There's Good in the "BAD": The Investment Case for Betting, Alcohol/Cannabis and Drugs (Pharmaceuticals and Biotech)

Executive Summary

The investment case for "sin" stocks, including those in the betting, alcohol, cannabis, and drugs (BAD) industries remains strong for the simple yet important reason that they have typically offered attractive risk-adjusted returns. These stocks have also shown resilience during economic downturns and are typically underappreciated and therefore under-valued.

Just as Socially Responsible Investing (SRI) deserves a place in investors' portfolios, BAD companies can also provide important diversification benefits and return potential.

Over the past decade, SRI and ESG (Environmental, Social, and Governance) have become significant investment trends for people who choose to invest in stocks that support their causes, communities, the environment, and good corporate governance. However, while SRI and ESG may satisfy investors' convictions, some argue that this investment style may leave gaps in a diversified portfolio that can limit returns and concentrate risk.[1] We believe our approach to "bad investing" can potentially fill that gap and be a source of alpha.

This paper aims to explore:

- BAD Investing 101
- The benefits of BAD investing
- Why excluding BAD stocks in a portfolio may come at a cost
- BAD investing versus Socially Responsible Investing (SRI)

BAD Investing 101

Also known as "sin" investments, BAD companies reside in defensive, "shunned" and underinvested segments of the market, providing diversification benefits, economic resilience and competitive risk-adjusted returns. These investments include:

- **B**etting: Casinos, gaming and online gaming operations
- **A**lcohol/Cannabis: Alcoholic beverage manufacturing and distribution
- **D**rugs: Pharmaceutical and biotechnology product development and manufacturing

Betting[2]

According to Statista.com, the casino and online gambling sector worldwide was estimated at roughly $265 billion in 2019, reflecting an increase over the previous year. However, in 2020, the COVID-19 pandemic caused the sector to decrease to $202.54 billion. In 2021, the market is forecast to reach $230.86 billion, aligned with economic reopening.

Alcohol/Cannabis[3]

The global alcoholic beverages market is expected to grow from $499.74 billion in 2020 to $546.15 billion in 2021 at a compound annual growth rate (CAGR) of 9.3%. The market is expected to reach $735.83 billion in 2025 at a CAGR of 8%.

The alcoholic beverages market consists of sales of alcoholic beverages by entities (organizations, sole traders and partnerships) that produce alcoholic beverages through the fermentation process and that produce distilled alcoholic beverages. Companies in the alcoholic beverages industry process raw materials into alcoholic beverages, package and distribute them through various distribution channels to both individual customers and commercial establishments. The alcoholic beverages market is segmented into beer, wine, as well as brandy and spirits.

The global cannabis market size was valued at $20.6 billion in 2019 and is forecast to record a CAGR of 28.5% from 2021 to 2027. Developments in cannabis genetics and increasing legalization worldwide for medicinal and recreational purposes are expected to fuel the growth of the global cannabis market.

Drugs: Pharmaceutical and biotechnology product development and manufacturing[4]

According to Research and Markets, the global pharmaceuticals market is expected to grow from $1228.45 billion in 2020 to $1250.24 billion in 2021, with a CAGR of 1.8%. The growth is mainly due to companies rearranging their operations and recovering from the COVID-19 impact, which had earlier led to restrictive containment measures involving social distancing, remote work and the closure of commercial activities that resulted in operational challenges. The market is expected to reach $1700.97 billion in 2025 at a CAGR of 8%.

The pharmaceuticals market consists of sales of pharmaceuticals and related services by entities (organizations, sole traders, and partnerships) producing pharmaceuticals used in treating diseases. Pharmaceuticals can be any type of drugs that are used for medicinal purposes. This industry includes companies producing biologics and pharmaceutical drugs.

In 2020, North America was the largest region in the global pharmaceuticals market, accounting for 46% of the market. Asia Pacific was the second largest region accounting for 26% of the global pharmaceuticals market.

