

# **Business Involvement Screening Research**

Methodology

MSCI ESG Research

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## Business Involvement Screening Research

To help asset owners and managers ensure that their investment decisions comply with client mandates, MSCI ESG Research provides research on companies involved in specific business activities.

MSCI ESG Research provides a profile of each company's specific business involvement. The company profile includes details on the company's tie to the activity, any related corporate actions in the last three fiscal years, and ownership information if the company has ties to the business activity through a subsidiary or parent company.

Analysts also provide the reported, if disclosed, or an estimated percent of total revenue derived from the business activity in question for screens where information available is regularly sufficient and reliable to produce quality information.

### Coverage Universe

The coverage universe for the MSCI Business Involvement Screening Research (BISR) in the areas of involvement shown below comprises global equity issuers, plus coverage for selected bond-issuing subsidiaries, selected corporate bond issuers and selected government-owned entities that operate as corporations.

- Abortion Providers,
- Abortifacients,
- Adult Entertainment,
- Alcohol,
- Animal Welfare,
- Biocides,
- Breast Milk Substitutes,
- Cannabis,
- Contraceptives,
- Gambling,
- Genetic Engineering,
- Nuclear Power,
- Pork,
- Stem Cells,
- Tobacco,

- Defense and Weapons

For other business involvement areas, the coverage is specified in the relevant sections below.

Factors are available for delivery in data feeds. These indicate if an issuer is within the different coverage universes.

Factor Name	Column Header	Description
BISR - Standard Screens - In Coverage Universe	BISR_COVERED	Issuer is in the standard Business Involvement Screening Research (BISR) coverage universe, which is applied to the following areas of involvement: Abortion, Adult Entertainment, Alcohol, Animal Welfare, Baptist, Biocides, Breast Milk Substitutes, Cannabis, Catholic, Contraceptives, Defense and Weapons, Gambling, Genetic Engineering, Global Sanctions, Nuclear Power, Pork, Stem Cells and Tobacco. This coverage universe flag doesn't apply to For Profit Healthcare, For Profit Prisons, Fur, Islamic, Hotels, Cinemas, Music, Palm Oil, Conventional Financial Services and Predatory Lending screens. For details on how the coverage universe is defined, please reference the Business Involvement Screening Research Methodology document.
BISR - For Profit Healthcare - In Coverage Universe	FOR_PROFIT_HEALTHCARE_COVERED	Issuer is in the coverage universe applied to For Profit Healthcare screen
BISR - For Profit Prisons - In Coverage Universe	FOR_PROFIT_PRISONS_COVERED	Issuer is in the coverage universe applied to For Profit Prisons screen.
BISR - Fur - In Coverage Universe	FUR_COVERED	Issuer is in the coverage universe applied to Fur screen.
BISR - Palm Oil - In Coverage Universe	PALM_OIL_COVERED	Issuer is in the coverage universe applied to Palm Oil screen.



Factor Name	Column Header	Description
BISR - Predatory Lending - In Coverage Universe	PREDATORY_LENDING_COVERED	Issuer is in the coverage universe applied to Predatory Lending screen.

## Research Process

The MSCI ESG Research team includes a team of content specialists dedicated to producing research on controversial types of business involvement. These analysts are specialists responsible for identifying involvement in issue areas within a company.

Using a combination of industry classifications, business descriptions and keyword searches in select company filings, we identify issuers that could have potential involvement in each of the screening topics. Issuers found without any potential involvement during this step are categorized “Not Involved – Verified.”

If the initial review process identifies the potential for involvement, an analyst will review the company’s regulatory filings, annual reports, company websites and third-party sources, including news, media and non-governmental organizations, to determine if a company is in fact involved in one of the covered activities. If after this step there is no evidence to flag the company for one of the covered activities, then the company is also categorized as “Not Involved – Verified.” If during the screening process or analyst review evidence is captured relating to the companies’ involvement in a covered activity, then the company is categorized as “Involved.”

A factor is available in ESG Manager that highlights whether an issuer has gone through the research process, and whether an issuer is involved in a covered screen or has been researched and found not to be involved. **Please note that this flag is only applicable to screens in our global coverage and not those screens that are index-specific.**

Factor Name	Column Header	Description
BISR Coverage Status	BISR_COVERAGE_STATUS	This factor returns the following values: Involved, Not involved – Verified. Note: If the issuer has a blank value, then it is either not in the coverage universe or has not undergone the screening process yet.

**Screens are designed only to flag companies with involvement in the covered activity and should not be used to produce comprehensive lists of companies without involvement.**

## Ongoing Monitoring and Update Cycle

MSCI ESG Research regularly reviews all companies in the coverage universe. These updates involve a multi-step process:

- **Ongoing review and identification of business ties:** Companies are reviewed throughout the year, based on fiscal-year reporting cycles.
  - Constituents of the MSCI ACWI Index are reviewed within one quarter of their annual filings.
  - The rest of the coverage universe is reviewed on a rolling schedule, within 12 months of the issuers' annual filings.
- **New constituents to the MSCI ACWI, MSCI US IMI or MSCI China Indexes are processed within one quarter of their Index inclusion.** All other additions are processed within two quarters of when they enter the index or coverage.

**Note: Occasionally the assessment of companies may require an additional review and approval before publication by the MSCI ESG Impact and Screening Methodology Committee, which could impact the timing of publication.**

## Corporate Actions

MSCI ESG Research analysts review and incorporate corporate actions to the research. Corporate events include acquisitions, consolidations, mergers, name changes, public offerings and spinoffs.

- **Spinoffs:** both the company that spins off operations as well as the new business entity are assessed to estimate the extent of their involvement in screened business activities (if any).
  - Constituents of the MSCI ACWI, MSCI USA IMI or MSCI China Index are researched within one quarter of their index inclusion.
  - All other entities are researched within two quarters of the transaction completion.
- **Mergers and Acquisitions:** We assess involvement in screened business activities for merged entities, acquiring companies and acquired companies.
  - Constituents of the MSCI ACWI, MSCI USA IMI or MSCI China Index are assessed within one quarter of the transaction completion.

- All other entities are researched independently within two quarters of the transaction completion.
- **Name changes:** The name of the company in our systems will reflect the new name; however, the body of the company’s report may continue to reflect the old name until the company undergoes scheduled data review.

### Additions and Deletions

Companies are added to or removed from MSCI ESG Research Business Involvement Screens under the following circumstances:

- If MSCI ESG Research determines conclusively that the company is no longer involved with the relevant activity.
- If there is no conclusive evidence of either continued involvement or a discontinuation of involvement in a subject activity, MSCI ESG Research retains a company’s involvement flags for up to three years. After this period, if there is no evidence of continued involvement, MSCI ESG Research considers the company no longer involved.

### Publishing Schedule

The MSCI BISR team follows a weekly schedule to publish updates to companies that already have been reviewed. There will be instances in which a few company updates may be published outside of that weekly timetable. All updates typically will be available in ESG Manager within 24 to 48 hours after publication.

### Sources

MSCI ESG Research uses a wide range of information tools and sources, including:

- Company websites,
- Company annual reports and regulatory filings,
- Media search services,
- Business directories,
- Nongovernmental organization (NGO) reports and websites,
- Government agencies and disclosures,
- Financial data providers, and
- Direct communication with company.

## Company Communication

MSCI ESG Research seeks input from every company included in any of the business involvement screens when its information is updated, at a minimum of once a year. Where MSCI ESG Research has the e-mail contact information, the companies are invited to review MSCI ESG Research’s assessments and reports, and to provide updates, clarifications and comments. Information provided by companies during this process is reviewed by analysts and incorporated into the research as appropriate.

In addition to the company verification process, MSCI ESG Research reaches out to companies with involvement in the following business activities on an annual basis: Abortion and Stem Cell Research. Companies are given two weeks to respond, after which, if a response is not received, a round of follow-up emails is sent.

MSCI ESG Research analysts also contact companies on all screens throughout the year when it is necessary to confirm involvement, the nature of the involvement or the revenue derived from the business activity in question.

## Revenue

MSCI ESG Research provides company revenue percentages for companies with certain types of business activity. Where the revenue for a covered business activity is not disclosed by a company and is not available through other publicly available sources, a revenue estimate is supplied. Estimation process and guidelines are described in the next section.

The following Business Involvement Screens provide revenue information associated with the business activity:

- Abortifacients
- Adult Entertainment
- Alcohol
- Biocides
- Cannabis
- Contraceptives
- For-Profit Prisons
- Gambling
- Genetic Engineering
- Nuclear Power

- Palm Oil
- Pork
- Lending Practices
- Tobacco
- Defense and Weapons
  - Firearms
  - Global Weapons
    - Conventional Weapons
    - Biological / Chemical Weapons
    - Nuclear Weapons
    - Support Systems and Services
    - Total Involvement

Revenue information is not provided for the following screens:

- Abortion Providers
- Animal Welfare
- Breast Milk Substitutes
- Fur
- For Profit Healthcare
- Stem Cells
- Defense and Weapons
  - Cluster Munitions
  - Landmines
  - Global Weapons
    - Blinding Laser Weapons
    - Depleted Uranium Weapons
    - Incendiary Weapons (White Phosphorus)
    - Non-Detectable Fragments

Additionally, MSCI ESG Research does not provide revenue or revenue estimates for companies that qualify for the ownership categories, which are intended to identify companies with indirect involvement to a business activity, either through a parent company or subsidiary.

**Revenue Estimation Process**

When companies do not report exact revenue figures for a covered business activity, MSCI ESG Research provides an estimate of the extent of companies’ involvement in the subject activity. The estimation approach is as follows: first, the reported business segment of the business involvement activity is identified. Next, the other activities in that segment(s) are determined and considered to calculate the estimated revenue for said business involvement activity. All available disclosures are considered. In the absence of information indicating otherwise, assumptions are made that product lines are of equal weight in terms of revenue contribution.

**Revenue Range**

Estimated revenue figures are represented as ranges, with the “Maximum Percentage of Revenue” representing the highest potential revenue figure for that business activity.

Analysts typically use the following revenue ranges:

- 0.01 to 0.99%
- 1 to 4.99%
- 5 to 9.99%
- 10 to 14.99%
- 15 to 19.99%
- 20 to 24.99%
- 25 to 49.99%
- 50 to 100%

## Treatment of Members in the Corporate Hierarchy

Parent companies of majority-owned subsidiaries with Involvement:

Companies that own >50% of a subsidiary involved in a screened business category inherit the involvement of the child company (including involvement type and revenue). In these cases, revenue attributed to the parent company is adjusted based on the percentage of revenue the child company derives from a covered activity, the percentage of stake held by the parent, and the parent's other revenue-generating activities.

For example, ABC Corp. holds a 60% ownership on XYZ Ltd., which generates 20% of revenue from the production and sale of alcoholic beverages. So, ABC Corp. inherits XYZ Ltd.'s involvement in the screened activity with an estimated 0.77% of revenue involvement.

The table below showcases the computation for ABC Corp.

	USD	%
Subsidiary: XYZ Ltd.		
Total revenue	\$450	
Revenue from alcoholic beverages	\$90	$\$90 / \$450 = 20\%$
Parent: ABC Corp		
Ownership in XYZ Inc.		60%
Total revenue	\$7,000	
Revenue from alcoholic beverages	$\$90 \times 60\% = \$54$	$\$54 / \$7000 = 0.77\%$

**Parent companies of minority-owned subsidiaries with involvement:** Companies are identified as having "Ownership Of" involvement ties when they own from 20% to 49.99% of a company with involvement in the business activity in question.

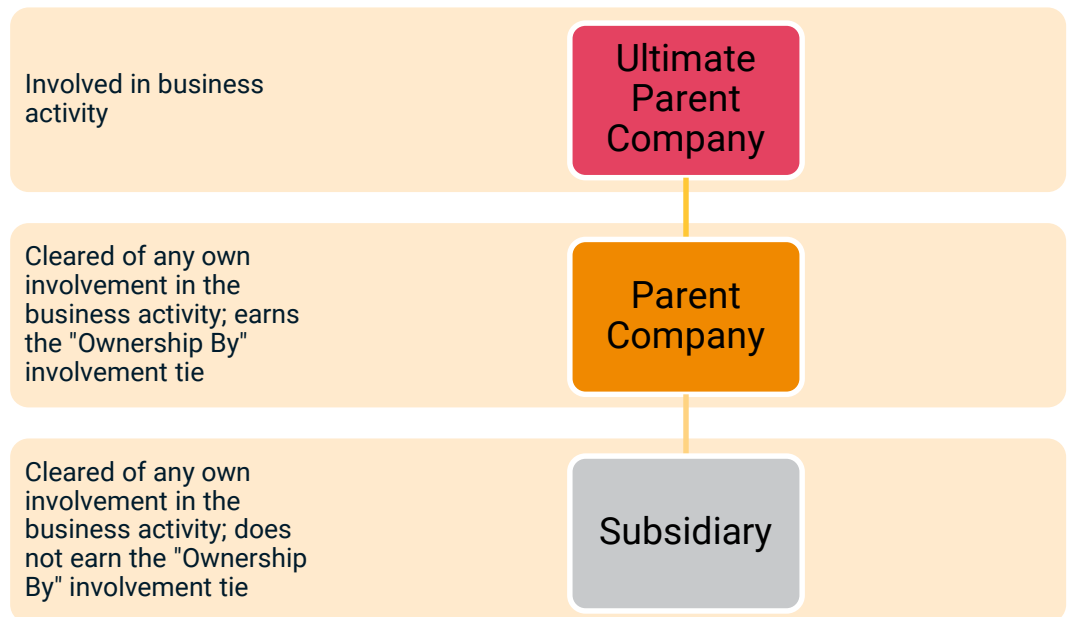
In this example, ABC Corp. holds only 30% ownership stake in XYZ Ltd., which generates 20% of revenue from production and sale of alcoholic beverages. ABC Corp will inherit XYZ Ltd.'s involvement in the screened activity in a form of an "Ownership Of" flag.

Not all screening categories have "Ownership Of" factors; see individual screening categories and exclusions below for more information.

**Majority-owned subsidiaries of involved parent companies:** All majority-owned subsidiaries that issue equity are assessed individually and independently of their parent’s involvement ties. But for majority-owned subsidiaries that only issue debt, business involvement is automatically mapped to their parent. Through an automated subsidiary mapping feature that MSCI provides, these entities are identified as having “Ownership By” involvement ties based on their parent company’s assessment.

**Exceptions to Ownership Tie Rules**

- Financial Institutions  
Because of the nature of their core business, financial institutions do not inherit percentage revenue involvement, but only an “Ownership Of” tie. A financial company must own at least 50% of the involved company before earning the “Ownership Of” involvement tie.
- Indirect Majority Ownership  
Companies that are indirect majority-owned subsidiaries of a company with involvement in a subject business activity are not flagged for the “Ownership By” involvement tie. An indirect subsidiary is an entity with another parent company between it and the involved company. The diagram below illustrates this situation.



**Financing Companies**



We define financing companies as entities without operations of their own and whose sole purpose is to finance other entities.

Due to the nature of their business and risk structure, financing companies inherit involvement ties and revenues (if any) from their parent companies.

*Captive Finance Companies*

We define captive finance companies as wholly owned subsidiaries of non-financial corporations (usually manufacturers or retailers) that primarily serve to advance the parent company’s products by providing financing to wholesale or retail customers of the parent.

Due to the nature of their business and risk structure, captive finance companies inherit involvement ties and revenue (if any) of their parent companies, like financing companies above.

**Subsidiary Mapping**

Subsidiary mapping is a feature found within the ESG Manager platform that automatically copies the involvement information from an involved parent to subsequent majority-owned subsidiaries. Note that subsidiary mapping will not copy involvement if the subsidiary issues equities or already has been researched by MSCI ESG Research.

**Quality Assurance**

Initial company research and analysis is followed by a rigorous quality assurance process. Data accuracy and company profiles are peer-reviewed, then sent to content leads for final approval. In specific cases in which a company’s business activity is not clearly defined by MSCI ESG Research’s methodology and there is no precedent, the case is escalated to the Head of Screening Research. Cases that require further interpretation or an update to the methodology are brought to the MSCI ESG Impact and Screening Methodology Committee for resolution.

**MSCI ESG Impact and Screening Methodology Committee**

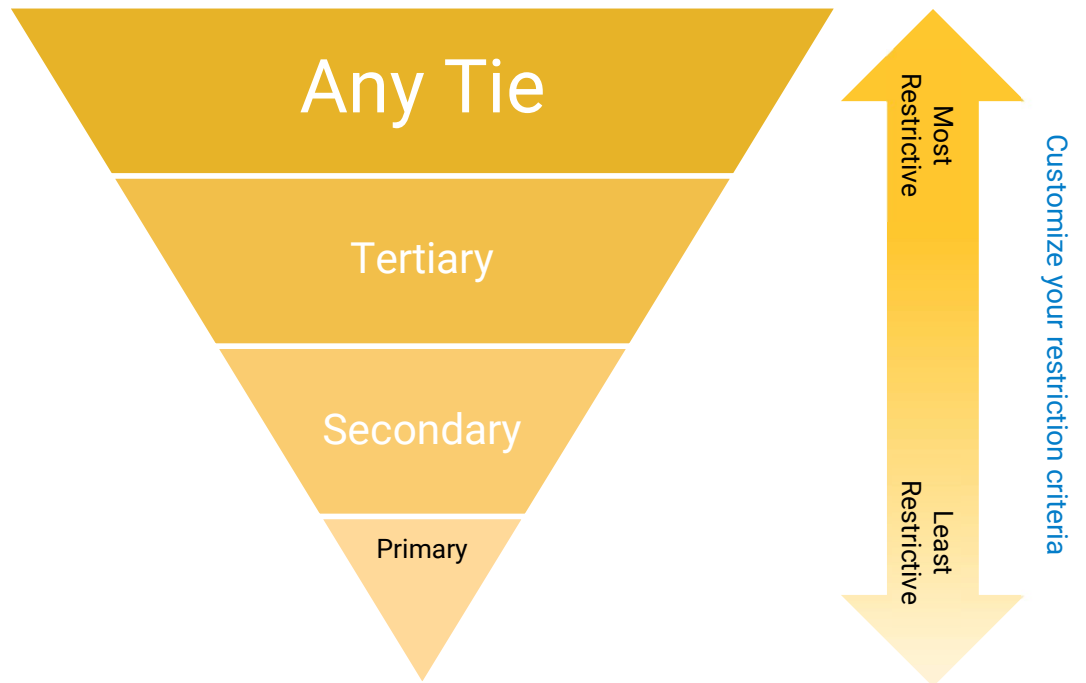
The MSCI ESG Impact and Screening Methodology Committee consists of senior members of ESG Research and ESG Screening operations. Cases are brought to the Committee for a number of reasons, including cases that involve changes in involvement with high-profile companies that are widely held by MSCI ESG Research’s clients; decisions involving a company’s pending addition to or removal from a business involvement screen for reasons that do not clearly fall within the current scope of the methodology; and decisions regarding an interpretation or update of the methodology.

Committee decisions are typically final. However, in some instances, cases may be escalated to the committee governing all MSCI ESG Research methodological documents and decisions, the MSCI ESG Executive Methodology Committee.

MSCI ESG Research observes a 30-day client notification period before making methodology changes and other changes with known impacts to MSCI ESG Research’s ESG Manager and Data Feed clients. Please note that MSCI ESG Research reserves the right to make final decisions on all companies and to interpret and update the methodology as necessary.

### Issuer Area Structure

Business Involvement Screens provide more granular data designed to allow clients to pick and choose the factors that better meet their needs. Our screens cover involvement of all levels from the targeted (direct) involvement of producers and operators to any tie, which includes owners and subsidiaries of involved companies (indirect). The broadest involvement category is the “Any Tie” factor, which for most screens results in the largest list of restricted companies.



