Deutsche Bank Research

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Short selling

Important business in need of globally consistent rules

- **Short selling: Short selling is a valuable complement to conventional financial market instruments.**
- **Benefits: More efficient price discovery, greater liquidity, better risk management and hedging for professional investors and companies.**
- **Risks: Short selling is associated with a number of potential risks, none of which, however, are specific to that market practice.**
- **Optimal regulation: Disclosure to regulators can contribute to market transparency and stability. Market rules can be beneficial if carefully defined, generally applicable, and aimed at greater financial stability. General limitations on short selling will do more harm than good.**
- **Global consistency: Current regulatory proposals differ widely across the major financial centres. More coordination is needed. US and EU should do their utmost to arrive at an equivalent regulatory framework.**

Short selling – a debatable market practice?

Short selling is generally understood to be the market practice of selling a financial instrument that the seller does not own at the time of the transaction. A covered short sale typically involves two steps:

- **Sale of borrowed securities:** As a first step, the seller – anticipating falling prices – borrows a certain security from a security broker at a lending fee and sells it on to a market participant at the market price in the initial period.
- **Returning the securities borrowed:** As a second step, the seller has to be able to return the borrowed securities to the broker at the time they are due or when the lender recalls them. To do so, he buys the relevant number of securities at the market price in the second period and returns them to the broker.

The key rationale of short selling transactions lies in the expectation of falling prices and the decision of the short seller to try to benefit from the expected price development:

- **Falling prices**: If the price of the security has fallen between the first and the second step – as assumed by the borrower – then the short selling transaction turns a profit, leaving the short seller with net earnings equal to the price at the time of short selling the securities minus the price of the securities when covering his short position minus the fees he paid for borrowing the securities in the meantime.
- **Risk profile:** The maximum profit a short seller can achieve from a short transaction is equal to the value of the asset sold short minus fees. In the extreme event of the market price of the asset falling to zero, the short seller can theoretically cover his transaction at zero cost, leaving him with the initial revenue from selling the asset minus the lending fees. The potential loss that the short seller risks, however, can be infinite. In case the market price of the asset sold short rises against the short seller's expectations, the costs of covering his short position rise in line, theoretically without limit. However, losses are usually contained as, in the event of rising prices, the short seller will

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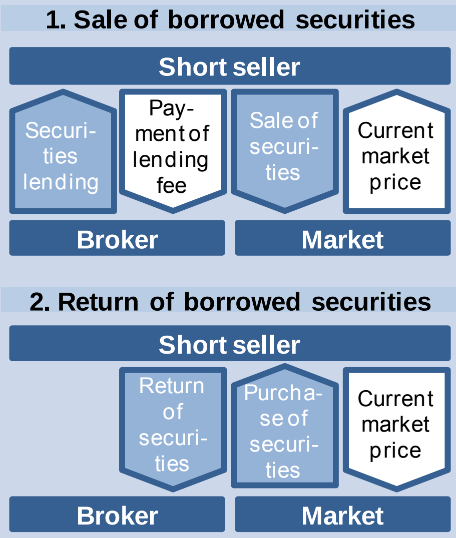
Short selling structure



Short squeeze

A short squeeze is a situation where the market price of an asset rises sharply as demand for the asset drastically exceeds its supply on the market, especially as a result of intense short sale covering. While short sellers expect market prices of an asset to fall, an actual increase in the price puts the short seller under pressure to cover their short position so as to minimise the loss on their short contracts. Also, short sellers may receive margin calls by their brokers. As short sellers seek to cover their positions they need to buy the underlying asset which causes its price to rise even further. This, in turn, may result in further waves of margin calls, asset purchases, and price rises.

The risk of short squeezes rises with

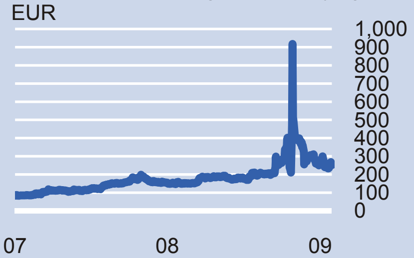
— increasing levels of short interest in an asset

— falling levels of market liquidity in the asset.

One of the most notable instances of a short squeeze occurred in October 2008 when the rush of short sellers to cover their positions led to a quintupling of the share price of German car manufacturer Volkswagen AG within two consecutive trading days. The rise in the share price illustrates the drastic impact short squeezes can have on market prices.