The pharmaceutical and biotechnology industries are expected to benefit from an aging population globally. According to the Population Reference Bureau, the share of population over the age of 65 in the global population increased from 8% in 2015 to 9% in 2019. The global population aged 65 years or over was 703 million in 2019. "This rise in the aging population increased the patient pool of many chronic diseases such as rheumatoid arthritis, hypertension, diabetes and cancer. The increase in the patient pool drove the demand for pharmaceuticals used in the treatment of these diseases, significantly impacting market growth during this period," the report stated.

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Benefits of BAD Investing[5]

While some investors may "shun" sin stocks due to various reasons, many of these stocks are sound investments, as discussed below.

Attractive risk-adjusted returns and dividends[6]

Many companies in the sin category offer market-beating and consistent dividend payments.[7] According to a Nasdaq article, historical evidence on the performance of sin companies highlights that these stocks have provided substantially higher returns than the broad market in general. For instance, Research by UBS suggests that a "benchmark of the largest 50 'sin' stocks has outperformed the MSCI World Index by nearly 5% per year."[8]

The report "Is It Good to Sin When Times Are Bad? An Investigation of the Defensive Nature of Sin Stocks," authored by Greg Richey and published in the October 2020 issue of *The Journal of Investing* analyzed the defensive nature of individual sin industries against the market portfolio. Richey's database covered the period 1980 to 2019 (providing 480 monthly observations) and 106 firms from four sin-related industries—alcohol, tobacco, gambling, and defense. He constructed a sin fund portfolio as well as one portfolio for each industry (a booze fund, a smoke fund, a game fund, and a boom fund).[9]

The following is a summary of his findings:

- Sin stocks have had higher returns and Sharpe ratios than the market portfolio, and sin industry funds' returns have been less correlated with each other than they have been with the market portfolio.
- The betas of the sin portfolios were less than one, indicating they have less systematic risk than the market portfolio (they are more defensive).
- Bad news events have a lesser impact on sin stock return volatility than do good news events.

Sin stocks have had higher returns and Sharpe ratios.

As the table below demonstrates, the returns on the sin portfolios outperformed the market portfolio (S&P 500 Index) over the sample period, both in percentage (mean) return and in risk-adjusted (Sharpe) return. They also outperformed the betting against beta (BAB) factor portfolio.

	Mean Return	Std. Dev.	Skewness	Kurtosis	Beta	Sharpe
SinFund	1.295	4.743	-0.473	6.087	0.790	0.199
BoozeFund	1.268	4.922	-0.084	5.877	0.680	0.187
SmokeFund	1.592	7.023	1.105	9.051	0.730	0.176
BoomFund	1.529	6.938	0.923	4.754	0.830	0.169
GameFund	1.146	5.804	-0.181	8.042	0.910	0.137
S&P	1.078	4.397	-0.741	5.375	1.000	0.166
BAB	0.951	3.636	-0.552	6.764	-0.150	0.165
T-Bill	0.350	0.295	0.812	3.510	0.000	0.000

The results are hypothetical results and are NOT an indicator of future results and do NOT represent returns that any investor actually attained. Indexes are unmanaged, do not reflect management or trading fees, and one cannot invest directly in an index.

Sources: The Journal of Investing "Is It Good to Sin When Times Are Bad? An Investigation of the Defensive Nature of Sin Stocks" by Greg M. Richey October 2020 https://joi.pm-research.com/content/29/6/43; Investopedia. Definitions: Bet against beta (BAB): A strategy using statistical arbitrage by taking a short position in stocks with high beta and a long position in stocks with low beta; Mean: mathematical average of a set of two or more numbers; Standard Deviation: Measures the dispersion of a dataset relative to its mean; Skewness: the distortion or asymmetry in a symmetrical bell curve, or normal distribution in a set of data; Kurtosis: a statistical measure that is used to describe distribution of returns; Beta: measures the volatility or systematic risk of a security or portfolio in comparison to the market as a whole; Sharpe Ratio: Measures the return on an investment compared to its risk.

According to the study, as the shunned-stock hypothesis suggests, sin stocks have not only provided higher returns than the market portfolio but higher risk-adjusted returns as well.

In addition, Richey's study demonstrates that sin stocks provide the added benefit of being defensive in nature, reducing the tail risk of investing in equities. Based on this study, risk-averse investors may conclude that, for them, sin investing is a good choice.