Clients can select individual factors to customize their screen or select the any-tie factor to capture all involvement. Examples of direct, semi-direct and indirect involvement are shown below:

Any Tie		
<p><b>Direct</b></p> <ul style="list-style-type: none"> <li>• Producer</li> <li>• Operator</li> </ul>	<p><b>Semi-direct</b></p> <ul style="list-style-type: none"> <li>• Retailer</li> <li>• Distributor</li> <li>• Supplier</li> <li>• Support</li> <li>• Services</li> <li>• Licensor</li> </ul>	<p><b>Indirect</b></p> <ul style="list-style-type: none"> <li>• Ownership Of</li> <li>• Ownership By</li> </ul>

Revenue information is provided for direct involvement in most of our screens. In addition to the aforementioned granularity, clients may use the revenue to set thresholds tailored to their needs.

## Business Involvement Screens

### Abortion Providers

MSCI ESG Research’s abortion-provider research identifies companies that own or operate facilities where abortions are performed. Companies are not placed on the Abortion Provider screen unless MSCI ESG Research has received confirmation from the company within the last three fiscal years that an abortion has been performed at a company facility.

In addition, MSCI ESG Research identifies companies that own or operate acute-care facilities with the capacity to perform abortions.

### Definitions

Factor Name	Column Header	Description
Abortion Provider	ABORTION_PROVIDER	Companies that offer abortion services.
Own or Operate Acute Care Facilities	ABORTION_ACUTE_CARE	Companies that own or operate one or more acute-care hospitals or surgical centers that provide general medical services, which may include abortions. MSCI ESG Research includes acute-care facilities because they generally perform surgeries and because long-term recovery time for an abortion is not common.
Ownership of an Abortion Company	ABORTION_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by an Abortion Company	ABORTION_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	ABORT_TIE	Companies with an industry tie to abortion or abortifacients, including Abortion Provider, Own/Operate Acute Care Facilities, Ownership of an Abortion Company, Ownership by an Abortion Company, Abortifacient Manufacturer, Ownership of an Abortifacient Company and Ownership by an Abortifacient Company categories.

## Exclusions

- Companies operating exclusively in countries in which abortion is illegal on all grounds, as indicated by the United Nations' (UN) Department of Economic and Social Affairs Population Division's World Abortion Policies wall chart. The countries where abortion is illegal for all the categories below are: Chile, the Dominican Republic, El Salvador, the Holy See, Malta and Nicaragua (based on the UN World Abortion Policies, 2013 – the latest available as of October 2019).
- The World Abortion Policies identify seven circumstances under which abortion is permitted in nations:
  - To save a woman's life
  - To preserve a woman's physical health
  - To preserve a woman's mental health
  - In case of rape or incest
  - Because of fetal impairment
  - For economic or social reasons
  - On request
- Companies that manufacture abortifacient products. MSCI ESG Research provides separate research related to these activities;
- Companies that only offer midwifery; and
- Companies that operate as Catholic faith-based healthcare systems.

## Abortifacients

MSCI ESG Research’s abortifacients research identifies companies that manufacture abortifacient products. The research describes both the type of involvement and the revenue from that involvement.

### Definitions

An abortifacient is defined as any drug, compound or chemical that results in the termination of pregnancy by causing the cervix to dilate and the uterus to prematurely contract. MSCI ESG Research includes drugs or other agents primarily designed or approved for use in the termination of pregnancy, as well as drugs or other agents recognized by medical authorities as having a significant secondary use in the termination of pregnancy, including methotrexate, misoprostol, oxytocin, dinoprost, hemabate (carboprost), RU 486 (mifepristone) or gemeprost.

Factor Name	Column Header	Description
Producer	ABORTIFACI ENTS_PROD	Companies engaged in the development or manufacture of products that may be used as abortifacients. Note: If a company manufactures a product that MSCI ESG Research has identified as an abortifacient but tells MSCI ESG Research that its products are not marketed or used for this purpose, the company is still included on the report.
Intended-Use Abortifacient s Producer	ABORTIFACI ENTS_PROD _INTEND	Companies that manufacture abortifacients specifically marketed for their ability to induce abortions. Therefore, multiple-use drugs such as methotrexate and misoprostol will not typically meet this definition, while mifepristone (RU-486) will.
Ownership of an Abortifacient Company	ABORTIFACI ENTS_OWN_ OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by an Abortifacient Company	ABORTIFACI ENTS_OWN_ BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	ABORT_TIE	Companies with an industry tie to abortion or abortifacients, including Abortion Provider, Own/Operate Acute Care Facilities, Ownership of an Abortion Company, Ownership by an Abortion Company, Abortifacient Manufacturer, Ownership of an Abortifacient Company and Ownership by an Abortifacient Company categories.

### Revenue

Factor Name	Column Header	Description
Abortifacients – Maximum Percentage of Revenue	ABORT_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the manufacture of abortifacients.
Abortifacients – Revenue is Estimated	ABORT_REV_ISET	The revenue for this involvement category is estimated.
Abortifacients – Maximum Total Revenue	ABORT_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from the manufacture of abortifacients.

### Exclusions

- Companies that solely market, license or distribute abortifacients;
- Companies that manufacture non-abortifacient specific products such as saline solution;
- Companies that retail or prescribe abortifacients, such as pharmacies, dispensaries or hospitals;
- Companies that manufacture abortifacient drugs exclusively for research purposes;
- Companies that manufacture abortifacient drugs exclusively for use on animals and/or veterinary drugs;
- Companies that produce drugs that list abortion as a side effect; and
- Companies that provide abortion services; MSCI ESG Research provides separate research related to these activities.

## Adult Entertainment

MSCI ESG Research’s adult entertainment research identifies companies involved in the production, distribution or retailing of adult entertainment products. The research describes both the type of involvement and the revenue from that involvement.

### Definitions

MSCI ESG Research defines adult entertainment products as material in which the dominant theme is “sexually explicit” conduct, specifically the depiction or description of sexual or excretory activities in a lascivious way. MSCI ESG Research uses the term “adult entertainment” interchangeably with “sexually explicit material” and “sexually explicit adult entertainment.”

Factor Name	Column Header	Description
Producer	AE_PRODUCER	Companies that produce, direct or publish adult entertainment materials that fall into the following six categories: Producer of X-rated films, Producer of Pay-per-view programming or channels, Producer of sexually explicit video games, Producer of books or magazines with adult content, Live entertainment of an adult nature, Producer of adults-only material on the internet.
Producer – XXX Rated Film or Video	AE_PROD_XXX	Companies that produce or publish motion pictures and videos containing sexually explicit material.
Producer – TV Programming	AE_PROD_TV	Companies that produce sexually explicit programs made specifically for television targeting adult viewers, including pay-per-view.
Producer – Games	AE_PROD_GAME	Companies that produce sexually explicit video games for adult consumers. MSCI ESG Research flags video games rated “Adults Only” with the following content descriptors: Nudity and Strong Sexual Content, as also provided by the U.S. Entertainment Software Rating Board.
Producer – Print Media	AE_PROD_PRINT	Companies that produce newspapers, magazines, or books that contain images of sexually explicit material for adult consumers.
Producer – Live Entertainment	AE_PROD_LIVE	Companies that own, operate or license commercial establishments such as strip clubs, gentlemen’s clubs, nude stage shows or adult entertainment booths, where the



Factor Name	Column Header	Description
		owner, agent or an employee participates, permits, allows, encourages or pays any person to engage in nude or sexually explicit entertainment on the premises. All live acts showing any nudity are considered if they are limited to adult viewing.
Producer – Online Products	AE_PROD_ONLINE	Companies that own or operate websites with sexually explicit content, such as live interactive cybercast performances and adult video on demand sites. This also includes companies that produce sexually explicit games for mobiles.
Distributor	AE_DIST	Companies involved in the independent wholesale of sexually explicit products and services, including X-rated movies and videos, printed materials, television programs, radio and online products. This includes companies that offer TV and cable channels with adult content. Companies in the hospitality industry are also included if they offer “adults-only” films for in-room viewing through pay-per-view services.
Retailer	AE_RETAIL	Companies that retail of adult entertainment products through specialty stores or online sites.
Ownership of an Adult Entertainment Company	AE_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by an Adult Entertainment Company	AE_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	AE_TIE	Companies involved through Producer, Distributor, Retailer and Ownership categories.

## Revenue

Factor Name	Column Header	Description
Adult Entertainment Producer - Maximum Percentage of Revenue	AE_PROD_MAX_RE V_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Producer of adult entertainment materials.
Adult Entertainment Producer - Revenue is Estimated	AE_PROD_REV_ISE ST	The revenue for this involvement category is estimated.
Adult Entertainment Distributor - Maximum Percentage of Revenue	AE_DIST_MAX_REV _PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Distributor of adult entertainment materials.
Adult Entertainment Distributor - Revenue is Estimated	AE_DIST_REV_ISES T	The revenue for this involvement category is estimated.
Adult Entertainment Retailer - Maximum Percentage of Revenue	AE_RET_MAX_REV_ PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Retailer of adult entertainment materials.
Adult Entertainment Retailer - Revenue is Estimated	AE_RET_REV_ISEST	The revenue for this involvement category is estimated.
Adult Entertainment - Maximum Percentage of Revenue	AE_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from adult entertainment.
Adult Entertainment - Revenue is Estimated	AE_REV_ISEST	The revenue for this involvement category is estimated.

Factor Name	Column Header	Description
Adult Entertainment – Maximum Total Revenue	AE_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from adult entertainment.

### Exclusions

- Internet service providers that host adult entertainment sites operated by third parties;
- Software companies that have products used to maintain adult entertainment websites;
- Companies that manufacture sex toys, lubricants, contraceptives or lingerie;
- Companies that operate adult dating sites or provide adult telephone services;
- Companies that are involved in adult entertainment advertising or marketing;
- Companies that operate pool halls, bars, casinos or other establishments that restrict access of minors but do not permit nude entertainment;
- Companies that publish romance novels without sexually explicit images;
- Companies that only offer video sharing platforms and allow third-party users to upload adult content;
- Companies that offer escort services;
- Railroad, shipping and transportation companies that may also transport adult entertainment products;
- Companies that own and/or operate non-adult entertainment websites that contain pornographic images; and
- E-commerce and online marketplace companies that only facilitate transactions between parties but do not directly sell involved products.

## Alcohol

MSCI ESG Research’s alcohol research identifies companies that produce, distribute, retail, license or supply alcoholic beverages, key products and services. The research describes both the type of involvement and the revenue from that involvement.

### Definitions

An alcoholic beverage is defined as any fermented liquor that contains ethyl alcohol or ethanol as an intoxicating agent. MSCI ESG Research captures beverages with any amount of alcoholic content.

Factor Name	Column Header	Description
Producer	ALC_PRODUCER	Companies that manufacture alcoholic products, including brewers, distillers and vintners. It also includes companies that own or operate wine vineyards. Note: Companies that sell private-label alcoholic beverages manufactured by a third party are considered retailers, not manufacturers, and must meet the retailer criteria.
Distributor	ALC_DISTRIBUTOR	Companies involved in the independent wholesale of alcohol products to retailers and other distributors. This data point does not include a manufacturer that distributes its own alcohol products, unless it also provides logistics or distribution services to other alcohol companies.
Retailer	ALC_RETAILER	Companies retail alcoholic products, such as supermarkets, liquor stores, bars, pubs or duty-free stores.
Licensors	ALC_LICENSOR	Companies that license their company name or brand name to alcoholic products.
Supplier	ALC_SUPPLIER	Companies that manufacture and supply key raw materials and other products used specifically for the production of alcoholic products, such as malt, hops, molasses, sweeteners, distilled spirits, alcohol flavoring, chemical additives, "pure alcohol" or "potable alcohol."
Distiller	ALC_DISTILLER	Companies that manufacture distilled alcoholic products.
Ownership of an Alcohol Company	ALC_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary

Factor Name	Column Header	Description
		with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by an Alcohol Company	ALC_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	ALC_TIE	Companies with an industry tie to alcohol, including Producer, Distributor, Retailer, Licensor, Supplier and Ownership categories.

## Revenue

Factor Name	Column Header	Description
Alcohol Producer - Maximum Percentage of Revenue	ALC_PROD_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Producer of alcohol products.
Alcohol Producer - Revenue is Estimated	ALC_PROD_REV_I SEST	The revenue for this involvement category is estimated.
Alcohol Distributor - Maximum Percentage of Revenue	ALC_DIST_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Distributor of alcohol products.
Alcohol Distributor - Revenue is Estimated	ALC_DIST_REV_I SEST	The revenue for this involvement category is estimated.
Alcohol Retailer - Maximum Percentage of Revenue	ALC_RET_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Retailer of alcohol products.
Alcohol Retailer - Revenue is Estimated	ALC_RET_REV_I SEST	The revenue for this involvement category is estimated.
Alcohol Licensor - Maximum Percentage of Revenue	ALC_LICEN_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Licensor.

Factor Name	Column Header	Description
Alcohol Licensor - Revenue is Estimated	ALC_LICEN_REV_ISEST	The revenue for this involvement category is estimated.
Alcohol Supplier - Maximum Percentage of Revenue	ALC_SUPPL_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from operating as an alcohol Supplier.
Alcohol Supplier - Revenue is Estimated	ALC_SUPPL_REV_ISEST	The revenue for this involvement category is estimated.
Alcohol - Maximum Percentage of Revenue	ALC_MAX_REV	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from manufacturing, distributing, retailing, licensing and supplying alcoholic products.
Alcohol - Revenue is Estimated	ALC_REV_ISEST	The revenue for this involvement category is estimated.
Alcohol – Maximum Total Revenue	ALC_TOTAL_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from manufacturing, distributing, retailing, licensing and supplying alcoholic products.

## Exclusions

- Railroad, shipping and transportation companies that may also transport alcoholic beverages;
- Companies that are engaged in the advertising or marketing of alcoholic products;
- Companies that organize events sponsored by alcohol companies;
- Companies that manufacture packaging such as beer bottles, wine bottles, aluminum cans, wine corks or bottle caps.
- Companies that manufacture hardware beverage-processing solutions such as brewing filtration, purification and fermentation systems;
- Companies engaged in manufacturing chocolates with liquor;
- Companies that only distribute and/or retail raw materials used to produce alcoholic beverages; and

- E-commerce and online marketplace companies that only facilitate transactions between parties but do not directly sell involved products.

## Animal Welfare

MSCI ESG Research’s animal welfare research identifies companies involved in testing products or product ingredients of any sort on animals, breeding animals for animal testing purposes, exhibiting animals and operating factory farms. MSCI ESG Research includes publicly traded companies that perform testing activities in-house, as well as those that outsource that testing to third parties.

### Definitions

Animal Welfare research refers to the research and testing performed on animals to determine safety and efficacy of specific products; factory farming; and the breeding and exhibiting of animals.

Factor Name	Column Header	Description
Medical Testing	PHARMACEUTICAL_TESTER	Companies that conduct animal testing for pharmaceutical medicines, drugs or medical devices intended for human use.
Non-medical Testing	NON_PHARMACEUTICAL_TESTER	Companies that conduct animal testing for non-pharmaceutical products including cosmetic, personal care and household cleaning products, as well as industrial and chemical products.
Licensed Exhibitor	EXHIBITOR	Companies that are licensed by the U.S. Department of Agriculture (USDA) to have animals on display.
Licensed Breeders	BREEDER	Companies that are licensed by the Animal and Plant Health Inspections Service (APHIS), a USDA department, to breed animals for use in laboratory testing.
Factory Farming	ANI_FACTORY_FARM	Companies that are involved in commercial animal husbandry for the purpose of food production, including breeding, raising and slaughtering pork, veal, poultry and beef, as well as dairy and egg farm operators. This category does not include restaurants or other food establishments where meat products are sold.
Ownership of an Animal	ANI_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a

Factor Name	Column Header	Description
Welfare Company		subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by an Animal Welfare Company	ANI_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	ANI_TIE	Companies involved in animal testing (including those on the PETA and USDA lists), factory farming, exhibiting animals, breeding animals and ownership of or by a company in these categories.

MSCI ESG Research monitors several different lists that indicate involvement in animal testing activities and provides clients with a comprehensive record of publicly traded companies included on those lists:

Factor Name	Column Header	Description
PETA List	PETA	Companies that are on the People for the Ethical Treatment of Animals (PETA) “Companies That Do Test on Animals List,” which includes both companies that manufacture animal-tested products and brands that are owned by companies that have not yet adopted a permanent “no animal testing” policy.
USDA List	USDA	Companies that are on the USDA list of facilities that conduct animal testing. The Animal and Plant Health Inspections Service (APHIS), a USDA Department, licenses the use of animals for research and other activities as part of enforcing the U.S. Animal Welfare Act that regulates the treatment of animals in research, exhibition, transport and by dealers.

MSCI ESG Research also maintains four “positive” or “offsetting” data points that may indicate to certain clients that a company, although involved in animal testing, should be treated differently than companies without these positive indicators:

Factor Name	Column Header	Description
Animal Testing Policy	ANI_TEST_POLICY	Companies that disclose statements or policies addressing the welfare of animals used for laboratory testing. Company



Factor Name	Column Header	Description
		<p>policies should mention any of these best practices to be included in this category:</p> <ul style="list-style-type: none"> <li>• Commit to the highest standards of respectful, humane care of animals used in testing;</li> <li>• Conform to or exceed standards that are set by animal rights advocates; or</li> <li>• Address the three Rs (reduce, refine and replace the use of animals in animal testing).</li> </ul>
Support Alternatives	SUPPORT_ALTERNATIVES	Companies that disclose statements in support of researching or employing alternatives to animal testing (i.e., other methods of ensuring product safety that do not include the use of animals in experiments). The company should mention that either it is researching or executing alternatives to animal testing or has adopted the three Rs.
AAALAC Accreditation	AAALAC	Companies that are accredited by the Association of Assessment and Accreditation of Laboratory Animal Care (AAALAC) – a private, nonprofit organization that promotes humane treatment of animals in science through voluntary accreditation. The program evaluates organizations that use animals in research, teaching or testing. The accreditation process requires internal review, site assessment and a program that describes animal care.
NIH Assured	NIH_ASSURED	Companies assured by the National Institutes of Health (NIH) – an agency of the U.S. Department of Health & Human Services responsible for bio-medical and health-related research. The organization ensures the humane care and use of laboratory animals, testing, training and supported research.

## Exclusions

- Companies that produce food products containing meat or other animal products;
- Companies that use animals to produce antibodies;
- Companies that manufacture veterinary products;
- Companies involved in fur production or retail. MSCI ESG Research provides separate research related to these activities;
- Companies involved in leather;
- Companies that conduct tests on aquatic and invertebrate organisms or Effluence/WET Tests; and
- Companies that manufacture and develop equipment as well as other supporting technologies used for animal testing.

## Factory Farming-Specific Exclusions

- Companies with farms that focus exclusively on organics or that are free-range;
- Companies such as supermarkets that have “private-label” animal products, unless they are involved in the supply chain;
- Companies that own milk or dairy processing facilities, unless they also own or operate the dairy farms where cows are raised and milked;
- Companies that own or operate meat-processing facilities but do not raise or slaughter animals;
- Companies involved in the raising, breeding, or processing of fish and other aquaculture products; and
- Companies involved in the raising, breeding, or processing of animals exclusively for entertainment, leisure, labor, scientific, industrial and other similar purposes.

## Animal Welfare Supplementary Sources

- PETA - <https://crueltyfree.peta.org/wp-content/uploads/companies-do-test.pdf>
- AAALAC - <https://www.aaalac.org/accreditation-program/directory/directory-of-accredited-organizations-search-result/>
- FRAME - <https://frame.org.uk/how-you-can-help/corporate-support/>
- CAAT - <http://caat.jhsph.edu/about/sponsor.html>

- USDA
  - [https://www.aphis.usda.gov/animal\\_welfare/downloads/List-of-Active-Licensees-and-Registrants.pdf](https://www.aphis.usda.gov/animal_welfare/downloads/List-of-Active-Licensees-and-Registrants.pdf)
  - <https://aphis-efile.force.com/PublicSearchTool/s/inspection-reports>
- NIH
  - <https://olaw.nih.gov/assured/app/index.html#DOMESTIC>
  - <https://olaw.nih.gov/assured/app/index.html#FOREIGN>

## Biocides

MSCI ESG Research's biocides research identifies companies involved in the production or the supply of chemicals used to control unwanted organisms.

