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Intraday analysis of currency ETFs

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Purpose

– The purpose of this paper is to find if erosion of value exists in grantor trust structured exchange traded funds. The author examines the performance of six currency exchange traded funds' tracking errors and pricing deviations on intradaily-one-minute interval basis. All of these exchange traded funds are grantor trusts. The author also studies which metric is of more importance to investors in these exchange traded funds by examining how these performance metrics are related to the exchange traded funds' arbitrage mechanism.

Design/methodology/approach

– The Australian Dollar ETF (FXA) is designed to be 100 times the US Dollar (USD) value of the Australian Dollar, the British Pound ETF (FXB) is designed to be 100 times the USD value of the British Pound, the Canadian Dollar ETF (FXC) is designed to be 100 times the USD value of the Canadian Dollar, the Euro ETF (FXE) is designed to be 100 times the USD value of the Euro, the Swiss Franc ETF (FXF) is designed to be 100 times the USD value of the Swiss Franc and the Japanese Yen ETF (FXY) is designed to be 10,000 times the USD value of the Japanese Yen. The author uses these proportions to estimate pricing deviations. The author uses a moving average model based on an Elton *et al*. (2002) to estimate if tracking error or pricing deviation are more relevant in ETF arbitrage and thus to investors.

Findings

– The author documents that the average intradaily tracking errors for the six currency ETFs are relatively small and stable. The tracking errors are highest for the FXF, 0.000311 percent and smallest for FXB, −0.000014 percent. FXB is the only ETF with a negative tracking error. All six ETFs average intradaily pricing deviations are negative with the exception of the FXA pricing deviation which is a positive $0.17; the rest of the ETFs pricing deviations are −0.3778 for FXB, −0.3231 for FXC, −0.2697 for FXC, −0.2697 for FXE, −0.6484 for FXF and −0.9273 for FXY. All exhibit skewness, kurtosis, very high levels of positive

mechanism is more closely related to the exchange traded funds' pricing deviation than tracking error.

Research limitations/implications

– The paper uses high-frequency one-minute interval data in the analysis of pricing deviation which might be artificially deflating standard errors and thus inflating the *t*-test significance values.

Originality/value

– The paper is relevant to ETF investors and contributes to the continuing search in the finance literature of better ETF performance metric.

Keywords: Currency ETF, ETF arbitrage mechanism, Pricing deviation, Tracking error

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