



Contents lists available at ScienceDirect

Journal of International Financial Markets, Institutions & Money

journal homepage: www.elsevier.com/locate/intfin

Do liquidity proxies measure liquidity accurately in ETFs?

Ben R. Marshall^{a,b,*}, Nhut H. Nguyen^a, Nuttawat Visaltanachoti^a^a Massey University, New Zealand^b University of Newcastle, Australia

ARTICLE INFO

Article history:

Received 24 September 2017

Accepted 22 February 2018

Available online xxxx

JEL classification:

G11

G23

Keywords:

Liquidity measurement

Liquidity proxy

Transaction costs

Exchange traded funds

ETF

ABSTRACT

We document the performance of liquidity proxies in ETFs. Most proxies are developed for use in equities. However, ETFs have lower asymmetric information, more algorithmic trading, and an active primary market where units are frequently created and redeemed. Using a comprehensive database of over 600 ETFs, we find that despite the differences between ETF and stock liquidity, proxies such as Daily Spread, High-Low, Close-High-Low, and Amihud all do a good job of capturing changes in effective and quoted spread transaction costs. However, no proxies accurately reflect movements in price impact or the level of actual transaction costs.

© 2018 Published by Elsevier B.V.

1. Introduction

Liquidity is a key dimension of financial markets, so it is important to measure it accurately. Liquidity proxies are frequently used in empirical research in instances where liquidity measurement-based high-frequency data, which can be very computationally intensive, is not warranted. However, this approach raises questions regarding the effectiveness of these proxies. This issue is comprehensively addressed in equities (e.g., Goyenko et al., 2009; Corwin and Schultz, 2012; Abdi and Ranaldo, 2017), bond markets (e.g., Schestag et al., 2016), currency markets (e.g., Mancini et al., 2013; Karnaukh et al., 2015), and commodity markets (e.g., Marshall et al., 2012).

However, relatively little is known about how best to measure liquidity in ETFs. Addressing this issue, the focus of this paper, is important as most liquidity proxies were developed for stocks. However, ETF and stock liquidity differ in a number of respects. First, as Subrahmanyam (1991) suggests, a basket of securities (such as an ETF) can be expected to have higher liquidity than the underlying stocks, due to lower adverse selection costs. These costs are an important aspect of stock liquidity and liquidity proxies (e.g., Glosten, 1987), as there can be a reluctance to supply liquidity when there are concerns that other market participants have superior information (e.g. Admati and Pfleiderer, 1988). In Appendix A, we show that effective spread on the Dow Jones Industrial Average ETF (DIA) is lower than the price-weighted effective spread of the stocks that comprise the DJIA, which supports the Subrahmanyam (1991) theory.¹

* Corresponding author at: School of Economics and Finance, Massey University, Private Bag 11-222, Palmerston North, New Zealand.

E-mail addresses: b.marshall@massey.ac.nz (B.R. Marshall), n.h.nguyen@massey.ac.nz (N.H. Nguyen), n.visaltanachoti@massey.ac.nz (N. Visaltanachoti).

¹ Hedge and McDermott (2004) present similar evidence over the fifty days following the launch of the DIA ETF in 1998. However, two recent papers imply the asymmetric information driven differences between stock and ETF liquidity may be lower than previously expected. Colin-Dufresne and Fos (2015) find informed traders make extensive use of limit orders and trade on days when liquidity is high so as to reduce the impact they have on prices, while Bhattacharya and O'Hara (2016) suggest informed trading may sometimes take place in ETFs when the underlying assets are difficult to trade.

Second, we confirm the suggestion from Alexander and Barbosa (2008) and Ben-David et al. (2015) that ETFs attract more demand from active traders. Hendershott et al. (2011) suggest algorithmic (hereafter “algo”) trading is associated with fast order submissions and cancellations so our algo trading proxy is trading value is divided by the number of messages (defined as either a quote or trade update) following Boehmer et al. (2015). We show (in Appendix A) there is a higher level of algo trading in the DIA ETF than its underlying stocks. This, combined with the evidence that algo traders consume liquidity when bid-ask spreads are narrow and liquidity is cheap, and supply liquidity when it is expensive (e.g. Hendershott and Riordan, 2013), raises questions about the ability of liquidity proxies to measure liquidity in ETFs.

