Fatal or friendly fees? Unit trusts versus ETFs

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Abstract

Most investors in Singapore would be better off buying exchange traded funds (ETFs) on the American Stock Exchange (AMEX) by trading in AMEX through a local stock broker rather than by buying similar-focus unit trusts. This is because the vast majority of unit trusts here are high fee active funds rather than low-fee passive funds. The small number of passive unit trusts here have much higher fees than those on comparable passive AMEX ETFs. I use funds that track the US S&P 500 stock index as examples. A hypothetical investment of SGD100000 in January 1990 in an AMEX ETF tracking the S&P 500 loses 3.3% of its October 2008 portfolio value due to all types of fees. In contrast, an investment through a passive unit trust tracking the S&P 500 loses 20.4% of its final portfolio value due to its higher fees. An active unit trust has even higher fees. If the active fund does not beat the S&P 500 index, it will lose at least 31.2% of its final portfolio value due to its higher fees.

Keywords: Unit Trusts; Fees; ETFs, Mutual Funds; AMEX; SPDRs; S&P 500

JEL Classification Codes: G11; G21; G23; G24

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Fatal or friendly fees? Unit trusts versus ETFs

1. Introduction

Unit trusts in Singapore have extremely high fees compared to mutual funds in the US. For example, the typical unit trust in Singapore charges an upfront sales charge of between 2-5% and annual expense ratio of between 1-2%. One possible reason could be that unit trusts in Singapore are typically distributed through banks and brokers instead of being sold directly to investors. For example, US investors can buy mutual funds directly from vanguard.com at much lower costs and annual expenses. I show in this article that one can reduce the impact of fees and expenses by buying exchange traded funds (ETFs) traded on the American Stock Exchange (AMEX) through a stock broker instead of buying similar objective unit trusts.

One critical principle in investing (on top of the principle of diversification) is that one should minimize fees. This is especially important since many academic studies show that most fund managers cannot consistently beat the market. In fact, higher fees are related to poorer performance (see for e.g., Carhart (1997)). Therefore, most retail investors would be better off investing in low-fee passive funds that mimic the performance of an index rather than high fee active funds that try to beat the market. It is puzzling that there are very few passive funds available in the menu of funds distributed by most Singapore banks and brokers. For e.g., DBS Asset Management has no passive funds on its menu and fundsupermart has only three index funds on its menu. One way to circumvent this dearth of passive funds is for Singapore investors to invest directly in ETFs. ETFs usually aim to passively track the performance of an index by investing proportionately in the stocks that constituent the index.

2. ETFs in SGX and AMEX

There is a menu of ETFs listed on SGX (see http://esite.sgx.com/live/st/STETFund.asp). Recently the number of ETFs in SGX increased to 24.[1] However, there some current limitations for investors considering SGX-listed ETFs. First, there are very few ETFs listed (24) compared to the hundreds on ETFs available on AMEX. Second, most of the ETFs here are based on local or regional indexes. Investors should in general aim to diversify beyond the region so as to maximize the benefits of diversification. Third and perhaps most importantly, the ETFs in SGX, alas, do not trade very often. Although trading volume has increased in recent months, most ETFs in SGX are still illiquid and investors may need to pay large bid-ask spreads and deal with prices that are not close to NAVs.

The alternative approach is to *directly* buy ETFs on AMEX through a Singapore stock broker. Most investors in Singapore are not aware of this avenue. Buying from AMEX reaps the benefits of both the breadth and liquidity of available ETFs (see for e.g., http://finance.yahoo.com/etf). Furthermore, the fee savings compared to investing in similar-objective unit trusts could be substantial.

3. The impact of high fees on portfolio value

Why should one invest in ETFs? The main reason is to save on fees. Every dollar saved is an additional dollar of capital put to use. I will show that a high fee fund can severely underperform a low fee fund. Although the analysis will be based on US markets, the principle applies to any situation where the investor compares similar funds based on fees (eg, comparing an ETF that invests in Japan versus an active unit trust that invests in Japan).

[1] See Business Times article on 5 November 2008, “Five SGX-listed ETFs take off today”.