### Definitions

Biocides are defined as products used to control unwanted organisms. These include pesticides, rodenticides, insecticides and antifouling products.

Factor Name	Column Header	Description
Biocides - Any Tie	BIOCIDE_TIE	Companies that have an industry tie to biocide products through the producer, supplier, or ownership categories.
Biocides - Company Profile	BIOCIDE_PROFILE	Biocides - Company Profile
Biocides - Ownership by a Biocide Company	BIOCIDE_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Biocides - Ownership of a Biocide Company	BIOCIDE_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI treats it as a consolidated subsidiary.
Biocides Producer	BIOCIDE_PRODUCER	Companies that produce biocides including antifouling products and pesticides such as rodenticides, avicides, molluscicides, vermicides, piscicides and insecticides.
Biocides Producer of Neonics and Chlorine Organics	BIOCIDE_PRODUCER_NEOCHLO	Companies that produce pesticides containing neonicotinoids and/or organochlorine compounds.
Biocides Supplier	BIOCIDE_SUPPLIER	Companies that provide chemicals or other raw materials to a biocides producer that are specifically formulated for use in biocides.

## Revenue

Factor Name	Column Header	Description
Biocides Producer - Maximum Percentage of Revenue	BIOCIDE_PRODUCER_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from manufacture of biocides.
Biocides Producer - Revenue is Estimated	BIOCIDE_PRODUCER_REV_ISEST	The revenue for this involvement category is estimated.
Biocides Producer of Neonics and Chlorine Organics - Maximum Percentage of Revenue	BIOCIDE_PRODUCER_NEOCHLO_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from manufacture of pesticides containing neonicotinoids and/or organochlorine compounds.
Biocides Producer of Neonics and Chlorine Organics - Revenue is Estimated	BIOCIDE_PRODUCER_NEOCHLO_REV_ISEST	The revenue for this involvement category is estimated.
Biocides Supplier - Maximum Percentage of Revenue	BIOCIDE_SUPPLIER_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from supplying products essential to the production of biocides.
Biocides Supplier - Revenue is Estimated	BIOCIDE_SUPPLIER_REV_ISEST	The revenue for this involvement category is estimated.
Biocides - Maximum Percentage of Revenue	BIOCIDE_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from biocides.
Biocides - Revenue is Estimated	BIOCIDE_REV_ISEST	The revenue for this involvement category is estimated.

**Exclusions**

- Genetically modified organisms that act as pesticides/biocides;
- Companies that only retail pesticides/biocides;
- Companies that only manufacture disinfectants and hygiene products;
- Companies that only manufacture preservatives and embalming products; and
- Companies that produce chemicals for research purposes only.

## Breast Milk Substitutes

MSCI ESG Research’s BMS screen identifies companies that have been flagged by the International Baby Food Action Network (IBFAN) as violating the International Code of Marketing of Breast Milk Substitutes.

### Definitions

Factor Name	Column Header	Description
Breast Milk Substitutes	BREAST_MILK_SUB S	Publicly traded companies identified by IBFAN as in violation of the International Marketing Code on Breast Milk Substitutes.

## Cannabis

MSCI ESG Research’s Cannabis research identifies companies involved in the production, retailing or pharmaceutical research of cannabis. The research describes both the type of involvement and the revenue from that involvement.

### Definitions

Cannabis products and derivatives usually come from the dried leaves and flowers of the *Cannabis sativa* or *Cannabis indica* plant. It has a psychoactive substance that can be used for both medicinal and recreational use. Its main psychoactive chemical component, tetrahydrocannabinol (THC), works as an anti-emetic drug that is effective against vomiting and nausea during medical treatments. Additionally, THC can also induce a euphoric high, which lets users experience a state of relaxation. Consumption of Cannabis is most commonly done through smoking, vaporizing or ingestion by mixing with food. It is also known as marijuana, weed, grass, ganja, bud, hash, pot, blunts or joint.

Factor Name	Column Header	Description
Cannabis – Any Tie	CANNA_TIE	Companies that have an industry tie to cannabis products through the producer, retailer, pharmaceutical-research or ownership categories.
Producer	CANNA_PROD	Companies that manufacture cannabis products, such as edibles, leaves, oils, seeds, joints, blunts and other smoking material. This also includes companies that grow or process raw cannabis plants, as well as companies that produce pharmaceutical products that have cannabis, cannabinoids or THC as ingredients.  Note: Pharmaceutical products still in research, development and/or testing are not included in this factor. They are flagged under the Pharmaceutical – Research factor.
Retailer	CANNA_RET	Companies that retail cannabis products.
Medical	CANNA_MEDICAL	Companies that produce and/or retail cannabis for medical use.
Recreational	CANNA_RECREATIONAL	Companies that produce and/or retail cannabis for recreational use.
Pharmaceutical - Research	CANNA_PHARM_RESEARCH	Companies engaged in research or development of pharmaceutical products or



Factor Name	Column Header	Description
		therapeutic treatments involving cannabis, cannabinoids or THC as ingredients.
Ownership of	CANNA_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by	CANNA_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Cannabis Watchlist – License Application/Development Stage Company	CANNA_WATCHLIST_LICENSE_APPLICATION	Companies awaiting regulatory approval of license to conduct cannabis-related activities and/or companies that are in the process of constructing cannabis-related facilities.

## Revenue

Factor Name	Column Header	Description
Cannabis Producer – Maximum Percentage of Revenue	CANNA_PROD_MAX_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the production of cannabis products.
Cannabis Producer - Revenue is Estimated	CANNA_PROD_ISEST	The revenue for this involvement category is estimated.
Cannabis Retailer – Maximum Percentage of Revenue	CANNA_RET_MAX_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from retail of cannabis products.
Cannabis Retailer - Revenue is Estimated	CANNA_RET_ISEST	The revenue for this involvement category is estimated.
Cannabis Total – Maximum Percentage of Revenue	CANNA_TOTAL_MAX_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from cannabis-related business activities.

Cannabis - Revenue is Estimated	CANNA_REV_ISEST	The revenue for this involvement category is estimated.
Cannabis - Maximum Total Revenue	CANNA_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from cannabis-related business activities.

### Exclusions

- Companies that manufacture synthetic cannabis or Marinol/Dronabinol (chemical that has the same characteristics of TetraHydroCannabinol (THC));
- Companies that produce or retail products that are Cannabidiol (CBD)-based. Products that are CBD-based are non-psychoactive;
- Companies that produce Cannabis products sourced from [Industrial] hemp plant. Products sourced from hemp plants are high in CBD content, therefore are classified as non-psychoactive;
- Companies that manufacture complementary cannabis products, such as matches, lighters, pipes, bongs and hookahs. These products are considered complementary products as they do not add any intrinsic value to the final product;
- Companies that produce or retail topical beauty products that contain cannabis. These products are mainly CBD-based and are non-psychoactive;
- Companies providing support services, such as financial solutions, capital investments, consultancy, payment solutions, etc.;
- Companies that manufacture products and farming equipment used in cannabis farming, such as fertilizers, chemicals and harvesting equipment;
- Companies that manufacture equipment, such as cannabis-drying machines, scales, labeling machines, lighting and packaging machines. Equipment such as this is considered secondary as they contribute to non-essential portions of the cannabis manufacturing process;
- Companies engaged in or providing marketing and technology support for cannabis products;
- Companies engaged in the import/export, shipping, railroad and transportation of cannabis or cannabis-related products;
- Companies that supply, distribute and/or retail raw materials used in production of cannabis products;



- Companies and REITs (real estate investment trusts) engaged in leasing land or facilities to grow cannabis;
- Companies that are financing/funding research for medical cannabis; and
- E-commerce and online marketplace companies that only facilitate transactions between parties but do not directly sell involved products.

## Contraceptives

MSCI ESG Research’s contraceptives research identifies companies that manufacture or license their company brand name to contraceptive products. The research describes both the type of involvement and the revenue from that involvement.

### Definitions

Contraception is defined as the prevention of fertilization of the ovum by sperm cells.

Factor Name	Column Header	Description
Producer	CONTRA_PRODUCER	Companies that manufacture or are developing products intended for contraception.
Licensor	CONTRA_MLD	Companies that license a company or brand name for contraceptive products. Licensor flags are limited to companies that are not producing or manufacturing a contraceptive product but that license their own brand name or company name to a contraceptive product.
Ownership of a Contraceptive Company	CONTRA_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by a Contraceptive Company	CONTRA_OWN_BY	Companies that are 50-% or more owned by a company with involvement.
Any Tie	CONTRA_TIE	Companies with an industry tie to contraceptives, including Producer, Licensor, or Ownership Of or Ownership By a contraceptives company.

Types of contraceptive products typically covered:

- Hormonal Contraceptives
  - **Oral contraceptive pills** are typically Progestin-only pills (POPs) or “minipills,” containing the hormone progestin, a synthetic progesterone. POPs containing norethindrone are currently available in the U.S. and POPs containing levonorgestrel, desogestrel and other progestins are available in other countries. They also include Selective Estrogen Receptor Modulators (SERMs), which cause ovulation to occur asynchronously with the formation of uterine lining, preventing implantation.

- **Combined Oral Contraceptives (COCs)** are typically pills that contain progestin and estrogen.
- **Emergency Contraceptives Pills (ECPs)** commonly known as the “morning-after pill,” refers to oral contraceptive measures that, if taken after intercourse, may prevent pregnancy. These pills typically contain levonorgestrel alone or a combination of ethinyl estradiol and either norgestrel or levonorgestrel progestins.
- **Injectable contraceptives** typically involve the injection of progesterone to inhibit fertility.
- **Contraceptive Patches** are typically thin, flexible, 20-centimeter patches with three layers: an outer protective polyester layer; a middle medicated adhesive layer; and a clear liner. Each patch typically contains 6 milligrams (mg) of norelgestromin and 0.75 mg of ethinyl estradiol.
- Vaginal Barriers are methods that work by blocking and/or killing sperm cells.
  - **Female or Male Condoms** are flexible sheaths usually made of thin rubber latex that provide a physical barrier.
  - **Diaphragms** are a shallow, dome-shaped rubber disks with a flexible rim that fit within the vagina and cover the cervix.
  - **Caps** are thimble-shaped, soft rubber caps with a round rim that are fitted around the cervix by a health professional.
  - **Sponges** are doughnut-shaped polyurethane devices containing spermicide and a woven polyester loop that hangs down from the vagina for removal.
  - **Vaginal rings** are soft, transparent, flexible rings of ethylene vinyl acetate copolymer that release etonogestrel.
- Intrauterine Devices (IUDs) are birth control devices that are inserted in the uterus to prevent implantation. There are two broad categories of such devices: inert and copper-base devices, and hormonal intrauterine devices that release a progestogen.
- Contraceptive Implants are thin rods or tubes containing a progestin hormone inserted under the skin of a woman’s arm.
- Spermicide is a substance or agent that kills sperm cells. It may be used alone, with a vaginal barrier method or as an adjunct to any of the other contraceptive methods for added protection against pregnancy. Spermicides are an integral component of most vaginal barrier methods.
  - **Spermicidal Gels, Creams and Foams** are commonly marketed for use with a diaphragm but may also be used independently.

- **Spermicide Suppositories** may be used alone or with a condom. They typically have a spermicidal concentration of 3% to 5%.
- **Spermicide Films** may be used alone or with barriers. Each paper-thin sheet of film typically has a spermicide concentration of 28% and 72 mg to 100 mg Nonoxynol-9 (N-9), an active ingredient in most spermicides.
- Permanent contraceptives, such as Essure or Adiana Permanent Contraception, are inserts, administered by a physician, that cause additional tissue growth in the fallopian tubes. The result is a permanent, natural barrier to pregnancy.

### Revenue

Factor Name	Column Header	Description
Contraceptives - Maximum Percentage of Revenue	CONTRA_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from manufacturing or licensing contraceptives.
Contraceptives - Revenue is Estimated	CONTRA_REV_ISET	The revenue for this involvement category is estimated.
Contraceptives - Maximum Total Revenue	CONTRA_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from the manufacturing or licensing of contraceptives.

### Exclusions

- Companies that retail contraceptive products such as grocery stores, convenience stores and drug stores;
- Companies that market contraceptive products;
- Health Management Organizations (HMOs), schools, clinics, hospitals or other government agencies that distribute contraceptives;
- Insurance companies that reimburse for products or procedures related to birth control;
- Corporate supporters of Planned Parenthood, similar advocacy organizations or research for contraceptive products;
- Companies that are involved in tubal sterilization or vasectomy;
- Companies that manufacture pharmaceutical drugs that are not marketed as a contraceptive, but contain an active ingredient that is commonly used for contraceptives;



- Companies that produce medical instruments that have multiple uses; and,
- Companies that conduct clinical trials.
- Companies that supply raw materials used in the development and production of contraceptive products (e.g., rubber for condoms, active pharmaceutical ingredients (APIs) commonly used in the formulation of contraceptives), as well as packaging materials

## Fur

MSCI ESG Research’s fur screen identifies companies that derive any detectable revenue from the production and/or sale of fur products, including those that raise, trap or slaughter animals for their fur as well as those deriving revenue from the sale of products made from or incorporating fur, such as coats, muffs, hats and stoles, as well as home décor, craft supplies, etc.

## Coverage Universe

MSCI ACWI IMI

## Definitions

MSCI ESG Research’s definition of fur includes shearling and astrakhan.<sup>1</sup> Leather is not included in the screen.

Factor Name	Column Header	Description
Producer	FUR_PRODUCER	Companies that produce fur pelt and products containing fur or fur trim. This factor also includes companies that hunt, raise or trap animals for their fur.
Retailer	FUR_RETAILER	Companies that retail any products featuring fur as a material
Any Tie	FUR_TIE	Companies that either produce or retail fur products.

## Exclusions

- Companies that produce or retail leather products.
- Companies that produce or retail products with bird feathers.
- Companies that produce or retail products with animal hair, fur or wool produced from shearing and/or shaving.

<sup>1</sup> Shearling is skin from a recently sheared sheep or lamb that has been tanned and dressed with the wool left on. Groups including the Fur Information Council of America consider shearling to be a type of fur. Astrakhan (also known as broadtail, Persian wool or karakul) is the fur of newborn and fetal karakul lambs.



## For Profit Healthcare

MSCI ESG Research’s for profit healthcare screen identifies companies with ties to abortion or birth control, including HMOs that offer coverage for these products and services, as well as companies offering standard healthcare services. These screening options are divided into two factors, “Life Ethics” and “Services and Facilities,” which are composed of the underlying subcategories detailed below.

### Coverage Universe

MSCI World excluding US + US Top 3,000

### Definitions – Life Ethics

Factor Name	Column Header	Description
For Profit Healthcare - Life Ethics	FPH_LIFE_ETHICS	Companies that own or operate one or more acute-care hospitals or surgical centers that may provide general medical services, including abortions; lease space to hospitals, surgical centers, or short-term acute-care facilities; produce surgical instruments likely used in abortion procedures, including specula, dilators, laparoscopes, suction devices and curettes; or are involved in the production of in vitro fertilization (IVF) treatments, enabling technologies and drugs. Also included are health insurance companies that cover routine medical procedures and expenses, including HMOs, PPOs and PMOs. If a company specifically reports that it only covers abortions if a woman's life is in danger, it is not flagged.

Life ethics activities typically covered:

Own/Operate Acute Care Facilities	Companies that own or operate one or more acute-care hospitals or surgical centers that may provide general medical services, including abortions.
Managed Health Program	Health insurance companies that cover routine medical procedures and expenses, including HMOs, PPOs and PMOs. If a company specifically reports that it only covers abortions if a woman's life is in danger, it is not included.
Healthcare REIT	Companies that lease space to hospitals, surgical centers or short-term acute-care facilities.

In vitro Fertilization	Companies involved in the production of in vitro fertilization (IVF) treatments, enabling technologies and drugs.
Surgical Instruments	Companies that produce surgical instruments likely used in abortion procedures, including specula, dilators, laparoscopes, suction devices and curettes.

### Definition – Services and Facilities

Factor Name	Column Header	Description
For Profit Healthcare - Services and Facilities	FPH_SERVICES_FACILITY	Companies that own or operate specialized healthcare facilities, such as dialysis centers, radiation centers, rehabilitation facilities, acute-care hospitals or surgical centers that may provide general medical services, including abortions, long-term health facilities such as nursing homes, assisted living facilities and long-term acute-care hospitals, psychiatric hospitals or behavioral health facilities. Also included are health insurance companies that cover routine medical procedures and expenses, including HMOs, PPOs and PMOs. If a company specifically reports that it only covers abortions if a woman's life is in danger, it is not included.

Services and facilities typically covered:

Own/Operate Acute Care Facilities	Companies that own or operate one or more acute-care hospitals or surgical centers that may provide general medical services, including abortions.
Managed Health Program	Health insurance companies that cover routine medical procedures and expenses, including HMOs, PPOs and PMOs. If a company specifically reports that it only covers abortions if a woman's life is in danger, it is not included.
Specialized Healthcare	Companies that own or operate specialized healthcare facilities, such as dialysis centers, radiation centers, rehabilitation facilities and others.
Long Term Facility	Companies that own or operate long-term health facilities such as nursing homes, assisted living facilities and long-term acute-care hospitals.
Mental and Emotional Healthcare	Companies that own or operate psychiatric hospitals or behavioral health facilities.

Companies involved only in the following mitigating activities will not be included:

Supplemental Major Medical Insurance	Health insurance companies that cover serious medical expenses or supplemental coverage of specific needs, such as accident insurance or disability income insurance.
Managed Health Government Program	Companies that provide managed care programs and related services to individuals and families enrolled in Medicaid/Medicare only.

### Definition – Surgical Instruments

Factor Name	Column Header	Description
For Profit Healthcare – Surgical Instruments	FPH_SURGICALINS T	Companies that produce surgical instruments likely used in abortion procedures, including specula, dilators, laparoscopes, suction devices and curettes.

### Exclusions

- Companies that only lease space to nursing homes, assisted living facilities or long-term care facilities, or regular doctor’s offices;
- Companies that construct but do not own or operate medical facilities;
- Companies that cover abortions only if a woman’s life is in danger;
- Companies that only act as distributor, insurance agent or broker, insurance underwriter or reinsurer;
- Companies that manufacture fertility drugs or forms of assisted reproductive technology;
- Companies that offer fertility testing;
- Companies that manufacture pharmaceuticals;
- Companies that produce or distribute surgical instruments not explicitly intended for use in Ob/Gyn-related procedures;
- Companies that provide prescription services, benefits management services, chronic disease management services or that are hired/contracted to assist patients with their treatment programs;
- Companies that provide home healthcare services such as in-home oxygen and respiratory services;
- Companies that offer dental products and services, or manage dental practices;

- Companies that cater to low-income or elderly individuals who receive healthcare benefits through government-sponsored programs as a subset of their services;
- Companies that offer diagnostic services and/or imaging systems are not considered for specialized healthcare;
- Companies that only provide software and/or technology solutions to hospitals and health insurance companies;
- Companies that only provide healthcare workforce and staffing services to hospitals and healthcare facilities;
- Companies that operate as Catholic faith-based healthcare systems.
- Note: Non-Catholic faith-based healthcare systems are not automatically included. Other religious affiliations are reviewed and evaluated to determine relevance for the screen. The exclusion is applicable to acute-care hospitals.
- To align with the Abortion Providers screen, companies that operate acute-care facilities exclusively in countries where abortion is illegal are excluded. The countries on this list are Chile, El Salvador, Nicaragua, Dominican Republic, the State of the Vatican City and Malta (based on the UN World Abortion Policies, 2013 – the latest available as of October 2019).

