

**Financial performance persistence in islamic and conventional fund family: Developing market evidence****Ahmad Marei<sup>a\*</sup>**<sup>a</sup>*Middle East University, Amman, Jordan***CHRONICLE***Article history:*

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The paper investigates performance persistence in both Islamic focused (IFFs) and conventional focused fund families (CFFs) in four emerging markets (Saudi Arabia, Malaysia, Indonesia, and Pakistan) from 2007 to 2021 using contingency tables. In the overall sample, we find that positive (negative) persistence in IFFs (CFFs) exists only in the short-run (one-month). At the country level, IFFs demonstrate positive persistence up to one month in Saudi Arabia and Indonesia and six months in Malaysia. For CFFs, negative persistence appears up to one month in Malaysia and six months in Indonesia. Surprisingly, the positive persistence of Indonesian IFFs changes to negative persistence in six months, before disappearing completely later. This result confirms the existence of short-run persistence for both IFFs and CFFs. This study presents new evidence for the persistent performance of fund families in emerging markets.

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**1. Introduction**

Islamic finance continues its rapid growth: the industry is now valued around US\$2.2 trillion and expected to further grow to US\$3.8 trillion by 2022 (MIFC, 2020). Some segments of Islamic finance are growing even more rapidly (Qushtom et al., 2022; Lutfi, 2022d). In 2008, Islamic assets under management (AUM)—assets managed by financial institutions on behalf of their clients and themselves, typically as mutual funds—were just US\$47 billion, spread across 802 funds. However, just a decade later, it had grown to US\$70.8 billion across 1,535 funds (MIFC, 2019), mostly as equity funds (42 percent), followed by money market (33.3 percent) and commodity (11.8 percent) funds (COMCEC, 2018). In terms of marketshare, Saudi Arabia and Malaysia account for by far the largest shares of AUM (35.6 and 31.9 percent, respectively) and the number of funds (22.8 and 24.2 percent, respectively), followed at some distance by Indonesia and Pakistan. While the Islamic funds management industry is highly concentrated geographically and currently accounts for only a small share of the global funds management industry (currently less than one percent) (COMCEC, 2018), institutional and non-Muslim investors gradually consider it as an attractive socially responsible investment subsector.

Most individual mutual funds, both Islamic and conventional, are managed by the same company, operate under the same brand (family), and promoted and distributed through the same channels (Iqbal, et al., 2019; Elmanizar & Aveliasari, 2023; Lutfi, Al-Khasawneh, 2022e). The performance and attributes of fund families are equally important as those of individual funds (Nanda, 2004; Harris et al., 2023). In contrast to individual firms, a fund family brings economies of scale to the operation, promotion, and distribution of funds (Lutfi, Al-Khasawneh, 2022f). It can also flexibly reallocate resources in response to opportunities or obstacles (Lutfi, 2020; Lutfi, 2021). Moreover, its reputation signals to investors the selection and monitoring skills of its managers (Lutfi, & Alqudah, 2023). As a result, third-party fund performance providers, in light of these three advantages, have increasingly focused on fund families (Lutfi, 2022a; Lutfi, 2022b). For example, Morningstar publishes its Fund Family 150 report, which ranks the top 150 asset management firms in the US on a range of criteria, while Barron's Fund Family Ranking evaluates the one-year relative performance of fund firms offering a diversified lineup of actively managed mutual funds.

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A view widely held by investors is that “success breeds success”: better-performing funds and fund families will continue to perform better in the future, popularized as the hot-hand phenomenon (Idris, & Mohamad, 2016; Lutfi et al., 2023; Saad et al., 2022). This view, however, is refuted by the efficient market hypothesis (EMH), that the future performance of an asset cannot be predicted based on its historical performance. Nonetheless, some evidence suggests that funds and fund families exhibit performance persistence. Sheng et al. (2023) argue that investors who base their investment decisions on positive historical performance are rational wealth maximizers, and their decision typically pays off. Capital inflow into good-performing funds and fund families is also likely to motivate their managers to maintain and improve their performance (Alshirah et al., 2021; Khassawneh, 2014; Lutfi, Al-Okaily, 2022a). This explains the usefulness of relative performance information across funds and fund families and over time (Idris, & Mohamad, 2017). Fund managers can make themselves appear more competent by making necessary decisions and positioning themselves relative to competing peers, whereas investors can more efficiently allocate resources to better-managed funds.