Recession Proof/Steady Demand

Since the demand for sin companies' products or services is relatively inelastic (i.e., where price changes do not significantly impact demand for the product or service), their business is deemed more recession-proof than other companies.

Sin stocks have proven to be resilient amid economic turbulence. For example, despite lockdowns and social distancing, alcohol sales skyrocketed by 55% in late March at the beginning of the coronavirus pandemic.[10]

Recent research by Richey says, "Bad-news events have a lesser impact on sin stock return volatility than do good-news events." Sin stocks are therefore considered defensive and tend to remain more stable under tough economic conditions.[11]

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Undervaluation

Moreover, research suggests that undervaluation is a key attribute of many BAD or sin stocks. They may be undervalued as the negative image of these investments lead analysts and institutional investors to avoid sin stocks, making them underpriced.

Consider that while ESG investing continues to gain in popularity, economic theory suggests the share prices of "sin" businesses (typically those involved in the gambling, tobacco, alcohol, guns, and defense industries) will become depressed if a large enough proportion of investors choose to avoid them—the "shunned-stock hypothesis," according to a report by Alpha Architect. "Such stocks would have a higher cost of capital because they would trade at a lower price-to-earnings (P/E) ratio—providing investors with higher expected returns. Some investors may view those higher expected returns as compensation for the emotional cost of exposure to offensive companies."[12]

Additionally, the Alpha Architect report cited research papers supporting the view that sin stocks have tended to be undervalued. The papers include 2009's "The Price of Sin: The Effects of Social Norms on Markets," the 2017 papers "Fewer Reasons to Sin: A Five-Factor Investigation of Vice Stocks" and "Sin Stocks Revisited: Resolving the Sin Stock Anomaly," as well as the 2020 study "The Underpricing of Sin Stocks."[13] The studies found that sin stocks have provided abnormal risk-adjusted returns due to neglect by institutional and retail investors, who lean toward the side of ESG investing. "The abnormal return of sin stocks occurred because they are more profitable and less wasteful with investment than the average corporation."[14]

Excluding Sin Stocks in a Portfolio May Come at a Cost[15]

The *Journal of Sustainable Finance & Investment* paper titled, "Does excluding sin stocks cost performance?" examined the impact of excluding sin stocks on expected portfolio return and risk. The paper found that from a risk perspective, excluding sin stocks in a portfolio may lead to under-diversification and exposure to unrewarded, diversifiable risk, or tracking error. A high tracking error brings along the risk of significant underperformance compared to peers.

Taking an asset pricing perspective, the study authors found that exclusions typically go against established asset pricing factors such as value, profitability, investment, and low risk, which lead to lower expected returns. "Although it can be theoretically argued that sin stocks should command a higher average return, there is no strong empirical evidence for the existence of such a sin premium – nor for a sin discount for that matter," the authors stated.

The authors estimated that naively excluding large numbers of sin stocks can lower the expected equity return by 0.25% to 0.50%. "Although this might seem small, a pension fund which underperforms its peers by such an amount may end up providing about 5% lower pensions in the long run."

