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## Morningstar Portfolio Product Involvement Methodology

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### Morningstar Direct

28 September 2017

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The Morningstar Portfolio Product Involvement metrics measure a portfolio's exposure to involvement in a range of products, services, and business activities. The metrics are holdings-based calculations that use company-level analytics from Sustainalytics, a leading ESG research provider. The metrics are calculated for managed products globally using Morningstar's portfolio holdings database.

Morningstar generates a portfolio product involvement percentage and category average for each of the following product areas:

- ▶ Abortive/Contraceptives/Stem Cell
- ▶ Adult entertainment
- ▶ Alcohol
- ▶ Animal testing
- ▶ Controversial weapons
- ▶ Fur & specialty leather
- ▶ Gambling
- ▶ GMO
- ▶ Military contracting
- ▶ Nuclear
- ▶ Palm oil
- ▶ Pesticides
- ▶ Small arms
- ▶ Thermal coal
- ▶ Tobacco

## Calculating the Product Involvement Percentage

Sustainalytics presents product involvement at the company level as a range of revenue exposure for all product areas except Animal Testing, Abortive/Contraceptives/Stem Cell, and Controversial Weapons. For Animal Testing, Abortive/Contraceptives/Stem Cell, and Controversial Weapons, company involvement is binary, either yes or no. For all other product areas, the company revenue exposure ranges are None, 0.1-4.9%, 5-9.9%, 10-24.9%, 25-49.9%, and 50-100%.

To calculate portfolio involvement, for each product involvement area Morningstar established a minimum involvement threshold. For each product involvement area, the holdings that meet the minimum involvement threshold are summed by their weight in the portfolio. The sum represents the portfolio's asset-weighted exposure to the product involvement area without an adjustment for cash.

### Exhibit 1 Portfolio Product Involvement Percentage Calculation Example

	Portfolio Weight	Alcohol Involvement	Controversial Weapons Involvement
Company A	3.5%	Yes	No
Company B	2%	No	Yes
Company C	1%	No	Yes
Other holdings	93.5%	No	No
Product Involvement Percentage		3.5%	3%

## Calculating the Product Involvement Category Average

To provide a meaningful comparison of a portfolio's product involvement percentage, Morningstar calculates a category average for each product involvement area:

$$\frac{\sum \text{Total \% of involvement for each fund in category with a value}}{\# \text{ of funds with involvement}}$$

## Defining the Product Involvement Product Areas

A company is considered involved and incorporated in the product area's product involvement percentage calculation if the minimum revenue threshold is greater than or equal to the revenue range listed in the below table. Sustainalytics evaluates direct product involvement from producing, manufacturing, or operating a product as well as indirect involvement from distributing or selling related products and services.

<b>Product Involvement Area</b>	<b>Definition</b>	<b>Minimum Revenue Threshold</b>
Adult Entertainment	<ul style="list-style-type: none"> <li>- Direct Involvement: The company is involved in the production of adult entertainment and/or owns/operates adult entertainment establishments, including adult entertainment movies and television programs, magazines, and adult websites.</li> <li>- Indirect Involvement: The company is involved in the distribution of adult entertainment materials.</li> </ul>	- 50-100%
Alcohol	<ul style="list-style-type: none"> <li>- Direct Involvement: The company manufactures alcoholic beverages.</li> <li>- Indirect Involvement: The company is a supplier of alcohol-related products/services to alcoholic beverage manufacturers, including specialized equipment or raw materials to produce alcohol.</li> <li>- Indirect Involvement: The company derives revenues from the distribution and/or retail sale of alcoholic beverages.</li> </ul>	<ul style="list-style-type: none"> <li>- Manufacturing: 5-9.9%</li> <li>- Supplier: 50-100%</li> <li>- Distribution: 25-49.9%</li> </ul>
Animal Testing	<ul style="list-style-type: none"> <li>- Direct Involvement: The company conducts animal testing for pharmaceutical products, medical devices, biotechnology, or non-pharmaceutical products.</li> </ul>	- Binary—yes/no
Abortive/Contraceptives/Stem Cell	<ul style="list-style-type: none"> <li>- The category consists of abortion, contraceptives, and Human Embryonic Stem Cell and Fetal Tissue.</li> <li>- Direct Involvement: The company manufactures drugs that have abortifacient properties.</li> <li>- Indirect Involvement: The company owns and/or operates one or more acute care hospitals or surgical centers related to abortion or contraceptive surgical procedures.</li> <li>- Direct Involvement: The company manufactures contraceptives.</li> <li>- Direct Involvement: The company is involved in the use of human embryonic stem cells,</li> </ul>	- Binary—yes/no