Some funds demonstrate positive performance persistence in the short-term (Ali et al., 2021; Hendricks et al. 1993; Brown & Goetzmann, 1995; Hammouda et al., 2023; Rabbani et al., 2023; Marei, 2022), whereas others demonstrate it for five to 10 years, attributed to the managers’ stock selection skills and access to information (Grinblatt & Titman, 1992; Elton et al. 1996; Lutfi, Abdalwali. Alkelani, 2022b, c). Gruber (1996) explains this phenomenon by arguing that investors are either sophisticated or disadvantaged, who vary in their ability to invest in or divest from funds. These studies, nevertheless, concern performance persistence at the fund level, which we complement by its analysis at the fund family level. Funds under a family cannot be treated as standalone funds, mainly because they are supported by their family (Lutfi, Alkelani, et al., 2022g)—in terms of, e.g., marketing and administrative functions—and because their investment strategies are likely to be comprehensive even though their investment objectives may outwardly differ (Cheng et al. 1999). These strategies, Brown and Goetzmann, (1995) argue, may influence, at the very least, the funds’ performance persistence in the short-term. Fund-family-level performance persistence is important because investors typically select a family first before looking at its fund(s), much like their selection of stocks.

The emerging Islamic asset management sector is currently led by Saudi Arabia and Malaysia, which are able to capitalize on developments in the sector (Bani Atta & Marzuki, 2021). Other countries, most prominently Indonesia and Pakistan, are behind them (COMCEC, 2018). We thus limit our investigation to these four countries. Saudi Arabia’s Capital Market Authority (CMA) reports that 607 funds and 41 families were operating in 2020 compared to 270 funds and 33 families in 2015 (Tadawul, 2020). During the same period (2015–2020), funds and fund families in Malaysia grew by seven and 56 percent to 654 funds and 80 fund families. Pakistan saw a growth from 221 to 255 funds and 22 to 30 families in the same period. Finally, funds in Indonesia increased from 608 in 2017 to 651 in 2020, while its fund families grew from 77 to 86. Alongside our broad focus on fund family performance persistence, we extend the analysis to compare performance persistence between Islamic and conventional fund families (Alshirah et al., 2021a). First, and as discussed, the Islamic asset management industry is experiencing rapid growth, especially in its largest markets in Saudi Arabia, Malaysia, Indonesia, and Pakistan. Second, there is every good reason to expect that fund family performance persistence will differ between Islamic and conventional funds. For example, Islamic fund managers operate within a constrained investment universe, and this may make asset selection and timing more difficult. Second, investors moving into and out of funds provide an important signal to fund managers regarding their performance. Significant costs in identifying other suitable Shariah-compliant fund families may likewise constrain investors seeking to change fund families. Thus, we aim to investigate the performance persistence of Islamic (IFF) and conventional fund families (CFF).

We briefly discuss in the next section the theoretical background of the study, and in Section 3 we will review related literature. The methodology and results are presented in Sections 4 and 5, while Section 6 concludes.

## 2. Theoretical Background

EMH is related to performance persistence: when a market is efficient, there should be no signs of performance persistence, instead fund prices will follow a random walk pattern. EMH states that prices immediately reflect all information (Kendall & Hill, 1953). It was proposed by Fama (1965), who concluded that prices exhibit a random walk pattern. An efficient market is further distinguished into weak, semi-strong, and strong forms (Clarson, 1970; Fama, 1969). Fama explains that an efficient market is information-efficient, i.e., its prices always entirely reflect all available information. Stock prices are random, and so investors cannot possibly outperform the market consistently (Malikel, 1973; Daoud et al., 2021). EMH has been contested for the past few decades. Torbey (2003) and Cooper et al. (2006), for instance, find that market efficiency is distorted by anomalies that lead to opportunities to generate trading rules. They argue that market efficiency is a short-term overreaction that leads to long-term reversal. The fact that some investors are able to generate abnormal returns suggests that the market is not entirely information efficient. This raises the question of how, despite being unable to beat the market, the mutual fund industry continues to grow rapidly. In developing countries, Jensen (1968) and Fama (1970) find support for EMH. According to Fama (1970), neither technical nor fundamental analysis could help identify undervalued stocks that could generate returns greater than those by holding a portfolio of randomly selected stocks with comparable risks. EMH holds when investors are rational. After accounting for risk, it is not possible for a fund manager to consistently outperform the market (Alrawd et al., 2023a; Marei, 2023).

