A decorative graphic consisting of four vertical bars stacked on top of each other. Each bar is divided into two sections: a teal top section and a purple bottom section. The bars are set against a dark blue background that transitions into a red background at the bottom.

# An Introduction to Short Selling

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# Table of contents

01

Executive  
Summary

02

The Mechanics

04

The Uses of  
Short Selling

05

Short Selling Bans:  
The Evidence

07

The Decline of  
Short Selling Bans

08

Additional  
Resources

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# Executive Summary

For a practice that dates to the first days of stock markets, short selling retains its ability to attract controversy. The goals and effects of short selling are often misunderstood, and when the markets enter a downturn many are quick to call for short selling to be banned. While such bans are unfortunate, they have left us with a wealth of data on the effects of short selling, and how it contributes to the proper functioning of markets. This paper analyses the common objections to short selling, and uses the existing body of academic research to judge whether they are sound. The evidence supports the following conclusions:

- Short selling is typically used as a conservative investment technique to hedge against risk, at the cost of foregoing some returns.

- Evidence indicates that short selling bans have historically done little to nothing to prevent slides in asset prices.

- Banning short selling removes an important source of liquidity when markets are falling. Removing short selling in a falling market can thus remove an important safety net for asset prices.

- Short sellers provide the wider markets with crucial information. Removing this information source is particularly unhelpful when markets are falling, and investors need all the information they can get.

- Research indicates that regulators are beginning to realise that short selling bans are ineffective: the use of such bans is becoming steadily less common.



# The Mechanics

Simply described, **short selling is the act of borrowing an asset and selling it to a third party, with the intention of buying the asset back once its price has decreased.** The difference between the higher price at which the asset is initially sold and the lower price at which it is repurchased and returned to the lender—minus the fees paid to borrow the asset—represents the profit of the investor doing the short selling. Short selling is, as such, a way of generating profits from the price of an asset correcting downwards. The mechanisms involved in short selling, however, are more complex than they initially appear.

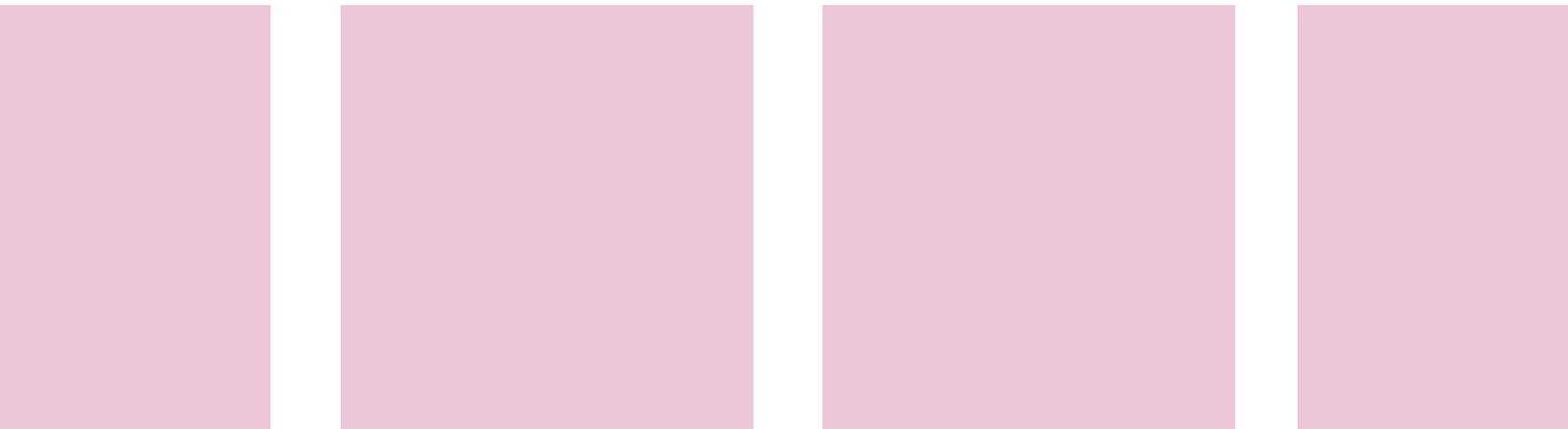
The process involves five principal parties. First, the *asset owner*. This is the party that actually owns the asset to be sold short, and from whom it is borrowed. Today asset owners tend to be large investment managers with long (as opposed to short) positions, which are also generally long-term in nature. Such investment managers—often pension schemes, insurance companies, and the like—will operate asset lending divisions, tasked with lending their assets and thus generating additional returns. For instance, rather than simply holding an equity and waiting for its value to increase, an asset owner may choose to loan that equity out, thus generating interest on it in addition to any increase in value it may experience. Without asset owners willing to lend their assets short selling would not be possible.

