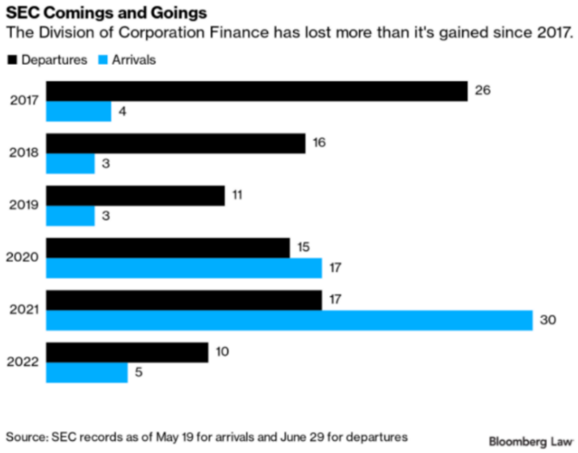
Source: US Securities and Exchange Commission

Defunding the Climate Police?

A Republican House could make it more difficult to implement President Biden's climate agenda. Though SEC rulemaking is a function of the executive branch, Congress could strip funding for the headcount needed to enforce any new or existing disclosure requirements, especially as the government comes up against the debt ceiling. The SEC's Division of Corporate Finance has been short-staffed the last few years, requesting funds in the most recent budget for seven new attorneys to support rules on climate, human capital and executive compensation.

Republican members of the Senate Banking Committee have already sent letters to the SEC questioning the pace of new rulemaking given staffing limits and probing numerous ESG ratings providers.

SEC Division of Corporation Finance Staff Turnover



Source: Bloomberg Law, US Securities and Exchange Commission

Antitrust Risks in ESG Efforts Are Avoidable

Warnings from a group of Republican senators over potential antitrust investigations into alleged collusive activities on ESG initiatives aren't idle; coordinated activity by competitors, even for a laudable goal, can pose antitrust risk. Still, the admonitions are about theoretical – but still avoidable – violations. Many, if not most, competitor collaborations on ESG are unlikely to violate antitrust law, which only bars agreements that restrain trade. Rivals can coordinate on actions that don't have that effect, for instance, discussions of industry best practices.

Cooperation among rivals crosses the line where it fixes prices, rigs bids, allocates markets or customers, or collectively boycotts a firm or firms. Sharing competitively sensitive information can be problematic as well.

Key Points:

Letter from Five GOP Senators to 51 Law Firms:

"[Y]our firm has a duty to fully inform clients of the risks they incur by participating in climate cartels and other ill-advised ESG schemes."

The FTC chair has "emphasized that there is no ESG exemption to antitrust laws."

"Of particular concern is the collusive effort to restrict the supply of coal, oil, and gas"

"Congress will increasingly use its oversight powers to scrutinize the institutionalized antitrust violations being committed in the name of ESG, and refer those violations to the FTC" and the DOJ

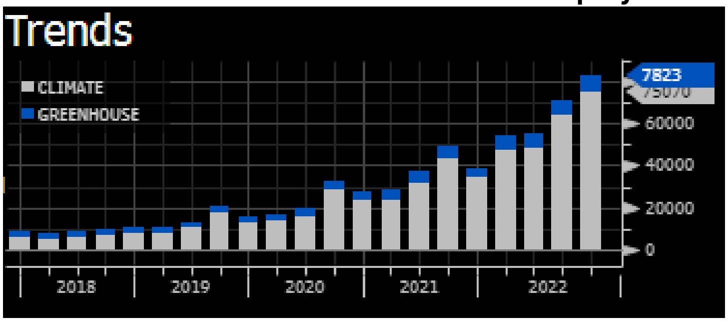
Source: Senators Cotton, Lee, Grassley, Blackburn and Rubio

SEC on Shaky Ground

Recent Supreme Court decisions, such as the June 30 ruling curtailing EPA authority over carbon emissions, bode poorly for the SEC and its climate-disclosure proposal from March. In the June 30 ruling and an earlier one expanding Second Amendment rights, the high court echoed arguments made by the libertarian Cato Institute. We think that happens again with the climate-disclosure rule.

We expect two arguments will resonate with conservative judges. First, the SEC exceeded its authority because the connection between climate-related disclosures and tangible financial impacts is tenuous. Further, Congress' delegation of climate-disclosure regulation, including greenhouse-gas emissions, to the EPA in the Clean Air Act of 1974, suggests the SEC lacks the authority to do the same. And second, that the costs outweigh the benefits.

'Greenhouse' or 'Climate' Found in S&P 500 Company Documents



Source: Bloomberg Intelligence

New EU Reporting Rules' Strength Hangs on Standards

The effectiveness of new EU rules on non-financial disclosure will largely depend on the stringency of standards that the European Financial Reporting Advisory Group (EFRAG) is developing and the directive's transfer into national laws. Still, together with the more sophisticated classification system brought by the EU taxonomy, the updated corporate reporting framework should improve the quantity and quality of the information available for investors, broadening the firms' coverage and requiring audits over reported information.

We calculate that more than 6,000 non-EU companies may meet the criteria to fall under the directive's expanded scope, with the largest number of those being US-based and operating in the industrial and financial sectors.

NFRD, CSRD: Key Differences

	Non-Financial Disclosure Directive (current rules)	Corporate Sustainability Reporting Directive (proposed rules)
Scope	Large firms with > 500 employees	All large and all listed firms (ex. micros, incl. non-EU)
Double materiality	Some ambiguity	Enhanced clarity
Topics	Environmental, social and employee affairs, human rights, corruption and bribery	NFRD plus governance
Reporting areas	Restricted list	More detailed and extensive list
Standards	Only disclosed if companies use any	Mandatory EU ones for large companies, simpler standards for SMEs
Supervision & penalties	No specific sanctions for non-listed companies, unclear supervisions for the others	Clearer supervision and ESMA guidelines for listed companies, minimum sanctions for non-listed ones

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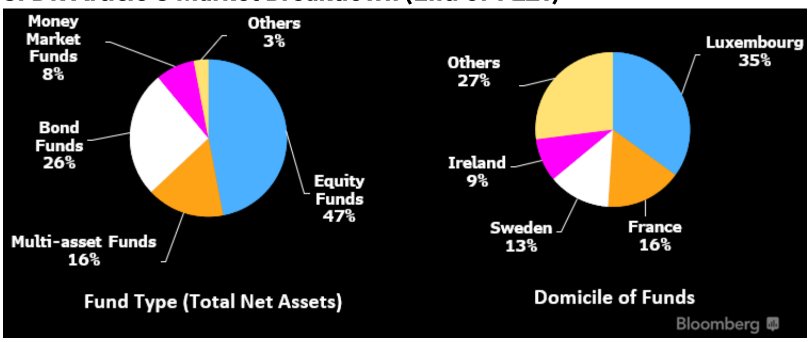
Source: CEPS, European Commission

SFDR Standards Improve Products' ESG Comparability

The application of the EU Sustainable Finance Disclosure Regulation's (SFDR) technical standards on Jan. 1, 2023, is set to increase the transparency and comparability of financial products on offer in the EU, helping investors identify funds that fully comply with Article 9 requirements. The new regulatory standards include mandatory content and presentation obligations for financial operators that may temporarily increase the number of funds being downgraded from Article 9 to Article 8, but that will ultimately support investors keen to discern greenwashing practices.

The European Fund and Asset Management Association estimates the European funds in the scope of SFDR Article 8 were worth €3.7 trillion at the end of 1Q21. Among them, Luxembourg ranks in the top domicile with 35%, or €1.301 billion, at the end of 1Q21.

SFDR Article 8 Market Breakdown (End of 1Q21)



Source: European Fund and Asset Management Association

Synchronizing With ISSB Could Be China's Next Step

Adopting international ESG disclosure standards should be China's long-term goal, which may help achieve mandatory ESG reporting. Still, a few problems should be addressed first, such as the lack of an established process for collecting high-quality ESG data and scant ESG coverage by third-party rating agencies. While the China Securities Regulatory Commission is asking A-share companies to report ESG information voluntarily – based on various disclosure requirements – synchronizing with global ESG standards such as the International Sustainability Standards Board (ISSB) could be the next step.

Chinese companies provided feedback on the ISSB proposals by June 15 based on their domestic needs, and this has been submitted to the ISSB.

ESG Metrics of Enterprise ESG Disclosure Guidance

Primary Indicator	Secondary Indicator	Tertiary Indicator	# of Metrics
Environmental (43)	Resource Consumption (14)	Water Resources	5
		Materials	4
		Energy	4
		Other Natural Resources	1
	Pollution Prevention (20)	Wastewater	7
		Waste Gas	5
		Solid Waste	7
		Other Pollutants	1
	Climate Change (9)	Greenhouse Gas Emission	5
		Emission Reduction Management	4
Social (32)	Labour Rights (15)	Recruitment and Employment	3
		Employee Protection	5
		Employee Health and Safety	4
		Employee Development	3
	Product Liability (7)	Production Regulation	2
		Product Safety and Quality	2
		Customer Service and Welfare	3
	Supply Chain Management (5)	Supplier Selection	3
		Supply Chain Management System	2
	Social Responsiveness (5)	Community Relations Management	2
		Civil Duty	3
Governance (43)	Governance Structure (10)	Shareholders	2
		Board of Directors	3
		Supervisory Board	2
		Senior Management	2
		Other Top Governance Body	1
	Governance Mechanism (24)	Compliance Obligations	7
		Risk Management	6
		Oversight	3
		Information Disclosure	2
		Senior Management Engagement	3
		Business Ethics	3
	Governance Effectiveness (9)	Strategy and Culture	2
		Innovation	4
		Sustainable Development	3

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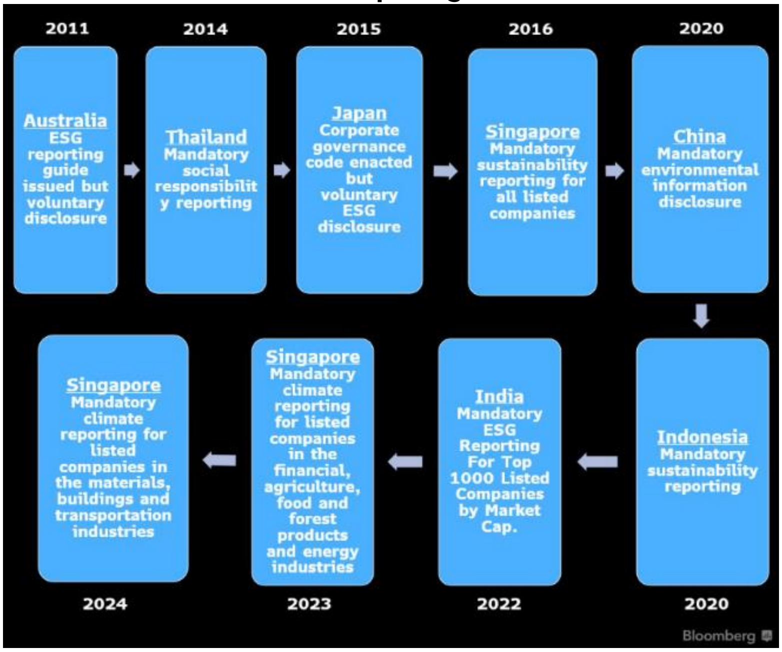
Source: Guidance for "Enterprise ESG Disclosure," Bloomberg Intelligence

Increasing ESG Disclosure Is the Megatrend in Asia

China's first "Guidance for Enterprise ESG Disclosure," issued by the China Enterprise Reform and Development Society and effective since June 1, was much needed to lift ESG disclosure standards among the country's enterprises given China's rapid development of ESG products. The guidance is based on Chinese laws and regulations, fitting in with operating conditions in the country. At least 25 jurisdictions have mandated corporate ESG disclosure, according to a study by the European Corporate Governance Institute. Among Asian countries, Thailand, China, Singapore, Indonesia and India have made sustainability and environmental information disclosure mandatory, but ESG reporting remains mostly optional.