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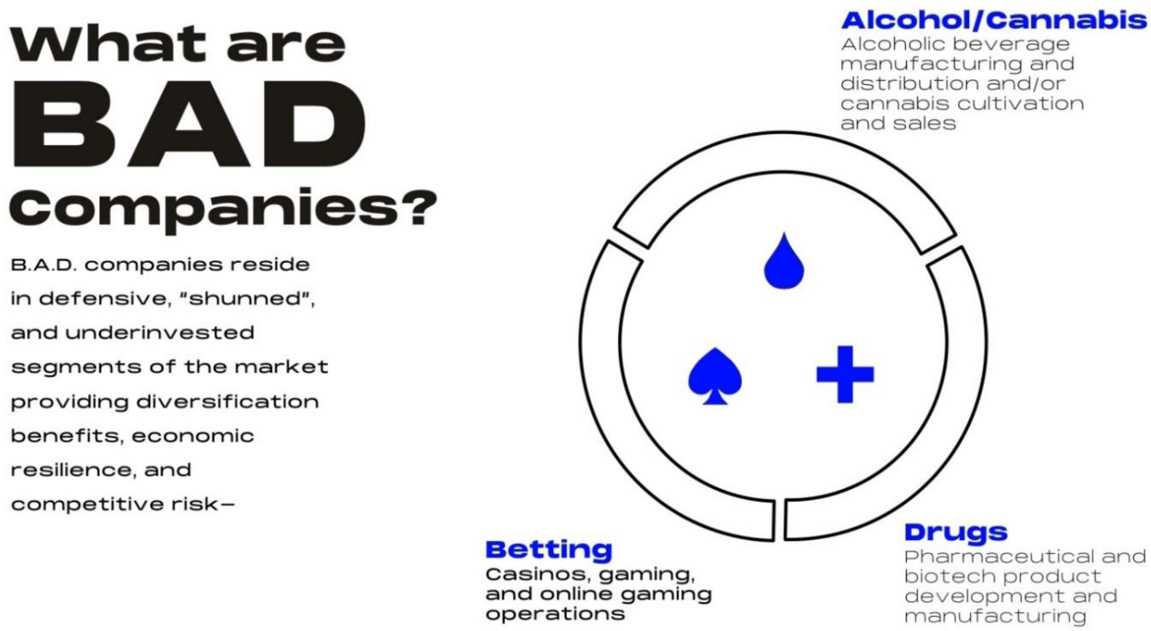
The Good in the BAD: Key Statistics[16]



*Sources: Globe Newswire and Business Wire; *CAGR: Compound Annual Growth Rate*

BAD Investing vs. SRI Investing

Can the sin-stock and SRI investing approaches co-exist in an investment portfolio? While the answer generally depends on an investor's stated goals, there are benefits to investing in both.

Can the sin-stock and SRI investing approaches co-exist in an investment portfolio?

BAD or sin investments pursue diversification benefits, investment in companies demonstrating economic resilience and competitive risk-adjusted returns.

Socially responsible investments pursue financial gains and social, economic and environmental goals. However, the two inherent goals of SRI, social impact and financial gain, do not necessarily have to go hand in hand, according to an Investopedia article, which states that just because an investment is defined as socially responsible doesn't mean that it will provide investors with a good return. "In fact, the potential for a good return is not an assurance that a company is socially conscious. An investor must still assess the financial outlook of the investment while trying to gauge its social value."[17]

Over the past decade, SRI has become an important investment trend, with people choosing only those stocks that support their communities, the environment, and good corporate governance, according to an Investopedia article.

However, while SRI may fit some investors' moral convictions, economists warn that investing solely in SRI stocks may leave important gaps in a diversified portfolio that can limit returns and concentrate risk.[18]

According to an Investopedia article, "SRI fans argue that it's possible to do some good while making money." Their argument rests on the idea that socially responsible companies are likely to be well managed because their underpinnings are based on solid values. On the other hand, "Sin stock fans argue that SRI mandates pass up good opportunities in companies that have strong fundamentals, trading profits for a feel-good factor."[19]

Our Investing Approach to BAD Investing

The BAD investing style takes a different approach to straight up "sin" investing by focusing on three market sectors offering resilience during economic downturns and growth potential.

The BAD Index provides equally weighted exposure to three B.A.D. market segments:

- Betting (Casinos, gaming, and online gaming operations);
- Alcohol/ Cannabis (Alcoholic beverage manufacturing and distribution and/or cannabis cultivation and sales); and
- Drugs (Pharmaceutical and biotechnology product development and manufacturing).

"We focus on companies in these three sectors that have survived multiple economic cycles and at the same time offer growth potential," according to Thomas Mancuso, president of the BAD Investment Company.

For example, the "D" in "BAD," which represents the pharmaceutical/biotechnology industry, benefits from a positive outlook, given the continued development of drugs and therapeutics amid long-term health factors, such as an aging population. "Our focus on the pharma/biotech sector makes us different from so-called "vice" investment styles," he points out. "It's particularly interesting to see what the future holds for companies aiming to improve people's health and well-being, especially as we've seen the impact these companies and their products can have in our lives during the pandemic."