Second, the *short seller* itself. Under most regulatory regimes, short selling can only be performed by specific forms of investment managers. Short selling, for reasons explained

below, is generally seen as too complex for the general investing public (commonly referred to as ‘retail’ investors). Rather, its use is limited to those investment managers who work for ‘professional’ investors. Short selling is often synonymous with hedge fund managers—more on which later.

Third, there is the *prime broker*. This party acts on behalf of the short seller, locating the assets to be sold short for them and providing them with a margin account. Per regulation in the United States of America, for instance, short selling positions must be held through margin accounts, which must hold capital to the sum of at least 150% of the value of the initial transaction (i.e., if one wanted to take a short position of \$10,000 in value, one would need \$15,000 in their margin account). Margin accounts are also subject to ‘maintenance margins,’ in which the investment manager must maintain a certain percentage of the value of their position with the margin account as collateral.

Fourth, the *underlying entity* to which the asset being shorted is attached. This party, often a company that has issued the equity or bond being sold short, plays a passive role in the process, but is nonetheless important. As a general rule, companies do not enjoy having their equity or bonds sold short. Obviously, being sold short tends not to be seen as a vote of confidence in one’s company. Short selling an asset also increases the supply thereof, as the asset is put back in the market after being held by the asset owner, and thus decreases its price (all else being equal). Short selling’s effects on liquidity are very important, and are discussed at greater length below.



Finally, there is the *asset buyer*—the party that actually buys the asset being sold short. Selling short the equity of a company offers a good example of the typical way short selling works. To begin with, the underlying entity, in this case a company, issues a round of equity, a portion of which is bought by the asset owner. The short seller, after reaching the conclusion that the price of the company's equity will decrease, decides to sell short \$10,000 worth of that equity. The short seller contacts its prime broker, who arranges for an asset owner to lend that amount of equity. The equity is then sold to the asset buyer, generating \$10,000 in revenue for the short seller.<sup>1</sup> The short seller then waits, say, six months, after which the equity has lost 50% of its value. The short seller then purchases \$5,000 worth of the equity it sold short, before returning it to the asset owner. Assuming the short seller had to pay a monthly fee of \$100 to borrow the equity, their total profit after closing the position would be \$4,400.

Short selling is not, however, without its risks. First, the price of the asset being sold short could simply not lose value as quickly as the short seller hoped. Since holding a short position comes with a cost, the short seller cannot hold their position indefinitely. Second, there is the risk that the asset increases in price. This would have several effects. As the price of the asset increased, so too would the necessary maintenance margin, mentioned above. In order to

keep their position the short seller would need to increase their maintenance margin. Such 'margin calls' are one possible cause of 'short squeezes,' in which short sellers are compelled to cover their positions by buying back the asset they have been shorting, generating demand for it and thus further increasing its price. Short squeezes can also occur when the asset owner decides to recall the asset, something that becomes more likely as its price increases. Finally, there is the risk that the price of the asset simply never stops increasing. In a traditional long position you can only lose as much money as you invest in the first place. In a short position the theoretical losses are infinite, as there is no practical limit to an asset's price.