## For Profit Prisons

MSCI ESG Research’s For Profit Prisons screen identifies companies that derive any detectable revenue from the operation of private prisons, jails, detention centers or correctional facilities or from the provision of integral services to these types of facilities. Integral services include complete facilities management (end-to-end), security services and detention services. For Profit Prisons alternatively may be known as private prisons.

## Coverage Universe

MSCI ACWI IMI

## Definitions

Factor Name	Column Header	Description
For Profit Prisons Operations & Services	FOR_PROFIT_PRIS ONS_OPER_SERV	This factor identifies companies that are involved in the operation of for profit prisons or the provision of integral services to these types of facilities. These facilities may be alternatively known as private prisons.

## Revenue

Factor Name	Column Header	Description
For Profit Prisons - Maximum Percentage of Revenue	FOR_PROFIT_PRIS ONS_MAX_REV_PC T	The recent-year percent of revenue, or maximum estimated percent, a company has derived from activities related to for profit prisons.

## Exclusions

- Companies that provide rehabilitation, probation and custodial services.
- Companies that serve for profit prisons by only providing supplemental services including cleaning, catering, environmental services, recreational programs and other such related services.
- Holding Companies, Banks and Financial Institutions that invest in companies that operate for profit prisons.



- Companies that own less than 50% of a company with involvement in for profit prisons.
- REITs that own property on which for profit prisons are located;
- Companies that lease land or space on which for-profit prisons are built and operated;
- Companies that purchase products manufactured using prison labor.
- Companies that earn revenue from providing services directly to prison inmates, such as digital services.

## Gambling

MSCI ESG Research’s gambling research identifies companies that own or operate gambling facilities or provide support or services to the gambling industry. The research describes both the type of involvement and the revenue from that involvement.

### Definitions

Gambling is defined as the betting or staking of money or something of value, with consciousness of risk and hope of gain, on the outcome of a game, a contest or an event, the outcome of which is determined by chance.

Factor Name	Column Header	Description
Operations	GAM_OPERATIONS	Companies that own or operate gambling facilities such as casinos, racetracks, bingo parlors or other betting establishments, including: horse, dog or other racing events that permit wagering; lottery operations; online gambling; fantasy sports that permit wagering; pari-mutuel wagering facilities; bingo; pachislot and pachinko parlors; slot machines; jai alai; mobile gambling; and sporting events that permit wagering.
Support	GAM_SUPPORT	Companies that provide key products or services fundamental to gambling operations, including: <ul style="list-style-type: none"> <li>• Products manufactured exclusively for gambling, such as slot machines, roulette wheels or lottery terminals. This also includes specialized dual-use products solely manufactured and used for casino operations, such as casino chips with RFID security technology, embedded microchips in playing cards, theft-proof devices in dice, etc.;</li> </ul> gambling technology and support designed for gambling applications such as IT maintenance, software design, security or surveillance systems and lottery ticket printing services; gambling-related services such as credit lines and casino management and consultation;

Factor Name	Column Header	Description
		<ul style="list-style-type: none"> <li>Leasing of gambling machines and providing broadcasting services to sports events either to bookmakers, wagering hubs or homes.</li> </ul>
Licensor	GAM_LICENSOR	Companies that license their company name or brand name to gambling products.
Ownership of a Gambling Company	GAM_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by a Gambling Company	GAM_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	GAM_TIE	Companies with an industry tie to gambling through any of the above categories.

## Revenue

Factor Name	Column Header	Description
Gambling Operations - Maximum Percentage of Revenue	GAM_OPER_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as an Operator of gambling facilities.
Gambling Operations - Revenue is Estimated	GAM_OPER_REV_IS_EST	The revenue for this involvement category is estimated.
Gambling Support - Maximum Percentage of Revenue	GAM_SUPPOR_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from providing Support to gambling operations.
Gambling Support- Revenue is Estimated	GAM_SUPPOR_REV_ISEST	The revenue for this involvement category is estimated.
Gambling Licensor - Maximum Percentage of Revenue	GAM_LICEN_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Licensor.



Factor Name	Column Header	Description
Gambling Licensor - Revenue is Estimated	GAM_LICEN_REV_I SEST	The revenue for this involvement category is estimated.
Gambling - Maximum Percentage of Revenue	GAM_MAX_REV_PC T	The recent-year percent of revenue, or maximum estimated percent, a company has derived from gambling-related business activities.
Gambling - Revenue is Estimated	GAM_REV_I SEST	The revenue for this involvement category is estimated.
Gambling – Maximum Total Revenue	GAM_MAX_REV	The total recent-year revenue (USD), or maximum estimated revenue, a company has derived from gambling-related business activities.

### Exclusions

- Companies that breed animals;
- REITs that own property on which casinos are located;
- Companies that lease land or space on which casinos are built and operated;
- Companies that manufacture dice, cards or chips;
- Companies retailing lottery tickets;
- Companies that operate carnivals;
- Companies that provide manpower services;
- Companies that provide third-party web hosting;
- Companies that manufacture lottery ticket printing machines;
- Companies that offer online or mobile games of skill;
- Companies that are engaged in derivatives trading;
- Financial companies that provide personal credit lines to individuals for gambling purposes;
- Companies offering check-cashing services;
- Companies engaged in distribution of gambling machines; and
- Companies that produce only components of gambling machines, including but not limited to pachinko slot pieces, LCD screens and coin-counting devices.

## Genetic Engineering

MSCI ESG Research’s genetic engineering research includes companies that genetically modify organisms (GMOs) for agricultural use or human consumption. Specifically, this includes companies that have filed for a notification with the USDA’s Animal and Plant Health Inspection Service (APHIS) for field testing of organisms engineered to produce compounds intended for agricultural use; companies included in the European Union (EU) – Food Safety Administration (EFSA) list that have applied for permits to market genetically engineered material for food or food additives in the EU; and companies found in the GM crop database from the Center for Environmental Risk Assessment (CERA).

### Definitions

Factor Name	Column Header	Description
Agriculture	GMO_AGRICULTURE	Companies that genetically modify plants, such as seeds and crops, and other organisms intended for agricultural use or human consumption.
Ownership of a GMO Company	GMO_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by a GMO Company	GMO_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	GMO_TIE	Companies with an industry tie to GMOs through any of the above categories.

### Revenue

Factor Name	Column Header	Description
Genetic Engineering - Maximum Percentage of Revenue	GMO_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from genetic engineering related business activities.
Genetic Engineering - Revenue is Estimated	GMO_REV_ISEST	The revenue for this involvement category is estimated.
Genetic Engineering -	GMO_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company

Factor Name	Column Header	Description
Maximum Total Revenue		has derived from genetic engineering-related business activities.

**Exclusions**

- Pharmaceutical or other companies that conduct genetic modification research on DNA, T-cells or other microorganisms for medical purposes;
- Companies that produce genetically modified organisms for use in industrial or chemical products not intended for human consumption;
- Companies that are developing or producing biofuels from genetically engineered ingredients;
- Paper companies that own or operate genetically engineered tree plantations;
- Food processing companies that use genetically modified ingredients;
- Companies that contract out genetic engineering research to third parties;
- Companies that are only involved in providing services for GMO field testing, research and development; and
- Companies that only use GMOs in the production process and where the final product does not contain GMOs.

## Lending Practices and CRA Rating

### Lending Practices

MSCI ESG Research’s Lending Practices research is designed to identify companies involved in the provision of products and services associated with controversial lending practices, including payday loans, installment loans, pawn loans, title loans, tax-refund-anticipation loans and doorstep loans.

### Lending Controversy Ties

The Lending Practices research also identifies companies with severe or very severe controversies within the past three years related to consumer lending, such as allegations of usurious interest payments, discriminatory lending practices, or deceptive or dubious home loan or subprime mortgage marketing practices.

### Coverage Universe

MSCI ACWI and US Top 3000 by Market Cap

### Definitions

Controversial lending practices are defined as those in which lenders take advantage of borrowers’ lack of understanding and/or lack of access to more-traditional financial services to impose loan terms that place a disproportionately and often untenably high burden on the borrower. This is often done through deception, fraud or manipulation via aggressive sales tactics.

Factor Name	Column Header	Description
Lending Practices – Direct Link to Predatory Lending	PRED_LEND_DIRECT	Companies that provide products and services associated with the controversial lending practices described above this table.
Lending Practices – Company Profile	PRED_LEND_PROFILE	Company Profile
Lending Practices – Controversy	PRED_LEND_CONTROVERSIES	Companies involved in severe or very severe controversies or lawsuits alleging predatory lending practices, as defined by MSCI ESG Impact Monitor product methodology.
Lending Practices – Controversy Profile	LEND_CONTROVERSIES_NOTES	Narrative description of controversies involving companies whose loan products or services have been the subject of high-profile or persistent controversies surrounding predatory lending or deceptive marketing practices.

Types of controversial lending practices typically covered:

Activity	Description
Title Loans	<ul style="list-style-type: none"> <li>• Advertised as not requiring credit score or credit reference check to qualify for loan.</li> <li>• A lien is placed against the title of the vehicle, and in many cases the borrower must surrender their hard copy of the title to the lender.</li> <li>• Loan is made on the estimated auction value of the vehicle, normally not to exceed 50% of this value. This is to ensure a profit if the borrower defaults.</li> <li>• If the loan is not repaid, the lender repossesses the borrower’s vehicle.</li> <li>• APRs can exceed 300%, but some U.S. states have placed limits on the APR of title loans.</li> </ul>
Logbook Loans	<ul style="list-style-type: none"> <li>• Advertised as not requiring credit score or credit reference check to qualify for loan.</li> <li>• Similar to a Title Loan except does not require a court order to repossess vehicle (the structure of the loan is that of a sale of the vehicle to the lender with the borrower retaining the use of the vehicle).</li> <li>• Loan is made on the vehicle’s value, normally not to exceed 50% of this value.</li> <li>• If the loan is not repaid, the lender repossesses the borrower’s vehicle.</li> <li>• APRs can exceed 300%.</li> </ul>
Rent to Own	<ul style="list-style-type: none"> <li>• Includes white goods or domestic appliances, electronics and furniture. This category does not include traditional vehicle and equipment leasing unless the money factor involved equates to an APR higher than 100%.</li> </ul>
Tax Refund Anticipation Loans (RALs)	<ul style="list-style-type: none"> <li>• Issues a cash advance (or other payment method including pre-paid debit cards) on the expected tax refund.</li> <li>• Fees and interest can equal 10% or more of the refund amount in order to get the refund a few weeks faster (as compared with direct deposit).</li> </ul>

Activity	Description
	<ul style="list-style-type: none"> <li>Including fees, APRs can exceed 100%.</li> </ul>
Doorstep Lending	<ul style="list-style-type: none"> <li>Advertised as not requiring credit score or credit reference check to qualify for loan.</li> <li>Loan is marketed directly to borrowers through in-person door-to-door agents.</li> <li>Loan is normally of a short duration (&lt; 1 year) with weekly payments collected in person by agents.</li> </ul>
Payday Loans	<ul style="list-style-type: none"> <li>Advertised as not requiring credit score or credit reference check to qualify for loan.</li> <li>Typically, the loan is an “advance” against a future payment to the borrower (such as a salary or benefit check).</li> <li>The borrower leaves a negotiable instrument with the lender that is redeemed by the lender if they do not repay by the loan maturity date.</li> </ul>
Pawn Loans	<ul style="list-style-type: none"> <li>Advertised as not requiring credit score or credit reference check to qualify for loan.</li> <li>Loan is normally of a short duration (&lt;90 days).</li> <li>Borrower brings an item of value, and the pawn broker makes a loan based on a percentage of the retail value.</li> <li>If the loan is not repaid, then the pawn broker takes ownership of the property.</li> </ul>

**Note:** For a company to be flagged, a product or service does not need to meet all the above criteria. These descriptions are guidelines for what analysts look for.

## Revenue

Factor Name	Column Header	Description
Lending Practices - Maximum Percentage of Revenue from Predatory Lending	PRED_LEND_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from predatory lending activities.  <b>Note:</b> Revenue is not provided for companies with ties to predatory lending through controversies.
Lending Practices -	PRED_LEND_REV_I SEST	The revenue for this involvement category is estimated.

Factor Name	Column Header	Description
Revenue is Estimated		
Lending Practices - Maximum Total Revenue from Predatory Lending	PRED_LEND _MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from predatory lending activities.

**Lending Practices Exclusions:**

- Automobile and equipment leasing
- Check cashing services
- Gold loans provided by Indian-based financial institutions

**CRA Rating**

MSCI ESG Research also provides a list of companies given a "Needs to improve" or "Substantial Noncompliance" rating under the Community Reinvestment Act (CRA) of the U.S.

The CRA is intended to encourage depository institutions to help meet the credit needs of the communities in which they operate, including low- and moderate-income neighborhoods, consistent with safe and sound banking operations.

**Coverage Universe**

U.S. financial institutions that received a rating of "Needs to improve" or "Substantial Noncompliance" after taking the CRA examination within the last three years.

**Definitions**

Factor Name	Column Header	Description
Lending Practices – CRA Rating	PRED_LEND _CRA _RATING	Financial institutions that received a rating of "Needs to improve" or "Substantial Noncompliance" after taking the CRA examination. According to the U.S. Federal Deposit Insurance Corp. (FDIC), the CRA rating is evaluated in the context of information about the institution (financial condition and business strategies), its community (demographic and economic data) and its competitors.

### Lending Practices and CRA Rating Supplementary Sources

- FFIEC CRA Rating: <http://www.ffiec.gov/craratings/default.aspx>
- Center for Responsible Lending: <http://www.responsiblelending.org/>



## Nuclear Power

MSCI ESG Research’s nuclear power research is designed to identify companies that own or operate nuclear power plants and manufacture and supply key products or services to the nuclear power industry. The research describes the type of involvement, the company’s percentage of power generation derived from nuclear sources, percentage of total nuclear installed capacity and the revenue from nuclear power-related activities.

### Definitions

MSCI ESG Research’s classifies involvement in the industry as follows:

Factor Name	Column Header	Description
Utility	NUC_UTILITY	Companies that own or operate nuclear power plants.
Nuclear Percentage of Power	NUC_PCT_GEN	<p>The percent of total electricity that is generated from nuclear power in a given year.</p> <p><b>Note:</b> MSCI ESG Research looks for self-generated nuclear power and does not consider purchased power in this figure. Generation differs from installed capacity; however, installed capacity is substituted when percent generation is not available.</p>
Percent Nuclear Installed Capacity	NUC_PCT_NUCCAP	<p>The percentage of installed capacity attributed to nuclear sources in a given year.</p> <p><b>Note:</b> Where total installed capacity or nuclear capacity figures are not publicly disclosed, the percentage may not be available. MSCI ESG Research does not provide estimates for this factor.</p>
Supplier	NUC_SUPPLIER	<p>Companies that provide essential products and/or services to active nuclear power plants, including but not limited to:</p> <ul style="list-style-type: none"> <li>• Companies that build or design nuclear power plants or nuclear power technology, which includes: <ul style="list-style-type: none"> <li>– Suppliers of key components for nuclear power plants, or essential services for the design,</li> </ul> </li> </ul>

Factor Name	Column Header	Description
		<p>construction, engineering or operation of nuclear power plants;</p> <ul style="list-style-type: none"> <li>- Producers and developers of nuclear fuel products, nuclear reactors, nuclear control rods and other nuclear power-specific equipment, etc.;</li> <li>- Engineered containments, including engineering and construction of structures for beyond-design basis facilities.</li> </ul> <ul style="list-style-type: none"> <li>• Companies that manufacture or supply essential components and equipment, which includes:           <ul style="list-style-type: none"> <li>- Instrumentation &amp; control (I&amp;C) equipment and systems to nuclear power plants. These systems are essential in monitoring and maintaining the operations of nuclear power plants as they provide real-time measurements, sensors, control and regulation of the operations of the plant;</li> <li>- Mechanical and remote handling systems, such as robot technologies and equipment used in the safe and efficient handling of nuclear fuel or radioactive materials.</li> </ul> </li> <li>• Companies that provide repair and maintenance services to nuclear power plants, which include non-destructive testing of key nuclear power equipment like reactors and site testing.</li> <li>• Companies that provide consulting and license renewal services for the nuclear industry, including companies that provide commercial-grade dedication.</li> </ul>

Factor Name	Column Header	Description
		<p>Commercial-grade dedication is an acceptance process that allows a commercial-grade product to be used in nuclear power plants. The attestations indicate that a product has passed stringent nuclear quality standards.</p> <ul style="list-style-type: none"> <li>• Companies involved in uranium mining, uranium conversion, uranium enrichment for nuclear power, nuclear fuel assembly, etc.</li> <li>• Companies that provide distribution and handling services of nuclear fuel, including those that provide spent-fuel handling and processing and spent-fuel storage services.</li> </ul>
Uranium Mining	NUC_URANIUM_MI NE	Companies that own or operate active uranium mines.
Ownership of a Nuclear Power Company	NUC_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by a Nuclear Power Company	NUC_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	NUC_TIE	Companies with an industry tie to nuclear power through any of the above categories.

## Revenue

Factor Name	Column Header	Description
Nuclear Power Utility - Maximum Percentage of Revenue	NUC_UTIL_MAX_RE V_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the ownership or operation of nuclear power plants.
Nuclear Power Utility - Revenue is Estimated	NUC_UTIL_REV_ISE ST	The revenue for this involvement category is estimated.

Factor Name	Column Header	Description
Nuclear Power Supplier - Maximum Percentage of Revenue	NUC_SUPPL_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from supplying key nuclear-specific products or services to the nuclear power industry.
Nuclear Power Supplier - Revenue is Estimated	NUC_SUPPL_REV_ISEST	The revenue for this involvement category is estimated.
Nuclear Power Uranium Mining - Maximum Percentage of Revenue	NUC_MINING_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the mining of uranium.  Note: Revenue from uranium mining is a subset of Nuclear Power Supplier Revenue. Values from these two factors should not be added together.
Nuclear Power Uranium Mining - Revenue is Estimated	NUC_MINING_REV_ISEST	The revenue for this involvement category is estimated.
Nuclear Power - Maximum Percentage of Revenue	NUC_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from nuclear power activities.
Nuclear Power - Revenue is Estimated	NUC_REV_ISEST	The revenue for this involvement category is estimated.
Nuclear Power - Maximum Total Revenue	NUC_MAX_REV	The total recent-year revenue (USD), or maximum estimated revenue, a company has derived from nuclear power activities.

### Revenue Estimation for Utilities

While there are a few select companies that disclose or differentiate revenue coming from nuclear power sources due to a subsidiary or subsidiaries' operation of nuclear power plants, most of the utilities in MSCI ESG Research's universe only provide

consolidated revenue. Because of this, MSCI ESG Research employs a process to estimate revenue.

The following is MSCI ESG Research's BISR revenue estimation process for percentage of revenue derived from the sale of electricity generated by nuclear power:

1. Capture the revenue derived from electricity generation from company reported figures.
2. Determine the percent of electricity generation from nuclear power in the most recently completed fiscal year using company-reported figures.
  - a. If generation figures are not available, use percent of installed capacity.
  - b. If only raw figures of either are reported, calculate percent first.
3. Calculate the revenue derived from the sale of electricity generated from nuclear power (absolute dollar figure) by multiplying the percent of nuclear generation and the disclosed revenue from electricity.
4. Divide the revenue derived from the sale of electricity generated from nuclear power by the total company revenue to obtain the estimated percentage of total revenue derived from nuclear power.