Volkswagen short squeeze

Share price Volkswagen AG, daily figures, EUR



Source: Bloomberg

be asked by the contracted broker to either cover his position by buying the shorted asset, or to provide additional cash in order to meet the margin requirement for the security. The market risk is particularly high in case of a short squeeze (see box).

In practice, this basic structure is applied in a variety of forms. Short positions can therefore have comparatively complex structures:

— **Naked short selling:** In contrast to conventional, covered short selling the seller can also choose to sell an asset short without borrowing the asset or making provisions to borrow it. In this case – naked short selling – the seller sells the promise to deliver an asset rather than selling the asset itself. The short seller's promise is termed hypothecated share. If the seller fails to deliver on this promise and does not locate the underlying security, the contract fails and the transaction has to be unwound.

— **Range of asset classes:** Short selling can, in principle, be conducted with all categories of financial assets. In practice, most short selling tactics are applied to equities, but short strategies are also applied to currencies, commodities or bonds.

— **Range of financial instruments:** Short positions can be obtained by using a wide range of tactics and financial instruments. Apart from short selling of cash instruments, in particular stocks, a short position aimed at benefiting from falling prices can also be based on derivative contracts, including options, futures, and other synthetic positions. Typical short positions based on derivate contracts include short futures and put options.

Given the complexity of transactions and the risk profile of short positions, short selling is a market practice almost exclusively pursued by professional market participants, namely institutional investors, investment banks, and other experienced securities traders. Even though market evidence is scarce, it is understood that retail investors generally are not directly involved in such transactions and have very limited access to such market practices.

The practical relevance of short selling

Given the risk profile of short selling strategies – i.e. the expectation of revenues from falling asset prices, limited profits, and virtually unlimited risks of loss – short selling is usually not pursued as an investment, but rather as a hedging instrument. Two motivations can be discerned:

— **Hedging of an existing exposure:** An investor owns an asset whose market price he expects to fall, and he decides to hedge against that risk. Examples include: (i) A strategic equity stake in a company which the investors wishes to hold on to despite the expected loss in market value. (ii) Equity or other securities positions held by institutional investors – such as insurance or fund companies – which hold the assets as part of a defined portfolio, and may not be in a position to sell securities as portfolio strategies or compliance with regulatory portfolio allocation rules may discourage such disinvestments at short notice. (iii) Producers of agricultural products or commodities find it useful to offset, partially or wholly, expected losses from falling prices in their businesses. In all three examples, short selling can be an important and economically sensible

The scale of short selling

The extent to which short selling actually takes place in every-day practice has not been verified as no reliable data on overall market activity is available. Evidence from major trading venues, such as the New York Stock Exchange, suggests, however, that the volume of short selling expanded dramatically in the 1980s and 1990, as shown by the historical figures for short interest, i.e. the number of shares sold short outstanding at the end of a given period, as well as the number of shares sold short over a certain period.

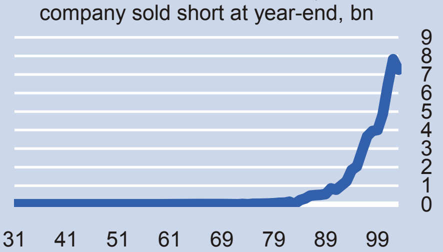
In terms of the percentage of outstanding stock shorted by market participants – the short interest quota – the share typically ranges between 0% and 10%, with substantially higher shares being observed in volatile market conditions.

In liquid markets, these positions can easily be covered. When the volume of shorting activity in an asset rises or trading in the underlying asset declines, however, locating the shorted assets becomes more costly and may lead to stronger price movements in the underlying assets. The buying pressure measured in days-to-cover, i.e. the ratio of the number of shorted shares in a given asset to the volume of daily trading in that asset, increases. This, among other things, indicates the likelihood of short squeezes. Typically, the measure of days it takes to cover all outstanding short positions in an asset is below ten, but, again, may rise significantly in tight market conditions.

