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# The short on shorting ETFs: The art of create to lend

Thought leadership by Kathryn M. Kaminski, PhD, and Valeri Sokolovski (Artikel in Englisch)

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Similar to stocks, Exchange Traded Funds (ETFs) or even more broadly Exchange Traded Products (ETPs) are portfolios of securities which are traded on an exchange. Since their introduction in 1993, the ETF market has ballooned to a size of over USD 5 trillion. Currently, close to 40 percent of all U.S. trading volume is in ETFs. The oldest and largest ETF, the SPDR S&P 500 ETF (also known as the "Spider"), has a colossal market size of USD 150 billion making it the most liquid and actively traded security in the world.

Although ETF growth has been strong in the U.S., the European ETF market is not far behind. Interest and growth in the European ETF market has exploded with roughly USD 400 billion invested. Despite its humble origins almost 20 years ago, ETFs have become a formidable asset class. Today's ETF market offers both breadth of options and depth in volumes to such a point that futures contracts are even offered on individual ETFs. The ability to sell short, a wide array of investment options, and the overall ease of use of ETFs is fuelling demand. Outside the larger highly liquid ETFs, more specialized and esoteric ETFs are emerging to fill this increasing demand.

**Short selling in ETFs**

Perhaps even more interesting, ETFs also provide a new avenue for taking short positions. Unlike individual stocks or securities, ETFs can be easily sold short and they have never been subject to the "uptick" rule. Short selling accounts for a non-negligible proportion of the ETF trading volume. For example, the average short interest for U.S. common stock is typically less than 2 percent, while short interest in ETFs is typically around 10 percent.

Unlike common stock, it is not unusual that short interest percentages of shares outstanding are over 100 percent.[1] ETF short sales are often made to reduce, offset, hedge, or manage risk. Highly liquid ETFs, such as the Spider (ticker SPY) or the Cubes (ticker QQQ) which tracks the NASDAQ 100, are in direct competition with index futures.

For the specific case of shorting ETFs, there are several unique features which may provide some incentive for their use in short selling. In most cases, management fees drag performance. For the case of shorting ETFs, management fees provide a tail wind. In addition, the short selling of ETFs provides a more cost effective avenue than short selling a group of individual stocks. The individual short sell of each security as a group can be more costly and time consuming.[2] Although somewhat counterintuitive, the number of shares outstanding for an ETF can be increased at a moment's notice. This makes short sellers of ETFs largely immune to supply constraints. Market Makers in ETFs can easily create additional shares exclusively for the purpose of lending them to short sellers. This process is often called a "create-to-lend".

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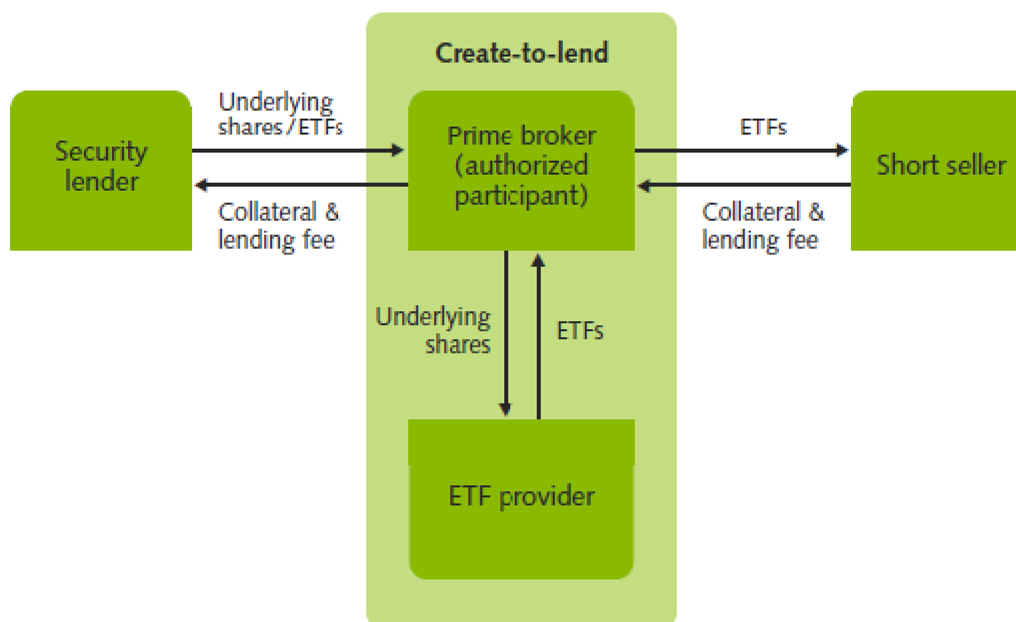
Figure 1 presents a diagram for the "create-to-lend" process. In standard short selling transactions, a short seller approaches a prime broker to borrow a security to short sell. The prime broker sources this security from a lender (such as an institutional investor) in exchange for collateral and a fee. The fee is passed onto the short seller. In the case of an ETF, the process is similar except that the actual ETF is somewhat more difficult to borrow (for example due to low institutional ownership). Instead, the prime broker can borrow the underlying securities and pass them onto the ETF provider. The ETF provider can create new ETF shares which can subsequently be given to the short seller.