I compare the hypothetical effect of fees on three funds that invest in US stock markets. The first is the famous the S&P Depository Receipts (SPDRs, pronounced “spiders”) ETF traded on AMEX (see finance.yahoo.com/q?s=spy). Ironically, the SPDRs ETF is also listed in SGX but its trading volume is close to zero so that it would be difficult to trade it on SGX. To buy the US-listed SPDRs ETF, one can go through a broker in Singapore. Local brokers (e.g. UOB Kay Hian or Phillip) typically charge a 0.4% commission to trade in US markets with a minimum commission of USD20-25 and a custody charge of SGD2 per month per counter. To be conservative, I assume a minimum USD25 commission. You also incur an exchange rate spread when buying and selling ETFs since AMEX ETFs are quoted in USD and your settlement currency is SGD. Exchange rate spreads with local brokers are typically about 0.4%. Bid ask spreads for the ETF itself are often negligible since the SPDRs ETF is one of the most traded stocks in AMEX. I assume is it 0.05% although in recent years it would be closer to 0.01%. You would also incur the ETF annual expense ratio of 0.1%. This is a small percentage because the ETF tracks the index passively and hence the fund manager only has to buy and hold the constituent stocks in the index with minimal rebalancing.

The second method is to find a passive unit trust that tracks the S&P 500 index sold by a distributor in Singapore. The Infinity US 500 fund, listed for e.g. in www.fundsupermart.com does this (“The fund aims for medium to long term capital appreciation by following the performance of Standard & Poor's 500 Composite Stock Price Index”). For this unit trust, there is no exchange rate spread since it is quoted in SGD. There is also no bid ask spread for the fund price. However, the initial sales charge is 1% and the expense ratio is an alarming 1.17%. Indeed, the expense ratio of the Infinity unit trust is about 15 times that of the SDPRS ETF even though the investment objectives are exactly the same—which is to track the S&P 500 index.

The third method is to choose an active unit trust that aims to perform better than the S&P 500 index, for e.g., the Fidelity America A-SGD unit trust. Since this is an active fund, its fees would be higher than those of a passive fund. Indeed, the sales charge is 2% and the expense ratio is 1.91%. Table 1 summarizes the differences in charges between these three methods of investing in the US equity market.

Table 1: Investing in US markets with passive ETF, passive unit trust, or active unit trust

Possible Investment Method	Name	Buy from	Commissions	Minimum Commission	Expense Ratio	Custody Fee	Exchange Rate Spread	Bid Ask Spread
AMEX ETF	S&P Depository Receipts (SPDRs)	AMEX through local broker	0.4% each trade	US$25	0.10%	S$2/mth	0.40%	0.05%
Passive Unit Trust	Infinity US500 index fund	Fundsupermart	1% upfront sales charge	None	1.17%	None	0.00%	0.00%
Active Unit Trust	Fidelity America A-SGD	Fundsupermart	2% upfront sales charge	None	1.91%	None	0.00%	0.00%

Notes: The unit trust fees are discounted fees from www.fundsupermart.com. The AMEX ETF fees are fees charged when trading in AMEX through a local broker UOB Kay Hian. The expense ratio of the AMEX ETF is assumed to be 0.1% as in the fund prospectus in www.ssga.com although finance.yahoo.com reports a 0.08% expense ratio.

We can do some back-of-the-envelope calculations to show the total fees when investing SGD100000 in these methods for a period of 20 years. To keep things simple for now, assume that the S&P 500 index remains flat over 20 years and that we make the payment with extra dollars instead of taking it out of the original SGD100000. For the ETF, we pay a brokerage commission of 0.4% to buy it. Assuming we sell it at the end of 20 years and incur another 0.4% selling commission and the round trip exchange rate spread of 0.4% and the bid ask spread of 0.05%, our total fees paid would roughly be $(0.4\%\times2)+0.4\%+0.05\%=1.25\%$ of SGD100000=SGD1250. There is also a custody fee of SGD2 per month so that works out to be SGD480 for 20 years. The expense ratio is 0.1% for 20 years and this works out to be SGD2000 $(100000\times0.1\%\times20)$. The total fees paid will be SGD3730.