The rise of short selling

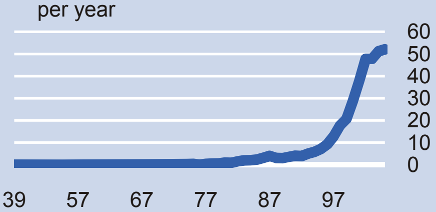
1. Short interest

Short selling at the NYSE, as measured by short interest, i.e. the number of shares of a publicly listed company sold short at year-end, bn



2. Number of shares sold short

Short selling at the NYSE, as measured by number of shares sold short, bn shares per year



Source: NYSE

instrument for compensating potential losses from asset price declines.

— **Benefiting from market trends:** Speculative motivations are the second objective for engaging short selling strategies. Investors expecting the price of an asset to decline may choose to benefit from their assessment by short selling an asset to a counterparty who expects the opposite market development and is ready to enter a transaction on the basis of that expectation.

The benefits of short selling and associated risks

Short selling, in principle, offers a number of advantages to market participants and the wider economy. These include faster price discovery in the market, greater liquidity, and enhanced opportunities in risk management (see box). All these effects are considered to add to the efficiency of financial markets.

Given the specific risk profile of the instruments and strategies applied, short selling has also given rise to concerns of the broader market risks they may entail. These include a disorderly sale of an asset, the use of short selling in conjunction with market abuse, as well as settlement disruptions at the time the asset is re-called (see box).

In the case of market abuse and settlement disruption, short selling either falls within the scope of existing rules on market and business conduct, or regulators have included it where this had not been the case. In practice, both aspects are generally considered to be covered by reasonable rules.

In contrast, the current political debate centres on the potential risks associated with market disorder. Short selling is believed to have been instrumental in the rapid fall of share prices during the financial crisis. In these market conditions, individual cases of short squeeze were also observed. In addition, naked credit default swaps (naked CDS) have been criticised as instruments speculative investors may use to benefit from falling prices, especially with a view to sovereign debt. As a result, regulators around the world are currently working on introducing rules on short selling, or reforming existing ones.

Regulatory responses to short selling

International: The political debate on whether and how to deal with short selling is shaped at the international level by four principles developed by IOSCO, the global organisation of securities regulators. The principles stipulate (i) appropriate controls to address the risks to an orderly and efficient functioning of markets and to financial stability, (ii) a reporting regime that provides timely data to markets and authorities, (iii) effective compliance and enforcement systems, (iv) appropriate exceptions for certain types of transactions.

US: In the US, abusive naked short selling is prohibited, and a disclosure regime requires the reporting of short positions in stocks above 0.25% of total equity. Recently, the SEC added an alternative uptick rule, as a consequence of which short trading is limited for a stock which falls by 10% in one trading day (see table below).

EU: At the EU level, no restrictions on short selling are in force or currently planned. However, EU securities regulators (CESR) have proposed the introduction of a reporting requirement in which net short interests in a stock of 0.2% or higher should be reported to national supervisors, and from 0.5% be published. Market-making activities would be exempted.