	<p>fetal cell lines for vaccines or biological development.</p> <ul style="list-style-type: none"> <li>- Indirect Involvement: The company develops technologies that enable human embryonic stem cell research.</li> </ul>	
Controversial Weapons	<ul style="list-style-type: none"> <li>- Controversial weapons consist of anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium ammunition, nuclear weapons, and white phosphorus weapons.</li> <li>- Direct Involvement: The company is involved in core weapon system, or components/services of the core weapon system that are considered tailor-made and essential for the lethal use of the weapon.</li> <li>- Indirect Involvement: The company provides components/services for the core weapon system, which are either not considered tailor-made or not essential to the lethal use of the weapon.</li> </ul>	- Binary — yes/no
Fur & Specialty Leather	<ul style="list-style-type: none"> <li>- Direct Involvement: The company manufactures products made from fur or specialty leather, including products made from animals solely hunted or bred for their skin and fur.</li> <li>- Indirect Involvement: The company derives 10% or more of its revenue from the distribution and/or retail sale of products made from fur or specialty leather.</li> </ul>	<ul style="list-style-type: none"> <li>- Production: 50-100%</li> <li>- Revenues: 25-49.9%</li> </ul>
Gambling	<ul style="list-style-type: none"> <li>- Direct Involvement: The company owns and/or operates a gambling establishment, such as a casino, racetrack, or online gambling.</li> <li>- Direct Involvement: The company manufactures specialized equipment used exclusively for gambling, including slot machines, roulette wheels, and lottery terminals.</li> <li>- Indirect Involvement: The company provides supporting products/services to gambling operations, such as gambling technology or credit lines to casinos.</li> </ul>	- 5-9.9%

GMO	<ul style="list-style-type: none"> <li>- Direct Involvement: The company grows genetically modified crops.</li> <li>- Indirect Involvement: The company is involved in the development and/or cultivation of genetically modified seeds and/or plants.</li> </ul>	<ul style="list-style-type: none"> <li>- Growth: 0.1-4.9%</li> <li>- Development: 5-9.9%</li> </ul>
Military Contracting	<ul style="list-style-type: none"> <li>- Military contracting includes companies involved in contracts related to military weapons, weapon systems, secondary components of weapons, or weapon related services.</li> <li>- Direct Involvement: The company manufactures military weapon systems and/or integral, tailor-made components of these weapons.</li> <li>- Indirect Involvement: The company provides tailor-made products and/or services that support military weapons.</li> <li>- Indirect Involvement: The company provides non-weapons related to tailor-made products and/or services to the military or defense industry.</li> </ul>	<ul style="list-style-type: none"> <li>- Manufacturing and related weapons: 5-9.9%</li> <li>- Non-weapons: 25-49.9%</li> </ul>
Nuclear	<ul style="list-style-type: none"> <li>- Direct Involvement: The company produces nuclear power, including utilities that own or operate nuclear power generators.</li> <li>- Indirect Involvement: The company provides products/services that support the nuclear power industry, such as designing and constructing nuclear power plants, manufacturing specialized parts for use in nuclear power plants, or companies involved in uranium mining exploration.</li> <li>- Indirect Involvement: The company distributes electricity generated from nuclear power.</li> </ul>	<ul style="list-style-type: none"> <li>- Production: 5-9.9%</li> <li>- Distribution and supporting products and services: 10-24.9%</li> </ul>
Palm Oil	<ul style="list-style-type: none"> <li>- Direct Involvement: The company is involved in the production and/or distribution of palm oil.</li> </ul>	<ul style="list-style-type: none"> <li>- 5-9.9%</li> </ul>
Pesticides	<ul style="list-style-type: none"> <li>- Direct Involvement: The company manufactures pesticides, including herbicides, fungicides, or insecticides.</li> </ul>	<ul style="list-style-type: none"> <li>- Production: 5-9.9%</li> <li>- Revenues: 50-100%</li> </ul>

	- Indirect Involvement: The company derives 10% or more of its revenues from the distribution and/or retail sale of pesticides.	
Small Arms	<ul style="list-style-type: none"> <li>- Direct Involvement: The company manufactures and sells small arms to civilian customers or military/law enforcement.</li> <li>- Direct Involvement: The company manufactures and sells key components of small arms.</li> <li>- Indirect Involvement: The company is involved in retail and/or distribution of small arms and/or key components.</li> </ul>	<ul style="list-style-type: none"> <li>- Manufacturing: 0.1-4.9%</li> <li>- Retail: 5-9.9%</li> </ul>
Thermal Coal	<ul style="list-style-type: none"> <li>- Thermal coal tracks the percentage of a company's generating capacity based on coal instead of revenue.</li> <li>- Direct Involvement: The company extracts thermal coal for coal mining and exploration.</li> <li>- Indirect Involvement: The company generates electricity from thermal coal, including utilities that own or operate coal-fired power plants.</li> </ul>	- 0.1-4.9%
Tobacco	<ul style="list-style-type: none"> <li>- Direct Involvement: The company manufactures tobacco products, including cigarettes, cigars, tobacco for pipes and snuff, and smokeless tobacco products.</li> <li>- Indirect Involvement: The company supplies tobacco-related products/services, such as pipes or rolling papers.</li> <li>- Indirect Involvement: The company derives 10% or more of its revenues from the distribution and/or retail sales of tobacco products/services.</li> </ul>	<ul style="list-style-type: none"> <li>- Manufacturing: 0.1-4.9%</li> <li>- Related &amp; Revenues: 10-24.9%</li> </ul>

## Frequency of Calculations

The company-level data for the Morningstar Portfolio Product Involvement metrics are updated monthly based on the most recent company data from Sustainalytics. Each portfolio receives updated product involvement percentage data for each product involvement area when Morningstar receives a new portfolio. The product involvement category averages are recalculated monthly on the sixth business day.