### Exclusions

- Companies that design, develop or build experimental reactors or reactors that are not used for the generation of energy for commercial purposes;
- Companies that provide nuclear power plant decommissioning services;
- Companies that manufacture components considered generic or non-essential, such as ordinary nuts, bolts, screws, wirings and cables, etc., or raw materials used to produce major components, such as metal and steel for nuclear reactors, control rods, etc.
- Companies that provide equipment used for non-standard or emergency operations, such as backup generator sets, bunkhouses, etc.;
- Companies that provide security equipment or services, or personnel safety gear;
- Companies that are still in the exploration stages of uranium mining with no active mines; and
- Companies that provide insurance products and services to nuclear power plants.

## Palm Oil

MSCI ESG Research’s Palm Oil Screen identifies companies involved in the production and distribution of palm oil products. The research describes both the type of involvement and the revenue from that involvement.

### Coverage Universe

MSCI ACWI IMI

### Definitions

MSCI ESG Research defines palm oil as a yield of the African oil palm or *Elaeis guineensis Jacq.* The oil can either be extracted from the flesh of the fruit of the palm or the crushed extract of the kernel of the fruit.

Factor Name	Column Header	Description
Palm Oil Producer	PALM_PRODUCER	Companies that cultivate oil palm trees and harvest fresh fruit bunches (FFBs) used to produce palm oil products. Includes millers that extract the oil from FFBs and process it into crude palm oil (CPO), crude palm kernel oil (PLO) and palm kernel meal. Will also flag companies that process CPO and PLO into refined, bleached and/or deodorized palm oil and palm kernel oil.
Palm Oil Distributor	PALM_DISTRIBUTOR	Companies that distribute palm oil products, such as crude palm oil, crude palm kernel oil, refined, bleached and/or deodorized palm oil and palm kernel oil.
Palm Oil - Ownership of a Palm Oil Company	PALM_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI treats it as a consolidated subsidiary.
Palm Oil - Ownership by a Palm Oil Company	PALM_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Palm Oil - Any Tie	PALM_TIE	Companies with an industry tie to palm oil, including producer, distributor and ownership categories.

MSCI ESG Research monitors the Round Table for Sustainable Palm Oil (RSPO) Annual Communication of Progress Reports (ACOP) that indicate palm oil plantation certification according to RSPO’s standards. These factors only use direct disclosure

from the reports. If a company fails to update their ACOP data within three years from their last disclosure, then their data will be considered stale and be removed. Lastly, companies that were removed from RSPO will also have their respective RSPO factors removed since non-RSPO members are no longer required to report updated RSPO data.

Factor Name	Column Header	Description
Palm Oil – First Year of RSPO Certification	PALM_RSPO_FIRST_YEAR	The first year in which the company obtained RSPO certification for its palm oil holdings / estates.
Palm Oil – Target Year of 100% RSPO Certification	PALM_RSPO_100PCT_YEAR	The target year for the company to obtain 100% RSPO certification for its palm oil holdings / estates.
Palm Oil – RSPO Percent of Certification	PALM_RSPO_PCT	The percentage of the company's palm oil holdings / estates that are certified by the RSPO.

## Revenue

Factor Name	Column Header	Description
Palm Oil Producer - Maximum Percentage of Revenue	PALM_PROD_MAX_REV_PCT	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from the production or distribution of palm oil.
Palm Oil Producer - Revenue is Estimated	PALM_PROD_REV_ISEST	The revenue for this involvement category is estimated.
Palm Oil Distributor - Maximum Percentage of Revenue	PALM_DIST_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the production of palm oil.
Palm Oil Distributor - Revenue is Estimated	PALM_DIST_REV_ISEST	The revenue for this involvement category is estimated.
Palm Oil - Maximum	PALM_TOTAL_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company

Factor Name	Column Header	Description
Percentage of Revenue		has derived from the distribution of palm oil.
Palm Oil - Revenue is Estimated	PALM_REVE_ISEST	The revenue for this involvement category is estimated.

### Exclusions

- Companies that manufacture or sell products that use palm oil as an ingredient or component;
- Companies that distribute and produce palm oil derivatives and fractionated products, such as olein, stearin and palmitic acid;
- Companies that sell oil palm seeds;
- Companies that only transport products from mill & supply base to refineries; and
- Companies that disclosed their primary activities or products of their organization only as consumer goods manufacturers, retailers, and banks and investors in the RSPO Annual Communication of Progress Reports.



## Pork

MSCI ESG Research’s pork research identifies companies involved in the production of pork products, including pig breeding, slaughtering and processing meat and food products with pork ingredients. The research also includes companies with significant retailing and distribution activities. The research describes both the type of involvement and the revenue from that involvement.

### Definitions

Pork is the culinary name for meat from the domestic pig (swine or *Sus domesticus*). MSCI ESG Research classifies involvement in the industry as follows:

Factor Name	Column Header	Description
Producer	PORK_PROD	Companies that are engaged in the manufacture or production of pork products, including pig breeding and slaughtering and the production of processed pork products and packaged food products with pork ingredients.
Retailer Distributor	PORK_RET_DIST	Companies that retail or distribute pork and related products to consumers, such as processed pork and packaged meals with pork ingredients. Specifically included are those involved in the following activities: <ul style="list-style-type: none"> <li>• Pork wholesalers;</li> <li>• Restaurants, bakeries and catering services that offer food items with pork ingredients;</li> <li>• Distributors of pork-related products to retailers and supermarkets;</li> <li>• Specialty stores that sell pork-related products; and</li> <li>• General merchandise stores, convenience stores and supermarkets selling pork-related products.</li> </ul>
Ownership of a Pork Company	PORK_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.

Factor Name	Column Header	Description
Ownership by a Pork Company	PORK_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	PORK_TIE	Companies with an industry tie to pork through any of the above categories.

## Revenue

Factor Name	Column Header	Description
Pork Producer - Maximum Percentage of Revenue	PORK_PROD_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Producer of pork products.
Pork Producer - Revenue is Estimated	PORK_PROD_REV_IEST	The revenue for this involvement category is estimated.
Pork Retailer - Maximum Percentage of Revenue	PORK_RET_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Retailer of pork products.
Pork Retailer - Revenue is Estimated	PORK_RET_REV_IEST	The revenue for this involvement category is estimated.
Pork - Maximum Percentage of Revenue	PORK_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from pork products and related activities.
Pork - Revenue is Estimated	PORK_REV_IEST	The revenue for this involvement category is estimated.
Pork - Maximum Total Revenue	PORK_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from pork products and related activities.

## Exclusions

- Companies that manufacture or market animal feeds, medicines or vitamins;
- Landowners who lease their estates for pig agriculture, unless they operate the production and operation of these facilities;



- Companies that produce gelatin, which is a secondary product and not only particular to production of pork-related products;
- Companies that manufacture pharmaceutical products, such as vitamins, that contain collagen derived from swine/pig;
- Railroad, shipping and transportation companies that may also transport pork products; and
- E-commerce and online marketplace companies that only facilitate transactions between parties but do not directly sell involved products.

## Stem Cells

MSCI ESG Research's stem cell research identifies companies that conduct research using stem cells derived from human embryos, human fetal tissue or human adult tissue. MSCI ESG Research also identifies publicly traded companies with research partnerships or collaborations that conduct stem cell research through a third party; companies using human fetal cell lines; and companies that produce technology or products that enable stem cell research.

## Definitions

MSCI ESG Research classifies involvement in the industry as follows:

Factor Name	Column Header	Description
Embryonic Stem Cell Research	EMBRYONIC_STEM_CELL	Companies that conduct stem cell research with cells derived from human embryos.
Fetal Tissue Research	FETAL_TISSUE	Companies that conduct stem cell research with cells derived from human fetal tissue.
Use of Fetal Cell Lines	FETAL_CELL	Companies that use fetal cell lines in the development of vaccines and other biologics, such as therapeutic proteins and gene therapy products. Human fetal cells are not stem cells but are derived from a fetus and then replicated to create cell lines that can be used in perpetuity.
Human Embryonic Stem Cell Cloning	HUMAN_EMBR_STEM_CELL	Companies that conduct embryonic stem cell research using human embryos derived from cloning techniques like somatic cell nuclear transfer (SCNT) rather than harvesting cells from spare IVF embryos.
Adult Stem Cell Research	ADULT_STEM_CELL	Companies that conduct stem cell research with cells derived from human adult tissue, including cord blood; and companies that provide enabling technologies for use in adult stem cell research.
Enabling Technology	ENABLE_TECH	Companies that develop or produce products for scientific research specifically on embryonic or fetal stem cells, such as technology that isolates or regulates the growth and proliferation of stem cells.
Ownership of a Stem Cell Company	STEM_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary. MSCI

Factor Name	Column Header	Description
		ESG Research does not include companies with indirect ties to adult stem cell research.
Ownership by a Stem Cell Company	STEM_OWN_BY	Companies that are 50% or more owned by a company with involvement. MSCI ESG Research does not include companies with indirect ties to adult stem cell research.
Any Tie	STEM_TIE	Companies with an industry tie to stem cells through any of the above categories.

### Exclusions

- Companies involved in research on stem cells derived from animals;
- Companies involved in vitro fertilization or reproductive facilitation;
- Companies involved in reproductive cloning of human cells, tissues or organs;
- Companies involved in marketing, licensing or distributing products related to stem cell research;
- Companies that offer cord-blood banking services;
- Companies that only conduct stem cell research using induced pluripotent stem cells (iPS cells);
- Companies that only conduct research using stem cells derived from tumors or cancer stem cells;
- Companies that produce stem cell lines or conduct stem cell research using unfertilized human eggs as a source;
- Companies that offer provisional services involving stem cell lines, such as hospitals/clinics offering dermatological services; and
- Companies with the intention or plans of conducting research on stem cells in the future but not yet doing so.

## Tobacco

MSCI ESG Research’s tobacco research identifies companies that produce, distribute, retail, license or supply key tobacco products and services. The research describes both the type of involvement and the revenue from that involvement. The total revenue derived from tobacco is available, as well as revenue derived from each of the following subcategories: Producer, Distributor, Retailer, Licensor and Supplier.

### Definitions

Tobacco is produced from the dried nicotiana plant. MSCI ESG Research classifies involvement in the industry as follows:

Factor Name	Column Header	Description
Producer	TOB_PRODUCER	<p>Companies that manufacture tobacco products, such as cigars, blunts, cigarettes, e-cigarettes, inhalers, beedis, kreteks, smokeless tobacco, snuff, snus, dissolvable and chewing tobacco. This also includes companies that grow or process raw tobacco leaves.</p> <p><b>Note:</b> Companies that sell private-label tobacco products manufactured by a third party are considered Retailers, not manufacturers, and must meet the Retailer criteria.</p>
Tobacco Producer – Alternative Smoking Products	TOB_PROD_ECIG	Companies that manufacture products aimed to replace or supplement tobacco products, such as electronic cigarettes or tobacco inhalers.
Distributor	TOB_DISTRIBUTOR	Companies involved in the independent wholesale of tobacco products to Retailers and other distributors. This data point does not include a manufacturer that distributes its own tobacco products unless it also provides logistics or distribution services to other tobacco companies.
Retailer	TOB_RETAILER	Companies that retail tobacco products.
Licensor	TOB_LICENSOR	Companies that license their company or brand name to tobacco products.
Supplier	TOB_SUPPLIER	Companies that manufacture and supply key products necessary for the production of tobacco products, such as tobacco flavoring, sorbitol, tobacco sauce, tobacco

Factor Name	Column Header	Description
		fragrance/aroma, cigarette filters (acetate tow), tobacco roll paper, cigarette manufacturing machines and tobacco packaging; specifically, cigarette cartons, films and aluminum foil.
Ownership of a Tobacco Company	TOB_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by a Tobacco Company	TOB_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	TOB_TIE	Companies with an industry tie to tobacco through any of the above categories.

## Revenue

Factor Name	Column Header	Description
Tobacco Producer - Maximum Percentage of Revenue	TOB_PROD_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a producer of tobacco products.
Tobacco Producer - Revenue is Estimated	TOB_PROD_REV_IS_EST	The revenue for this involvement category is estimated.
Tobacco Distributor - Maximum Percentage of Revenue	TOB_DIST_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a distributor of tobacco products.
Tobacco Distributor - Revenue is Estimated	TOB_DIST_REV_IEST	The revenue for this involvement category is estimated.
Tobacco Retailer - Maximum Percentage of Revenue	TOB_RET_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a retailer of tobacco products.
Tobacco Retailer - Revenue is Estimated	TOB_RET_REV_IEST	The revenue for this involvement category is estimated.

Factor Name	Column Header	Description
Revenue is Estimated		
Tobacco Licensor - Maximum Percentage of Revenue	TOB_LIC_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a Licensor.
Tobacco Licensor - Revenue is Estimated	TOB_LIC_REV_ISET	The revenue for this involvement category is estimated.
Tobacco Supplier - Maximum Percentage of Revenue	TOB_SUPP_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived as a supplier to the tobacco industry.
Tobacco Supplier- Revenue is Estimated	TOB_SUPP_REV_ISET	The revenue for this involvement category is estimated.
Total - Maximum Percentage of Revenue	TOB_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from tobacco-related business activities.
Tobacco - Revenue is Estimated	TOB_REV_ISET	The revenue for this involvement category is estimated.
Total – Maximum Total Revenue	TOB_MAX_REV	The total recent-year revenue (USD), or maximum estimated revenue, a company has derived from tobacco-related business activities.

### Exclusions

- Railroad, shipping or transportation companies that may transport tobacco products;
- Companies that manufacture complementary tobacco products such as matches, lighters, pipes, bong and hookahs;
- Companies that manufacture products used in tobacco farming such as fertilizers, chemicals and harvesting equipment;
- Companies that use tobacco leaves to produce insecticides or tobacco paste;
- Companies that manufacture cigarette vending machines;





- Companies that manufacture equipment such as tobacco drying machines, scales, labeling machines, lighting and packaging machines.
- Companies that manufacture products designed exclusively as an aid to quit smoking;
- Companies that only distribute and/or retail raw materials used to produce tobacco products; and
- E-commerce and online marketplace companies that only facilitate transactions between parties but do not directly sell involved products.

## Defense and Weapons

MSCI ESG Research's Defense and Weapons research includes companies that are involved in the production of civilian Firearms and Controversial and Conventional Military Weapons. Defense and Weapons screens available are listed below:

- [Firearms](#)
- [Cluster Munitions](#)
- [Landmines](#)
- [Global Weapons Production](#)
  - Conventional Weapons
  - Biological/Chemical Weapons Systems
  - Blinding Laser Weapons
  - Depleted Uranium Weapons
  - Incendiary Weapons
  - Non-Detectable Fragments
  - Nuclear Weapons
  - Total Involvement
- [U.S. Department of Defense \(DOD\) Top 100 Contractors](#)

### Firearms

MSCI ESG Research’s Firearms research identifies companies that manufacture handguns, pistols, shotguns, rifles, revolvers and ammunition for civilian (non-military) use. The research describes both the type of involvement and the revenue from that involvement.

### Coverage Universe

Standard BISR global coverage but may include select private companies well-known for their ties to civilian firearms.

### Definitions

Firearms are devices capable of firing a projectile and using an explosive charge as a propellant. MSCI ESG Research categorizes involvement in the industry as follows:

Factor Name	Column Header	Description
Producer of Civilian Arms	PROD_CIV_ARMS	Companies that manufacture firearms and small-arms ammunitions for civilian markets. The research excludes products exclusively sold for the military, government and law enforcement markets.
Civilian Firearms – Producer: Ammunition	PROD_CIV_ARMS_AMMO	Companies that only manufacture small-arms ammunitions for the civilian market, including powder-propelled, cartridge-based ammunition up to 20mm, which can be fired from weapons, such as revolvers and self-loading pistols, rifles and carbines, assault rifles, sub-machine guns and light/general purpose machine guns. The research excludes products exclusively sold for the military, government and law enforcement markets.
Civilian Firearms – Producer: Semi-Automatic	PROD_CIV_ARMS_SEMI	Companies that manufacture firearms that automatically eject the cartridge case of a fired shot and load the next cartridge from the magazine, allowing the gun user to fire a single bullet for every pull of the trigger. The research specifically targets semi-automatic firearms that possess cosmetic, ergonomic or construction features of an assault rifle, including, but not limited to, any two of the following:

Factor Name	Column Header	Description			
		Feature	Rifle / Carbine	Pistol	Shotgun
		an ability to accept a detachable magazine	Required	Required	✓
		a folding, telescoping or detachable stock	✓		✓
		a pistol grip that protrudes conspicuously beneath the action of the weapon	✓		✓
		a bayonet mount	✓		
		a flash suppressor or a threaded barrel designed to accommodate a flash suppressor, barrel extender or silencer	✓	✓	
		a grenade or rocket launcher	✓		
		an ammunition magazine that attaches to the pistol outside of the pistol grip or an extended magazine		✓	
		a shroud that is attached to, or partially or completely encircles, the barrel and that permits the shooter to hold the firearm with the non-trigger hand without being burned	✓	✓	
		a manufactured weight of 50 ounces or more when the pistol is unloaded		✓	

Factor Name	Column Header	Description
		<p>a fixed magazine capacity in excess of five rounds ✓</p> <p>a semi-automatic version of an automatic firearm model ✓ ✓ ✓</p> <p>The research excludes products exclusively sold for the military, government and law enforcement markets.</p>
Civilian Firearms – Producer: Automatic	PROD_CIV_ARMS_AUTO	<p>Companies that manufacture firearms that automatically eject the cartridge case of a fired shot and load the next cartridge from the magazine allowing the gun user to fire more than one bullet for every pull of the trigger.</p> <p>The research includes all types of weapons that are automatic or fully automatic, regardless of cosmetic, ergonomic or construction features, as well as weapons that allow selective fire. Selective fire means that the gun user can choose a firing mode (semi-automatic, burst fire, or automatic).</p> <p>The research excludes products exclusively sold for the military, government and law enforcement markets.</p>
Firearms Retailer and Distributor	FIREARM_RETAILER	Companies that derive any amount of annual revenue from the distribution (wholesale or retail) of firearms or small-arms ammunition intended for civilian use.
Ownership Of a Firearms Company	FIREARM_OWN_OF	Companies that own 20% to 49.99% of another company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Civilian Firearms Retailer - Automatic	FIREARM_AUTO_RETAILER	Companies that derive any amount of annual revenue from the distribution (wholesale or retail) of automatic firearms intended for civilian use.
Civilian Firearms Retailer -	FIREARM_SEMI_RETAILER	Companies that derive any amount of annual revenue from the distribution (wholesale or retail) of semi-automatic firearms intended for civilian use.

Factor Name	Column Header	Description
Semi-Automatic		
Ownership By a Firearms Company	FIREARM_OWN_BY	Companies that are 50% or more owned by a company with involvement.
Any Tie	FIREARM_TIE	Companies with an industry tie to firearms through any of the above categories.

Types of Firearm and ammunition products typically covered:

- Handguns or Pistols are the smallest of all small arms. There are three common types of handguns:
  - Single-shot pistols are firearms that hold any single round of ammunition and must be reloaded after each shot.
  - Revolvers are repeating firearms that have cylinders containing multiple chambers and at least one barrel for firing.
  - Semi-automatic pistols can be fired in semi-automatic mode, firing one cartridge for each pull of the trigger. Semi-automatic pistols are also called automatic pistols, self-loading pistols, self-loaders, auto-pistols and auto-loaders.
- Rifles are firearms designed to be fired from the shoulder using a relatively high-velocity round. These firearms are capable of accurate fire out to a few hundred meters.
- Carbines, also known as pistol-calibers, are like rifles and muskets firing the same ammunition, although often at a lower velocity. There are different classes of carbines: pistol calibers, short-barreled rifles and semi-automatic versions of submachine guns.
- Shotguns are shoulder-fired arms. Most have barrels with smooth bores and fire shells which include a wad. These shells may contain multiple lead or steel shots, slugs or less than lethal projectiles.
- Ammunition, often referred to as ammo or munitions when used collectively, specifically sold to the civilian markets.