Variance in mutual fund returns due to different risk categories is expected (Alshirah et al., 2021b). Many investments of funds can be more effective than others as managers can effectively diversify, thereby generating more returns for a given level of risk (Alrawd et al., 2022). However, this positive performance is unlikely to persist. According to Carhart (1997), some funds do demonstrate persistent performance, but controlling for the four factors in his model causes the funds' average net fee returns to be zero or negative. Their persistence can be largely explained by their loading on the four factors. Poor fund performance persistence may be attributed to the high cost incurred by fund managers on the continuous hunt for wrongly priced securities. Investigating the presence and persistence of fund manager performance, in general, is a critical test of EMH. Evidence of performance persistence would challenge the notion of a semi-strong efficient market. Advocates of EMH claim that persistence is solely due to chance and not due to the abilities of fund managers.

### 3. Previous studies

Performance persistence research mainly investigates whether investors can meaningfully use past performance information to assist their investment decisions; it thus challenges EMH. Early performance persistence studies have examined whether mutual funds could systematically select securities over a certain period (Treynor, 1965; Sharpe, 1966; Jensen, 1968). They find no or weak support for performance persistence, and as such the past performance of fund managers is by no means a useful indicator of their future performance. But this conclusion was later challenged by studies in the 1990s, which reveal that some mutual funds demonstrate performance persistence over one to five years. Among these studies are Hendricks et al. (1993), Goetzmann & Ibbotson, (1994), and Brown and Goetzmann (1995). Hendricks find evidence for performance persistence over a two-year, six-month, and three-month holding period; Goetzman and Ibbotson over a two-year and one-month holding period; and Brown and Goetzmann (1995) over a one-year holding period. Droms and Walker (2001), using Jensen's alpha on a sample of 151 US equity funds in 1971–1990, conclude the absence of performance persistence in the long term (10-year holding period); they find it only in the short-term (one to three years). Similar results for short-term persistence are reported by Harlow and Brown (2006).

Evidence in developed countries shows persistence in the short-term but not in the long-term. In emerging countries, however, the evidence is mixed. Marwa, (2019) finds the persistent performance of Saudi Arabian mutual funds when they are focused internationally and disregard Sharia law. These conclusions are based on an analysis of the monthly returns of HSBC Saudi mutual funds in 2011–2018. Based on 1996–2000 data, Malaysian mutual funds have a short-term relationship with the stock market, as their prices are linked to the KLCI stock market index (Low & Ghazali, 2007; Shatnawi et al., 2022; Marei et al., 2022). Contrasting evidence—the absence of performance persistence in Malaysia in 1991–2000—is concluded by Taib & Isa, (2007). Malaysian ethical funds exhibit more persistent performance during and before the Asian financial crisis and global financial crisis. This finding is based on a contingency table analysis on a sample of 129 ethical and 350 conventional mutual funds (Mansor et al., 2019). More recently, others (Alharasis et al., 2021; Bani Atta & Marzuki, 2020 and Ahamd, 2023) have examined the performance, but not persistence, of Malaysian fund families and their Islamic and conventional funds.

Dwianggoro et al. (2012) are unable to find evidence of five-year performance persistence among Indonesian mutual funds in 2006–2011, but they find shorter-term persistence using Jensen's and Sharpe's models. In 2008–2012, the mutual funds appear to demonstrate persistent performance (Elvani & Linawati, 2013). Arifin and Mulyati, (2017) find that Islamic funds in 2010–2016 have fairly high relative short-term persistence, after which performance declines. Arifin, (2018) finds that Islamic mutual funds in Indonesia only exhibits output persistence in the early sample period but then continues to decline. In Pakistan, Nafees et al. (2017) investigate the timing and selection skills of open-ended fund managers and their performance persistence. They find that only a small number of funds are able to outperform the market, and their performance persistence is low.