Timeline for ESG Disclosure / Reporting in Asia



Source: Bloomberg Intelligence

ESG Scores

ESG Scores Could Signal Better Returns, Growth at Top Performers

Top ESG scores could signal that firms are addressing risks and reinforcing strategic positions, which can aid returns and income growth. US and EMEA have higher ratios of stocks outscoring sector peers in "E" and "S" than APAC, which needs to boost disclosure and "G" metrics. We expect ESG disclosure to improve globally as frameworks standardize, shifting focus toward ESG performance.

Top ESG Scores May Signal Better Returns

High ESG scores could signal proficient managements that generate better returns and profit than indexes. Within our sample of 1,000 companies, 29 stocks are ranked in the top 10% for environmental, social and governance scores. Our analysis shows they have better average total returns, risk-adjusted returns (higher Sharpe ratios) and net income growth vs. the MSCI World benchmark. While our study doesn't prove direct causation, it does suggest that solid ESG management is linked to enhanced returns and profit. Though most of these top firms have seen share-price falls in a turbulent 2022, they have dropped less than the index. Oil-tech giant Schlumberger has seen the biggest rise, of 77%.

The elite group includes no APAC stocks; we think disclosure and performance enhancement are needed to nurture more ESG leaders from that region.

Companies With Top 10% ESG Scores

Name	Country	*Sector*	E Pillar Percentile 2021	S Pillar Percentile 2021	G Pillar Percentile 2021	3 Year Annualized Total Return - Last Close	Sharpe Ratio 3 Years	3 Year Net Income CAGR	Price Change Year To Date Percent
VERIZON	US	Communications	94.5	95.3	98.9	-11%	-0.56	12%	-28%
MONDELEZ INTER-A	US	Consumer Staples	98.2	99.1	93.7	9%	0.35	9%	-5%
BROWN-FORMAN -B	US	Consumer Staples	95.3	93.0	90.7	2%	0.07	8%	-8%
HERSHEY CO/THE	US	Consumer Staples	98.6	98.6	93.8	20%	0.74	8%	18%
DIAGEO PLC	UK	Consumer Staples	100	100	94.9	8%	0.29	-4%	-9%
GENERAL MOTORS C	US	Consumer Discretionary	97.9	100	100	1%	0.01	8%	-33%
YUM! BRANDS INC	US	Consumer Discretionary	93.1	100	93.3	9%	0.27	1%	-12%
EBAY INC	US	Consumer Discretionary	100	96.3	96.3	6%	0.16	75%	-40%
SCHLUMBERGER LTD	US	Energy	100	92.0	94.0	17%	0.28	-4%	77%
MORGAN STANLEY	US	Financials	97.3	97.3	97.2	24%	0.57	20%	-14%
GOLDMAN SACHS GP	US	Financials	100	90.9	100	20%	0.51	27%	-6%
JOHNSON&JOHNSON	US	Health Care	97.8	96.7	94.2	12%	0.53	11%	0%
BRISTOL-MYER SQB	US	Health Care	99.6	98.9	96.7	15%	0.60	12%	26%
GSK PLC	UK	Health Care	92.1	98.4	93.3	-2%	-0.08	8%	-11%
CORTEVA INC	US	Materials	100	100	92.6	38%	0.99	NA	38%
FREEPORT-MCMORAN	US	Materials	92.5	100	93.3	50%	0.79	18%	-16%
NEWMONT CORP	US	Materials	93.9	93.9	100	5%	0.16	51%	-34%
LINDE PLC	UK	Materials	98.9	98.9	92.2	17%	0.27	30%	-11%
CRH PLC	IRELAND	Materials	92.6	92.6	100	7%	0.19	-5%	-21%
APPLE INC	US	Technology	93.9	95.7	92.0	30%	0.80	17%	-22%
CISCO SYSTEMS	US	Technology	97.4	92.3	98.4	1%	-0.01	358%	-30%
ADOBE INC	US	Technology	96.2	94.5	96.2	1%	-0.03	23%	-50%
HEWLETT PACKARD	US	Technology	91.0	99.1	96.0	-2%	-0.08	22%	-10%
ASML HOLDING NV	NETHERLANDS	Technology	98.9	91.1	95.8	25%	0.65	31%	-34%
PG&E CORP	US	Utilities	96.9	91.2	96.2	28%	0.65	NA	26%
EVERSOURCE ENERGY	US	Utilities	92.9	100	95.2	1%	0.04	6%	-15%
ENEL SPA	ITALY	Utilities	98.9	93.6	95.2	-8%	-0.22	-13%	-34%
E.ON SE	GERMANY	Utilities	100	95.0	95.5	4%	0.16	13%	-29%
SSE PLC	UK	Utilities	95.7	92.6	92.3	13%	0.42	40%	-4%
Average (Top 29 ESG performers)						13%	0.32	30%	-9%
MSCI WORLD INDEX						6%	0.23	12%	-22%

Note: Data as of 4 November 2022. Analysis is based on 2021 scores if available, 2020 if not. Bloomberg

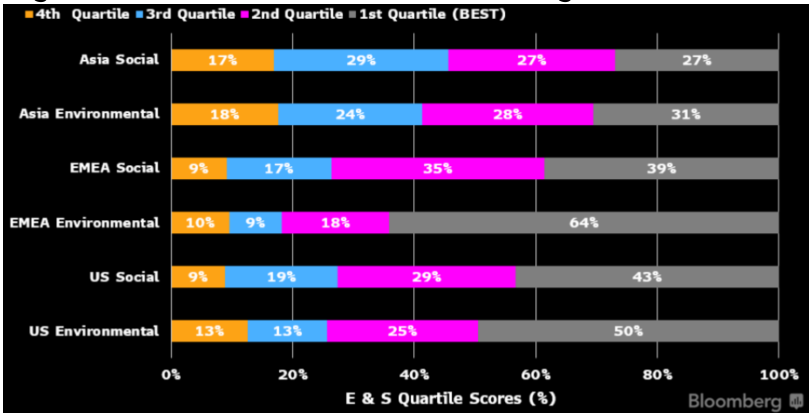
Source: Bloomberg Intelligence

EMEA Takes Lead on 'E' Scores by Quartile; US Tops 'S'

Bolstered by regulation and investor pressure, EMEA outperforms on environmental scores across industries while the US leads on social performance. Our analysis of the 1,000 largest-cap stocks in our scoring universe shows 64% of EMEA firms are in the top quartile for environmental practices vs. 31% in APAC. The EU's taxonomy of sustainable activities, and Europe's Sustainable Finance Disclosure Regulation have improved disclosure and helped boost scores in the region.

The US leads on social performance with 43% in the top quartile. At 17-18%, APAC has the largest proportion of companies in the lowest performance quartiles for both 'E' and 'S'. Bloomberg's quartiles compare a company's aggregated performance with global-industry peers, ranging 0-100 (100 best).

Regions' Relative Performance in Global Ranking



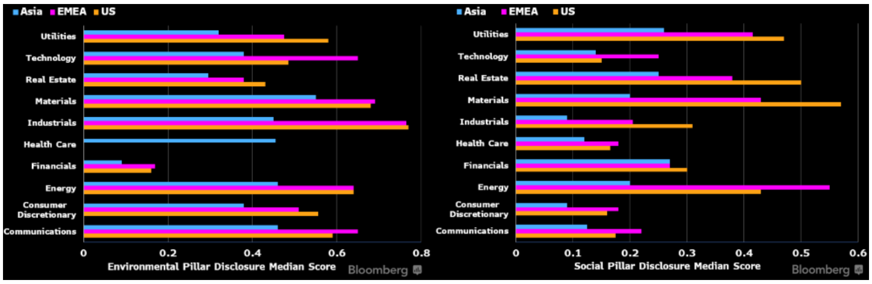
Source: Bloomberg Intelligence

Industrials Lead on 'E' and 'S' Disclosure

Industrials, materials and energy have the highest median environmental disclosure scores, likely due to sectors with larger environmental footprints initially receiving higher ESG scrutiny. Since policies such as the EU taxonomy stipulate disclosure across all industries, this discrepancy will eventually diminish, even for financials, a laggard. Industrials, materials and energy also score well in social disclosure, alongside real estate and utilities.

EMEA companies disclose more material environmental information and the US more social information, and APAC lags. We expect disclosure to improve globally. In APAC, more countries are likely to adopt the International Sustainability Standards Board ESG reporting framework, while the US SEC recently proposed amendments to regulate ESG disclosure.