#### Revenue

Factor Name	Column Header	Description
Civilian Firearms Producer -	FIREARM_PROD_M AX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from manufacturing firearms

Factor Name	Column Header	Description
Maximum Percentage of Revenue		and small-arms ammunition for civilian markets.
Civilian Firearms Producer - Revenue is Estimated	FIREARMS_PROD_REV_ISEST	The revenue for this involvement category is estimated.
Civilian Firearms Automatic Producer - Maximum Percentage of Revenue	FIREARM_PROD_AUTO_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from manufacturing automatic firearms for civilian markets.
Civilian Firearms Semi-Automatic Producer - Maximum Percentage of Revenue	FIREARM_PROD_SEMI_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from manufacturing semi-automatic firearms for civilian markets.
Civilian Firearms Retailer - Maximum Percentage of Revenue	FIREARM_RET_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the distribution (wholesale or retail) of firearms or small-arms ammunition intended for civilian use.
Civilian Firearms Retailer - Revenue is Estimated	FIREARMS_RET_REV_ISEST	The revenue for this involvement category is estimated.
Civilian Firearms Automatic Retailer - Maximum Percentage of Revenue	FIREARMS_RET_AUTO_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the distribution (wholesale or retail) of semi-automatic firearms for civilian use.
Civilian Firearms Semi-Automatic Retailer - Maximum Percentage of Revenue	FIREARMS_RET_SEMI_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the distribution (wholesale or retail) of semi-automatic firearms for civilian use.

Factor Name	Column Header	Description
Retailer - Maximum Percentage of Revenue		or retail) of automatic firearms for civilian use.
Civilian Firearms - Maximum Percentage of Revenue	FIREARM_MAX_RE V_PCT	The recent-year percentage of revenue, or maximum estimated percent, a company has derived from the manufacture and retail of civilian firearms and ammunition.
Civilian Firearms - Revenue is Estimated	FIREARMS_REV_IS EST	The revenue for this involvement category is estimated.
Civilian Firearms - Maximum Total Revenue	FIREARM_MAX_RE V	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from the manufacture and retail of civilian firearms and ammunition.

**Exclusions**

- Firearms or ammunition components;
- Air rifles, air pistols or airsoft guns;
- Toy guns, replica weapons, paintball guns or blank ammunition;
- Gun safety equipment such as trigger locks and safe storage boxes;
- Firearm accessories, such as scopes, shooting gloves, ammo carriers, mounts, gun care products, slings, belts and gun cases; and
- E-commerce and online marketplace companies that only facilitate transactions between parties but do not directly sell involved products.



## Cluster Munitions

MSCI ESG Research's Cluster Munitions screen identifies companies involved in the production of cluster munitions, components and delivery platforms. The research may also include select significant or notable private companies.

### Coverage Universe

Standard BISR global coverage but may include select private companies well-known for their ties to cluster munitions.

### Definitions

MSCI ESG Research incorporates the following definitions:

- Cluster munition: a bomb, missile, rocket or shell that carries submunitions and disperses them over an area
- Submunition: a small bomb contained with other submunitions in a cluster munition. The submunition is designed to detonate prior to, on or after impact.
- Cluster munition component: an integral part to the basic function of a cluster munition weapon system. It may also provide added lethality, precision or other functionalities, such as targeting, guidance and navigation.
- Cluster munition delivery platform: an independent weapons system capable of carrying and deploying cluster munitions to the designated target area. Delivery platforms can include self-propelled rocket launcher systems and aircraft.

### Evidence Assessment

MSCI ESG Research assesses the quality of the evidence of company involvement with cluster munitions for the following:

- Cluster Munitions Whole Weapons Systems Manufacturer
- Intended-Use Components
- Dual-Use Components
- Delivery Platforms

### *Involved*

- Strong Evidence:
  - A company's involvement is clear and unambiguous from a trusted source.
  - Trusted sources include:
    - Direct confirmation from the company,
    - Company website,

- Product or marketing documents,
- Government contracts or official military websites or
- Reports from trustworthy aerospace and defense industry publications.
- Time Frame: Three years without further proof of ongoing involvement from trusted sources.
- Limited Evidence:
  - A company’s involvement is based on allegations that are unsupported by evidence from a trusted source.
  - Non-trusted sources include:
    - Reports published by nongovernment organizations that contain data that is not based on trusted sources, or
    - Information found on unofficial websites without proof of verified and updated data, such as from websites dealing with military themes, internet forums, Wikis, etc.
  - A company’s involvement is from a source that is *over three years old* AND the company has not provided evidence of non-involvement.
    - Evidence of non-involvement includes a statement of non-involvement or providing proof of cessation of activities related to cluster munitions.
  - Time Frame: Indefinite

*Reviewed and/or Past Involvement*

- A company that has faced allegations of involvement but for which MSCI ESG Research has found compelling evidence of non-involvement.
- Sources include direct confirmation from the company presenting proof of non-involvement or cessation of cluster munition activities, end of contract and government statements.
- Time Frame: Indefinite
- A company that appears in this list is considered not involved.

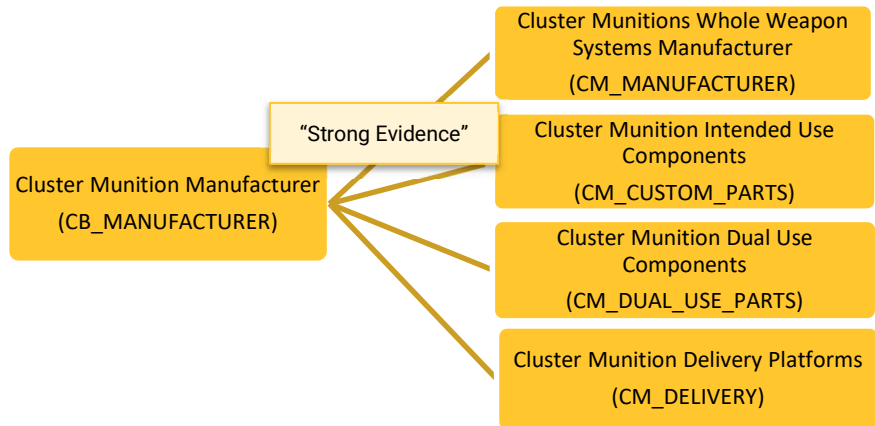
**Factors**

MSCI ESG Research classifies company involvement with cluster munitions into the following categories:

Factor Name	Column Header	Description
Cluster Munitions - Tie to Manufacturing	CB_MANUFACTURER	Companies that manufacture cluster munitions whole weapons systems, components, or delivery platforms.
Cluster Munitions Whole Weapons Systems Manufacturer	CM_MANUFACTURER	Companies that manufacture cluster munition whole-weapons systems.
Intended-Use Components	CM_CUSTOM_PARTS	Companies that manufacture components that were developed or are significantly modified for exclusive use in cluster munitions.
Dual-Use Components	CM_DUAL_USE_PARTS	Companies that manufacture components that were not developed or are not significantly modified for exclusive use in cluster munitions.
Delivery Platforms	CM_DELIVERY	Companies that manufacture weapon platforms capable of carrying and deploying cluster munitions to the designated target area. Delivery platforms can include self-propelled rocket launcher systems and aircraft.
Smart Weapon	CM_SMARTWEAPON	<p>Companies that exclusively manufacture cluster munitions determined to be smart weapons. Also identifies companies that manufacture components or delivery platforms exclusively for "smart" cluster munitions. The cluster munition weapon has technological improvements that minimize the danger and harm to non-combatants and risk of unexploded ordnance.</p> <p>These weapons have all the following characteristics:</p> <ul style="list-style-type: none"> <li>• Submunitions (or equivalent thereof) can individually locate and acquire targets;</li> <li>• Submunitions have a self-destruct mechanism, if no targets are acquired; and,</li> <li>• Submunitions also have a self-deactivation mechanism in addition to</li> </ul>

Factor Name	Column Header	Description
		or as an alternative to the self-destruct mechanism.
Ownership by a Cluster Munitions Company	CB_OWN_BY	<p>Companies that are owned at least 50% by a company flagged for the following factors with a "Strong Evidence" rating:</p> <ul style="list-style-type: none"> <li>• Cluster Munitions Whole-Weapons Systems Manufacturer</li> <li>• Intended-Use Components</li> <li>• Dual-Use Components, and/or</li> <li>• Delivery Platforms.</li> </ul>
Ownership of a Cluster Munitions Company	CB_OWN_OF	<p>Companies that own 20% to 49.99% of a company flagged for the following factors with a "Strong Evidence" rating:</p> <ul style="list-style-type: none"> <li>• Cluster Munitions Whole-Weapons Systems Manufacturer</li> <li>• Intended-Use Components</li> <li>• Dual-Use Components, and/or</li> <li>• Delivery Platforms.</li> </ul> <p>When a company owns 50% or more of an involved subsidiary, MSCI ESG Research treats the involved subsidiary as a consolidated subsidiary and the company is given a direct-involvement tie.</p> <p><b>Note:</b> Due to the nature of their business, financial institutions are not given a direct-involvement tie even if they own more than 50% of an involved company. As such, for financial institutions, the Ownership of a Cluster Munitions Company category covers equity ownership from at least 50% to 100%.</p>

MSCI ESG Research’s Cluster Munitions screen identifies companies with different types of ties to cluster munitions. Below is a visual representation of the relationship between the Cluster Munitions Manufacturer factor and its four subfactors:

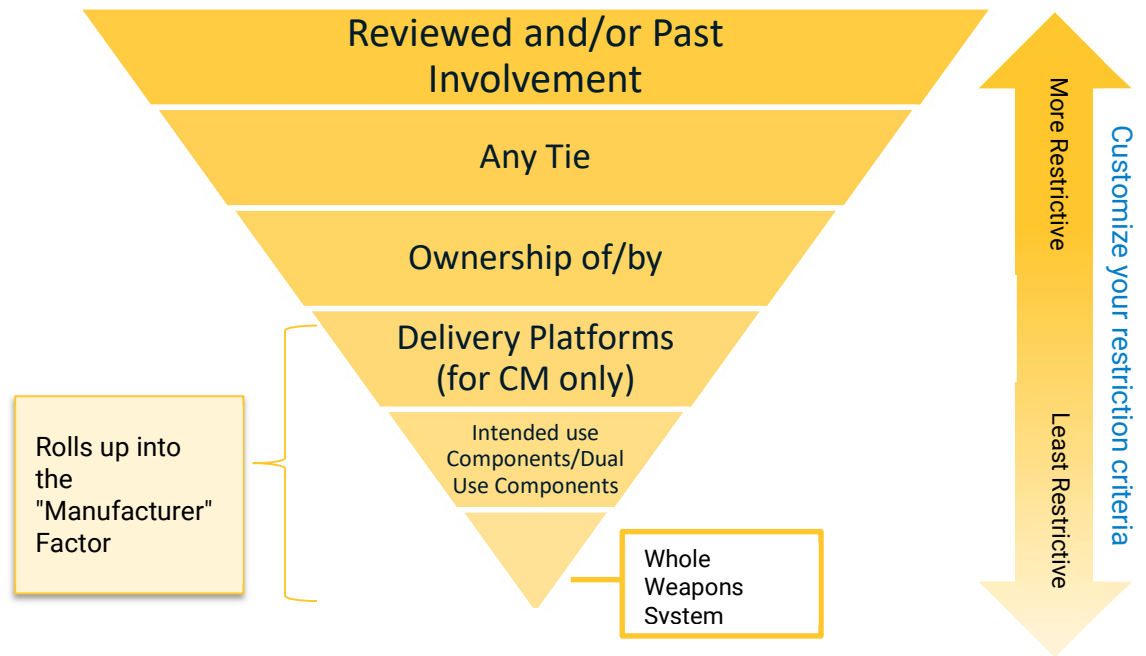


MSCI ESG Research also monitors several different lists and sources that include companies with alleged involvement in cluster weapons, and provides clients with rationales why these companies do not currently meet MSCI ESG Research’s criteria for involvement in Cluster Munitions:

Factor Name	Column Header	Description
Reviewed and/or Past Involvement	CB_REVIEWED	Companies that frequently appear in publicly available Cluster Munitions blacklists or have been the subject of repeated public and/or client inquiry but there is evidence against their alleged involvement, including, but not limited to: company statements denying involvement, proof of cessation of activities, end of production contract without renewal, etc. It also includes companies formerly flagged by MSCI ESG Research as involved but that have been confirmed to no longer produce cluster munitions, components or delivery platforms.
Reviewed and/or Past Involvement – Commentary	CB_REVIEWED_COMMENT	Provides an explanation for companies flagged for the Reviewed and/or Past Involvement factor.
Any Tie	CB_TIE	Companies with an industry tie to Cluster Munitions that are flagged for Cluster Munitions Manufacturer (which includes companies that have a “Strong Evidence” rating for cluster munitions whole-weapons systems, components or delivery platforms), Ownership by a Cluster Munitions Company, or Ownership of a Cluster Munitions Company.

Factor Name	Column Header	Description
		This does not include companies with a Reviewed and/or Past Involvement status.

MSCI ESG Research’s Cluster Munitions screen is designed to allow investors to choose what level of involvement they want to exclude from their portfolios:



Types of cluster munition products typically covered:

1. All types of cluster munitions that scatter submunitions, such as anti-personnel, anti-vehicle, anti-materiel, mine-laying cluster bombs and hybrids or mixed types.
2. Customized components, defined as parts that were developed or are significantly modified for exclusive use in cluster munitions. These include, but are not limited to:
  - a. Munitions dispensers also sometimes called canisters, that can only contain/carry cluster munitions;
  - b. Submunitions, munitions or explosives;
  - c. Targeting or tracking systems integrated into the weapon system;
  - d. Rocket motors of dispensers/submunitions;
  - e. Fuses and triggering mechanisms developed for cluster munitions or significantly modified to be used in cluster munitions; and,
  - f. Rockets or missiles designed to carry cluster munitions in their warheads.
3. Dual-use components, defined as parts that were not developed or are not significantly modified for exclusive use in cluster munitions. These products

can be used in a variety of other weapons, such as fuses used in non-cluster munition missiles. These include, but are not limited to:

- a. Any of the components listed above that were not developed solely for cluster munitions or not significantly modified;
  - b. Multi-purpose munitions dispensers;
  - c. Fuses and arming devices; and
  - d. Rockets or missiles that can be fitted with various types of warheads.
4. Delivery platforms, defined as weapon systems that can carry and deploy Cluster Munitions to the designated target area. These may be multi-purpose platforms, such as rocket launchers and aircraft.

MSCI ESG Research considers a component to be significantly modified if it has been reconfigured, redesigned or remodeled so that it provides an added or different functionality than the original one.

**Exclusions**

- Components of delivery platforms, such as the truck or chassis on which the launchers are mounted. MSCI ESG Research considers this tie as incidental because it is far removed from direct involvement in Cluster Munitions;
- Anti-electrical Cluster Munitions that are used to disrupt and damage electrical power transmission systems or electric power substations. Anti-electrical Cluster Munitions that do not contain explosives and are not directly harmful to either soldiers or civilians;
- Cluster Munitions that only distribute leaflets or propaganda materials and do not include explosives;
- Alternative cluster munition warheads, such as flechettes or steel rods;
- Intermediary components or raw materials, such as the metal used in canisters, chemicals, etc;
- Minor or common components, such as cables, wirings, bolts, nuts, etc., present in almost all electronic or mechanical equipment and devices; and
- Financial entities or banks that own less than 50% of cluster munition companies.

## Landmines

MSCI ESG Research's Landmines Screen identifies companies involved in the production of anti-personnel landmines (APMs), components and anti-vehicle landmines. The research may also include selected significant or notable private companies.

### Coverage Universe

Standard BISR global coverage may include selected private companies well-known for their ties to landmines.

### Definitions

MSCI ESG Research incorporates the following definitions:

- Anti-personnel landmine: a munition that is placed under, on or near the ground or other surface area and explodes by the presence, proximity or contact with a person or upon command by an operator from a remote location.
- Anti-personnel landmine component: an integral component to the basic function of the weapon. It may also provide added lethality, precision or other functionalities to the weapon.
- Anti-vehicle landmine: munition that is placed under, on, or near the ground or other surface area and explodes by the presence, proximity or contact with a vehicle.

**Note:** MSCI ESG Research also considers and includes weapons or munitions that fulfill the same function, role and/or purpose as landmines.

### Evidence Assessment

- MSCI ESG Research assesses the quality of the evidence of company involvement with landmines for the following:
  - Anti-Personnel Landmine Whole Weapon Systems Manufacturer
  - Intended-Use Components
  - Dual-Use Components
  - Anti-vehicle Landmine Whole Weapon Systems Manufacturer



*Involved*

- Strong Evidence:
  - A company’s involvement is clear and unambiguous from a trusted source.
  - Trusted sources include:
    - Direct confirmation from the company,
    - Company website,
    - Product or marketing documents,
    - Government contracts or official military websites, or
    - Reports from trustworthy aerospace and defense industry publications.
  - Time Frame: Three years without further proof of ongoing involvement from trusted sources.
- Limited Evidence:
  - A company’s involvement is based on allegations that are unsupported by evidence from a trusted source.
  - Non-trusted sources include:
    - Reports published by nongovernment organizations that contain data that is not based on trusted sources, or
    - Information found on unofficial websites without proof of verified and updated data, such as from websites dealing with military themes, internet forums, Wikis, etc.
  - A company’s involvement is from a source that is over three years old AND the company has not provided evidence of non-involvement.
    - Evidence of non-involvement includes a statement of non-involvement or providing proof of cessation of activities related to landmines.
  - Time Frame: Indefinite

*Reviewed and/or Past Involvement*

- A company that has faced allegations of involvement but for which MSCI ESG Research has found compelling evidence of non-involvement.
- Sources include direct confirmation from the company presenting proof of non-involvement or cessation of landmine activities, end of contract and government statements.
- Time Frame: Indefinite
- A company that appears in this list is considered not involved.