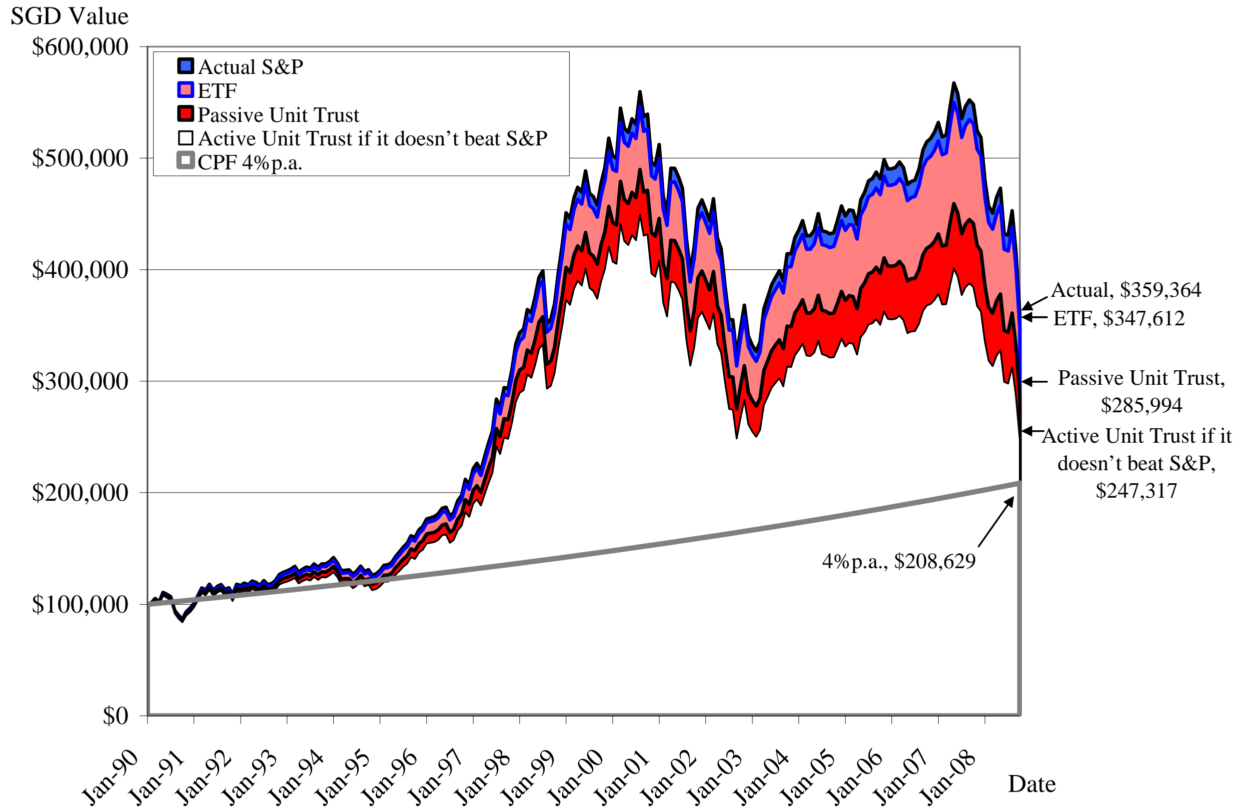
For the passive unit trust, you pay a 1% sales charge upfront = SGD1000. You will pay 1.17% per year on SGD100000 for 20 years (100000×1.17%×20) = SGD23400. The total fees paid will be SGD24400. This is 6.5 times the total fees of the ETF. For the active unit trust, since it aims to beat the market, there is a chance that it will. However, there is also a chance that it will not; since most mutual fund research shows that active managers have a hard time beating the market. Suppose the active unit trust does not beat the market but matches the S&P 500 index return, then the fees paid will be the 2% sales charge=SGD2000, and the 1.91% per year (100000×1.91%×20) = SGD38200. The total fees will be SGD40200, about 10.8 times the fees of the ETF.