Third, as Malamud (2015, p. 1) highlights, ETFs have a “two-tier ETF market structure with both a centralized exchange (secondary market) and a creation/redemption mechanism (primary market) operating through market-making firms known as Authorized Participants. In the Malamud (2015) model, changes in liquidity in the primary market have important implications for ETF volatility and tracking error. In Appendix A, we report the average proportion of days, across all ETFs in our sample, where there are primary market creations or redemptions as ranging from 14% to 21% depending on how this average is calculated. We also generate regression results which show that a reduction in ETF liquidity in the primary market on a given day leads to an increase, on average, in effective spread of the ETF in the secondary market the following day. There is also evidence that lower spreads the previous two days are associated with higher net flows on day t . This is consistent with the authorized participants, who act as market makers for ETFs, being more active in the primary market when the secondary market is more liquid. Arbitrage via the creation and redemption of primary market ETF units is more attractive when secondary market transaction costs are lower. In sum, we conclude there is evidence of a strong two-way linkage between primary and secondary market liquidity.

Fourth, ETFs differ from the other asset classes studied in the liquidity proxy literature in that they are based on a wide variety of underlying assets. The ETFs in our sample include those related to equity indices, equity sectors, bonds, commodities, currencies, real estate, and other “exotic” asset classes. It is therefore possible that some liquidity proxies perform well in some ETFs but not others, meaning there is no single proxy that can be used across the entire ETF universe.

It should be noted that our analysis is based on the assumption that the transaction cost benchmarks that we use represent the actual liquidity in ETFs, despite the differences between ETF and other markets. We feel this is a reasonable assumption. The method by which a return is calculated does not differ across asset classes and, in much the same way, there is no reason to expect a liquidity benchmark such as effective spread, which measures the difference between the transaction price and the mid-point of the spread, to not apply in different asset classes. Moreover, Mancini et al. (2013) and Marshall et al. (2012) assume high-frequency liquidity measures such as effective spread capture the true cost of trading in currency and commodity markets.²

There has been a sharp increase in the number, variety, and asset value of ETFs. While the original ETFs were backed by physical assets, many ETFs now provide asset class exposure via derivative contracts. Early ETFs provided long-only equity market exposure, but it is now possible to find ETFs with short and leveraged exposure to a range of asset classes. The assets of U.S.-listed ETFs are estimated at over US\$1.7 trillion at the beginning of 2014, with ETFs typically representing between 25% and 40% of the total dollar volume of trading on U.S. exchanges (e.g., Hill et al., 2015). While it is well known that the first ETFs on large equity indices feature extremely low bid-ask spreads (e.g., Hill et al., 2015), the relatively large transaction costs of more exotic ETFs are receiving increased attention.³

Our first contribution is to provide comprehensive measures of transaction costs across ETFs and through time. These measures will likely be of interest to a number of parties, including investors and researchers. Lesmond et al. (2004) show that transaction costs are a critical analytical input to determine whether active investment strategies add value, while De Roon et al. (2001) find that apparent diversification advantages often disappear when transaction costs are accounted for. Risk managers will also find these measures useful. Elton et al. (2002) find that ETFs are popular hedging tools, and Perold and Schulman (1988) point out that transaction costs are a key input in judging hedging effectiveness. Transaction costs are also very relevant for exchanges, as Harris (2003) suggests they are an important determinant of the level of business they attract. Finally, Chordia et al. (2008) show that there is a direct link between transaction costs and market efficiency; thus, transaction costs affect all market participants.

Our sample includes U.S., international, sector equity, municipal bond, taxable bond, commodity, currency, allocation (such as conservative), and alternative (including leveraged) ETFs. Our results show that average effective spreads range from 0.115% for currencies to 0.391% for ETFs providing an asset allocation exposure. Overall, ETF transaction costs compare very favorably to the average developed and emerging market effective spreads of 2.2% and 2.7%, respectively, documented by Fong et al. (2017) for the 1996–2007 period.

It is possible that existing liquidity proxies, which were largely developed for use in the stock market, perform well in ETFs. However, it is also possible that the differences in ETF markets including lower adverse selection costs, higher algo trading, and the existence of a primary market where ETFs are created and redeemed result in traditional stock proxies not performing well in ETFs. There are valid reasons to support both of the above possibilities. After all, an ETF on a major index is quite different to an individual stock regarding features like the possible influence of private information. However,

² We thank an anonymous referee for highlighting this point to us.

³ <http://www.nasdaq.com/article/biggest-etf-myths-that-can-lead-to-investor-mistakes-cm3459403>.

Download English Version:

<https://daneshyari.com/en/article/8942352>

Download Persian Version:

<https://daneshyari.com/article/8942352>

[Daneshyari.com](https://daneshyari.com)