Environmental and Social Disclosure

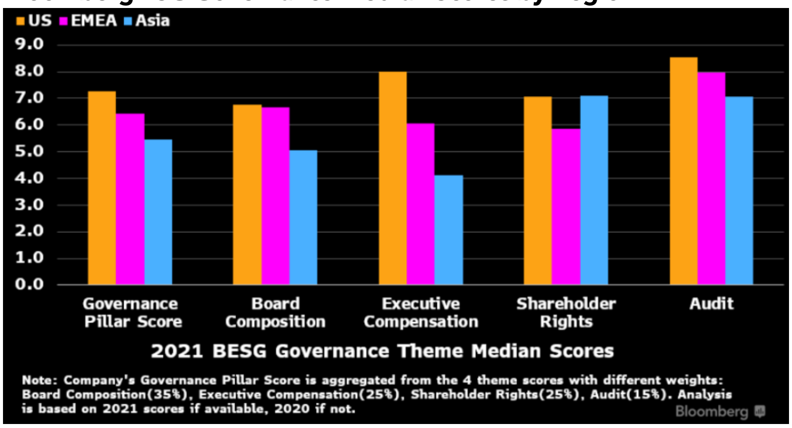


Source: Bloomberg Intelligence

APAC Needs to Boost Women on Boards

APAC has a lower median score for board composition in 2021 than the US and EMEA, mainly due to weaker diversity and independence. The median proportion of women on US boards is 29% and for EMEA it's 36% vs. APAC's 13%. Our analysis shows APAC companies have introduced more independent directors on boards in the past five years, but its 43% median is still far behind the US and EMEA. APAC also lags in executive compensation, mainly due to poor incentive structures; only 30 of 290 sample firms have set up ESG-linked bonuses. EMEA firms can improve shareholder rights scores by promoting equal voting rights between common-share classes. All three regions score well in audits, but we expect further improvement in auditor ratification and support, as shareholders' satisfaction with auditors may signal better audit quality.

Bloomberg ESG Governance Median Scores by Region



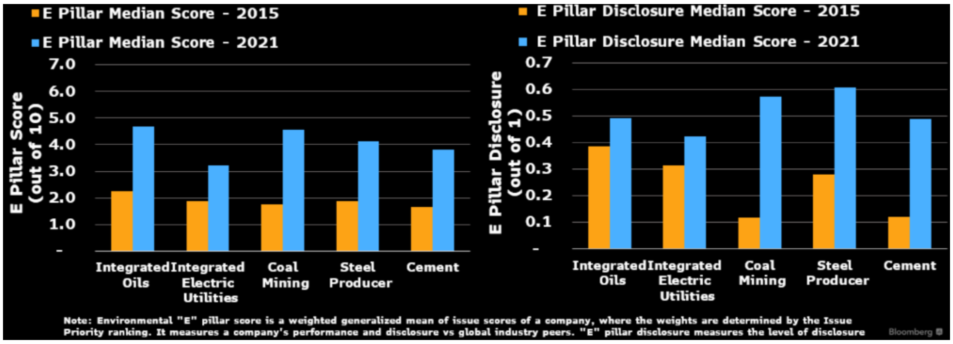
Source: Bloomberg Intelligence

Energy Transition Sectors Vary in Raising 'E' Score

With the world aiming to limit global warming, we identify integrated oils, integrated electric utilities, coal, steel and cement as key sectors facing intensified pressure for decarbonization. We believe these sectors' companies urgently need to improve their environmental performance and disclosure, given their low 2021 environmental scores. Coal and cement saw the largest increases in median environmental disclosure scores between 2015-21, implying their improvements in overall environmental scores could have been largely driven by stronger disclosure instead of performance.

Among the other sectors, integrated oils may have engaged in mitigating climate risks at an earlier stage, as reflected in its relatively high 2015 environmental median score and slower rise in disclosure.

Environmental Pillar & Disclosure Median Scores



Source: Bloomberg Intelligence

Activism Gathering Steam

Asset Managers Seek Cover as Activists Step Up: Proxy Season '23

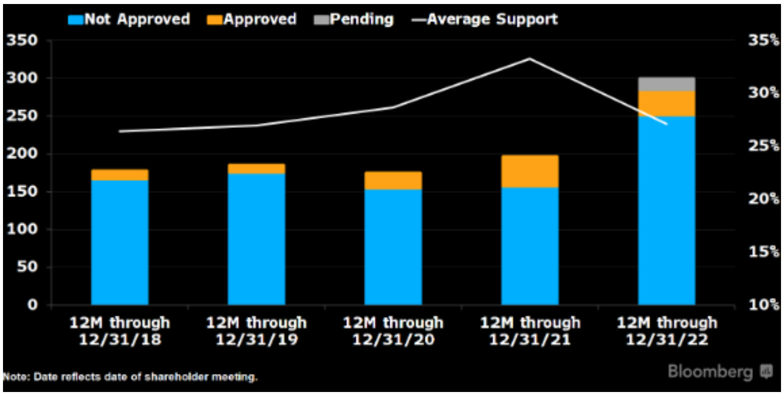
Environmental and social advocates, as well as anti-ESG activists, will continue to propose shareholder resolutions in 2023 to push their agendas. Yet major asset managers – often the arbiters of such debates given their outsize ownership – are finding ways to deflect what has become a growing spotlight on their stewardship.

Another Deluge of Resolutions Appears Likely

Another record year for US shareholder proposals is likely in 2023, we believe, given lower regulatory hurdles and growing pressures on corporate behavior from supporters as well as detractors of ESG. The SEC opened the floodgates in late 2021, making it harder to keep certain items with "broad societal impact" off proxies, driving a 52% increase in environmental and social resolutions. This included highly prescriptive proposals from environmental and social activists, as well as "anti-woke" proposals. Both sides failed to woo mainstream investors, as evidenced by average support levels dropping to 27% in 2022 from 33% the year before.

Amid a growing chorus on climate change and racial justice on the left and rising anti-ESG rhetoric on the right, we expect these resolutions will continue to show up en masse next year.

E and S Shareholder Proposals (Russell 3000)



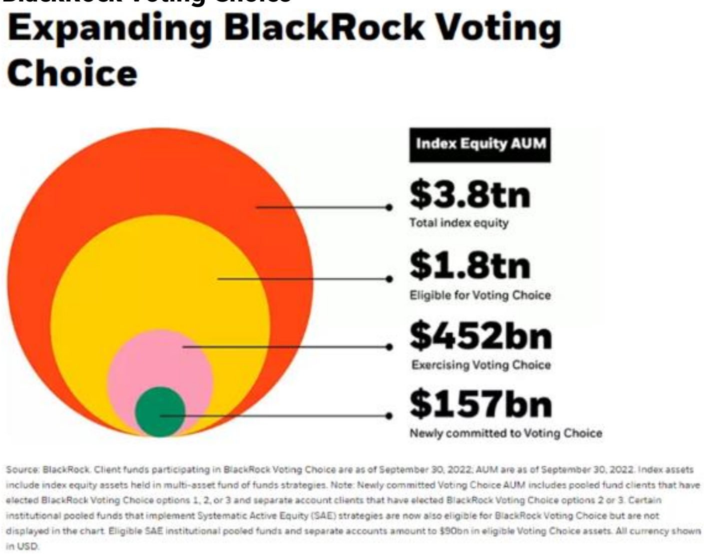
Source: Bloomberg Intelligence

Power to the People ... or Passing the Buck?

Recent moves by Vanguard and BlackRock to introduce or expand plans allowing fund holders to vote proxies directly represent a new element of shareholder democracy. It's no coincidence that the policies came right after the SEC finalized rules to "enhance transparency of fund and institutional investment manager proxy voting." By passing on voting to fund participants, asset managers can sidestep criticism of ESG engagement policies from both sides. Some state officials have accused asset managers of going too far on environmental and social risk management, while others have said they haven't gone far enough.

The moves also help temper accusations that too much voting power is concentrated in a handful of firms. Still, we think these shifts may be too little too late to push back the politicization of ESG investing.

BlackRock Voting Choice



Source: Bloomberg Intelligence

Target of Both ESG and Anti-ESG Factions

Environmental activists – as well as coal miners – have already expressed dissatisfaction with Vanguard and BlackRock. There's been a string of protests as well as articles and columns accusing both firms of being the biggest owners of fossil fuels and moving too slowly – or too quickly – on ESG issues. Though Vanguard and BlackRock are among the top shareholders of companies such as Exxon Mobil and Chevron, there's little they can do about it. Index funds can't sell such stocks as long as they remain in benchmarks. By democratizing the vote, Vanguard can now say they are simply voting the will of the people.

The targeting of active managers might be a more fruitful approach for activists. That could drive down prices of energy stocks, leading to lower market capitalizations that may get them ejected from indexes.

Website

> "Environmental activists have a big passive problem. Despite chalking up a string of victories, campaigners trying to save the planet by convincing investors to ditch fossil fuel stocks are at risk of seeing their efforts crushed by the relentless growth of index funds. No matter how poorly they perform, they can count on investor money filling their coffers as long as they maintain their spot in the right indices."

Source: Billy Nauman – Columnist, Financial Times – Feb. 7, 2020

SEC: Investors Seek Climate Goals, Not Meddling

The SEC emboldened shareholder proposals asking companies to set carbon targets or report ESG data, though voting from the recent proxy season showed a limit to how far investors were willing to press such goals. The agency's Staff Legal Bulletin says the definition of "micromanagement" previously used to exclude resolutions was too rigid. It also says references to established frameworks like the Task Force on Climate-Related Financial Disclosures alleviate concerns that these topics are difficult for investors to evaluate.

The SEC allowed Devon Energy to exclude a 2019 proposal seeking greenhouse-gas targets in line with the Paris Agreement, claiming it would micromanage the company by imposing specific methods for setting complex policies. But the bulletin makes clear that the current commission would rule differently.

Government Filing

> "While the analysis in this bulletin may apply to any subject matter, many of the proposals addressed in the rescinded SLBs requested companies adopt timeframes or targets to address climate change that the staff concurred were excludable on micromanagement grounds. Going forward we would not concur in the exclusion of similar proposals that suggest targets or timelines so long as the proposals afford discretion to management as to how to achieve such goals."

Source: Shareholder Proposals: Staff Legal Bulletin No. 14L (CF), Division of Corporation Finance, Securities and Exchange Commission – Nov. 3, 2021

`Anti-Woke' Resolutions Skew Numbers Lower

A number of so-called anti-woke proposals emerged this year. Labeled `E' or `S' by data providers, they often run counter to the policies of ESG investors and corporate boards and received low support. The right-leaning National Center for Public Policy Research submitted 11 resolutions for civil-rights audits at Meta, Walmart and Bank of America, among others. The proposals – criticizing anti-racism and diversity and inclusion policies adopted by many companies – received just 2% of the shareholder vote on average vs. 39% for all other race-related provisions.

The anti-woke proposals may have been intended to preclude similarly worded but more ESG-friendly resolutions from showing up again. The SEC recently proposed clarifications to duplication and resubmission rules to prevent that from happening.

Company Filing

> "Businesses should not be distracted and hijacked by social and political activists seeking to change perceived shortcomings of society, which are issues better and more appropriately addressed by governments and charities. Nuisance shareholders and their proposals distract management and coerce it into taking harmful actions based on junk science, political correctness and other non-business agendas rather than rational business practice. This can only reduce profits and, thereby, prevent ExxonMobil from achieving its actual social responsibility."