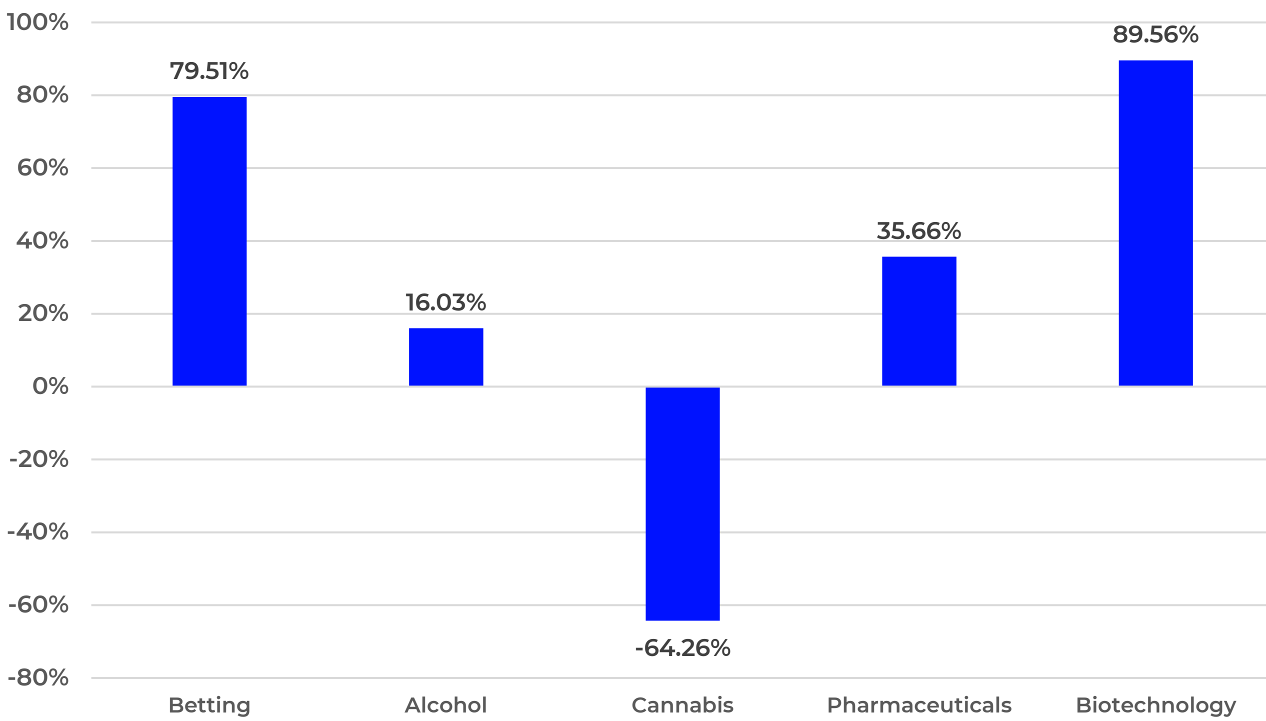
The portfolio is primarily U.S.-focused, with non-U.S. domiciled companies, including those in emerging markets, which are only eligible for inclusion as ADR versions.

The Index Provider utilizes issuer financial statements and other public filings and reports, as well as third-party industry research, reports, and analyses to identify companies in business categories that meet the Index's criteria for inclusion.

Companies in the drug category must be at least $10 billion in USD market capitalization, with biotech company exposure limited to the top 10 by market capitalization. Companies in the Betting and Alcohol/Cannabis categories must meet a minimum market capitalization threshold of $1 billion USD. The weight to cannabis companies is maxed out at 10% in aggregate and limited to U.S.-exchange listed companies. Finally, each component must have an average daily traded value of $1 million USD over the last six months.

This diversified approach has historically delivered competitive backtest results. While the Alcohol/Cannabis segments underperformed the broad market over the last 3-year period due to pandemic-related dislocations, we expect the pattern of combined outperformance to resume going forward, as the market gravitates toward more defensive, underappreciated names in the coming years.