**Factors**

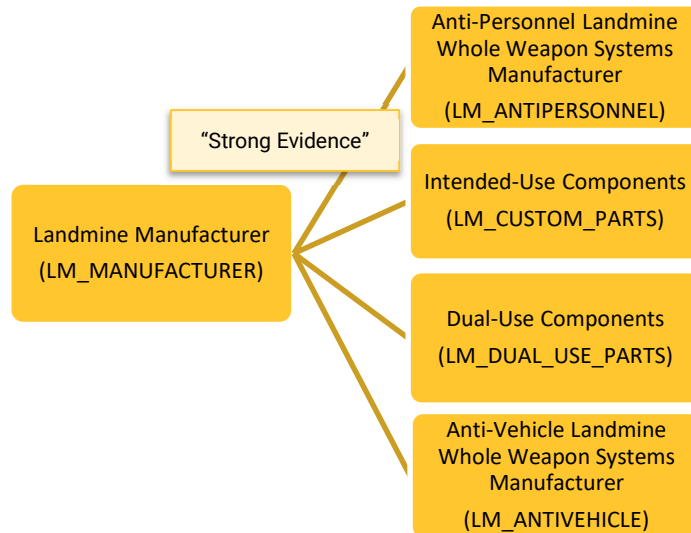
MSCI ESG Research classifies company involvement with landmines into the following categories:

Factor Name	Column Header	Description
Landmines - Tie to Manufacturing	LM_MANUFACTURER	Companies that manufacture landmines whole systems or components.
Anti-Personnel Landmines Whole Weapons Systems Manufacturer	LM_ANTIPERSONNEL	Companies that manufacture anti-personnel landmines whole weapons systems. Includes weapons or munitions that function similarly or fulfill the same role as traditional anti-personnel landmines.
Intended-Use Components	LM_CUSTOM_PARTS	Companies that manufacture components developed or significantly modified for exclusive use in anti-personnel landmines.
Dual-use Components	LM_DUAL_USE_PARTS	Companies that manufacture components not developed or significantly modified for exclusive use in anti-personnel landmines.
Anti-Vehicle Landmines Whole Weapon Systems Manufacturer	LM_ANTIVEHICLE	Companies that manufacture anti-vehicle landmines whole weapons systems. Includes weapons or munitions that function similarly or fulfill the same role as traditional anti-vehicle landmines.
Smart Weapon	LM_SMARTWEAP	<p>Companies that exclusively manufacture anti-personnel landmines determined to be smart weapons. Also identifies companies that manufacture components exclusively for “smart” anti-personnel landmines. The anti-personnel landmine has technological improvements that minimize the danger and harm to non-combatants. These weapons have all the following characteristics:</p> <ul style="list-style-type: none"> <li>• Munition does not automatically explode upon being triggered by a person or it only explodes upon command by an operator, i.e., it is not victim-activated;</li> <li>• Munition has either of the following features that reduces its possibility to become an unexploded ordnance:</li> </ul>

Factor Name	Column Header	Description
		<ul style="list-style-type: none"> <li>- a self-deactivate mechanism or can be activated/deactivated by an operator either manually or remotely, or</li> <li>- a self-destruct mechanism or can be commanded to self-destruct by an operator either manually or remotely.</li> </ul>
Ownership by a Landmine Company	LM_OWN_BY	<p>Companies that are owned at least 50% by a company flagged for the following factors with a "Strong Evidence" rating:</p> <ul style="list-style-type: none"> <li>• Anti-Personnel Landmines Whole Weapons Systems Manufacturer</li> <li>• Intended-Use Components</li> <li>• Dual-use Components, and/or</li> <li>• Anti-Vehicle Landmines Whole Weapons Systems Manufacturer.</li> </ul>
Ownership of a Landmine Company	LM_OWN_OF	<p>Companies that own 20% to 49.99% of a company flagged for the following factors with a "Strong Evidence" rating:</p> <ul style="list-style-type: none"> <li>• Anti-Personnel Landmines Whole Weapons Systems Manufacturer</li> <li>• Intended-Use Components</li> <li>• Dual-use Components, and/or</li> <li>• Anti-Vehicle Landmines Whole Weapons Systems Manufacturer.</li> </ul> <p>When a company owns 50% or more of an involved subsidiary, MSCI ESG Research treats the involved subsidiary as a consolidated subsidiary and the company is given a direct-involvement tie.</p> <p><b>Note:</b> Due to the nature of their business, financial institutions are not given a direct-involvement tie, even if they own more than 50% of an involved company. As such, for financial institutions, the Ownership of a</p>

Factor Name	Column Header	Description
Any Tie	LM_TIE	Landmine Company category covers equity ownership from at least 50% to 100%. Companies with an industry tie to landmines that are flagged for Landmine Manufacturer (which includes companies that have a “Strong Evidence” rating for anti-personnel landmines whole weapons systems manufacturer, intended-use components, dual-use components and anti-vehicle landmine whole weapons systems manufacturer), Ownership by a Landmines Company, or Ownership of a Landmines Company. This does not include companies with a Reviewed and/or Past Involvement status.

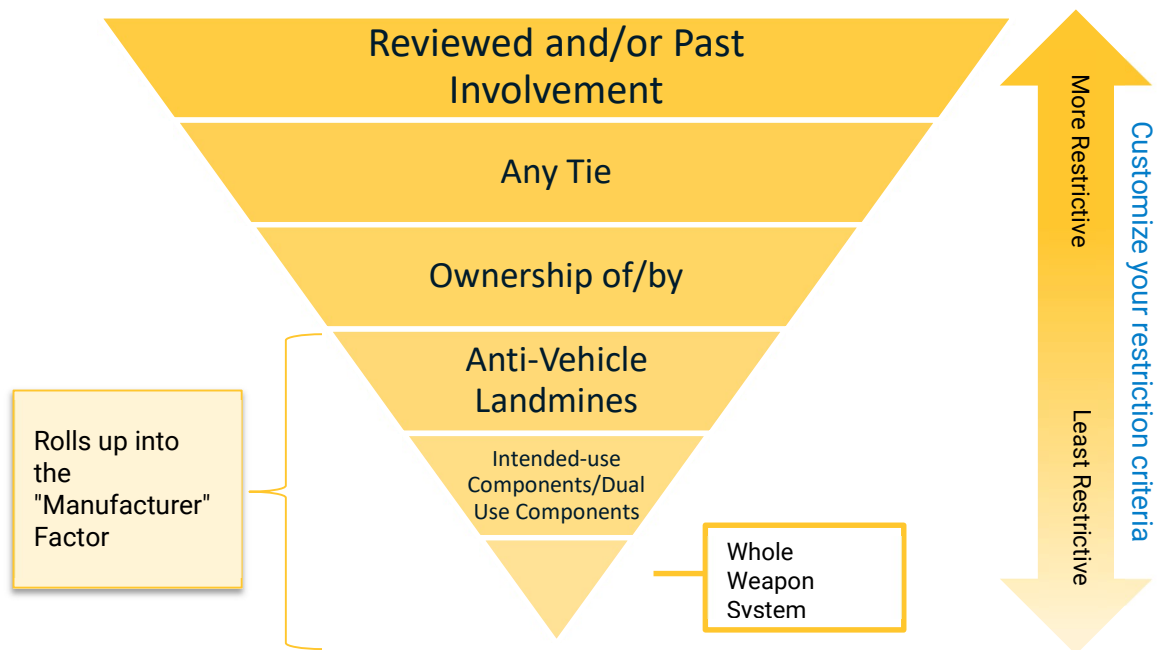
MSCI ESG Research's Landmines screen identifies companies with different types of ties to landmines. Below is a visual representation of the relationship between the Landmines Manufacturer factor and its four subfactors:



MSCI ESG Research also monitors several different lists that include companies with alleged involvement in landmines and provides clients with rationales why these companies do not meet MSCI ESG Research's criteria for involvement in Landmines:

Factor Name	Column Header	Description
Reviewed and/or Past Involvement	LM_REVIEWED	Companies that frequently appear in publicly available landmine blacklists or have been the subject of repeated public and/or client inquiry but there is evidence countering their alleged involvement, including but not limited to: company statements denying involvement, proof of cessation of activities, end of production contract without renewal, etc. It also includes companies formerly flagged by MSCI ESG Research as involved but that have been confirmed to no longer produce landmines or components.
Reviewed and/or Past Involvement – Commentary	LM_REVIEWED_COMMENT	Provides an explanation for companies flagged in the Reviewed and/or Past Involvement factor.

MSCI ESG Research’s Landmines screen is designed to allow investors to choose what level of involvement they want to exclude from their portfolios:



Types of landmine products typically covered:

1. All types of anti-personnel landmines, such as bounding anti-personnel mines and claymores. MSCI ESG Research also includes alternative munition systems that fulfill the same role and purpose as anti-personnel landmines.
2. All types of anti-vehicle landmines. MSCI ESG Research also includes alternative munition systems that fulfill the same role and purpose as anti-personnel landmines.
3. Customized Component, defined as parts that were developed or are significantly modified for exclusive use anti-personnel landmines. These include, but are not limited to:
  - a. Casings or containers;
  - b. Munitions or explosives, booster charge and main charge;
  - c. Pressure plates, sensor systems, tilt-rods and other triggering mechanisms; and,
  - d. Fuses and arming devices developed for anti-personnel landmines, or significantly modified to be used in anti-personnel landmines.
4. Dual-use components, defined as parts that were not developed or are not significantly modified for exclusive use in anti-personnel landmines. These products can be used in a variety of other weapons, such as fuses used in other ordnances. These include, but are not limited to:
  - a. Any of the components listed above that were not developed solely for landmines or not significantly modified,
  - b. Multi-purpose fuses and arming devices, and
  - c. Igniters or detonators.

MSCI ESG Research considers a component to be significantly modified if it has been reconfigured, redesigned or remodeled so that it provides an added or a different functionality than the original one.

#### Exclusions

- Mine-laying equipment and other dispersal platforms, such as helicopters and mine-laying tanks.
- Marine or naval mines.
- Improvised explosive devices (IEDs).
- Intermediary components or raw materials, such as the metal used in mine casings, chemicals, etc.
- Minor or common components, such as cables, wirings, bolts, nuts, etc., present in almost all electronic or mechanical equipment and devices.
- Mine deactivation or clearance services, including mine deactivation training.

## Global Weapons Production

MSCI ESG Research’s weapons research identifies companies that manufacture military weapons systems and weapons components. The research describes both the type of involvement and the revenue from that involvement. MSCI ESG Research’s weapons research distinguishes between involvement in whole weapons systems and components of those systems. Additionally, the research includes recent-year percentage of revenue for the following main categories: Conventional Weapons and Components, Chemical and Biological Weapons and Components, Nuclear Weapons and Components, and Support Systems and Services. Analysts capture each company’s total revenue from weapons, including both weapons-specific DOD contract revenue, if applicable, and all other sources of weapons revenue.

### Coverage Universe

Standard BISR global coverage but may include select private companies well-known for their ties to weapons.

MSCI ESG Research’s global weapons producer screen classifies involvement in the industry as follows:

### Conventional Weapons

Factor Name	Column Header	Description
Conventional Weapons Systems	WEAP_CONV_SYSTEM	<p>Companies that manufacture conventional weapons and weapons systems. A conventional weapon is defined as “a weapon of warfare which is not nuclear, chemical or biological in nature” and this category includes but is not limited to:</p> <ul style="list-style-type: none"> <li>conventional projectile-firing weapons such as firearms, machine guns, rifles, shotguns, grenade launchers and other similar weapons used by the military;</li> <li>tactical, short- and long-range missiles, warheads, missile and rocket launchers;</li> <li>ammunition, grenades, explosive ordnances, mortars;</li> <li>bombers, fighters, combat helicopters and attack aircraft;</li> <li>warships, battleships, submarines, battle cruisers, corvettes, landing craft,</li> </ul>

Factor Name	Column Header	Description
		<p>destroyers, frigates, mine hunters, minesweepers, flotillas and river craft;</p> <ul style="list-style-type: none"> <li>armored land vehicles such as tactical and assault tanks, main battle tanks, infantry fighting vehicles, howitzers and torpedoes; and</li> <li>unmanned aerial vehicles (UAVs), drones, unmanned ground vehicles, unmanned underwater or surface vehicles and other robotics used by the military for striking at enemy targets or locations (armed).</li> </ul>
<p>Conventional Weapons Components</p>	<p>WEAP_CONV_COMPONENT</p>	<p>Companies that manufacture critical components for conventional weapons systems. This category includes but is not limited to:</p> <ul style="list-style-type: none"> <li>propulsion and motors systems and engines for strike vehicles, aircraft and ships including locomotive equipment and systems, such as gearboxes and power transmission assemblies;</li> <li>propulsion and motor systems for conventional missiles;</li> <li>aerostructures, vehicle chassis, ship hulls and other physical or structural components that make up the vehicle platform;</li> <li>electronic hardware components for weapons platforms, especially for shoot-and-forget type projectiles, such as missiles and rockets;</li> <li>shells or ammunition canisters, as well as detonation systems for various missiles; and</li> <li>turbines for strike submarines.</li> </ul>

**Conventional Weapons Revenue**



Factor Name	Column Header	Description
Conventional Maximum Percentage of Revenue	WEAP_CONV_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the manufacture of conventional weapons and related systems and components.
Conventional - Revenue is Estimated	WEAP_CONV_REV_IEST	The revenue for this involvement category is estimated.
Conventional Maximum Total Revenue	WEAP_CONV_TOTAL_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from the production of Conventional Weapons systems and components.

### Biological/Chemical Weapons

Factor Name	Column Header	Description
Biological/Chemical Weapons Systems	WEAP_BIO_CHEM_SYSTEM	<p>Companies that manufacture biological or chemical weapons, which are defined as weapons that use pathogens such as viruses, bacteria and disease-causing biological agents, toxins or chemical substances that have toxic properties that kill, injure or incapacitate. This category includes but is not limited to:</p> <ul style="list-style-type: none"> <li>biological weapon agents such as anthrax, Ebola, Marburg virus, tularemia, brucellosis, Q fever, Bolivian hemorrhagic fever, smallpox, coccidioides mycosis, glanders, melioidosis, shigella, psittacosis and Japanese B encephalitis;</li> <li>toxins or agents used in biological or chemical weapons such as ricin, SEB, botulism toxin, saxitoxin and mycotoxins; and</li> <li>chemical weapon agents (CWA), such as:                             <ul style="list-style-type: none"> <li>blood agents, including cyanogens, chloride and hydrogen cyanide;</li> </ul> </li> </ul>

Factor Name	Column Header	Description
		<ul style="list-style-type: none"> <li>- blister agents, including ethyldichloroarsine, sulfur and nitrogen mustard gas and methyldichloroarsine;</li> <li>- nerve agents, including tabun (GA), sarin (GB), soman and cyclosarin;</li> <li>- pulmonary agents, including chlorine, chloropicrin and phosgene;</li> <li>- incapacitating agents, including Agent 15, EA-3167 and Kolokol-1.</li> </ul>
Biological/Chemical Weapons Components	WEAP_BIO_CHEM_COMPONENT	Companies that manufacture critical components for chemical or biological weapons systems. May include components found in conventional weapons systems that are also capable of carrying chemical or biological weapons.

**Biological/Chemical Weapons Revenue**

Factor Name	Column Header	Description
Bio/chem Maximum Percentage of Revenue	WEAP_BIO_CHEM_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the manufacture of chemical or biological weapons and related systems and components.
Bio/chem - Revenue is Estimated	WEAP_BIO_CHEM_REV_ISEST	The revenue for this involvement category is estimated.
Bio/chem Maximum Total Revenue	WEAP_BIO_CHEM_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from the production of biological or chemical weapons systems and components.

### Blinding Laser Weapons

Factor Name	Column Header	Description
Blinding Laser Weapons	WEAP_BLINDING_LASER	Companies that manufacture weapons using laser technology that causes permanent blindness to the target.
Ownership of a Blinding Laser Weapons Company	WEAP_BLINDING_LASER_OWN_OF	Ownership of a Blinding Laser Manufacturer
Ownership by a Blinding Laser Weapons Company	WEAP_BLINDING_LASER_OWN_BY	Ownership by a Blinding Laser Manufacturer

#### Blinding Laser Weapons Exclusions

- Components of blinding laser weapons.
- Laser weapons that temporarily cause blindness, destroy the target or cause burns.

### Depleted Uranium Weapons

MSCI ESG Research’s Depleted Uranium research identifies companies that manufacture weapons, ammunition and armor made with Depleted Uranium (DU) and DU alloys. DU is a byproduct of the uranium-enrichment process used to make nuclear weapons and nuclear-reactor fuel. The U.S. Nuclear Regulatory Commission defines depleted uranium as uranium whose percentage fraction by weight of the U-235 isotope is less than 0.711%.

**Note:** Revenue derived from DU weapons is incorporated into MSCI ESG Research’s Conventional Weapons revenue category.

Factor Name	Column Header	Description
Depleted Uranium Weapons - Manufacturer	DU_WEAP	Companies involved in the production of depleted uranium (DU) weapons, ammunition and armor, including companies that manufacture armor piercing, fin-stabilized, discarding sabot tracer rounds (APFSDS-T); Kinetic Energy Missiles made with DU penetrators; and DU-enhanced armor, including composite tank armor.

Factor Name	Column Header	Description
Ownership of a Depleted Uranium Weapons Company	WEAP_OWNOFDU	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by a Depleted Uranium Weapons Company	WEAP_OWNBYSU	Companies that are 50% or more owned by a company with Depleted Uranium weapons involvement.

#### *Depleted Uranium Weapons Exclusions*

- Companies that own/operate nuclear fuel enrichment or fabrication facilities;
- DU ammunition delivery platforms, such as aircraft, helicopters, tanks, artillery, kinetic energy platforms and guns; and

#### **Incendiary Weapons**

Factor Name	Column Header	Description
Incendiary Weapons	WEAP_INCENDIARY_WP	Companies that manufacture incendiary weapons using white phosphorus.
Ownership of an Incendiary Weapons Company	WEAP_INCENDIARY_OWNOF	Ownership Of an Incendiary Weapons Manufacturer
Ownership by an Incendiary Weapons Company	WEAP_INCENDIARY_OWNBYSU	Ownership By an Incendiary Weapons Manufacturer

#### *Incendiary Weapons Exclusions*

- Components of incendiary non-weapons munitions that happen to use white phosphorus. These include but are not limited to:
  - Smokescreens and illuminators;
  - Tracers; and
  - Chafes, flares, etc.
- Manufacturers of components of incendiary weapons, including producers of chemicals like white phosphorus.

#### **Non-Detectable Fragment Weapons**

Non-Detectable Fragments Weapons are defined as any weapon with a primary effect to injure with fragments that cannot be detected by X-rays once inside the human body.

Factor Name	Column Header	Description
Non-Detectable Fragments	WEAP_NONDETECTABLE_FRAGMENTS	Companies that manufacture weapons that use non-detectable fragments to inflict injury to targets.
Ownership of a Non-Detectable Fragments Company	WEAP_NDF_OWN_OF F	Ownership of a Non-Detectable Weapons Manufacturer
Ownership by a Non-Detectable Fragments Company	WEAP_NDF_OWN_BY Y	Ownership by a Non-Detectable Weapons Manufacturer

*Non-Detectable Fragment Weapons Exclusions*

- Manufacturers of components of weapons that use non-detectable fragments.

