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ETFs: Weighing the risks



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Introduction

The dramatic growth in exchange traded funds (ETFs) has led regulators to consider more carefully the systemic risks ETFs may pose. Several organisations have published papers recently highlighting their concerns and calling for further study (see list at end of article). We offer here a summary of these reports.

Context

The reason for the increased attention given to ETFs is the parallels some see with the development of the mortgage-backed security (MBS) market and the fallout of the global financial crisis. Mortgage-backed securities were initially relatively simple. A bank could take a group of mortgages that were being held on its balance sheet, amalgamate the regular payments the borrower made, and sell the bundle as a security. This allowed the bank to free up its balance sheet to pursue fresh lending, while offering the investors who bought the MBS a new, diversified source of income. Regulators viewed MBS benignly as the products seemed to spread risk more broadly across the financial system. Over the years, however, innovation led banks to securitise new sources of revenue (commercial mortgages, credit cards, student loans, etc.), and to structure the payments in ever more complex ways. This led to the plethora of securitised acronyms: MBS, ABS, CMBS, CMO, CDO, CLO, etc. In retrospect, the risk was only being spread across interconnected players, while also being magnified through layers of leverage, so that when house prices finally fell it almost brought down the entire global financial system instead of just the banks that had originally made the loans¹. Regulators now want to be sure that the increasing complexity and popularity of ETFs is not similarly generating unappreciated risk in the financial system.

Market development

Over the last ten years, ETF assets under management have grown to USD 1.2 trillion, equal to 5% of all mutual fund assets. Initially, ETFs were primarily 'plain vanilla' products mimicking the performance of developed market equity indices, but they have, recently expanded to include emerging market equities, credit fixed

¹For a review of the global financial crisis, see Bank for International Settlements (2009): *79th Annual Report*, Chapter II, recommended in Bank for International Settlements (BIS) (2011).

Exhibit 1 – ETF Risks

Tracking error	Collateral mismatch	Counterparty	Liquidity
Return of securities used to replicate index is different from actual index return.	Securities used as collateral for total return swap are different from those making up the index being tracked. Securities may also be of lower quality and less liquid.	Investor is exposed to failure or downgrade of swap counterparty. Investor exposed to the counterparty of the repurchase agreements using collateral securities.	ETFs responsible for disproportionate share of security trading. In the event of market stress, illiquid collateral may not be sellable to meet redemptions from ETFs based on liquid indices.

income and commodities (developed market equities account for about 60% of ETF assets according to BlackRock, fixed income 17.8%, and commodities 3%). There are also ETFs that offer an investor a multiple of the return of an index or the opposite of its return, or both (these are known as leveraged or inverse ETFs).

As ETFs have grown in sophistication, so have the mechanics required to generate the returns on ever more complex or illiquid securities, leading to what are called synthetic ETFs. The first ETFs simply replicated the performance of the underlying index by holding the members of the index (or more often a representative sample), for example, the stocks in the S&P 500. This physical replication is a key characteristic of plain vanilla ETFs. Some ETFs now forego holding any of the underlying index securities and instead choose assets that are highly correlated with the index. Most synthetic ETFs use total return swaps to generate the required index return. The ETF provider sells the ETF for cash and then uses this money to purchase securities similar in quality to those underlying the index being replicated. The return on these securities is then swapped for the index return. The counterparty for the swap is often the banking division of the same company. The advantage of this arrangement is that it eliminates tracking error for the ETF investor. Commodity ETFs (sometimes called ETCs — Exchange-Traded Commodities) may use physical replication but many also employ futures and forward contracts. Synthetic ETFs are particularly widespread in Europe where they account for 45% of the market. Regulations restrict their use in the US.

Risks

The risks that regulators have identified broadly fall into four categories: tracking error, collateral mismatch, counterparty risk, and liquidity.

Tracking error

Tracking error refers to the difference between the return of the index underlying the ETF and the actual return generated by the ETF. The difference arises because the securities behind the ETF don't match the return of the index, or, in the case of commodity ETFs, because the forward contracts used don't exactly replicate the performance of the commodity. Tracking error is a worry more for investors in ETFs than it is for regulators, as it is investors who take the risk that they do not achieve the return they had expected.

Collateral mismatch

The nature of synthetic ETF swaps exposes investors to risks they may not have considered regarding the assets they may end up with if an ETF provider were to fail, as noted in the Financial Stability Board (FSB) and the Bank for International Settlements (BIS) reports. The collateral for one MSCI Emerging Markets ETF, for example, included a substantial percentage of Japanese equities and unrated US corporate bonds. While here the collateral

was probably of higher quality than the index, it is also possible that the securities used as collateral are less liquid or of lower quality. In the event of bankruptcy, an ETF investor risks ending up with securities perhaps very different from (and not necessarily of the same quality as) the index they thought they had bought.

Counterparty risk

In addition, investors need to consider the solvency or credit quality of their ETF provider's derivative contract counterparties. In the case of a fully funded swap, the ETF provider transfers all the cash to the swap counterparty and the collateral is pledged at the fund's custodian bank. In the International Monetary Fund (IMF) report, the author points out that after the collapse of Lehman Brothers, bankruptcy proceedings prevented investors from accessing their assets at custodial banks, so investors may find that collateral is not only very different from the index but it might even be inaccessible.

Another way investors face counterparty risk is through securities lending. Besides intraday liquidity, ETFs are appealing because of their low cost. One reason ETF providers are able to charge such low fees is that they generate revenue through another means — security lending. Those providers that hold the securities underlying an ETF can lend them using repo agreements to other institutions looking to short those securities. If the ETF provider were to fail, investor could conceivably find that the securities underlying their investments are not being held by the ETF provider². There is also the worry that heavy ETF redemptions would lead providers to call back loaned securities on a broad scale thus creating a market squeeze.

Liquidity

Beyond investor worries about the nature of collateral and counterparty risk, regulators are also keenly aware of

market-wide liquidity risks. An investor who purchases an ETF is actually buying a share from a market maker, who are the ones providing the intraday liquidity. One risk that regulators see to financial market stability is the difference between the value of the ETF at the time it is sold by an investor and the value of the underlying securities when the positions are closed out with the fund. The Bank of England report notes that market makers are not required to provide liquidity to investors and at times of high volatility the difference could become significant. Leveraged ETFs may exacerbate this risk as they account for a disproportionate amount of ETF trading. Though they make up just 3% of the market, they represent around 20% of daily turnover. It is believed that this may have played a role in the 'flash crash' in May 2010, when the Dow Jones index fell 600 in a few minutes. ETFs accounted for a very high share of all broken trades.

If there were an unexpected increase in liquidity demand from ETF investors, an ETF provider could have difficulty selling the collateral securities. This could be especially acute if investors attempt to sell ETFs based on the most liquid indices (for example, the S&P 500), when the collateral for synthetic ETFs may be made up of less liquid securities. The provider then might have to decide to either suspend redemptions from the fund, or else face a liquidity shortfall. When multiplied across the entire financial system, the potential for a dramatic drop in liquidity is significant. Liquidity pressures could affect not only the market makers but also their various counterparties, so even if the exposure of an investor to a single counterparty is limited, in the event of market turmoil cumulative counterparty risk could become systemic.

Conclusion

ETFs have a great many benefits, but it is important for investors as well as regulators to be aware of the risks we all face from increasingly complex and opaque products an interconnected financial market.

²The Bank of England report recommends Tucker, P (2010), *Shadow banking, financing markets and financial stability*, available at www.bankofengland.co.uk/publications/speeches/2010/speech420.pdf for a discussion of security lending's importance during the financial crisis.

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