4. Backtesting the effect of fees using 1990-2008 period

The earlier calculations are rough estimates because they do not account for the fact that a dollar lost in expenses and fees could have been an additional dollar invested in the index. I therefore backtest the three methods by assuming a hypothetical SGD100000 investments in the S&P 500 index in end-January 1990 and held up to October 2008. The aim is to illustrate the impact of fees using actual past return data by assuming that the three methods were implementable in January 1990. I also assume that all three methods end up tracking the S&P 500 index perfectly so that any loss in value is a result of fees. All fees are assumed to be taken from the initial investment instead of topping up additional dollars. This way, any amount paid in fees or expenses or forex spreads reduces number of dollars put in the portfolio. The net SGD value of the three investment methods are plotted over time and compared with two benchmarks values. The upper benchmark shows the performance of the portfolio if you were able to invest in the actual S&P 500 index without any commissions, fees, expenses, or forex spreads. The

lower benchmark is your portfolio value if you were risk averse and instead placed the SGD100000 in a deposit account bearing 4% p.a. (e.g. CPF special account).

Figure 1: Value of a SGD100000 investment in S&P 500 in January 1990



Notes: S&P 500 total returns (inclusive of dividends) are from the CRSP (before 2008) and Datastream. SGD per USD mid rates are from Datastream. The portfolio values in SGD are plotted for the unit trust and the ETF methods of investment taking into account the upfront sales charges, trading commissions, expense ratios, exchange rate spreads, bid-ask spreads, and custody fees assumptions in Table 1. The active unit trust that doesn't beat the S&P 500 is assumed to earn gross returns equal to the S&P 500.

From Figure 1, we see that an investment of SGD100000 in end-January 1990 grows to SGD359364 at the end of October 2008 if we were able to invest cost-free in the S&P 500 index. If we invested in the SPDRs ETF though a local Singapore broker and incurred trading commissions, foreign exchange spreads, bid ask spreads, custody fees, and ETF expense ratios, the investment would be worth SGD347612. This seems pretty decent, 3.27% [1-

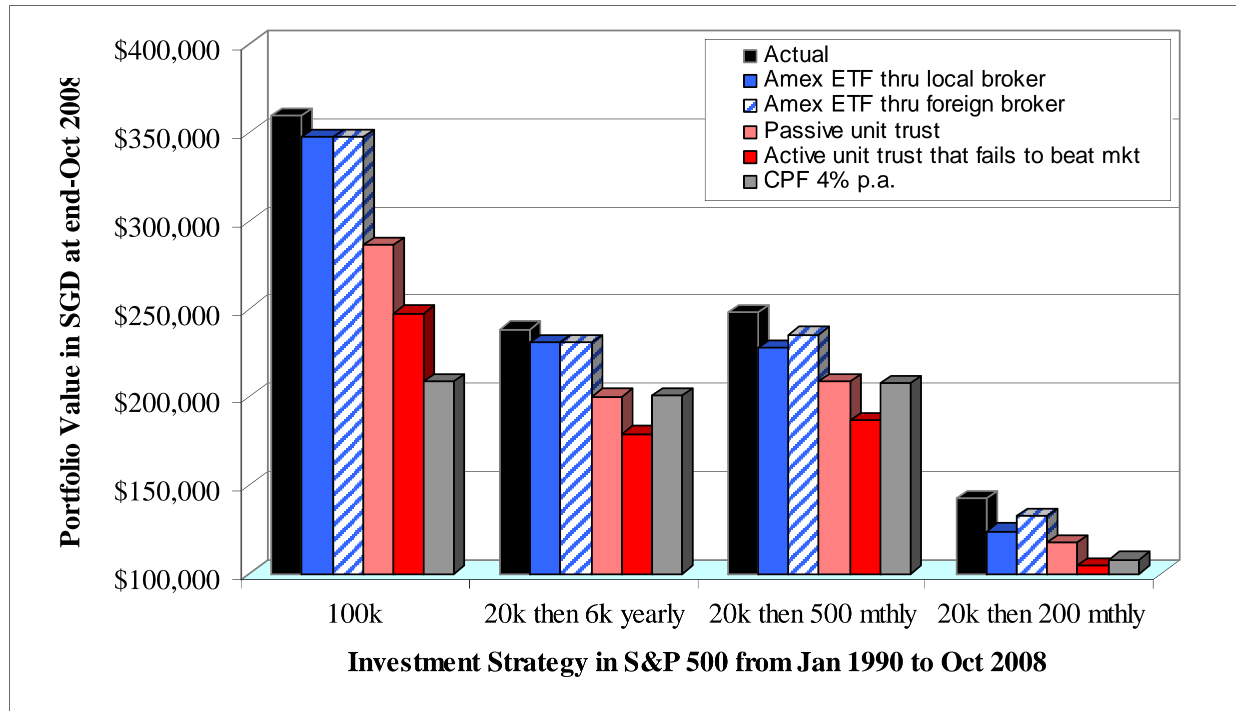
(347612/359364)] of the portfolio value is lost because of all types of fees. However, if you invest via the passive unit trust, your investment would only be worth SGD285994, which is equivalent to 20.42% [1-(285994/359364)] of the portfolio value lost because of fees. 20.42% is about six times of 3.27%. Finally, if you invested via the active unit trust, and assuming that the active unit trust did not manage to beat the market, your investment would be worth SGD247317 (31.18% lost due to fees). In other words, in order for the active fund to match the performance of the ETF, it has to beat the market soundly in order to make up 27.91% (31.18%-3.27%) of the portfolio value lost due to high fees. This is a tall order for any fund manager.