Source: Steven Milloy - Shareholder Proposals, Item 5, ExxonMobil Notice of 2022 Annual Meeting, April 7, 2022

A Turning Point for the Climate?

Delayed Ambition on CO2 Reduction: Climate Hopes Shift to 2023

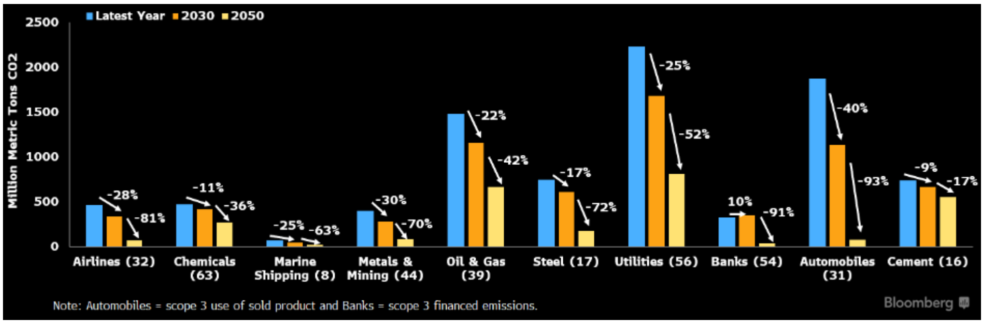
As analysis of ambitions to cut carbon dioxide emissions matures, the most carbon-intensive companies will likely step up commitments in 2023. For banks, nascent reporting on financed emissions and associated target-setting should give way to improvements. Investors and companies alike will continue to wait for more transparency and structure around CO2 offsets.

Moving Beyond Disclosure, a Focus on CO2 Objectives

Though debates over CO2 disclosures persist in certain forums, the most carbon-intensive companies have largely shifted their attention beyond this and toward reducing emissions. In our BI Carbon peer set of over 350 companies, which represents a cumulative total of almost 6.4 billion metric tons of Scope 1 and 2 emissions, or 17% of total global emissions, roughly 95% report CO2 emissions data and nearly 80% have set reduction targets. However, only 92 companies have set targets in line with a temperature-aligned benchmark by 2030, suggesting increased ambition will be the focus for the year ahead.

Operational emissions for the 360 companies in our peer set that provide emissions data are expected to decrease by almost 20% between the latest year and 2030, and about 50% by 2050, based on our analysis.

BI Carbon: Forecast CO2 Emissions Reductions



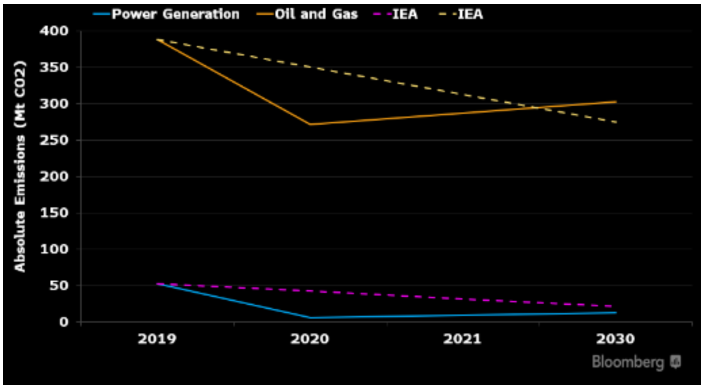
Source: Bloomberg Intelligence

For Banks, Disclosure and Stepped-Up Goals Needed

Most top global lenders have committed to aligning their lending portfolios with net zero by 2050 as part of the Net-Zero Banking Alliance, but 2023 will likely yield improved disclosure on financed emissions and more ambitious interim targets. In our peer set of 54 banks, 60% don't report financed-emissions data, making analysis of current performance and future ambition difficult. Further, using Bloomberg league-table figures to calculate historic financed emissions, as well as publicly stated targets, we find that only 14 have set interim 2030 goals for lending toward power generation and oil and gas that are consistent with an IEA Net Zero by 2050 pathway, suggesting strategies need to be enhanced in the near term.

Credit and market losses could be significant for those continuing to accumulate climate risk.

Power, Oil & Gas Financed Emissions vs. IEA NZE



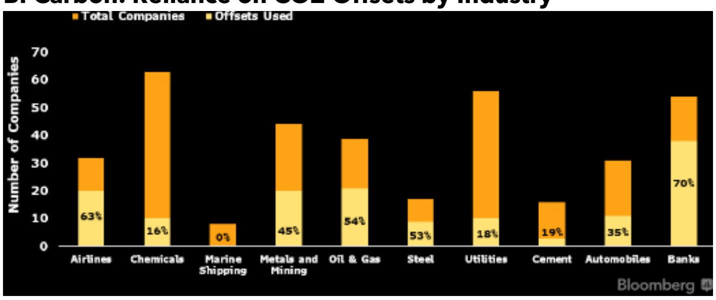
Source: Bloomberg Intelligence

Offsets Are the Climate Elephant in the Room

Despite a heavy reliance by companies on CO_2 offsets, this market will remain a source of scrutiny and confusion in 2023. Delegates at COP27 failed to agree on rules for an international carbon market, pushing further deliberation to next year. Also, the negotiations didn't provide a clear distinction between carbon reductions/removals and avoidance offsets, and what would be eligible for the market. As a result, companies will continue to engage in the voluntary carbon markets, which remain opaque for investors. Roughly a third of companies in our BI Carbon peer set state a reliance on offsets to achieve at least a portion of their CO_2 target.

Demand for carbon offsets is expected to drive the price of credits to \$40-\$50 a ton by 2030 and \$50-\$100 by 2050 from \$2-\$6 currently, according to BloombergNEF.

BI Carbon: Reliance on CO2 Offsets by Industry



Source: Bloomberg Intelligence

Carbon Outlook

Carbon-Emissions Growth May Ease Off in 2023 as Trade, GDP Slow

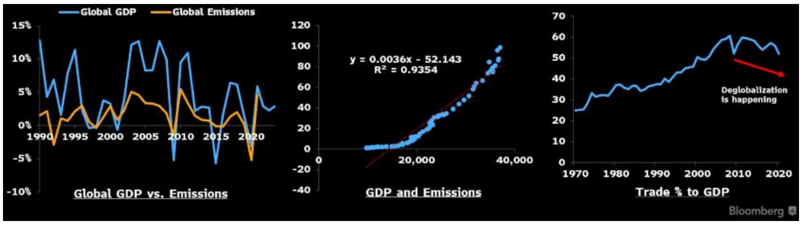
The growth in global carbon emissions might decelerate in 2023 as GDP expansion is likely to moderate in a post-Covid environment and as the Russia-Ukraine war rages on. Carbon prices might hit new records, spurred by higher energy prices and inflation. Food supply and the EU's carbon border adjustment mechanism could be hurt if states don't collaborate.

Decline in Trade Might Slow Emissions in 2023

The increase in global carbon emissions could slow in 2023 if trade continues to decline as economic and transportation activities could slacken. The global trade-to-GDP ratio stood at 52% in 2020, the lowest since 2003, as the Covid-19 pandemic brought international freighting to a standstill. Russia's invasion of Ukraine in February 2022 might have compounded the situation. There's a positive relationship between global GDP and emissions, looking at 1962-2022 data, with a correlation coefficient of 0.94. Therefore, with market consensus looking for a 2.3% growth in global GDP for 2023 vs. 2022's 2.9%, the increase in the world's carbon emissions could decelerate as well.

Power, transport, aviation and shipping, manufacturing and construction accounted for 62% of total global emissions in 2019.

Global Emissions vs. GDP; Trade to GDP



Source: WGDPWRLD Index, World Bank

Coal Expansion Might Not Spur Emissions

China will grow its thermal-coal output by 4% in 2023 to a record 3.8 billion tons, according to Bloomberg Intelligence forecasts. Yet, the increase in emissions from coal might be more than offset by a slowdown in economic activity amid the government's Covid-Zero measures and a crisis in the property sector. Property construction could remain sluggish after land sales plunged 53% in the first nine months vs. a year ago, and we have yet to see any signs of a relaxation in China's Covid-Zero measures. China's CO_2 emissions fell 8% in 2Q vs. a year ago even as coal output rose 14% and thermal power generation gained 10%.

The output of the nation's biggest coal miners, Shenhua Energy and China Coal Energy, rose 5% and 10.2% during the first nine months vs. a year ago.

China's Coal Demand and Supply; Land Purchases YoY

China		2018	2019	2020	2021	2022E	2023E	2024E
Commercial Thermal Coal Production	Million Tons	3,109	3,147	3,057	3,293	3,672	3,819	3,971
	YoY		1.2%	-2.9%	7.7%	11.5%	4.0%	4.0%
Commercial Coal Consumption	Million Tons	3,313	3,335	3,297	3,581	3,744	3,943	4,161
	YoY		0.7%	-1.1%	8.6%	4.6%	5.3%	5.5%

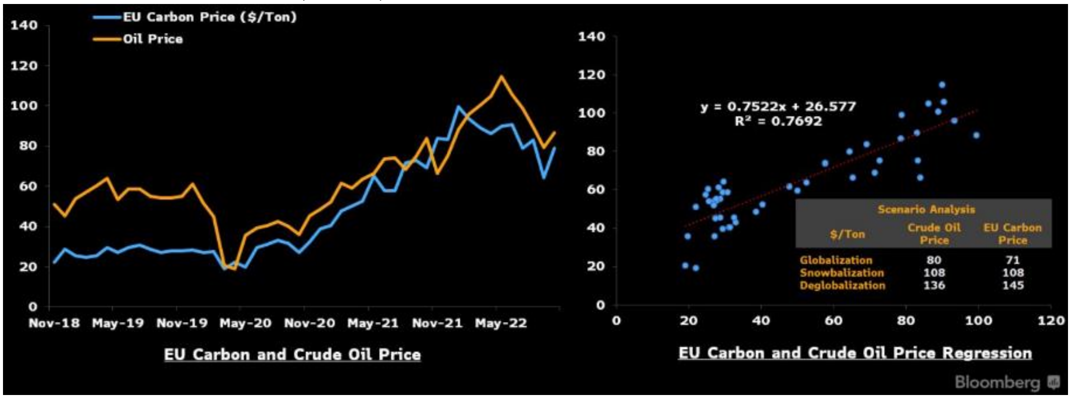
Source: Bloomberg Intelligence

Carbon Price Might Nearly Double Under Deglobalization

The EU's carbon price might trade at $145 a ton under a deglobalization scenario, representing a 96% upside to Nov. 18's close. Regression analysis puts the coefficient of determination (R2) between carbon and oil prices, based on the past four years' data, as high as 0.77. Higher carbon pricing might effectively prompt a reduction in emissions and hasten a green-energy transition by households and businesses, with the tax revenue potentially ploughed back into cutting emission budgets.