# The Uses of Short Selling

The most widespread use of **short selling is to mitigate losses, sacrificing potential returns in order to do so.** The risk-mitigating (or ‘hedging’) potential of short selling was pioneered by Alfred Winslow Jones in the 1950s. By combining long positions and short positions, Jones realised that he could limit the risk to his portfolio. His fund was thus ‘hedged’ against risk, and the first hedge fund was born. By hedging, hedge fund managers can choose the risk they take: they can ensure that the major risks to their portfolios are idiosyncratic, rather than driven by the general movement of the markets. For instance, in a long-biased hedged portfolio, an investment manager may allocate 60% of its capital to long positions, and 40% to short positions. Their total market exposure is thus only 20% of their capital. In a downturn, an investment manager will suffer losses on their long positions. However, they will generate positive returns on their short positions, thus mitigating their losses.

There is, however, a trade-off. When markets are doing well, the short positions an investment manager establishes will generate losses that offset the gains their long positions generate. As such, a hedge portfolio will not capture the entirety of a market upswing. Conceptually, passive short selling can be compared to the act of purchasing insurance. Investment managers will ‘pay’ during good times by way of not generating the returns they could with a portfolio that was not hedged. This insurance will, however, ‘pay out’ when markets correct downwards, as the short positions an investment manager has been paying for in good times will limit its losses when markets turn sour. **Just like the act of purchasing insurance, passive short selling is literally a conservative act: it is designed to conserve capital.**<sup>ii</sup>

Ironically, the moments at which short selling is most essential to protecting the capital of investors also tend to be the moments during which calls for short selling to be banned are the loudest. This is often due to a misunderstanding of the uses of short selling: spectators seem to be under the impression that investment managers are using short selling to profit from downturns, when in actual fact they are generally using short selling as a shield to protect their existing capital.

Short sellers can also generate returns by identifying assets they feel are overvalued. Such investment managers tend to have concentrated portfolios, as this investment technique is difficult and highly research-intensive. The typical active short selling scenario may proceed as such: an investment manager, after extensive research, comes to the conclusion that a certain company’s equity is overvalued, perhaps because its earnings forecasts are overly optimistic, or its corporate governance is subpar.<sup>iii</sup> The investment manager will then take a concentrated short position in that company’s equity, and either publicise its findings—to be judged by the broader markets—or hold until the price of the company’s equity corrects downwards (perhaps when its earnings do not meet its projections).

# Short Selling Bans: The Evidence

## Short selling bans do not help prevent slides in equity prices

Perhaps the most common argument for banning short selling is that doing so can help prevent collapses in the price of equities. This is premised on the notion that short selling depresses prices. There are two alleged mechanisms behind this process. First, the act of publicly selling a company's equity short can be read by the markets as a signal that said company is overvalued, triggering a downward correction in the price of that company's equity (we will return to this phenomenon). The second mechanism is slightly more complex. As detailed above, when a stock is sold short it is borrowed from its owner in order to be sold. This means that the market supply of that stock will increase, as rather than sitting in the asset owner's portfolio it is being sold on the markets. All else being equal, an increase in supply will lead to a decline in an asset's price. As such, the argument goes that during a downturn short sellers accelerate the downwards trend, as they send 'sell signals' to other market positions, while simultaneously flooding the markets with assets, further depressing their prices. This, the argument goes, creates a vicious cycle, in which equity prices are driven ever further downwards—a 'pro-cyclical' phenomenon.

The problem with this argument is that it is simply not supported by the evidence. **There is a large body evidence from previous short selling bans that shows that the effect of short selling are marginal, to the point of barely being quantifiable.**<sup>iv</sup> Stock prices are already declining during a downturn—that is what makes

it a downturn. Short sellers are simply too small a group to add more than a drop to the flood that is a market correction: price declines are primarily driven by long-only investors selling their holdings.<sup>v</sup> Ironically, such selling has roughly the same effects as those attributed to short selling. When a prominent long-only investment manager sells its holdings in a company it is sending a 'sell' signal to the market while trying, just like the passive short seller, to limit its losses. Few call for the banning of all sales during a downturn, as this is quite rightly seen as unduly burdensome; observers realise that it is unreasonable to prevent investors from trying to protect their capital (which in many cases could mean their retirements). The available academic research suggests that this recognition should be extended to short selling.