Analysis in all the studies above is at the fund level, providing no information about performance persistence at the family level. Family-level analysis is important because investors typically invest in funds belonging to the same family, mainly due to convenience. The performance of a family relative to others is an important information for them (Premachandra et al., 2012) because family performance is often the basis on which they identify and select funds (Elton et al., 2007; Brown and Wu, 2012; Bani Atta & Marzuki, 2019; McCourt & Ramos, 2019; Mustafa et al., 2023; Shatnawi et al., 2021). Additionally, switching between funds in a family is more convenient and cheaper (Marei et al., 2023; Massa, 2003).

Some scholars nonetheless have investigated performance persistence at the family level. Cheng et al., (1999) examine performance persistence of Hong Kong fund families in 1992–1996. They find that only two funds have high past returns, and that there is weak evidence for performance persistence in the short-term. These findings contradict those in the US. The literature notes that family-level decisions are determined mostly by its overall management strategies and the performance of its managers. This then raises the question of whether the average fund performance of a family persistently over- or underperforms rival families. McCourt finds that, using gross returns, performance persistence of top-decile families is similar to that of individual funds, suggesting that the family structure does not lead to sustained superior performance. They find that only 3 percent of families are genuinely skilled after controlling for noise in the performance measure. A family with a higher alpha *t*-statistic is more likely to be genuinely skilled. Using net returns, on the other hand, reveals weak support for persistence.

The literature on family-level persistence has mainly concentrated on developed markets and conventional families. There is, therefore, a knowledge gap in the performance persistence of Islamic mutual fund families. This study covers this gap by investigating family-level performance persistence in four emerging markets with the largest share of Islamic mutual funds.

#### 4. Methodology

We collect mutual fund data from Bloomberg. Our focus is only equity funds (i.e., a fund holding  $\geq 60\%$  of its portfolio value in equity), following Tower & Zheng, (2008). The sample is 70 fund families: 25 from Saudi Arabia, 20 from Malaysia, 14 from Indonesia, and 11 from Pakistan, for a total of 503 equity funds. Fund family performance is measured as the value-weighted average change in total net asset value of every fund in a family (Strauss, 1985; Reinker & Tower, 2004; Gallaher & Starks, 2006). We collect rate of return, total asset, and market index prices from January 2007 to December 2018. Family-level performance persistence is tested using contingency tables, where funds are identified as winners or losers, and their ability to sustain this performance over the succeeding time periods is analyzed (Malkiel, 1995; Droms & Walkers, 2006). Fund family performance is examined firstly on a monthly basis, then semi-annually and annually.

We classify fund families into four groups: (1) WW: superior performance in one period and the next; (2) LL: inferior performance in one period and the next; (3) WL: superior performance in one period but inferior in the next; and (4) LW: inferior performance in one period but superior in the next. A “winner” is a family whose funds have an average rate of return above or equal to the median return of all fund families. A “loser”, on the other hand, is a family whose funds’ average rate of return is below the median return. The two-by-two contingency table and performance classification is shown in Table 1. Taking the WW intersection as an example, this means that a fund wins in one period and loses in the next. A fund has “+ve persistence” (positive persistence) if it wins in one period and the next, and “-ve persistence” (negative persistence) when it loses in both periods successively.

**Table 1**  
Contingency table

		Period (t+1)		
		Winner	Loser	Total
Period (t)	Winner	WW	WL	WW+LW
	Loser	LW	LL	WL+LL
	Total	WW+LW	WL+LL	WW+WL+LW+LL