Yet higher carbon prices could also raise operating costs for businesses, which might put some pressure on governments planning to launch carbon trading or carbon taxes. Japan has abandoned its plan to include a carbon-tax reform in fiscal 2023 to avoid putting a cost burden on companies and consumers.

EU Carbon and Oil Prices ($/Ton)



Source: Bloomberg Intelligence

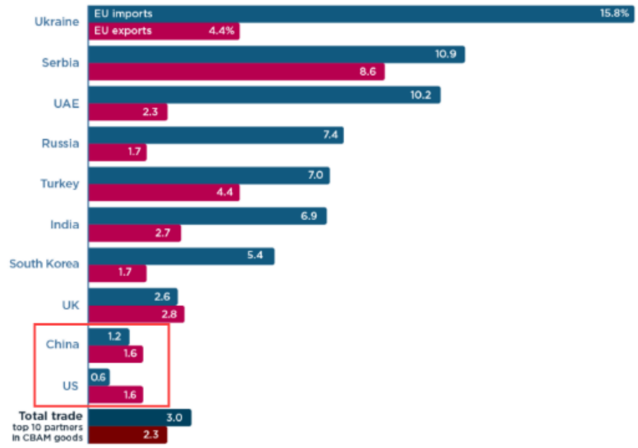
EU Carbon Tax May Crimp US, China Exports

The EU's carbon border adjustment mechanism will make the US, Chinese and many other non-EU countries' products sold by companies in five industries – iron and steel, aluminum, fertilizers, electricity and cement – more expensive in Europe. An additional four industries – chemicals, polymers, hydrogen and ammonia – may also be added by the end of the legislative process. In US-EU and China-EU trade, the most affected companies, for now, are those selling steel and aluminum, which the Peterson Institute for International Economics estimates may comprise $1.4 billion. Some of the raw materials used to make steel and process aluminum could also become pricier due to the tax.

Alcoa earned 34% of revenue from Europe in 2021 and U.S. Steel 21%. However, China is the world’s largest exporter of both steel and aluminum.

EU's CBAM Only Covers Fraction of Imports for Now

Share of EU trade with top 10 trading partners in products covered by proposed CBAM



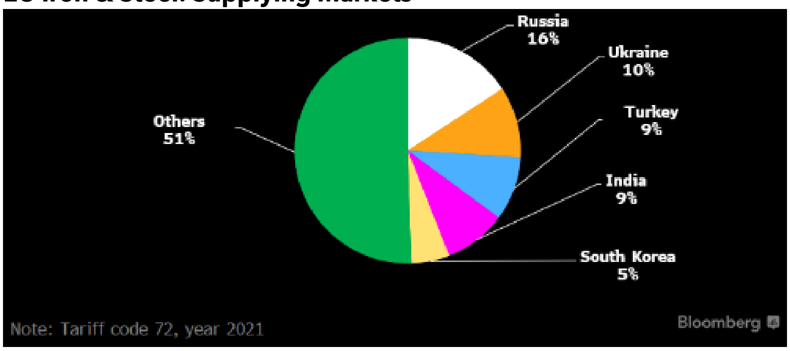
Source: Peterson Institute for International Economics

Russia Most Exposed to EU Carbon Border Price

Baoshan Iron & Steel and Novolipetsk Steel are among the Chinese and Russian iron and steel producers whose competitiveness could diminish in the EU market when the cross-border carbon tax is implemented. Their carbon intensities are higher than the average of EU producers, and they're not subject to a domestic carbon-pricing system. China is the biggest global supplier of iron and steel products, accounting for one-tenth of EU imports.

Beijing ships 12% of its iron and steel exports to the EU, while Russia is more dependent on the bloc. The EU bought 29% of Russia's exports of iron and steel products before the invasion of Ukraine in February.

EU Iron & Steel: Supplying Markets



Source: Bloomberg Intelligence, ITC Trade Map

Financing the Transition

Softer Global Economy May Put Temporary Brakes on ESG Finance

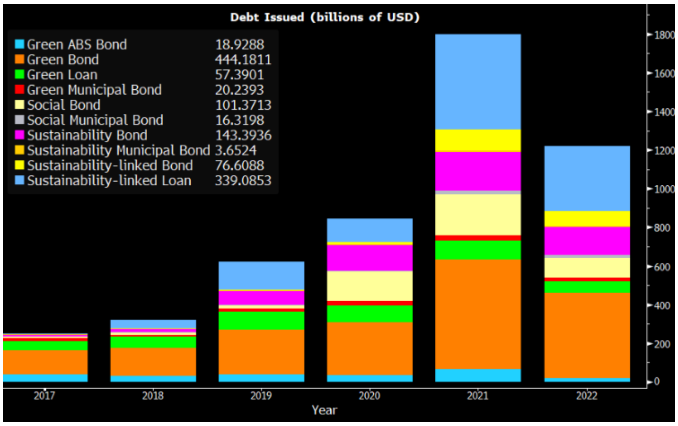
Economic turbulence may keep next year's ESG debt issuance below the $1.8 trillion record of 2021 as energy-transition projects compete with efforts to ensure energy security and tame inflation. Higher interest rates could affect all allocation, but we see several areas of resilience, like investments in energy efficiency and the "just transition."

ESG Debt Issuance Is Not Immune to Wider Slowdown

Global ESG debt supply may stay subdued in 2023 for macroeconomic reasons, unlikely to match the record $1.8 trillion of 2021 amid higher interest rates, stagnating growth and significant earlier refinancings. One fillip could be the market debut or return of large SSAs (sovereigns, supranationals and agencies). Potential savings vs. conventional debt remain an attraction for issuers, but such greeniums compared with conventional bonds are not universal, our analysis suggests.

High energy costs mean national security and financial liquidity may be prioritized over ESG credentials. Regulatory proposals such as an EU gas price cap may delay some transition projects. Positively, though, legislation like the US Inflation Reduction Act, the possible resumption of China-US climate talks and new commitments at COP27 may durably boost transition investment.

Labeled Issuance



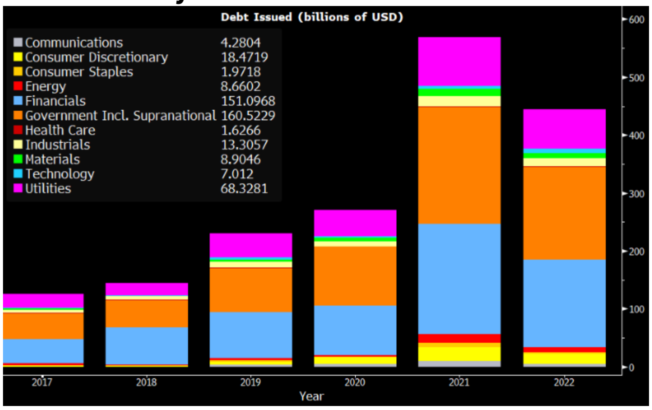
Source: Bloomberg Intelligence

Green Bonds to Retain Appeal Despite Softer Volume

The largest security type within sustainable debt continues to be green bonds, which have accumulated over $440 billion in issuance so far in 2022. Governments including supranationals are the largest issuing sector, representing 36% of issuance year-to-date, with the European Union, the European Investment Bank and France leading with over $10 billion per year over the past two years.

We believe green bonds will continue to be the leading ESG security type even with softening economic conditions, as governments and corporates have an abundance of energy-efficiency and decarbonization projects to fund. These could include growing fields such as green buildings, electric vehicles and renewable power, but also industrial sub-sectors previously seen as less suitable for the instrument, such as fertilizers and polymers.

Green Bonds By Sector



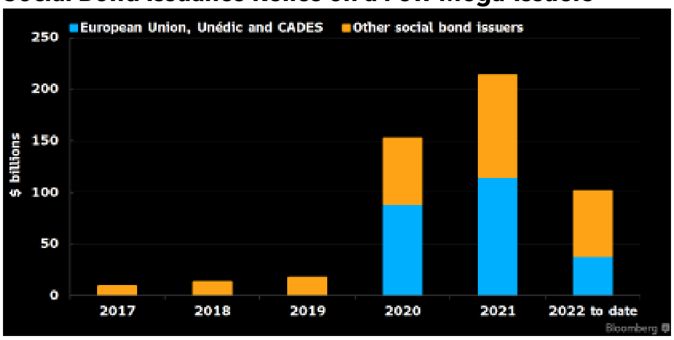
Source: Bloomberg Intelligence

Sustainability-Linked Bonds Adapt Better Than Covid's Social Bonds

Softer economies could also dampen the private sector's appetite for other types of ESG debt. Social bonds ($101 billion issued so far in 2022) – dominated by sovereigns, supranationals and agencies, whose issuance behavior could easily move totals – are seeing a pullback after large amounts were issued to tackle Covid. With the pandemic ebbing, social and sustainability bonds, including municipals, look well-placed to finance "just transition" schemes blending environmental and local community benefits, perhaps in partnership with corporate issuers.

Sustainability-linked debt fell to $416 billion year-to-date but remains popular with a range of industries thanks to its flexibility. More companies that have already used linked bank loans, often revolving facilities, may graduate to sustainability-linked bonds, which are more transparent.

Social Bond Issuance Relies on a Few Mega-Issuers



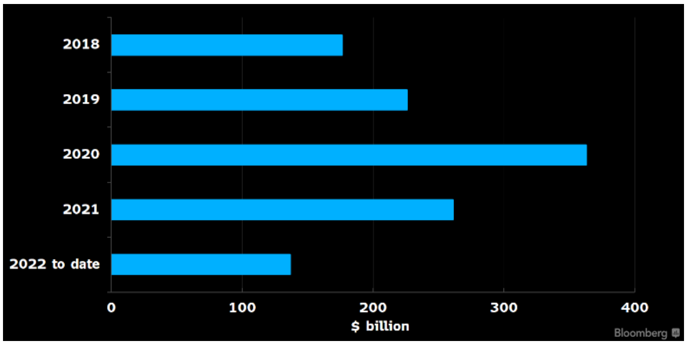
Source: Bloomberg Intelligence

High-Carbon Businesses Line Up Transition Projects

The energy and mining sectors are facing increased scrutiny of their carbon dioxide emissions, but also exceptional internally generated cash flows thanks to high commodity prices. With the economy turning and many banks aiming to reduce financed CO2 emissions, bond issuance for such activities may turn costlier. At the same time, we expect more interest in transition-related investments, like oil majors' expansion into wind and solar power, biogas and hydrogen (for example, BP's deal for Archaea Energy); miners' push into battery metals (BHP's bid for OZ Minerals); or container shippers' spending on methanol-powered vessels.