Three-Year Cumulative Backtested Returns by Market Segment



Source: Bloomberg, EQM Indexes as of 11-30-2021

Key Takeaways

- BAD or sin stocks have generally delivered attractive risk-adjusted returns.
- Companies in the betting, alcohol/cannabis and pharmaceutical/biotech industries could be good diversifiers within investor portfolios.
- Sin stocks have shown resilience during economic downturns.
- These companies have been shunned by investors, resulting in undervaluation.
- Excluding BAD or sin stocks in a portfolio may come at a cost.
- BAD investments can be positioned alongside SRI and other investments.
- The BAD investing style takes a different approach to straight up “sin” investing by focusing on three market sectors offering resilience during economic downturns and growth potential.

ABOUT US

THE BAD INVESTMENT COMPANY

We're not your normal fund management company. We mix modern strategies with traditional values - all centered around the BAD and progressive things in life.

Beginning with BAD (Betting, Alcohol and Drug Industries) as our flagship ETF, we are eager to push the limit and rethink how investment vehicles are built.

Together, we are creating investment opportunities that are different, yet familiar — putting the freedom back in your pocket.

EQM INDEXES LLC

EQM Indexes LLC is a woman-owned firm dedicated to creating and supporting innovative indexes that track growth industries and emerging investment themes. Co-founded by Jane Edmondson, a former Institutional Portfolio Manager with more than 25 years in the investment industry, our index design expertise spans a wide range of asset classes and financial instruments.

We partner with issuers and work jointly with other index firms to provide benchmarks for Exchange Traded Products (ETPs) such as Exchange Traded Funds (ETFs), Exchange Traded Notes (ETNs), and other similar products. EQM Indexes LLC also assists firms on a fee basis to design and implement their index ideas.

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Definitions[20]

Alpha – The excess return of an investment relative to the return of a benchmark index.

American Depositary Receipt (ADR) – A U.S. bank-issued certificate representing shares in a foreign company for trade on American stock exchanges.

Backtesting – Evaluates the effectiveness of a trading strategy by running it against historical data to see how it would have fared.

CAGR – The Compound Annual Growth Rate is the rate of return required for an investment to grow from its beginning balance to its ending one.

Diversification – an investment strategy based on the premise that a portfolio with different asset types will perform better than one with few.

Dividends – the distribution of corporate profits to eligible shareholders.

Environmental, Social, Governance (ESG) Criteria – A set of standards for a company's operations that socially conscious investors use to screen potential investments.

Price-to-Earnings Ratio – used for valuing a company by measuring its current share price relative to its earnings per share.

Risk-Adjusted Return – accounts for the riskiness of an investment compared to the risk-free rate of return.

Socially Responsible Investing (SRI) – An investment considered socially responsible due to the nature of the business. The investment can be made through companies or through socially conscious mutual funds or exchange traded funds.

Standard Deviation – A statistic measuring the dispersion of a dataset relative to its mean.

Systematic Risk – the risk that is inherent to the entire market rather than a particular stock or industry sector; also known as market risk.

Tail Risk – is portfolio risk that arises when the possibility that an investment will move than three standard deviations from the mean is greater than what is shown by a normal distribution.

Tracking Error – the difference between the performance of a stock or mutual fund and its benchmark.

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[1] *Source: Investopedia "Socially Responsible Investing Vs. Sin Stocks" May 12, 2020 https://www.investopedia.com/articles/stocks/08/sri-versus-sin-stock.asp*

[2] *Source: Statista.com "Market size of the casino and online gambling industry worldwide from 2011 to 2020, with a forecast for 2021(in billion U.S. dollars)" Nov. 4, 2021 https://www.statista.com/statistics/1186231/casino-and-online-gambling-industry-market-size-global/*

[3] *Source: Businesswire.com "The Alcoholic-Beverages Global Market Report 2021: COVID 19 Impact and Recovery to 2030" Aug. 17, 2021 https://www.businesswire.com/news/home/20210817005734/en/Alcoholic-Beverages-Global-Market-Report-2021-COVID-19-Impacts-and-Forecasts-to-2030---ResearchAndMarkets.com*

[4] *Source: Research and Markets "Global Pharmaceuticals Market Report 2021: Market is Expected to Grow from $1228.45 Billion in 2020 to $1250.24 Billion in 2021 - Long-term Forecast to 2025 & 2030" March 31, 2021 https://www.globenewswire.com/en/news-release/2021/03/31/2202135/28124/en/Global-Pharmaceuticals-Market-Report-2021-Market-is-Expected-to-Grow-from-1228-45-Billion-in-2020-to-1250-24-Billion-in-2021-Long-term-Forecast-to-2025-2030.html*

