# Pricing Efficiency of Premier ETF LQ-45

*Premier ETF LQ-45 (R-LQ45X) is the first equity ETF in Indonesia that aims to deliver returns equal to the benchmark: LQ-45 Index. Investors can buy or sell R-LQ45X units through primary market and secondary market. The primary difference is from the minimum size: primary market min 200 lot and secondary market min 1 lot (retail based). The test indicate there is no significant difference between NAV return and last price return (pricing in secondary market is efficient).*

**Figure 1. R-LQ45X Screen**



Source: Indo Premier Online Trading (IPOT) platform, 12nd February 2013

The first equity exchange traded fund in Indonesia, Premier ETF LQ-45 (R-LQ45X), was launched on 18 December 2007 by Indo Premier Investment Management and uses LQ-45 Index issued by Indonesia Stock Exchange as the benchmark. LQ-45 Index consists of 45 stocks listed in Indonesia Stock Exchange and accounting around 67% of total market capitalization.

Investors can buy or sell R-LQ45X units by doing subscription or redemption on specified units in primary market through authorized participant or doing buy and sell units through stock exchange. The differences are the minimum unit size through authorized participant is larger than through stock exchange and the price per unit in authorized participant is intraday indicative NAV while price per unit in stock exchange depend on the supply and demand of the R-LQ45X (minimum size in primary market = 1 basket / 200 lot / 100,000 units and minimum size in secondary market = 1 lot / 500 units). **Figure 1** shows the primary market and secondary market of R-LQ45X through Indo Premier Online Trading (IPOT) platform.

The price of R-LQ45X in secondary market is determined by market. Although the NAV information of R-LQ45X is available publicly for investors, the

market price in the secondary market can be higher or lower than the NAV. Investor sentiment is one of the main explanations of this premium/discount situation. Lee et al. (1991) argue that closed-end funds are generally held by individual investors or noise traders, and discounts on closed-end funds are a proxy for changes in individual investor sentiment. While Pontiff (1995), Hanley et al. (1996) and Brown (1999), among others, support this theory, Chen et al. (1993), Elton et al. (1998), Neal and Wheatley (1998), Lofthouse (1999) and so on present evidence challenging the investor sentiment argument.

Because of the possible deviation in the secondary market from their NAV value, it can indicate price inefficiency. The significant discount or premium in Premier ETF LQ45's secondary market can make an arbitrage opportunity for investors.

Figure below shows the summary of daily fund premium/discount to R-LQ45X last price.

**Figure 2. Historical Fund Premium / Discount**
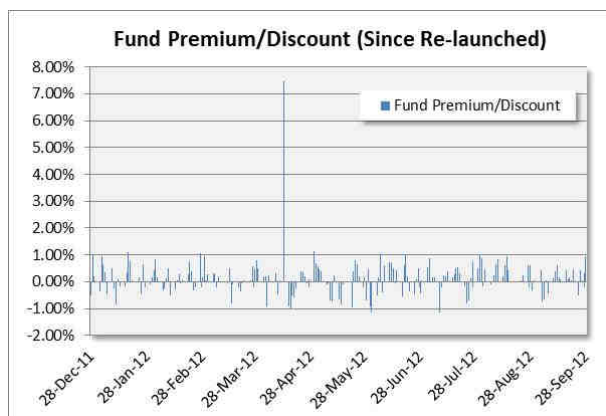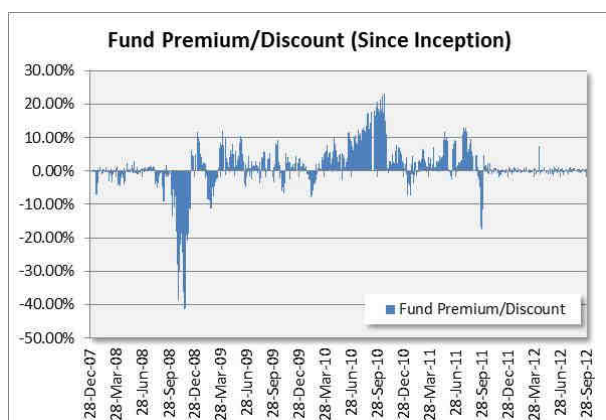




The fund premium/discount of Premier ETF LQ45 return to the LQ45 Index return increase quite significant at the end of 2008. The significant increase is caused by the global financial crisis. The immediate cause or trigger of the crisis was the bursting of the United States housing bubble (peaked in 2005-2006). During the global crisis period, LQ45 Index was down 55% in 2008. Before the global financial crisis, the average fund premium/discount is still below 0.2%. During the global financial crisis, the average fund premium/discount is continuing increasing around 1.00%. The global financial crisis made the investors of Premier ETF LQ45 to sell the instrument lower than the potential Net Asset Value (NAV) at that time because they think the index will continue to fall in the next couple of days.

In order to calculate pricing efficiency of R-LQ45X stock price in secondary market, we will conduct two-sample t-test between Premier ETF LQ45 Last Price and Premier ETF NAV. The t-test will be conducted using Minitab® Statistical Software version 16.2.2 with 95% confidence level ($\alpha$ = 0.05). If the p value is greater than the given level of significance we may accept the null hypothesis. Otherwise reject the null hypothesis.

Since Premier ETF LQ45 was re-launched on December 2011 (modified minimum size of transaction to increase liquidity), the t-test will be divided into two periods: since inception period and since re-launched period to see if there any differences between the period.

**Figure 3. Two-Sample T-Test and Cl: NAVR1, PXR1**

```
Two-sample T for NAVR1 vs PXR1

          N    Mean    StDev   SE Mean
NAVR1   964   0.0002   0.0206  0.00066
PXR1    964   0.0002   0.0205  0.00066


Difference = mu (NAVR1) - mu (PXR1)
Estimate for difference:  -0.000009
95% CI for difference:  (-0.001847, 0.001830)
T-Test of difference = 0 (vs not =): T-Value = -0.01
P-Value = 0.993  DF = 1925
```

Since the p-value is greater than $\alpha$ (0.993 > 0.05), the null hypothesis of equal return cannot be rejected, suggesting the return of the two series are considered

to have no significant difference during the period. In other words, this result is a strong indication that the return of R-LQ45X (Last Price) is similar with the return of R-LQ45X (NAV) since inception until re-launched period.

**Figure 4. Two-Sample T-Test and CI: NAVR2, PXR2**

```
Two-sample T for NAVR2 vs PXR2

          N    Mean   StDev  SE Mean
NAVR2   203  0.0004  0.0109  0.00076
PXR2    203  0.0004  0.0107  0.00075


Difference = mu (NAVR2) - mu (PXR2)
Estimate for difference:  0.00002
95% CI for difference:  (-0.00208, 0.00213)
T-Test of difference = 0 (vs not =): T-Value =
0.02  P-Value = 0.982  DF = 403
```

Since the p-value is greater than α (0.982 > 0.05), the null hypothesis of equal return cannot be rejected, suggesting the return of the two series are considered to have no significant difference during the period. In other words, this result is a strong indication that the return of R-LQ45X (Last Price) is similar with the return of R-LQ45X (NAV) since re-launched period.

Because of there is no significant difference between R-LQ45X NAV return and R-LQ45X last price return since inception period and also since re-launched period, it indicates that the pricing in Premier ETF LQ45's secondary market is efficient. So, for retail investors that want to invest into R-LQ45X but don't have enough cash to buy 1 basket (200 lot / 100,000 units) can buy through secondary market (min 1 lot / 500 units) because the return of R-LQ45X last price is similar to the return of R-LQ45X NAV.

Susanto Chandra