Such moves could also preempt more "windfall profit" taxes as advanced economies try to shore up national budgets, including via carbon border adjustment mechanisms and higher carbon emissions prices.

Oil & Gas Bond Issuance Down on Sector Rude Health



Source: Bloomberg Intelligence

Governments Play Growing Role in Policing `Green'

Going into 2023, we see governments and regulators in an unenviable position vis-à-vis the green transition. On the one hand, they will likely work to attract more investment by highlighting their own green roadmaps, including nationally determined contributions (NDCs) to the Paris Agreement. On the other hand, they are poised to take a harder line against perceived greenwashing by corporations and investors in order to maintain the public's confidence.

Transgressions on the regulators' radars range from allocations of green bond proceeds to unsupported sustainability claims by investment funds. Regional differences may emerge, but we expect that a well-reasoned crackdown on miscreants may allow bona fide transition projects to access adequate funding, reflecting their genuine potential.

Government Filing

"We have sought, as far as possible, to achieve international coherence with other regimes – notably the Sustainable Finance Disclosure Regulation (SFDR) in the European Union (EU) and proposals by the Securities and Exchange Commission (SEC) in the United States (US) ... While we recognise there will be a cost for firms in implementing these proposals, we consider that the benefits, such as reducing greenwashing and rebuilding trust in the market, outweigh the costs."

Source: UK's Financial Conduct Authority 'Sustainability Disclosure Requirements (SDR) and investment labels' consultation paper, October 2022

Hong Kong and China Governance

Stewardship Could Rise Despite Dilutive M&A and Audit Concerns

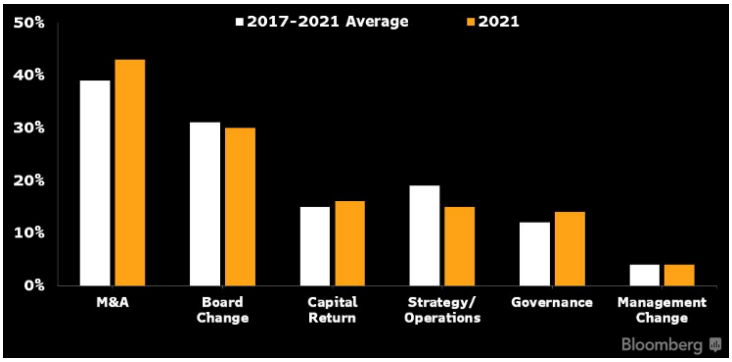
Against the backdrop of the China-US audit saga, opposition to dilutive financing activities, executive compensation and non-accretive M&A/privatization proposals are the key governance topics to watch in Hong Kong and mainland China next year. Yet despite the selldown by significant shareholders, we expect rising support for stewardship and proxy voting participation.

Potentially More M&A, Privatization Proposals

As ESG issues gain prominence in shareholder meetings, M&A-related objectives remain the most common campaigns, according to Lazard. Minority shareholders have successfully blocked bids that were too low, such as the merger between Li Ka-shing's Power Assets Holdings and CK Infrastructure in 2015. Only 50.8% of votes approved the deal, falling short of the 75% threshold. Among minority investors, 26% rejected the deal, which required that no more than 10% voted against the proposal.

China Resources Holdings scrapped a plan to combine two units, China Resources Gas and China Resources Power, in 2013 after 64% of minority shareholders voted against it. In 2008, China Eastern Airlines rejected an offer from parent Air China to buy a stake. Hong Kong courts in 2009 blocked Richard Li's proposed buyout of PCCW.

Global Activist Campaign Objectives



Source: Bloomberg Intelligence

Capital Raising Amid Slump Could Fuel Shareholder Ire

Shareholder support for capital structure proposals is declining, given that a majority of Hong Kong boards are issuing shares at a time when stock prices are falling. This not only undervalues companies but also dilutes the stock held by existing shareholders. Raising shares is more beneficial to stakeholders when stock prices are high to minimize dilution. Yet only a handful of companies – such as PAX Global Technology, China Oilfield Services, Shenzhen International Holdings, Giordano International, WH Group and Sinopharm Group – proposed issuance shares amid rising stock prices this year.

Hong Kong companies that proposed a share issuance this year have fallen 14% on average. The number of proxy proposals for capital structure that had a low voting approval (50-80%) rose to 122 in 2022 from 84 in 2021 and 81 in

2020.

HK Firms: Share Issuance Proposed at Higher Prices

Company	Market Cap ($ Million)	Sector	Proxy Date	Share Price Change
PAX Global	857	Information Technology	April 1	25%
China Oilfield Services	8,746	Energy	May 10	15%
Shenzhen International	1,688	Industrials	May 13	13%
Giordano	268	Consumer Discretionary	May 20	11%
WH Group	6,963	Consumer Staples	April 20	11%
Sinopharm Group	6,202	Health Care	June 2	9%
Jiumaojiu International	2,449	Consumer Discretionary	April 25	4%
Bank of East Asia	2,707	Financials	May 6	3%
HKT Ltd	8,739	Communication Services	March 31	3%
SITC International	4,723	Industrials	March 18	2%
Guangdong Investment	5,264	Utilities	April 29	2%
China National Building Material	5,609	Materials	May 30	2%
Anhui Conch Cement	18,479	Materials	April 21	1%

Note: Change in share price is from the beginning of this year till the proxy date Bloomberg

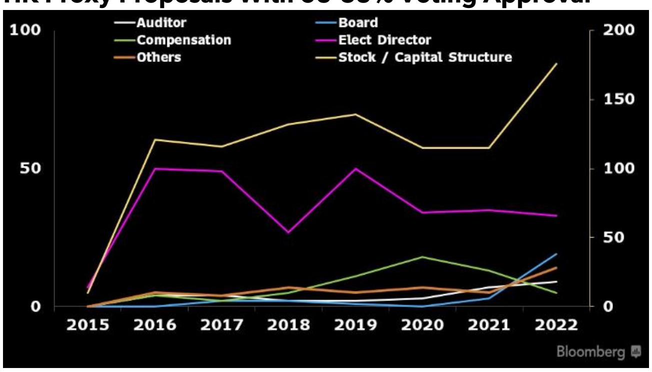
Source: Bloomberg Intelligence

More Scrutiny Likely on Performance-Linked Compensation

Rising shareholder support for director compensation in Hong Kong over the past three years and aligning executive pay with relative shareholder returns will be crucial to ensuring approval remains high. Investors might be more inclined to vote against larger pay packages that aren't justified by company performance, given the current inflationary environment and lack of supportive policies to lift the economy. The number of proxy proposals for director compensation that had low voting approval (50-80%) fell to five this year vs. 13 in 2021 and 18 in 2020.

Emoluments for CK Hutchison's co-managing director Canning Fok rose 15.5% to HK$192 million in 2021, even as the company's share price fell 7%. That for Tencent president Martin Lau dropped 24.5% to 323 million yuan last year amid the stock's 19% price dive.

HK Proxy Proposals With 50-80% Voting Approval

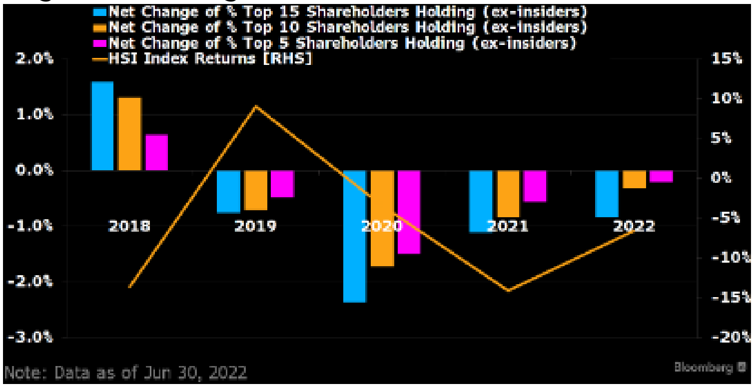


Source: Bloomberg Intelligence

Bottom-Up: Top Dogs Have Reduced; Trend Is Slowing

The interest of the 15 largest shareholders in the outstanding shares of Hang Seng Index members has fallen since 2019, but the trend appears to be slowing through the end of 2022. The reduced shareholdings mainly came from the largest five shareholders, reflecting that top-tier asset managers such as BlackRock and Temasek could be reducing their exposure to Hong Kong-listed companies. Tencent also distributed its JD.com stake to shareholders as a dividend while its biggest shareholder Naspers sold more shares of Tencent despite pledging not to.

Largest Five vs. Largest 15 Shareholders



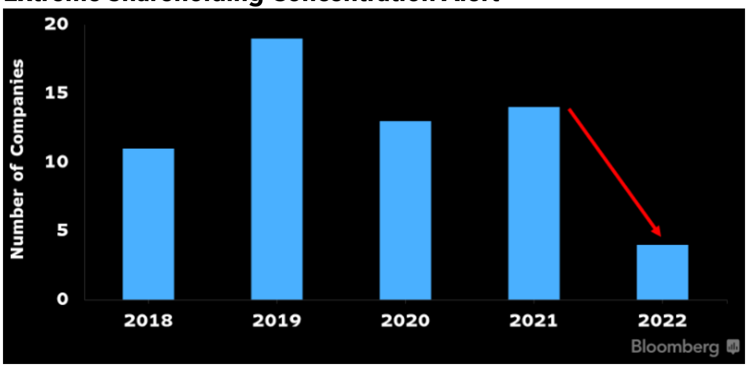
Source: Bloomberg Intelligence

Extreme Concentration Declines; Curbing Manipulation

A focus on diversifying and increasing the number of shareholders could be rising, based on the sudden decline of Hong Kong companies with high shareholding concentration. Some companies can appear to maintain the minimum required public float, even if a small number of shareholders holds their shares. Both HKEX and the Securities and Futures Commission alert the market when companies have a high shareholding concentration with more than 90% of their shares held by 10-20 shareholders. Only four such companies were alerted this year vs. 14 in 2021 and 13 in 2020.

HKEX requires listed firms to maintain a public float of at least 25% to ensure an open and fair market.

Extreme Shareholding Concentration Alert



Source: Bloomberg Intelligence

Labor

Could 2022 Labor Headwinds Turn to Tailwinds in 2023?