The table also shows that repeat-winner (repeat-loser) is the ratio of families that win (lose) in any two consecutive periods. A family has +ve persistence if it has  $>50$  percent chance of repeating its superior performance in the next period. The repeat-winner ratio (%) is the count of WW divided by the sum of WW and WL. Following Cheng et al. (1999), statistical significance of these outcomes is tested using  $z$ -scores. In this method, repeat winners and repeat losers are first identified, and their  $z$ -scores are then computed. The  $z$ -statistic follows a normal distribution with a mean of zero and standard deviation of one. A family exhibits performance persistence when its probability of winning in the next period is  $>0.5$ , and vice versa. Computation of the repeat-loser ratio and its  $z$ -scores is similar to that of repeat winners. Because the random variable  $z$  of the number of continuously winning funds follows a binomial distribution of  $b(n, p)$ , it can be determined that the probability of persistent winning is  $>0.5$ . The number of WW thus becomes larger. The random variable  $z$  is normally distributed, with a mean of zero and standard deviation of one. A large positive  $z$ -statistic is observed when a high percentage of winners in one period continues as winners in the next period. On the other hand, a large negative  $z$ -statistic is observed when a high percentage of winners become losers in the following period. The  $z$ -statistic becomes zero when the same percentage of winners and losers remain as such in the subsequent periods. A small  $z$ -statistic is obtained when no clear pattern is observed. The repeat-winner ratio  $z$ -statistic is expressed as:

$$Z = \frac{W_{t+1} - W_{tp}}{\sqrt{W_{tp}(1-p)}} \quad (1)$$

where  $W_{t+1}$  is the count of winning of a fund family in period  $t+1$ ,  $W_t$  is the total count of winning in period  $t$ , and  $p$  is the probability of repeat winning. The repeat-loser ratio  $z$ -statistic is expressed as:

$$Z = \frac{L_{t+1} - L_{tp}}{\sqrt{L_{tp}(1-P)}} \quad (2)$$

where  $L_{t+1}$  is the count of losing of a fund family in period  $t+1$ ,  $L_t$  is the total count of losing in period  $t$ , and  $p$  is the probability of repeat losing.

## 5. Results and Discussion

We present and discuss in this section the findings related to family-level persistence, i.e., whether investors can actually gain abnormal returns from investing in fund families based on their past positive performance. We first begin with findings from the overall sample, continuing with those from each country. We then compare the performance persistence of Islamic fund focused families (IFFs) and conventional fund focused families (CFFs).

### 5.1 Descriptive Statistic

Table 2 provides descriptive statistics for monthly returns by country and overall sample, including mean, median, minimum, maximum, and number of families (Alqudah et al., 2023; Almaiah et al., 2022; Alrawad et al., 2023b; Alshira'h et al., 2020). There are 70 families: 41 IFFs and 29 CFFs. Saudi Arabia (33 families) and Malaysia (41) are the most representative of IFFs. Overall, all families in the sample markets report positive average raw returns over the sample period ( $M = 0.2897$ ). Similar positive returns are also demonstrated by IFFs ( $M = 0.3005$ ) and CFFs ( $M = 0.1373$ ). Saudi Arabia has the highest average monthly return ( $M = 0.5373$ ), followed by Malaysia ( $M = 0.2452$ ), Indonesia ( $M = 0.2391$ ), and lastly Pakistan ( $M = 0.1373$ ).

**Table 2**  
Descriptive Statistics

		All family	IMF focused Family (IFF)	CMF focused Family (CFF)
Saudi Arabia	Num. of Family	25	25	0
	Mean	0.5373	0.5373	----
	Median	0.2954	0.2954	----
	Min	-0.2391	-0.2391	----
	Max	0.9812	0.9812	----
Malaysia	Num. of Family	20	8	12
	Mean	0.2452	0.1533	0.1355
	Median	0.1954	0.1392	0.1126
	Min	-0.2301	-0.1221	-0.2301
	Max	0.7540	0.7540	0.6522
Indonesia	Num. of Family	14	5	9
	Mean	0.2391	0.1432	0.1422
	Median	0.1872	0.1146	0.1223
	Min	-0.2401	-0.2401	-0.1422
	Max	0.6602	0.5510	0.6602
Pakistan	Num. of Family	11	3	8
	Mean	0.1373	0.1282	0.1244
	Median	0.1036	0.1009	0.1021
	Min	-0.1038	-0.1038	-0.1431
	Max	0.4581	0.3780	0.4581
Whole sample	Num. of Family	70	41	29
	Mean	0.2897	0.3005	0.1373
	Median	0.1908	0.1792	0.1156
	Min	-0.2391	-0.2401	-0.2301
	Max	0.9812	0.9812	0.6602

### 5.2 Overall and By Country

We show in this section evidence supporting +ve and -ve performance persistence in the overall sample and in each country. The discussion is based on three persistence periods of one month, six months, and one-year.