5. Possible advantages of unit trusts

Clearly, investing directly in a SPDRs ETF can easily surpass a unit trust investment if the unit trust charges very high fees. Some would argue, however, that there are other advantages of unit trusts over ETFs. First, unit trusts allow you to invest very small amounts regularly. For example, how would the figures look if you invested SGD20000 upfront and added SGD500 per month regularly? A minimum brokerage commission of USD25 (about SGD37) on a SGD500 investment would be about 7.4% of SGD500. The passive unit trust would instead charge you the sales charge of 1% (SGD5). To save on commissions, it would be better to do an annual investment of SGD6000 instead of a SGD500 per month investment if you are going to buy the SPDRs ETF instead of the unit trust. Table 2 shows the impact of end of period investment value for different amounts and frequencies of investment. I even consider a SGD200 per month strategy. One can see that investing via the ETF dominates the unit trust in every scenario. The larger dollar commission paid by the ETF method is offset by the lower expense ratios of the ETF compared to the unit trust.

Table 2: Final value of various investment amounts in S&P 500: Comparing local and foreign brokers

Intitial SGD Amt Jan 1990	Subsequent till Oct 2008	Actual S&P 500	Buy SPDRs ETF from AMEX		Buy unit trust		CPF 4% p.a.
			Local broker	Foreign broker	Passive fund	Active fund if it doesn't beat mkt	
100000	0	$ 359,364	$ 347,612	$ 347,552	$ 285,994	$ 247,317	$ 208,629
20000	6000 yearly	$ 238,306	$ 230,883	$ 231,054	$ 200,215	$ 179,376	$ 200,711
20000	500 monthly	$ 248,219	$ 227,659	$ 235,553	$ 208,588	$ 186,922	$ 207,636
20000	200 monthly	$ 142,411	$ 124,038	$ 132,547	$ 117,755	$ 104,447	$ 108,090



Notes: For ETFs, local broker assumptions are from UOB Kay Hian with commissions of 0.4% (minimum USD25), a forex spread of 0.4%, and SGD2/mth custody fee. Foreign broker assumptions are from E-trade (Singapore) with flat rate commissions of USD9.95, zero custody fees, and a forex spread of 1.4%. The "Actual" strategy assumes we can invest without costs in the S&P 500 index. The passive unit trust strategy invests in the S&P 500 through the Infinity fund distributed by fundsupermart, and the active unit trust value uses the fundsupermart fees of Fidelity America A-SGD fund and assumes that the active fund doesn't beat the market but instead earns exactly the S&P 500 return.