Figure 1: A schematic for the "create-to-lend" process




On a daily basis, the number of ETF shares can change through the "creationredemption mechanism". By simply delivering a physical bundle of securities which corresponds to the underlying ETF portfolio to their broker, new ETF shares can be created. Similarly, by delivering ETF shares to a broker, ETF shares can be redeemed for an underlying portfolio of securities. Creation and redemption orders are at a minimum of 50,000 units. They must be placed at the end of trading day and they carry a small fixed cost per creation or redemption irrespective of the size of the transaction. The creation and redemption mechanism both increases liquidity and ensures that an ETF never deviates too far from its net asset value (NAV). Gastineau (2004) aptly states "the theoretical maximum size of the typical ETF, given this in-kind creation process, can be measured in hundreds of billions or even trillions of dollars of market value". This mechanism allows for ETF shares to be created for the sole purpose of facilitating short selling. "Create-to-lend" is a unique feature of exchange traded funds.

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Despite this, the “create-to-lend” process remains somewhat misunderstood. Put into more simple terms, if a prime broker is faced with a request to borrow ETF shares which are not readily available, the broker can dip into the pool of underlying securities and create new ETF shares. These shares are created and subsequently lent out to a short seller. Since ETF providers are often active participants in the securities lending markets, the availability of the underlying securities to borrow is seldom an issue. The creation-and-redemption process makes it possible to create shares for the sole purpose of short selling or create-to-lend. In a recent academic study, Karmaziene and Sokolovski (2014) uncover evidence of this behavior during the 2008 shorting ban for U.S. financial securities.

**Demonstrating create-to-lend: a case study of the U.S. financial ban of 2008**
On 18 September 2008, the U.S. Securities and Exchange Commission (SEC) temporarily banned short sales in 797 financial stocks. This ban was enacted on 18 September and subsequently lifted on 8 October. ETFs were, however, exempt from this particular ban. Karmaziene and Sokolovski (2014) show that a substantial portion of shorting volume moved to the most liquid SPY (Spider) ETF during the ban on short selling in financials. For this particular period, liquidity was a serious issue even for ETFs.