	Disclosure requirements				Short selling restrictions		
	Threshold	Scope	Conditions	Public	Threshold	Restriction	Conditions
US	- 0.25% of outstanding. - >USD 1m fair value of short sale position.	- All 1934 SEA Section 13(f) securities (equity and equity derivatives other than options).	- Filing of Form SH at T+7 or earlier. - Disclosure of gross positions. - Reporting by institutional investment managers. - Legal basis: SEC Rule 10a-3T. - Other provisions: SROs require broker-dealers to report all short positions on bi-monthly basis.	- Regulatory disclosure only. - Positions reported to SROs are made public.	- 10% stock price decline or more in one day (circuit breaker).	- Following trigger of circuit breaker, short selling restricted.	- If triggered, short selling only permitted if price of security is above current national best bid (Alternative Uptick Rule). - Applied at T and T+1. - Legal basis: New Reg SHO Rule 201. - Other provisions: Abusive naked short selling prohibited (SEC Rule 10b-21).
HK	- All short selling transactions.	- All short selling transactions in Designated Securities.	- Disclosure of short selling transaction upon order. - Legal basis: HK SFC Securities and Futures Ordinance.	- Regulatory disclosure only.	- All short selling transactions.	- Unless exempted, naked short selling is prohibited. - Covered short selling is limited to transactions in Designated Securities (currently 519).	- Seller must identify order as short selling order and document that sale is covered. - All short sales subject to tick rule: Short sales be made at prices not below the best current ask price. - Exceptions to tick rule: Exempted ETFs (currently 51).
SG	- No disclosure requirements in force.				- All short selling transactions.	- Partially restricted short selling. - Naked short-selling: Penalties for failed trades 5% of value of trade, with a minimum penalty of SGD 1,000.	- Buying-in market: Short selling is banned. Penalty for failure to deliver shares in that market is a maximum of SGD 50,000 plus prohibition on future buying-in activity.
JP	- 0.25% or more of outstanding issued stock.	- All equity and equity derivative short selling transactions.	- Traders: Requirement to verify and flag whether or not a transaction is short selling. - Exchanges: Daily announcements on aggregate price of short selling regarding all securities.	- All short sale positions of 0.25% of outstanding issued stock.	- All short selling transactions.	- Uptick rule: Short selling at prices no higher than the latest market price prohibited. - Naked short selling: Prohibited.	
EU (CESR draft, not in force)	- 0.2% regulatory disclosure. - 0.5% public disclosure. - 0.1% intervals.	- All net short positions creating economic exposure to shares.	- All shares traded and primarily listed in EEA. - Net positions creating economic exposure. - Reporting at or before T+1. - Market makers exempted.	- From 0.5% onwards at 0.1% intervals.	- No EU-wide short selling restrictions. CESR continues to consider whether further measures for the regulation of short selling, beyond disclosure, are required.		
DE	- No disclosure requirements in force. New rules have been announced and will enter into force on March 25, 2010.				- No restrictions in force. Drafting of rules outlawing naked short selling announced.		
FR	- Net position 0.25% or higher of security outstanding.	- Equity securities issued by credit institutions and insurance companies.	- Investor reports eligible positions to regulator (AMF). - Exemptions: Market makers, liquidity providers, counterparties for block trades in equities. - Legal basis: AMF.	- Short sale positions are reported publicly.	- No restrictions in force.		
UK	- 0.25% of issued share capital and each 0.1% thereafter.	- All disclosable net short positions.	- No later than 15:30GMT on T+1. - Legal basis: FSA Short Selling Instrument.		- No restrictions in force.		

Source: National authorities, DB Research

Benefits of short selling

— Efficient price discovery: Market participants expecting the price of an asset to fall and sell the asset as a consequence contribute important information to the market – irrespective of whether they owned the asset in the first place. They are likely to be among the first to realise and signal that an asset is overvalued or even in bubble mode. As a result, short sellers are important contributors to the process of price discovery in the market and of identifying fundamentally unjustified price developments.

— Higher market liquidity: Short sellers contribute to the liquidity of markets, and therefore to their efficient functioning. As counterparts to market participants willing to buy an asset – irrespective of whether the seller actually owns that asset or not – they facilitate trading transactions that otherwise may not materialise. The same applies to the point when a short seller covers his transaction and enters the market as a buyer.

— Better hedging and risk management: Short selling enables market participants to manage exposure to certain assets that they own, but which they are not in a position to sell when they expect prices to fall. Short selling helps these investors to mitigate the related risks and smoothen their cash flows.

Possible risks of short selling

— **Market disorder:** Recognising the immense benefit or short selling as a facilitator of re-pricing over-valued securities, regulators are concerned that the re-pricing itself may be disorderly, i.e. result in a rush, and that the outcome of the price decline may be an overshoot. None of these two risks, it is recognised, are specific to short selling and are well known in cash markets.

— **Market abuse:** Regulators are concerned that short selling may be used in conjunction with abusive market activities, e.g. insider dealing. Again, this is not a generic risk, but short selling instrumentalised for market abuse may amplify its market effects.

— **Settlement disruption:** Short selling can be disrupted if the seller fails to deliver the borrowed assets, and in case market liquidity dries out and aggravates the location of assets.

DE: Germany's BaFin responded to the CESR recommendations by requiring reports of net short positions at the CESR trigger values for ten major financial institutions starting March 25, 2010. In parallel, the Federal Government has announced it will prepare a domestic ban of naked short selling and promote the prohibition of short CDSs at international level.

UK: The UK has no restrictions in force, but the FSA requires reports of net short interests in a stock from 0.25%.

Other jurisdictions: Many jurisdictions, including Hong Kong and Singapore, limit naked short selling. Some authorities apply uptick rules that limit short selling in shares that have fallen beyond a certain limit in one trading day. Most countries maintain reporting requirements for short interests above around 0.2%.