Another advantage of unit trusts is that it instills discipline in investing. If you use a regular investment plan, you sign up to automatically invest over time. With the ETF investment, you have to execute the trades yourself monthly, which could be a hassle for less financially savvy or indecisive investors. However, it's not clear that the added trouble of executing trades yourself is worth the high fees charged by unit trusts. Also, one limitation of investing in AMEX

ETFs is that one may not be able to buy foreign-listed securities using one's CPF account. But if one were investing from personal savings, this would not be an issue.

I also consider the effect of reinvestment of dividends. For non-US stock holders, the dividends they receive from US-listed companies are subject to a 30% withholding tax. For unit trusts, the net dividends are automatically reinvested into the unit trust. For ETFs, the net dividends are typically paid every quarter in cash. If you reinvested this dividend, you have to incur trading commissions since the dollar amount of the dividend each quarter could be small and you could be paying the minimum commission of USD25. One way to reduce commissions is to accumulate the dividends and reinvest them at the end of the year instead of every quarter. I test the effect of self-reinvestment of dividends on the SGD100000 strategy. I assume that S&P index dividends are cumulated without interest and reinvested into the ETF at the end of each year. The resulting final October 2008 portfolio value (net of all fees) of this hypothetical strategy is SGD342622, meaning that 4.66% of the final portfolio value is lost due to fees [1-(342622/359364)], minimally different from the earlier result of a 3.27% impact of ETF fees.

6. Foreign versus local stock brokers

There has been an influx of foreign brokers into Singapore recently. These brokers claim to have very low trading commissions. They usually do not charge custody fees and boast of superior platforms for trading in US markets. For example, some Singapore brokers may not offer live prices on their internet platforms but most foreign brokers do. One foreign broker, E-trade, offers commissions as low as USD9.95 per US trade (if you have USD50000 in your account), and another, Saxo Capital Markets, offers USD0.05 per share commissions (for >USD10 shares) with a minimum commission of USD15. However, these two brokers have exchange rates spreads which are large. E-trade uses Standard Chartered's TT rates when you

transfer SGD to your E-trade account. Typical TT spreads are about 1.4%. Saxo applies a 0.5% spread to the exchange rate for each trade (equivalent to a 1% round trip spread).

If you do the math based on these assumptions alone, it is not clear that foreign brokers have total fees that are significantly less than those of local brokers. I also show in Table 2 (and the accompanying chart) the value of the investment strategies in the AMEX SPDRs ETF depending on which broker is used. The foreign broker is assumed to be E-trade and with a flat USD9.95 commission and a 1.4% forex spread.

Although using local or foreign brokers clearly does better than investing via the passive unit trust, there is little evidence that foreign brokers do better than local brokers for large investment amounts. The large exchange rate spreads used by the foreign broker dents the advantage of its lower commissions. However, when one looks at smaller investment amounts, the portfolio invested through the foreign broker beats that of the local broker. The caveat here is that the differences between local and foreign brokers are based only on one illustrative pair of brokers. Indeed, the differences are thin and could be sensitive to small changes in assumptions in forex spreads or minimum commissions. Many banks may for example offer tighter spreads when you exchange a large amount of money for USD, for example SGD50000.

7. Conclusion

In sum, the take home message is that from the perspective of fees, passive investing beats active investing. Singapore investors should consider investing in ETFs listed in AMEX through a local or foreign stock broker rather than buying similar-focus unit trusts. Active unit trusts have extremely high fees and investors may need their fund managers to beat the market by close to one percent per year in order to make up the large differences in fees between active

unit trusts and passive ETFs. For investors investing in passive funds, the passive funds distributed here also have much higher fees than comparable US-listed ETFs.

A recent academic paper by Khorana, Servaes, and Tufano (2008) finds that mutual fund fees are lower in countries with higher investor protection. Most economists would consider Singapore to be a high investor protection country so one would hope that unit trust fees in Singapore become more palatable in the future. Also, if distributors can offer a larger menu of passive unit trusts with lower fees, that would be a step forward. Finally, it would be great if the ETFs in SGX start to trade more often so that it would be easier to trade US ETFs that are cross-listed here. Otherwise, Singapore investors may be better off investing directly in AMEX ETFs.

8. References

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