## Short selling bans curtail liquidity

As detailed above, part of the criticism of short selling is that it increases supply, and thus depresses prices. This, however, is only part of the story, as short sellers also need to 'cover' their positions by buying the stocks they are selling short back. When short sellers believe a stock has reached its nadir, or if they have simply generated the protection they sought, they need to close their position out. This means that short sellers are often some of the very few market actors who are actually *buying* during particularly difficult moments. In other words, they are providing demand for stocks at the very moment when that demand is, by definition, at its weakest.

As such, rather than simply drive prices down, **short sellers provide a floor for the markets in the worst of times.** Indeed, research has found that short selling bans hamper liquidity, as short sellers are no longer available to buy troubled assets.<sup>vi</sup> Numerous commentators and regulators have noted the important role short sellers play in providing liquidity.<sup>vii</sup> Rather than help sustain prices, short selling bans may thus inadvertently act to remove this final safety net.

### Short selling bans deprive investors of crucial information

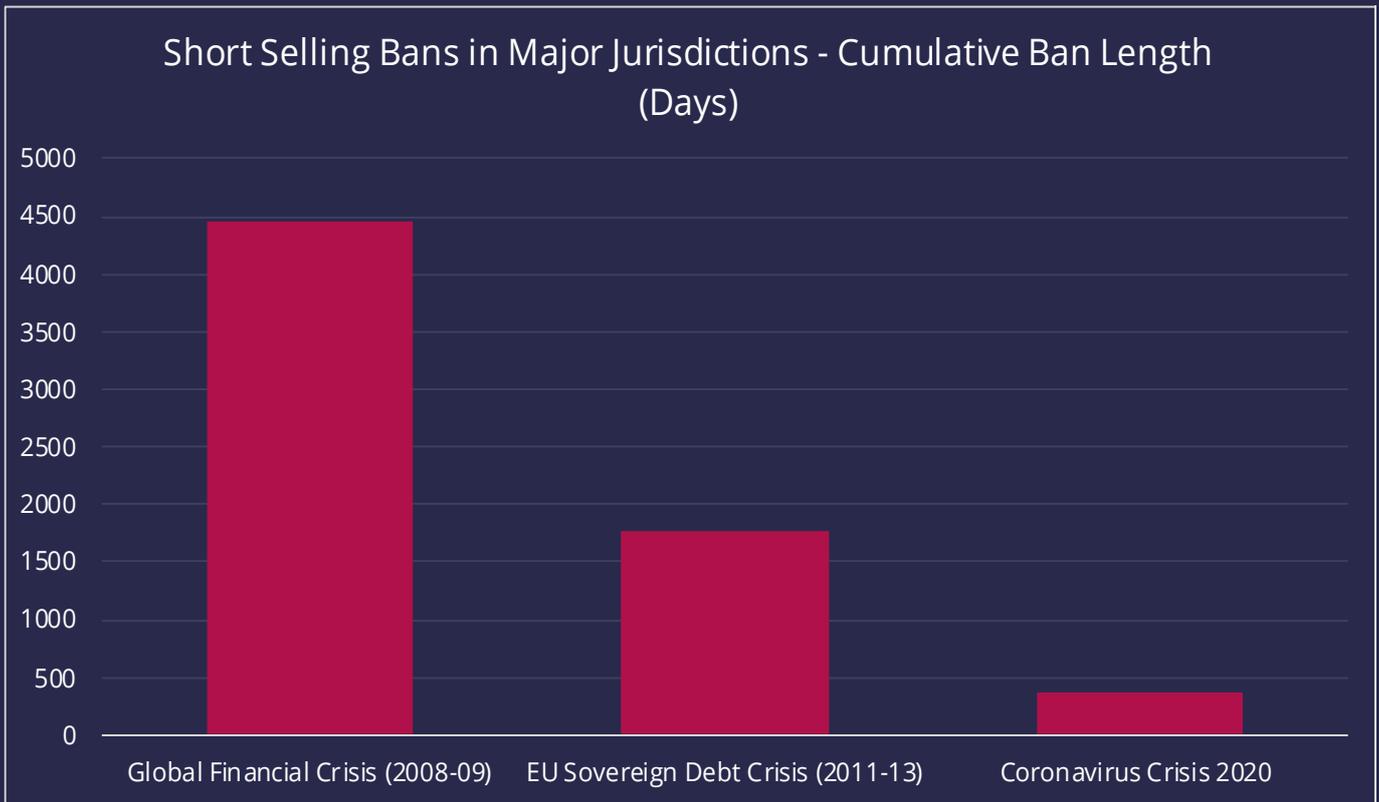
As mentioned above, one of the rationales for short selling bans is that short sellers provide signals to the market through the mere act of selling a stock short. While this is often portrayed as a negative, it is actually essential to the proper functioning of markets. **Short sellers, and particularly active short sellers, play an essential role in price formation and market information.**