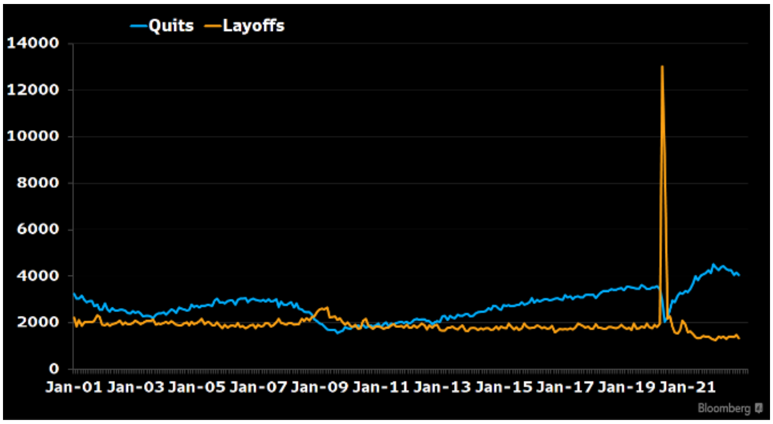
This year has seen significant labor disruption with staffing shortages, strike threats and rising wages. High levels of turnover weighed on productivity. In 2023, companies with strong retention may start to reap benefits as recent hires ramp up. In the event of an economic downturn, companies that minimize layoffs might see better productivity and lower recruiting and training costs.

Markets Learned Value of Human Capital

This has been a year of labor disruption. The US quit rate touched a more than 10-year high in late 2021 as layoffs hit the lowest levels in over a decade. Resignations are running about 50% above average, while layoffs are near 30% below, suggesting a historically wide gap in favor of labor. The tight worker supply created significant challenges with reduced operations, high wage inflation and strike threats across a swath of industries. There was renewed interest in unionization at companies such as Apple, Starbucks and Amazon.com. Wages have risen, but labor disputes centered on quality-of-life issues such as scheduling in many industries.

High turnover can come at a big cost as companies need to attract, train and retain talent. New hires need time to ramp up. A recent report indicated Amazon's elevated turnover cost the company $8 billion.

US Quits vs. Layoffs



Source: Bloomberg Intelligence

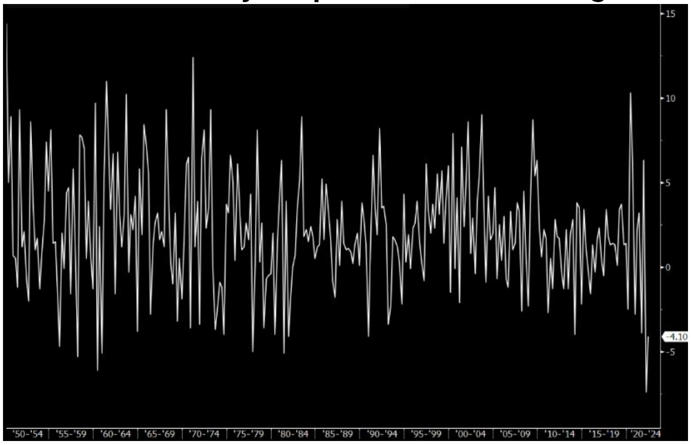
Poised for Productivity Gains in 2023?

As companies hired and trained new staff in 2022, many suffered a significant drop in labor productivity, forcing companies to curtail operations and limit services. In early 2022, the trend in US labor productivity slipped to a multi-decade low. This manifested as canceled flights, delayed shipments, limited hotel housekeeping and slow customer service. These headwinds could start to reverse in 2023. For companies able to retain recent hires, operating efficiencies might start to accrue as these new workers move up the learning curve.

The CEO of Delta Airlines indicates the company is working through a training bottleneck, noting that to replace

2,000 senior pilots, you almost have to train 12,000. The company is operating at roughly 85% pre-pandemic capacity.

US Labor Productivity, Output Per Hour, Q/Q Change



Source: BLS, Bloomberg Intelligence

Labor Lessons Learned?

Labor markets have remained tight, even as indicators suggest potential economic softening. US unemployment is hovering near 50-year lows. Should the global economy tip into recession, companies that spent the post-Covid-19 recovery struggling to attract and train staff might prove more reluctant than normal to let workers go during a downturn. Companies have increased investments in technology and automation to decrease the labor burden. Robots are making tortilla chips at Chipotle, cleaning floors in hotels and filling prescriptions at Walgreens. Driverless taxis are on the roads in some cities.

While deploying technology has the potential to reduce costs and improve the quality of life for the remaining staff, this needs to be managed carefully. Automation is the major sticking point in a labor dispute at a West Coast port.

Lessons to Be Learned

Bringing Inflation Down – Lael Brainerd Vice Chair US Federal Reserve:

- Businesses that experienced unprecedented challenges restoring or expanding their workforces...may...make greater efforts to retain their employees than they normally would when facing a slowdown

LA Port Chief Says Labor Deal Still Likely But Months Away:

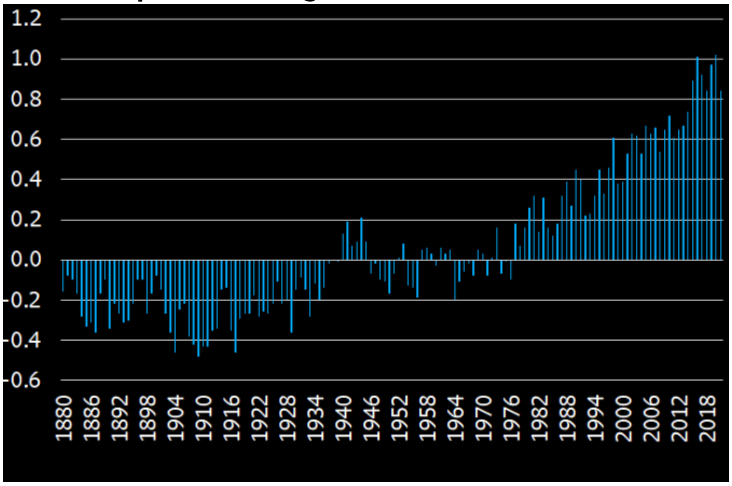
- We're going to continue to move faster with technology development -- we just cannot leave the worker behind, Seroka said. If we keep those postulates together, we'll get through this in good order

Source: Bloomberg Intelligence

Changing Climate Raises New Risks to Labor

In a viral video, a UPS worker collapsed on a porch from extreme heat. Weeks later, during a heat wave, company employees protested working conditions at a non-air-conditioned New York facility. The US government investigated Amazon after a storm damaged a facility, killing six workers. A changing climate is creating new risks for workers, which may affect operations across a wide range of companies and geographies. A UN report, citing IPCC analysis, concluded that lost productivity related to extreme heat could exceed $2 trillion by 2030. To address this, companies may have to alter and shrink operating hours, invest in air conditioning and other forms of mitigation, and comply with mounting regulatory requirements.

Global Temperature Change (C)



Source: Bloomberg Intelligence

Labor Roadblocks to Realizing Technology Potential

As traditional industry embraces technological solutions, companies increasingly need to compete to attract and retain workers with the requisite skills. Technology can help the mining industry improve its ESG footprint with lower operating emissions and improved safety. But miners must compete with well-paying technology companies and industries such as electric vehicles for tech staff. Once hired, retaining staff with in-demand skills can be a challenge. By some estimates, Exxon's recent attrition has run nearly double peers, attributed at least partly to a culture that has alienated younger, diverse and skilled talent who were lured away by Microsoft, Amazon and leading consultants like Bain.

Focusing on retraining existing talent is one solution. Teck Resources is targeting $200 million in training/skills development.

More Lessons to Be Learned?

Exxon's Toxic Culture Drives Workers From a Once Coveted Career – Bloomberg Businessweek:

- If Exxon has any shot at dominating the volatile energy transition over the next century, it will need to attract and hold on to the next generation of scientists, engineers, and technologists.

KPMG Global Mining Outlook 2022:

- There is another notable new entrant – the talent crisis. Attracting and retaining the right people is becoming an increasingly live issue for the industry.

Source: Bloomberg Intelligence

Green Trade

Green Protectionism Steers Trade, Supply-Chain Reshaping in 2023

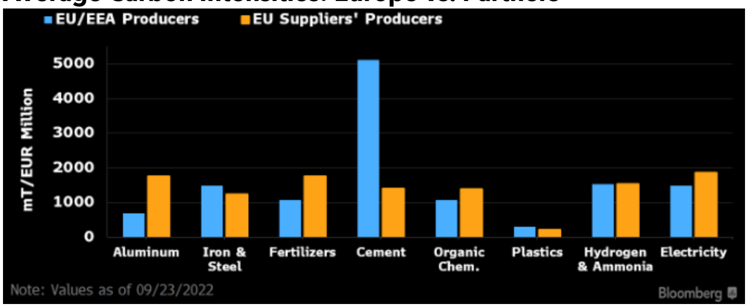
Efforts to strengthen supply-chain resiliency and to accelerate a shift away from fossil fuels are fueling tensions that will increasingly weigh on US and EU trade decisions in 2023, we believe. The US-China technology rivalry could continue curbing the aspirations of China's chip industry while the US debates the role foreign suppliers should play in the efforts to lift solar's share of the energy mix to 30% from 3% in 2030. The EU's first carbon border tax to put a price on emissions embedded in imports could begin to roll out and redesign the industrial competitiveness landscape well beyond Europe.

Carbon Border Taxes Can Speed Shift From Fossil Fuel

EU plans to adopt a tax on carbon emissions embedded in imports could concretely accelerate the decarbonization of several industrial segments. In particular, this would tackle the carbon footprint of energy, construction and agri-food companies that are key users of the materials targeted by the EU Carbon Border Adjustment Mechanism. The EU tax would initially cover imports worth less than 5% of the bloc's total imports, but still amount to almost €25 billion a year under our core EU carbon-price scenario of €75 a metric ton, we calculate.

US plans to adopt a similar levy in response to the EU CBAM may have been reduced with the US' Inflation Reduction Act and would require a bipartisan compromise to pass, but other EU partners may adopt similar programs in response to effects on their exports' competitiveness.

Average Carbon Intensities: Europe vs. Partners



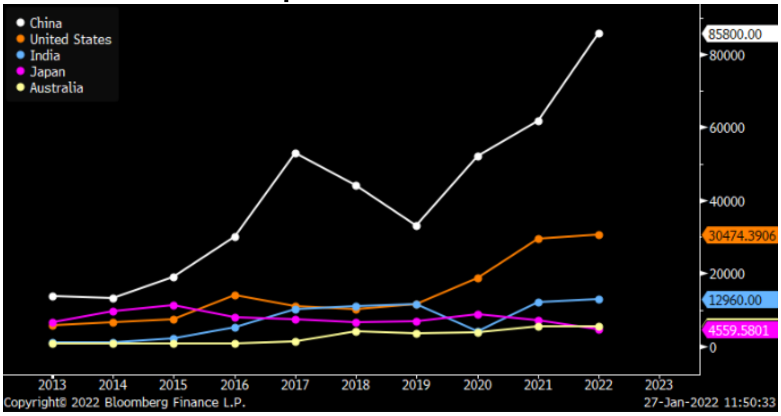
Source: Bloomberg Intelligence

US Solar Industry Struggles to Balance Industrial, Green Goals

Efforts to meet US clean-energy targets through solar can reap the benefits of both Made-in-America regulatory initiatives promoting domestic production and milder tariff actions on solar products. Yet the outlook for the availability and price of Asian supplies of solar equipment remains uncertain as 2022 nears an end, with a US Commerce Department probe result that could lead to the adoption of tariffs starting in 2024 on key US Southeast Asian suppliers accounting for 80% of total imports.