[5] *Source: Investopedia.com "Sin Stock" June 26, 2020 https://www.investopedia.com/terms/s/sinfulstock.asp*

[6] *Sources: Investopedia.com "Add Some Sin To Your Portfolio With This ETF," June 25, 2019 https://www.investopedia.com/stock-analysis/cotd/082214/add-some-sin-your-portfolio-etf-bjx-stz-pm.aspx; The Journal of Investing "The Underpricing of Sin Stocks," June 2020 https://joi.pm-research.com/content/early/2020/04/15/joi.2020.1.126#:~:text=A%20popular%20explanation%20for%20the,2008).*

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[8] *Source: Nasdaq.com "7 Sin Stocks to Buy as the World Goes to Hell in a Handbasket," Oct. 4, 2021 https://www.nasdaq.com/articles/7-sin-stocks-to-buy-as-the-world-goes-to-hell-in-a-handbasket-2021-10-04*

[9] *Source: The Journal of Investing "Is It Good to Sin When Times Are Bad? An Investigation of the Defensive Nature of Sin Stocks" by Greg M. Richey October 2020 https://joi.pm-research.com/content/29/6/43*

[10] *Source: Nasdaq.com "7 Sin Stocks to Buy as the World Goes to Hell in a Handbasket," Oct. 4, 2021 https://www.nasdaq.com/articles/7-sin-stocks-to-buy-as-the-world-goes-to-hell-in-a-handbasket-2021-10-04*

[11] *Source: The Journal of Investing "Is It Good to Sin When Times Are Bad?* An Investigation of the Defensive Nature of Sin Stocks*" by Greg M. Richey October 2020 https://joi.pm-research.com/content/29/6/43*

[12] *Source: Alpha Architect "The Benefits of Sin Stocks" July 29, 2021 https://alphaarchitect.com/2021/07/29/the-benefits-of-sin-stocks/#:~:text=As%20the%20shunned%2Dstock%20hypothesis,risk%20of%20investing%20in%20equities.*

[13] *Sources: Hong, Harrison & Kacperczyk, Marcin, 2009. "The price of sin: The effects of social norms on markets," Journal of Financial Economics, Elsevier, vol. 93(1), pages 15-36, July; Richey, Greg M., Fewer Reasons to Sin: A Five-Factor Investigation of Vice Stocks (January 18, 2017). Available at SSRN: https://ssrn.com/abstract=2901795 or http://dx.doi.org/10.2139/ssrn.2901795; The Journal of Portfolio Management Fall 2017 "Sin Stocks Revisited: Resolving the Sin Stock Anomaly" by David Blitz and Frank Fabozzi https://jpm.pm-research.com/content/44/1/105; The Journal of Investing "The Underpricing of Sin Stocks," June 2020 https://joi.pm-research.com/content/early/2020/04/15/joi.2020.1.126#:~:text=A%20popular%20explanation%20for%20the,2008).*

[14] *Source: Alpha Architect "The Benefits of Sin Stocks" July 29, 2021 https://alphaarchitect.com/2021/07/29/the-benefits-of-sin-stocks/#:~:text=As%20the%20shunned%2Dstock%20hypothesis,risk%20of%20investing%20in%20equities.*

[15] *Source: Journal of Sustainable Finance & Investment "Does excluding sin stocks cost performance?" by David Blitz and Lauren Swinkels Sept. 3, 2021 https://www.tandfonline.com/doi/full/10.1080/20430795.2021.1972789?scroll=top&needAccess=true*

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[17] *Source: Investopedia.com https://www.investopedia.com/terms/s/sri.asp*

[18] *Source: Investopedia "Socially Responsible Investing Vs. Sin Stocks" May 12, 2020 https://www.investopedia.com/articles/stocks/08/sri-versus-sin-stock.asp*

[19] *Source: Investopedia.com https://www.investopedia.com/terms/s/sri.asp*

[20] *Sources: Wikipedia.com; Investopedia.com*