Put simply, short sellers have an incentive to discover the flaws in a company; an incentive that long-only managers do not possess to the same degree. This is not to malign long-only managers, or imply that they overlook the problems in the companies in which they invest—they do not. They simply have, by their nature, less of an incentive to spend their resources searching for such flaws. While a podiatrist has taken the Hippocratic Oath,

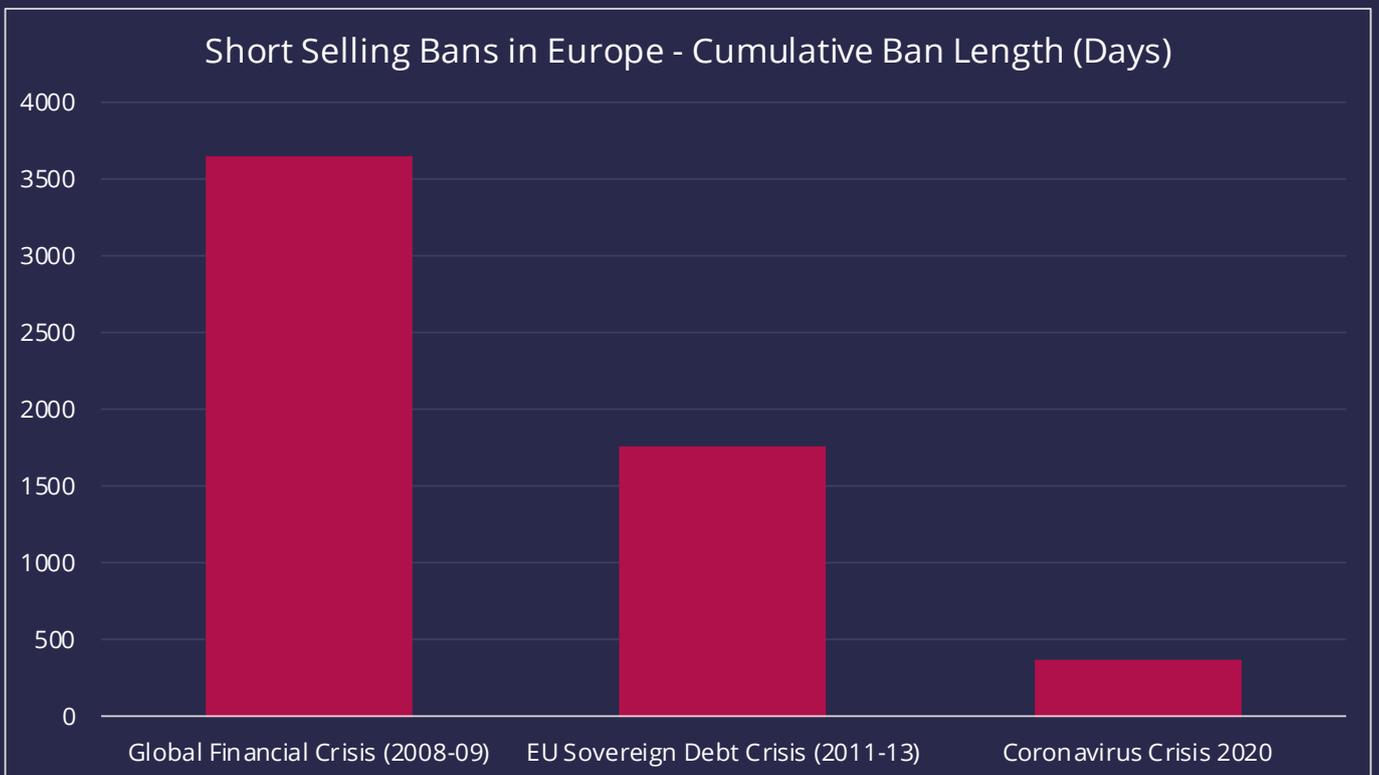
she is unlikely to take note of your blood pressure, as she is concentrated on other things. So it can be with long-only managers. Short sellers thus provide essential information to the markets, without which they could not properly function.<sup>viii</sup> By selling companies short, and sending signals about doing so, short sellers actually protect other investors, who would otherwise invest in those companies (indeed, active short selling only makes sense if the markets are in need of such signals).<sup>ix</sup>