The Biden administration set the annual solar target at 30 GW by 2025 and 60 GW by 2030, which could be difficult to achieve without the inputs of overseas suppliers. That goal is crucial for the nation's energy-mix target of 40% electricity derived from solar by 2035, and instrumental to the overall net-zero emission goal by 2050.

PV New Build: World Top 5 Countries



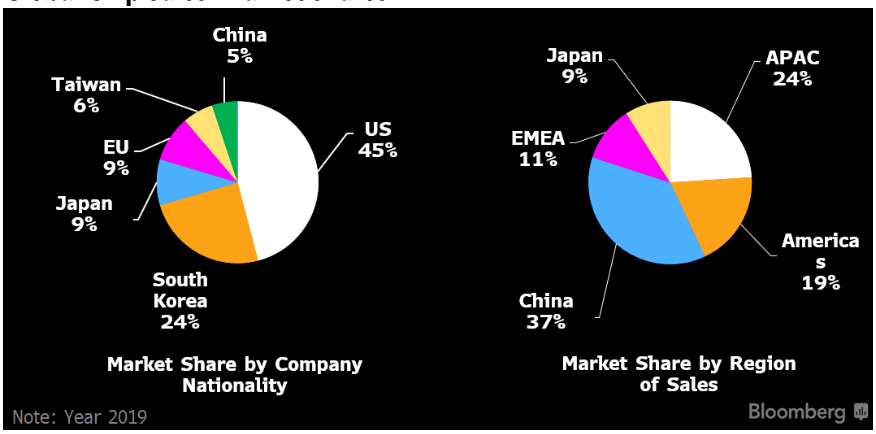
Source: Bloomberg Intelligence

US Regulatory Moves Sketch 2023 Gloom for China Chip Industry

Tariffs and regulatory barriers might lock China into its current low share (5%) of global chip sales, with non-tariff measures currently weighing the most. US export restrictions, license requirements, restricted entity lists, increasing foreign investment scrutiny and actions limiting the employability of staff of US nationality affect US sales to China and may hinder Beijing's aspirations to climb the added-value ladder of the global semiconductor industry, just as the "Made in China 2025" plan pours effort into narrowing the technological gap with the US.

Chinese companies still concentrate on the assembly and testing segments of the industry's global supply chain, missing out on the 90% of total chain value that's in the design and manufacturing segments dominated by the US.

Global Chip Sales' Market Shares



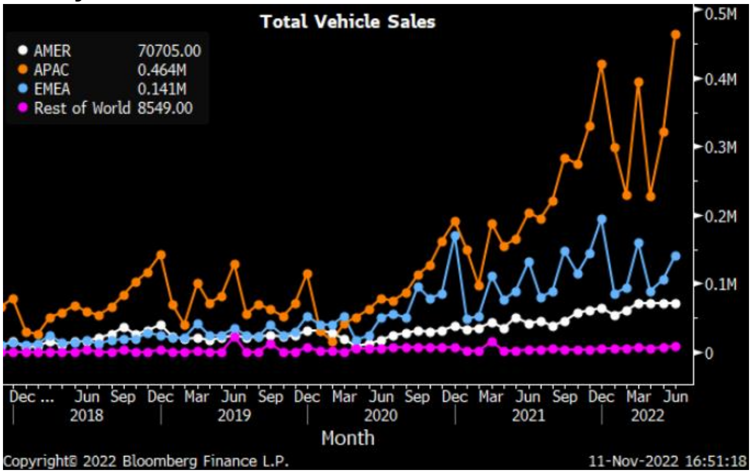
Source: Bloomberg Intelligence, Hinrich Foundation

EV Subsidies Are Double-Edged Sword for Climate-Change Fight

New conditions attached to the US Inflation Reduction Act's electric-vehicle (EV) tax incentives could boost the sales of clean industries domestically but slow the development of those relying on global supply chains. As more than half of the $8 billion of batteries imported by the US came from China in 2021, the IRA's provisions could dent the profitability of non-US EV and EV-battery makers as well as affect pre-discounted prices in the US.

In 1H22, the top three EV-battery makers worldwide were Asian, based on SNE Research data: CATL (34% of global sales), LG Energy Solution and BYD. These are among the companies that may see US revenue decline on the competitive disadvantage posed by the new rules.

Battery-Powered EV Sales



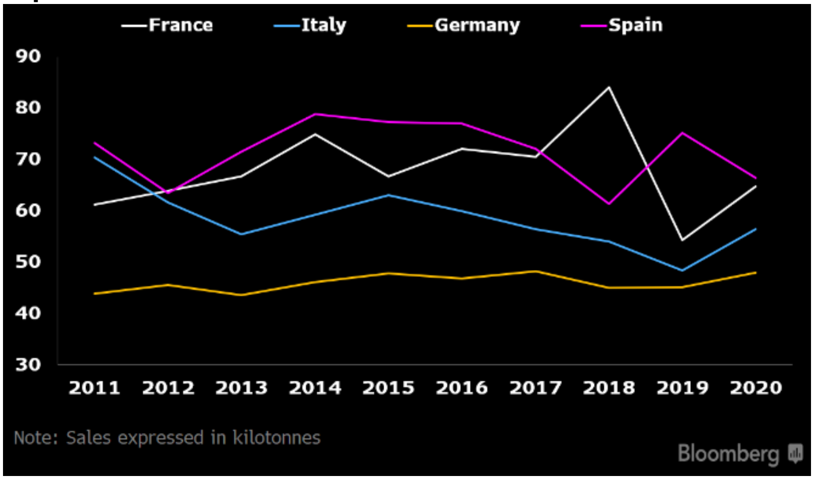
Source: Bloomberg Intelligence

Ukraine War Supply Disruptions Defy EU Green Farming Push

EU sustainability efforts in agriculture may continue facing pushback in 2023 as the war in Ukraine keeps pressure on global farming, war-induced food supply and prices, and affordability concerns shadow green-agriculture goals. With $2.4 billion of Russian fertilizer exports to the EU, and Russia and Ukraine's historical 30% share of global wheat exports still at stake, EU proposals to curb pesticides (by 50%) and fertilizers (20%) by 2030 are now unlikely to make a breakthrough before the end of the EU's current mandate in 2024.

A 2022 Green-Deal draft law requiring EU pesticide use to be halved by 2030 was sent back to the drawing board by EU member states in June as more robust impact assessments of the associated costs are sought.

Top EU Fertilizer Producers' CO2 Emission Goals



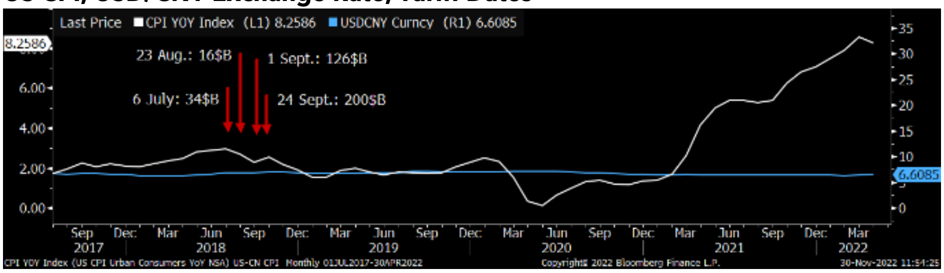
Source: Bloomberg Intelligence

Supply Chains, Strategy Guide US Tariff Changes More Than Prices

US tariff decisions in 2023 on Chinese green goods' exports are likely to support industrial strategies aiming at boosting domestic production and diminishing the exposure of North American supply chains to China. As inflation pressures may have passed their peak, clearing at least in part potential price concerns, some tariffs may remain in place to shield domestic industries as they grow with the help of domestic incentives, while others could be reduced through waivers and exemptions to satisfy specific internal demand needs.

US Section 301 tariffs, in place since July 2018, still affect US imports worth almost $350 billion from China with a 15-25% surcharge. A decision to prolong some of those may take place in early 2023, in absence of clear evidence showing a link between tariff and price levels.

US CPI, USD/CNY Exchange Rate, Tariff Dates



Source: Bloomberg Intelligence

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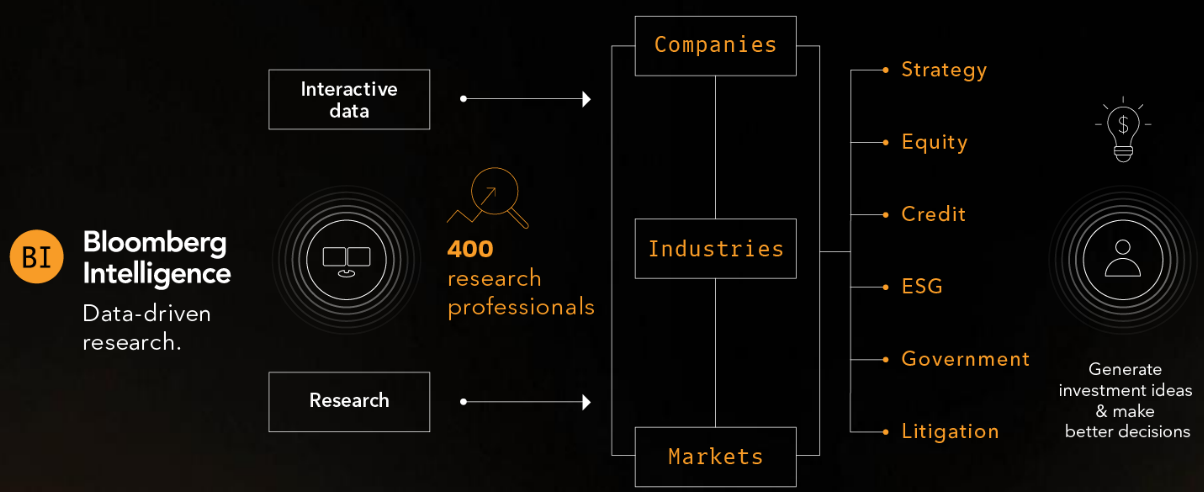

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