#### One month

Tables 3–5 respectively show the summarized contingency tables for the performance persistence of all families, IFFs, and CFFs in each country over a period of one month, six months, and one year. Table 3 shows persistence on a month-by-month rolling period. In the overall sample, the repeat-winner ratio is 71 percent, as there are 3,416 WW and 1,415 WL for a total of 4,831 WW + WL. Repeat winners are significant if the  $z$ -statistic is  $>1.645$  (critical value). A negative  $z$ -statistic means that a winner becomes a loser in the next month. As for repeat losers, the table shows that the repeat-loser ratio is 74 percent, as there are 3,796 LL from a total of 5,140 LL + LW. Repeat losers are significant if the  $z$ -statistic is  $>1.645$ . There

is thus evidence for +ve and –ve persistence in the overall sample. This means that both superior- and inferior-performing families demonstrate persistence over a single-month period.

Country-level analysis shows that one-month superior performance persistence is found in all four countries. Saudi Arabia leads in persistence ( $z = 1.96$ ), followed closely behind by Malaysia ( $z = 1.88$ ). Indonesia, however, demonstrates significant negative persistence ( $z = 1.963$ ). In Saudi Arabia, two of 23 families are statistically significant repeat winners, while one of 18 families is a significant repeat loser. In Malaysia, one of three families is a significant repeat winner, and one of 20 is a significant repeat loser. In Indonesia, one of five families is a significant repeat winner, and similarly one of five families is a repeat loser. Pakistan's results are similar to Indonesia.

**Table 3**  
One-month fund family performance persistence

	Family	Previous Month	Following Month		Repeat Winner	Repeat Loser	Repeat Winner stat	Z-	p-Value	Repeat Loser stat	Z-	p-Value
			W	L								
Saudi Arabia	All Family	Winner	2106	284	0.82	0.72	1.9160		0.027**	-1.1133		0.059
		Loser	303	737								
	All IFF	Winner	1950	301	0.85	0.71	1.8160		0.031**	-1.0136		0.062
		Loser	324	758								
All CFF	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Malaysia	All Family	Winner	321	482	0.38	0.76	1.8756		0.002**	-1.0791		0.921
		Loser	506	1553								
	All IFF	Winner	172	258	0.39	0.77	1.9743		0.002**	-0.7321		0.921
		Loser	269	877								
All CFF	Winner	169	226	0.41	0.74	1.9931		0.003**	1.9915		0.041**	
Loser	239	654										
Indonesia	All Family	Winner	625	314	0.66	0.70	1.7357		0.021**	-0.3362		0.065
		Loser	320	742								
	All IFF	Winner	137	208	0.38	0.73	1.9935		0.021**	-0.1296		0.065
		Loser	217	581								
All CFF	Winner	397	129	0.76	0.61	1.0941		0.121	1.9521		0.041**	
Loser	124	208										
Pakistan	All Family	Winner	249	264	0.57	0.74	-2.2517		0.031**	1.9630		0.010**
		Loser	186	764								
	All IFF	Winner	145	148	0.47	0.72	-0.3461		0.631	0.8123		0.090
		Loser	159	396								
All CFF	Winner	115	126	0.45	0.72	1.0321		0.60	0.8216		0.192	
Loser	137	337										
Whole Sample	All Family	Winner	3416	1344	0.71	0.74	-1.8875		0.032**	1.9367		0.011**
		Loser	1415	3796								
	All IFF	Winner	2560	898	0.72	0.74	2.0137		0.004**	1.1032		0.075
		Loser	948	2591								
All CFF	Winner	681	481	0.57	0.71	1.0134		0.437	1.9326		0.004**	
Loser	500	1199										