Banning short selling thus removes a crucial source of information for investors, often exactly at the moment they need it most.<sup>x</sup> **During a downturn, investors urgently need information about the health of the companies in which they invest, or in which they plan to invest.** Short sellers are perfectly positioned to provide such information; bans prevent them from doing so.

# The Decline of Short Selling Bans



Cumulative number of days short selling bans effective in Australia, Austria, Belgium, Canada, Denmark, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Portugal, South Korea, Spain, Switzerland, Taiwan, UK, and the USA during the years 2008-09, 2011-13, and 2020. See: Beber, Alessandro, et al., "Short-Selling Bans and Bank Stability," European Systemic Risk Board Working Paper 64, January 2018. <https://bit.ly/2xPXlhj>



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<sup>i</sup> In general the short seller never actually holds the asset being sold short themselves: the asset is lent, sold, and repurchased by their prime broker.

<sup>ii</sup> Short selling is not the only means by which to create a 'short position' for the purposes of hedging against risk. Many short positions are 'synthetic,' which is to say created through the use of derivatives such as options or futures. Such derivatives play important roles in the functioning of the wider markets—particularly when it comes to liquidity and volatility. The use and effects of synthetic short positions are, however, beyond the scope of this paper.

<sup>iii</sup> At the extreme end, active short sellers have been known to discover examples of grave corporate malfeasance.

<sup>iv</sup> Aromi, Daniel, and Cecilia Caglio, "Analysis of Short Selling Activity during the First Weeks of September 2008," *SEC Office of Economic Analysis*, December 2008.

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Bris, Arturo, et al. "Efficiency and the Bear: Short Sales and Markets around the World," *The Journal of Finance* 62, issue 3, June 2007. <https://bit.ly/2x68jEY>

<sup>v</sup> The assets under management of the entire hedge fund industry are estimated at between \$2.5-3.5 trillion dollars American. Even using a deliberately generous estimate of the prevalence of short selling—40% of total hedge fund capital—this would equate to \$1-1.4 trillion dollars of short positions, a fraction of the assets managed by some long-only managers *individually*.

<sup>vi</sup> Battalio et al. "Market Declines: Is Banning Short Selling the Solution?"

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<sup>vii</sup> MGavin, Katherine, "Short Selling in a Financial Crisis: The Regulation of Short Sales in the United Kingdom and the United States," *Northwestern Journal of International Law and Business* 30, issue 201, 2010. <https://bit.ly/2XcqBz0>

Technical Committee of the International Organisation of Securities Commissioners, "Regulation of Short Selling: Final Report," IOSCO, June 2009. <https://bit.ly/39Oe0EM>

<sup>viii</sup> Beber and Pagano, "Short-Selling Bans Around the World."

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<sup>ix</sup> Kelley, Eric and Paul Tetlock, "Retail Short Selling and Stock Prices," *Columbia Business School Research* 13, issue 70, August 2016. <https://bit.ly/3aPZtd4>

<sup>x</sup> Grima, Simon, and Stephen Sammut, "A Study on the Impact of the Short Selling Ban on FIBS," *International Journal of Economics and Business Administration* 5, issue 1, 2017.

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#### Disclaimer

The contents of this primer are not intended as legal advice. Due to this dynamism of this field the meaning of some key concepts may change over time.

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