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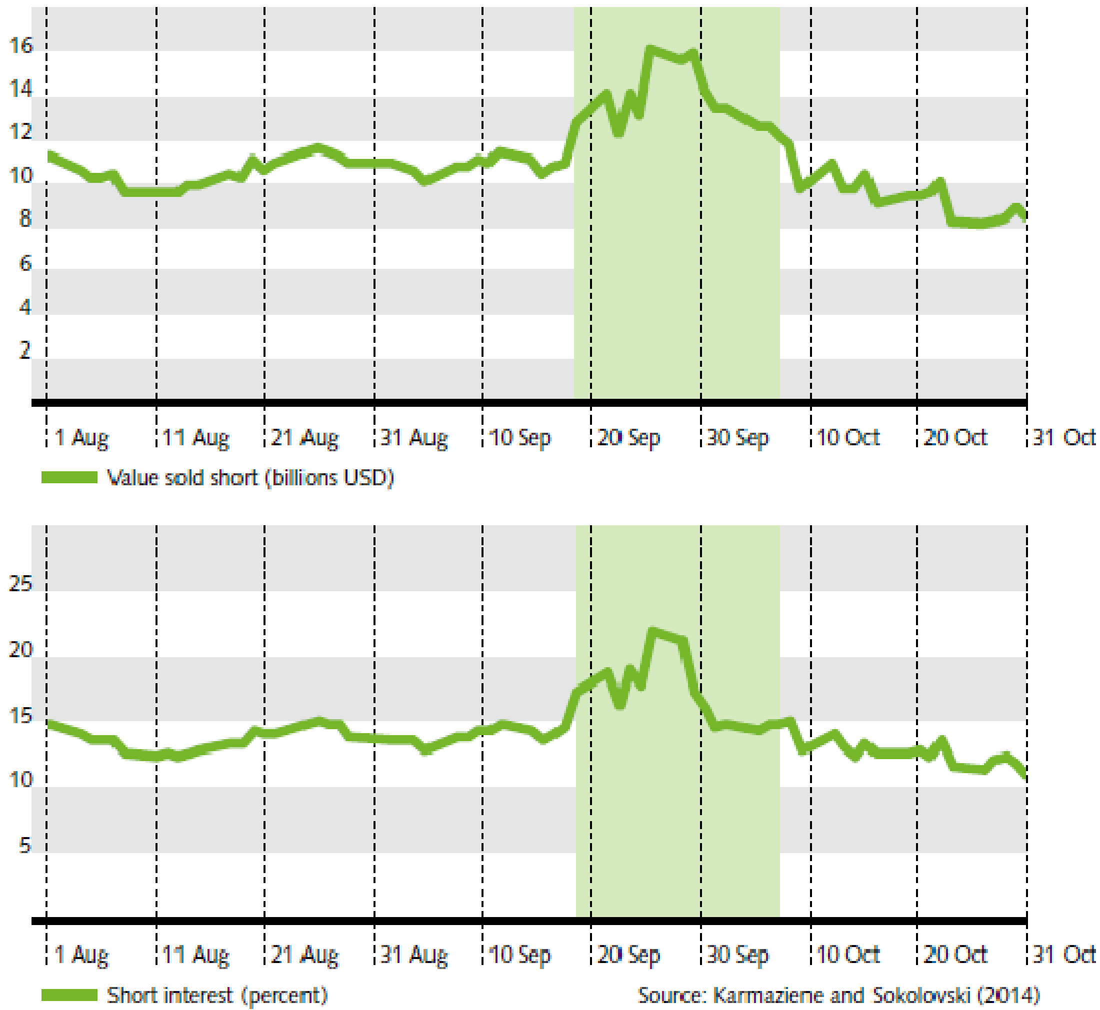
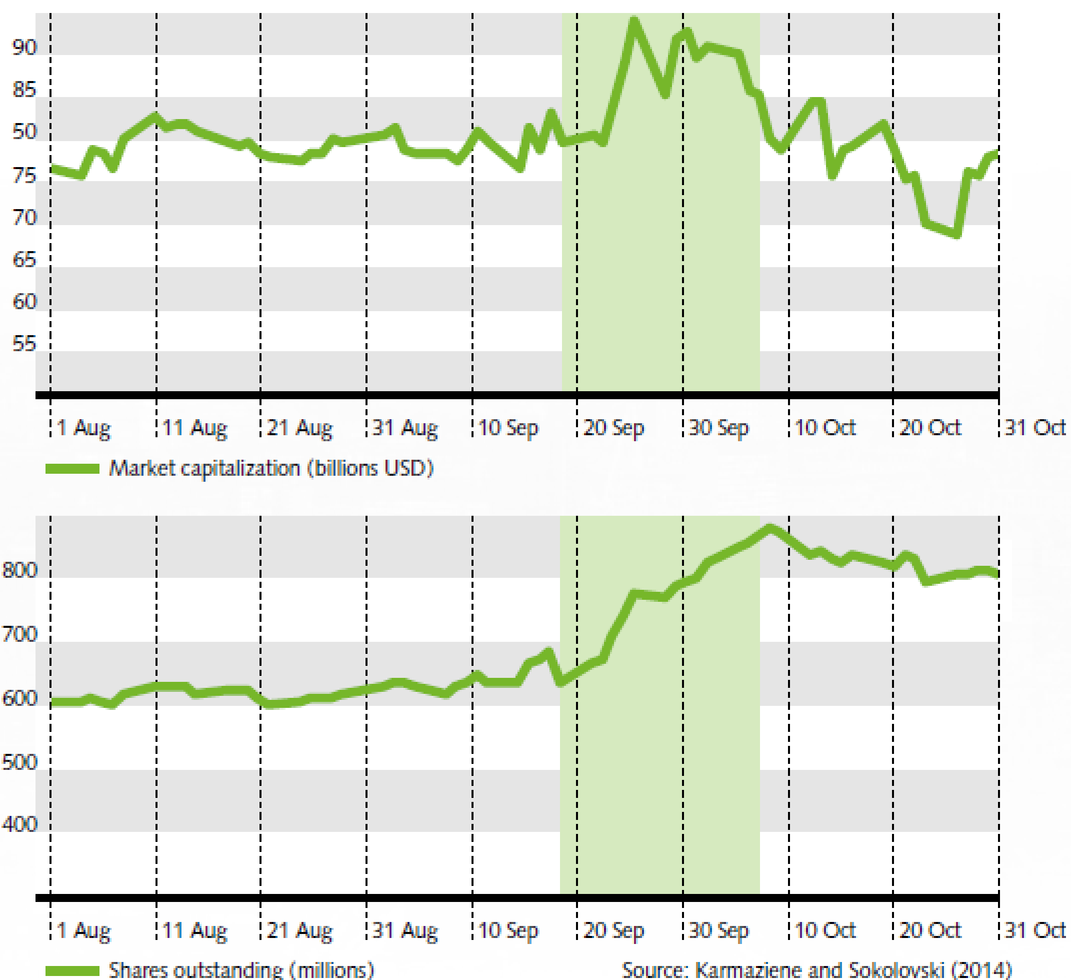