**Nuclear Weapons**

Factor Name	Column Header	Description
Nuclear Weapons Systems	WEAP_NUC_SYSTEM	Companies that manufacture nuclear weapons. A nuclear weapon is defined as “an explosive device that derives its destructive force from nuclear reactions, either fission or a combination of fission and fusion” and this category includes but is not limited to: <ul style="list-style-type: none"> <li>• nuclear warheads;</li> <li>• intercontinental ballistic missiles and corresponding air- and land-based delivery platforms; and, ballistic missile submarines capable of delivering nuclear warheads.</li> </ul>
Warheads & Missiles	WEAP_NUC_MISSILE	Companies that manufacture nuclear warheads and/or whole nuclear missiles. Includes assembly and integration of warhead and missile body. Includes companies with contracts to

Factor Name	Column Header	Description
		operate/manage government-owned facilities that manufacture nuclear warheads and missiles.
Nuclear-Exclusive Delivery Platforms	WEAP_NUC_EXCL_DELIVERY	Companies that manufacture or assemble delivery platforms that were developed or significantly modified for the exclusive delivery of nuclear weapons.
Dual-Use Delivery Platforms	WEAP_NUC_DUAL_DELIVERY	Companies that manufacture or assemble delivery platforms that were not developed or not significantly modified for the exclusive delivery of nuclear weapons, i.e., these platforms are capable of delivering conventional weapons.
Nuclear Weapons Components	WEAP_NUC_COMPONENT	<p>Companies that manufacture critical components for nuclear weapons or nuclear weapons delivery systems. This category includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• propulsion and motor hardware and systems;</li> <li>• electronic circuitry for flight, navigation and targeting that is found within the missile and critical for its basic operation; and</li> <li>• all other components found in Conventional Weapons systems also capable of carrying nuclear weapons.</li> </ul> <p>Also includes companies involved in the production and/or storage of fissile materials used in nuclear weapons.</p> <p><b>Note:</b> MSCI ESG Research’s assessment includes companies that are involved in joint ventures that operate or manage facilities that produce and/or store fissile materials. Fissile materials are elements that “can sustain an explosive fission chain reaction” and “are essential in all nuclear explosives.” The most common in use are highly enriched uranium and plutonium. Companies that mine uranium or use depleted uranium for weapons</p>

Factor Name	Column Header	Description
		production are therefore not covered by this assessment.
Intended-Use Components	WEAP_NUC_EXCL_COMPONENT	Companies that manufacture components developed or significantly modified for exclusive use in nuclear weapons (warheads and missiles). INCLUDES companies with contracts to operate/manage government-owned facilities that manufacture components for nuclear warheads and missiles, such as fissile materials, non-nuclear components, explosives, triggers and detonators, etc.
Dual-Use Components	WEAP_NUC_DUAL_COMPONENT	Companies that manufacture components that were not developed or not significantly modified for exclusive use in nuclear weapons (warheads and missiles), i.e., these components can be used in both nuclear and conventional weapons.
Components of Nuclear Exclusive Delivery Platforms	WEAP_NUC_EXCL_DELIVERY_PART	Companies that manufacture components for nuclear-exclusive delivery platforms.
Components of Dual-Use Delivery Platforms	WEAP_NUC_DUAL_DELIVERY_PART	Companies that manufacture components for dual-use delivery platforms.
Nuclear Weapons Support Services	WEAP_NUC_SUPPORT	Companies that provide auxiliary services related to nuclear weapons, such as repairing and maintaining nuclear weapons, providing overhaul and upgrade services (including engineering), stockpiling and stewardship, research & development (R&D) work, testing and simulations, etc. INCLUDES companies with contracts to operate/manage government-owned facilities that conduct R&D, testing, simulations and other essential sciences on nuclear weapons.
Weapons - Nuclear Fissile Materials	WEAP_NUC_FISSILE_MAT	Companies involved in the production and/or storage of fissile materials used in/for nuclear weapons. Includes companies with contracts to

Factor Name	Column Header	Description
		operate/manage facilities that are responsible for the manufacture of fissile materials for nuclear weapons.
Ownership of a Nuclear Weapons Company	WEAP_OWNOFNUC	<p>Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.</p> <p><b>Note:</b> Even if the company has direct weapons involvement as a producer or support services provider, if it owns a nuclear weapons company it will appear under this factor.</p>
Ownership by a Nuclear Weapons Company	WEAP_OWNBNUC	<p>Companies that are 50% or more owned by a company with nuclear weapons involvement.</p> <p><b>Note:</b> Even if the company has direct weapons involvement as a producer or support services provider, if it is owned by a nuclear weapons company it will appear under this factor.</p>

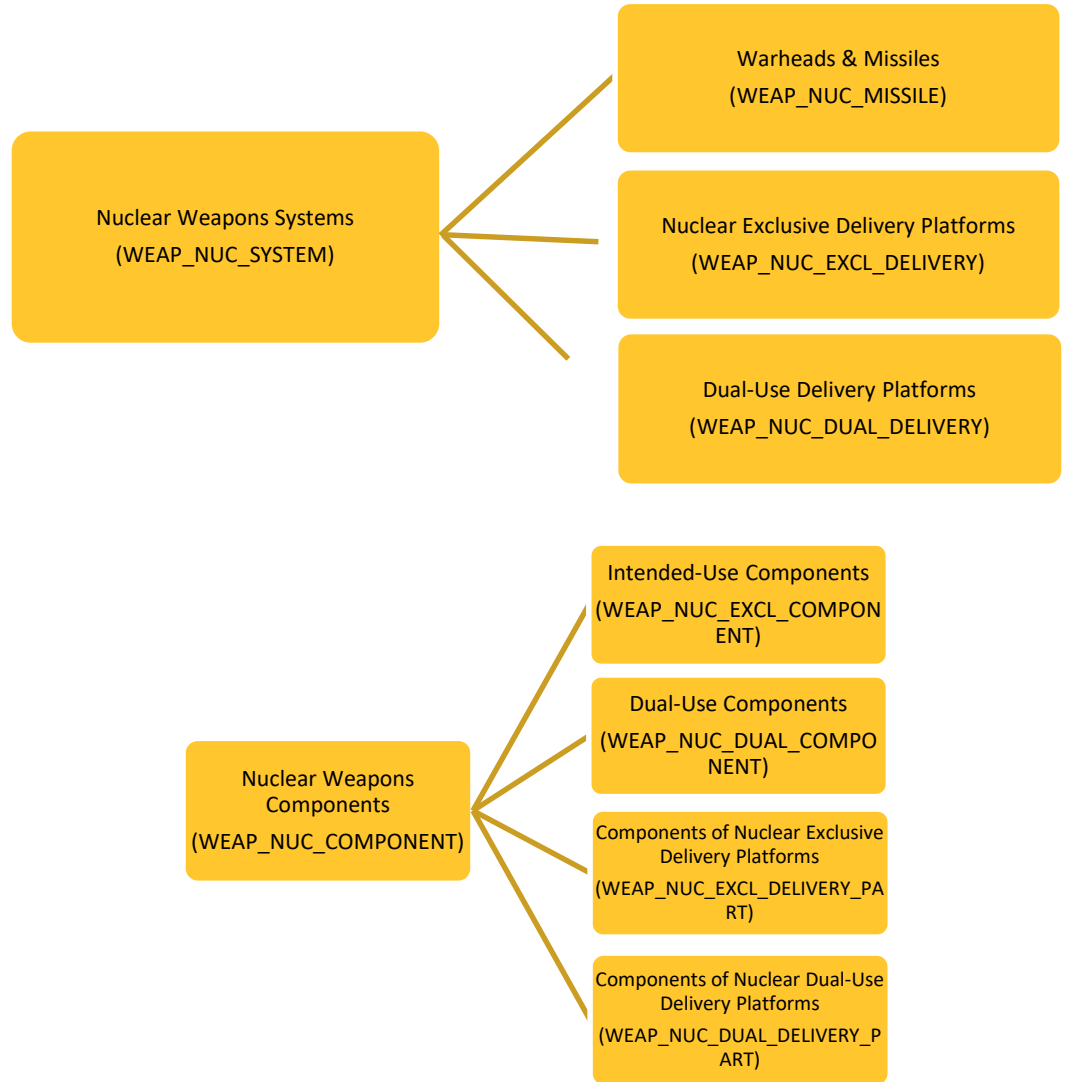
### Nuclear Weapons Revenue

Factor Name	Column Header	Description
Nuclear Maximum Percentage of Revenue	WEAP_NUC_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from the manufacture of nuclear weapons and related systems and components.
Nuclear - Revenue is Estimated	WEAP_NUC_REV_IS_EST	The revenue for this involvement category is estimated.
Nuclear Maximum Total Revenue	WEAP_NUC_TOTAL_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from the production of nuclear weapons systems and components.

MSCI ESG Research's Nuclear Weapons screen identifies companies with different types of ties to nuclear weapons. Below is a visual representation of the



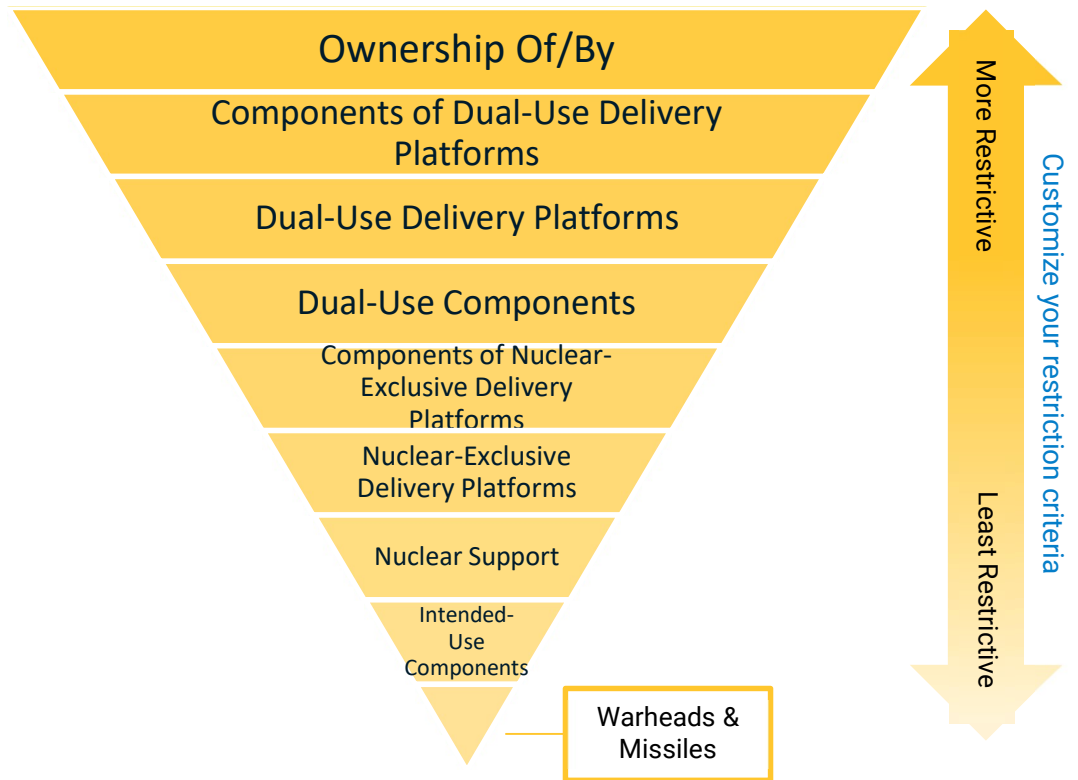
relationships between the Nuclear Weapons Systems and Nuclear Weapons Components factors and their subfactors:



**Nuclear Weapons Exclusions**

- Producers of rocket fuel that is used in nuclear weapons

MSCI ESG Research’s Nuclear Weapons screen is designed to allow investors to choose what level of involvement they want to exclude from their portfolios:



**Support Systems & Services**

Factor Name	Column Header	Description
Support Systems and Services	WEAP_SUPP_SERV	<p>Companies that provide weapons systems support and services. This category comprises companies that provide equipment, systems and services in direct support of weapons systems, or that provide systems with direct weapons-related applications. Companies are only included if there is evidence that the product or service has a weapons application. This category includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• weapons control systems, especially for higher accuracy and fast targeting;</li> <li>• navigation systems, including GPS and sonar systems and related</li> </ul>

Factor Name	Column Header	Description
		<p>equipment, and air-, land-, naval- and space-based radar systems;</p> <ul style="list-style-type: none"> <li>• weapons and weapons systems research, development, testing and evaluation (RDTE).</li> <li>• maintenance, repair &amp; overhaul (MRO), spare parts and upgrades for weapons and weapons equipment. This category includes services for:</li> <li>• weapons platforms and supporting systems;</li> <li>• components of weapons; and</li> <li>• components of support systems;</li> <li>• maintenance or management of nuclear weapon stockpiles;</li> <li>• weapons training and simulation systems and services;</li> <li>• defense electronics systems and equipment, such as electronic warfare/jamming and related warning and countermeasure systems; and nuclear, biological or chemical (NBC) detection systems;</li> <li>• weapon-specific night vision and other optical guidance and surveillance systems;</li> <li>• communications systems and equipment that has the primary purpose of allowing elements of the armed forces to communicate with each other in direct support of battlefield activities. (This category does not include telecommunication companies that provide the military with equipment such as telephones or routine telephone services for military</li> </ul>

Factor Name	Column Header	Description
		<p>installations). This category includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• air-, land-, naval- and space-based surveillance systems;</li> <li>• integrated communications, command, combat, computing, intelligence, surveillance and reconnaissance systems, more popularly known as C4ISR or any variation of such which are directly used for battlefield operations, including C&amp;C, C3, C4, C2I, C3I, etc.; and</li> <li>• intelligence services (including intelligence-gathering, GPS and aerial imagery and geospatial services) that are designed for or can be used with a weapon system;</li> <li>• UAVs, drones, unmanned ground vehicles, unmanned underwater or surface vehicles and other robotics used by the military for gathering intelligence, surveillance and reconnaissance of enemy targets or locations; and coordinating armed forces and providing combat/battlefield support (command and control, communication, etc.); and</li> <li>• highly specialized data processing equipment, such as supercomputers and software used in targeting, planning and war-gaming activities.</li> </ul>

**Support Systems & Services Revenue**

Factor Name	Column Header	Description
Support Systems and Services Maximum Percentage of Revenue	WEAP_SUPP_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from weapons-related support systems and services.
Support Systems - Revenue is Estimated	WEAP_SUPP_REV_IEST	The revenue for this involvement category is estimated.
Support Systems and Services Maximum Total Revenue	WEAP_SUPP_TOTAL_MAX_REV	The recent-year revenue (USD), or maximum estimated revenue, a company has derived from weapons-related support systems and services.

### Total Involvement

Factor Name	Column Header	Description
Any Tie	WEAP_GTIE	Companies that have an industry tie to the manufacture of military weapons: Conventional, Biological/Chemical, Blinding Laser, Depleted Uranium, Incendiary (white phosphorus), Non-Detectable Fragments, or Nuclear Weapons systems and components. This includes companies that provide support systems and services, as well as those with indirect ties to weapons production through ownership.
Producer	WEAP_GPRODUCER	Companies that produce Conventional, Biological/Chemical or Nuclear Weapons. Excludes companies that manufacture components of weapons systems and support services and systems.
Conventional Weapons – Any Tie	WEAP_CONVENTIONAL_TIE	Companies that have an industry tie to Conventional Weapons.
Nuclear Weapons – Any Tie	NWEAP_TIE	Companies that have an industry tie to Nuclear Weapons.
Controversial Weapons – Any Tie	CWEAP_TIE	Companies that have any ties to cluster munitions, landmines, biological /chemical weapons, depleted uranium

Factor Name	Column Header	Description
		weapons, blinding laser weapons, incendiary weapons and/or non-detectable fragments.
Ownership of a Weapons Company	WEAP_OWN_OF	Companies that own 20% to 49.99% of a company with involvement. When a company owns 50% or more of a subsidiary with involvement, MSCI ESG Research treats it as a consolidated subsidiary.
Ownership by a Weapons Company	WEAP_OWN_BY	Companies that are 50% or more owned by a company with involvement.

### Total Revenue

Factor Name	Column Header	Description
Weapons - Maximum Percentage of Revenue	WEAP_MAX_REV_PCT	The recent-year percent of revenue, or maximum estimated percent, a company has derived from weapons systems, components and support systems and services.
Weapons - Revenue is Estimated	WEAP_REV_ISEST	The revenue for this involvement category is estimated.
Weapons - Maximum Total Revenue	WEAP_TOTAL_MAX_REV	The total recent-year revenue (USD), or maximum estimated revenue, a company has derived from weapons systems, components and support systems and services.

### Global Weapons General Exclusions

- Military uniforms and safety gear and equipment – includes all types of uniforms. This also includes gear and equipment that provide safety and other supporting functions. This list includes but is not limited to:
  - Helmets, bulletproof vests and riot gear;
  - parachutes and life rafts;
  - safety masks;
  - biological and chemical agent detectors;
  - NBC suits (Nuclear, Biological, Chemical); and
  - Hazmat protective suits.

- Miscellaneous supporting aircraft and vehicles – Supporting aircraft, ships and vehicles that do not contribute to the lethality of combat, battles or warfare. This list includes but is not limited to:
  - UAVs or drones used for non-military activities, commercial, scientific and/or personal activities. This also does not include UAVs or drones used for logistics or transportation of military materials and equipment;
  - medical equipment and medical ships or helicopters;
  - refueling aircraft; and
  - logistics and transportation.
- Non-essential components of weapons systems or platforms – Items that are commonly used in everyday electronic and mechanical equipment and vehicles; they are not specific to military or weaponry use. Producers of components of components are also not included. This list includes but is not limited to:
  - manufacturers of steel alloys for use in armor;
  - aerodynamic designs/add-ons and environmental protection technology for military vehicles and aircraft;
  - cables, electrical wires, spark plugs, vehicle axles and pistons;
  - vehicle batteries and other power sources; and
  - mirrors, seats, carpets and other internal vehicle furniture and fixtures.
- Non-weapons-related supporting services – Services not combat- or warfare-oriented. This includes but is not limited to:
  - military base construction;
  - basic IT/telecommunications infrastructure and technical support;
  - supply-chain management services;
  - program management and support (including cost/acquisition support);
  - food services; and
  - refueling and paint jobs.

### U.S. DOD Top 100 Contractors

MSCI ESG Research's U.S. DOD Top 100 Contractors presents the largest companies in terms of total contracts awarded by the U.S. Department of Defense in a given fiscal year.

#### Coverage Universe

Global equity issuers

**Note:** This screen only flags equity-issuing companies, but the US DOD Top 100 includes some private companies. Thus, ranking may not appear in sequential order.

Factor Name	Column Header	Description
U.S. DOD Top 100 - Contract Amount	DOD_TOP100_CONTRACT_AMT	The total contract value for companies included on the U.S. DOD Top 100 Contractors list.
U.S. DOD Top 100 - Contract Percentage	DOD_TOP100_CONTRACT_PCT	The percentage share of U.S. DOD contracts for companies included on the U.S. DOD Top 100 Contractors list.
U.S. DOD Top 100 – Rank	DOD_TOP100_RANK	The rank of companies included on the U.S. DOD Top 100 Contractors list according to total contract amount (1 to 100).

**U.S. DOD Screens Source**

- U.S. Department of Defense



## Appendix

### Revenue Estimation (Generic Case)

When companies do not report exact revenue figures for a covered business activity, MSCI ESG Research provides an educated estimate associated with the business involvement activity. First, the reported business segment of the business involvement activity is identified. Next, the other activities in that segment(s) are determined and considered to calculate the estimated revenue for said business involvement activity. All available disclosures are considered, like one or more product lines within that segment representing a larger (or smaller) percentage of revenue, when estimates are being calculated. In the absence of information indicating otherwise, assumptions are made that product lines are of equal weight regarding revenue contribution.

The steps below showcase the general process that an analyst will use for revenue estimation when exact revenue figures are not explicitly disclosed by the company.

1. An analyst will confirm or determine if a company is involved in the business activity, then identify covered products and services.
2. The analyst will identify the business segment of the covered products and services and determine how many other products and services are offered in that business segment. Due to the lack of any other disclosed statements, the analyst will equally divide the segment revenue by the number of products and services.

**Note 1:** Prior to equally dividing the segment revenue by product, the analyst may divide by product lines first, depending on company disclosures.

**Note 2:** This step is a simplified representation, as analysts normally further rely on cues coming from company statements found in financial statements, Management Discussion & Analyses, investor presentations, marketing brochures and other materials.

3. The analyst will add all the computed percentages of revenue for each covered product to get a total from that segment.

**Note:** If other segments also offer covered products and services, Steps 2 and 3 are repeated.

4. The analysts will sum all calculated figures to come up with a final estimated figure, then choose the appropriate revenue range.

### Revenue Estimation for Corporate Actions

If MSCI ESG Research determines the corporate action would have an impact on a company's business involvement and revenue estimates, forward-looking estimates

for the year of the transaction will be created. In simple terms, the surviving entity would incorporate the attributes of the acquired entity such as business-activity ties and revenue.

- Analysts will use all available disclosed information to calculate new revenue estimates for business activities.
- If the surviving entity doesn't disclose pro forma revenue post-transaction, then estimates are calculated by simple combination of the two entities' revenue. The following year, when the surviving entity publishes its new annual filing, revenue estimates are reviewed and updated as necessary.
- For example, COMPANY A acquires COMPANY B, and COMPANY A has the following attributes,
- Total revenue for FY 2018 = USD 2,500 million
- Alcohol estimated revenue for FY 2018 = 4.99%,

and COMPANY B has the following attributes,

- Total revenue for FY 2018 = USD 5,000
- Alcohol estimated revenue for FY 2018 = 0.99%

Assuming COMPANY A didn't disclose pro forma revenue after the transaction was completed, then forward-looking estimates would appear as:

- Total revenue for FY 2019 = USD 7,500
- Alcohol estimated revenue for FY 2019 = 2.50% (by adding the derived value for COMPANY A's 4.99% and COMPANY B's 0.99%, then using a new revenue band).

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