Regulating short selling: The economist's view

In principle: There is nothing wrong with short selling. Short selling can provide markets with important information on pricing, facilitate the management and hedging of risks in many firms around the world, and provide financial markets with liquidity. In other words, short selling promotes the efficiency of functioning markets.

Selling an asset that you do not own certainly sounds counterintuitive, but it needs to be kept in mind that the asset needs to be re-purchased at some point – any short seller becomes a buyer. Also, for any short seller there is a buyer who expects prices to rise. And there is a lender who calls his shares when their value declines too rapidly.

Naked short selling: Naked short sellers can get into market disruptions when too many of them rush to the exit trying to cover their positions in an insufficiently liquid market. The effects on prices of such a situation can be significant.

Regulators should be aware, however, that the impact of short selling is only gradual. If market participants lose trust in an asset, they will always sell it, and modern technology allows them to do so very fast. Limiting naked short selling will therefore not prevent drastic price declines of troubled companies. They will occur anyway. What a ban of naked short selling does, however, is eliminating an important early warning indicator for mispriced assets and market bubbles.

Market abuse: Short selling can be used by market abusers just like any other financial instrument. Short selling should therefore be subject to the same strict regulatory provisions, as is generally the case already.

Short selling regulation: There are no principal objections against the disclosure of short selling to regulators or carefully defined, generally applicable rules for short-selling if aimed at greater financial stability and the prevention of market abuse, and provided that such rules do not discourage short selling as such.

CDS – shorting credit risk

Just like market risk can be shorted by selling equities for future delivery, credit risk may be shorted by buying credit protection. In this context, the term naked CDS (credit default swap) refers to the buying of CDS protection by someone who neither owns the underlying bond (naked in a wider sense) nor is otherwise exposed to the referenced borrower (naked in a narrow sense). CDSs are mainly used to hedge credit risk, thereby facilitating the efficient allocation of risk across institutions and markets. While hedging via CDSs is widely recognized as serving a useful economic purpose, naked CDSs have been criticised for potentially distorting markets. In the wake of Greece's fiscal problems, politicians and the media blame speculators in CDS markets for driving up sovereign bond spreads, thereby increasing Greece's financing costs. EU and US supervisors have launched investigations into CDS trading, and legislative initiatives to prohibit naked CDS buying have been initiated.

From an analytical point of view the merits of banning naked CDS remain unclear. First, it is difficult to distinguish between hedging and trading activities as holding a bond, extending a loan or being exposed to the reference entity via counterparty risk all qualify for having an insurable interest. Second, the shorting of credit risk brings additional liquidity to the market and helps to ensure the efficient processing of information. Third, with a ban of naked CDS, markets would be shallower and probably more vulnerable to manipulation. Finally, banning naked CDS will not prevent markets from reacting to adverse information. In the case of sovereigns, it remains pivotal to address the underlying fiscal problems, i.e. the causes rather than the symptoms.

For an overview of the market, see Weistroffer, Christian (2009). Credit default swaps – Heading towards a more stable system. Current Issues. DB Research. Frankfurt am Main.

EU approach: The disclosure regime proposed by CESR is reasonable, save for the requirement to disclose short positions from 0.5% to the public, which may raise issues including greater risk of herding. Confining the rule to disclosure to supervisors would suffice to meet the policy objectives. Going forward, the EU should make sure that an EU disclosure regime should be fully harmonised across the Union, and that any form of on-top restrictions in the member states, i.e. the so-called gold-plating of EU rules, should be avoided.

US approach: The new SEC alternative uptick rule – which comes on top of existing Form SH reporting – introduces limitations on market practices which weakens competitive position of US vis-à-vis major EU markets, but not compared to Hong Kong, Singapore or Japan where uptick rules are already in force.

International cooperation: Market participants are faced with an increasingly fragmented landscape of short-selling rules around the globe. This raises costs of compliance, complicates the assessment of market conditions as disclosure standards differ, and increases legal risks regarding failure to meet local standards.

Short-selling regulation is a further case in which the G20 spirit of close cooperation on regulatory responses to the crisis has got lost. Better coordination is desperately needed.

The US and the EU should do their utmost to arrive at an equivalent regulatory framework for short selling. Anything else will create competitive distortions and weaken the effectiveness of stability-oriented regulatory policy.