As a result, short selling in financial ETFs was substantially more difficult.[3] For the period before, during and after the short selling ban, Figure 2 plots the value and share of stocks on loan for the SPY. Immediately after the ban announcement, short interest in the SPY began increasing. At one point, close to USD 5 billion new short sale positions were created using the Spider ETF.

Figure 3: Market capitalization and shares outstanding for the S&P500 SPY ETF for August to October 2008




For the period before, during, and after the short selling ban, Figure 3 plots the total market capitalization and total number of shares for ETFs. Driven by rapid share creation, market capitalization of the SPY grew during the ban – arguably to fill the corresponding rise in short selling demand. Combining the effects in both Figure 2 and Figure 3, this demonstrates how shares were essentially created for the sole purpose of short selling. This case study demonstrates how the create-to-lend mechanism in ETFs facilitated the short selling during the U.S. financial ban. This was obviously neither anticipated nor welcomed by the regulators.

**The short on shorting ETFs**

Despite the extreme example in Karmaziene and Sokolovski (2014), it demonstrates how the create-to-lend process works and that it worked even in a rather difficult moment for short selling. Outside the world of derivatives, short selling in ETFs provides a new avenue for investors to short sell with relative ease.

The ETF market has grown substantially over the last 20 years. Product offerings, market depth, and liquidity continue to expand in ETF markets to fill the increase in demand for this type of product.

Although many investors use ETFs for investment, short sell interest is non-negligible. The unique creation-and-redemption mechanism provides new avenues for using ETFs for short selling.

### References

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### Footnotes

**1** A short interest percentage above 100 indicates that the average share the fund has outstanding has been lent and re-lent several times with a round-robin effect.

**2** For example, there have been cases where a hedge fund may short sell an ETF and establish a long position in all but one or possibly several hard to borrow securities. This net portfolio allows the fund to short only the difficult to short securities.

**3** The size and depth of financial ETFs most likely made short selling more difficult.

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