#### Six months

Performance persistence is then examined over a longer period of six months. Table IV shows the performance persistence of the families over a semi-annual rolling period. Five of 25 families are statistically significant repeat winners, while eight of 39 families are significant repeat losers. The former, then, demonstrates persistent superior performance over a six-month period, while the latter persistent inferior performance. The repeat winner ratio for the overall sample is 71 percent. Repeat winner is not significant because the  $z$ -statistic is less than the critical value of 1.3122. The repeat loser ratio for the overall sample is 75 percent. It is also not significant because the  $z$ -statistic is less than the critical value of 1.4455. Country analysis shows that Malaysia has the highest significant superior performance persistence ( $z = 1.9081$ ). In Saudi Arabia, five of 23 families are significant repeat winners, while two of nine families are significant repeat losers. In Malaysia and Pakistan, superior and inferior performance persistence are not detected. In Indonesia, two of seven families are significant repeat winners, while six of 11 families are significant repeat losers.

**Table 4**  
Fund Family Persistence (Six-Month)

	Family	Previous Month	Following Month		Repeat Winner	Repeat Loser	Repeat Winner stat	Z-	P-Value	Repeat Z-stat	Loser	P-Value
			W	L								
Saudi Arabia	All Family	Winner	343	68	0.83	0.57	-0.2392	0.427	0.2434	0.079		
		Loser	66	91								
	All IFF	Winner	303	78	0.77	0.53	-0.4377	0.627	0.1456	0.059		
Malaysia	All Family	Winner	49	48	0.41	0.85	1.9081	0.004**	-1.0148	0.921		
		Loser	70	285								
	All IFF	Winner	32	33	0.45	0.81	1.8935	0.002**	1.1054	0.921		
Indonesia	All Family	Winner	116	33	0.71	0.75	1.1297	0.021**	-1.3173	0.065		
		Loser	47	99								
	All IFF	Winner	57	18	0.67	0.77	1.0362	0.521	1.9840	0.025**		
Pakistan	All Family	Winner	47	46	0.50	0.71	0.1466	0.631	-0.1468	0.090		
		Loser	47	113								
	All IFF	Winner	25	25	0.48	0.70	0.5327	0.631	0.5465	0.090		
Whole Sample	All Family	Winner	561	201	0.71	0.75	1.3122	0.127	1.4455	0.601		
		Loser	230	588								
	All IFF	Winner	457	144	0.74	0.71	1.0570	0.432	1.1032	0.743		
All CFF	Winner	111	56	0.63	0.79	0.7542	0.439	0.9325	0.537			
	Loser	64	220									

*One year*

Table 5 reports the performance persistence of the families over an annual rolling period.

**Table 5**  
Fund Family Persistence (One-Year)

	Family	Previous Month	Following Month		Repeat Winner	Repeat Loser	Repeat Winner Z-stat	P-Value	Repeat Z-stat	Loser	P-Value
			W	L							
Saudi Arabia	All Family	Winner	110	50	0.69	0.55	-0.1419	0.427	0.1414	0.059	
		Loser	49	62							
	All IFF	Winner	105	52	0.68	0.54	-0.1215	0.442	0.1612	0.075	
Malaysia	All Family	Winner	34	36	0.44	0.75	0.9583	0.211	-0.9765	0.921	
		Loser	42	109							
	All IFF	Winner	24	21	0.53	0.71	0.9732	0.502	0.8032	0.341	
Indonesia	All Family	Winner	37	29	0.48	0.64	1.1948	0.031**	-1.2436	0.065	
		Loser	36	52							
	All IFF	Winner	20	16	0.54	0.68	0.6651	0.661	0.7501	0.475	
Pakistan	All Family	Winner	22	26	0.44	0.63	0.3898	0.631	-0.1924	0.090	
		Loser	27	46							
	All IFF	Winner	12	15	0.42	0.60	0.7438	0.681	0.6501	0.190	
Whole Sample	All Family	Winner	202	142	0.57	0.66	-0.9670	0.084	1.0070	0.712	
		Loser	154	270							
	All IFF	Winner	166	102	0.61	0.62	0.8485	0.075	0.7940	0.084	
All CFF	Winner	60	54	0.52	0.47	0.7652	0.540	0.6932	0.439		
	Loser	55	49								

Only two of 32 fund families are statistically significant repeat winners, while seven of 34 families are significant repeat losers. The repeat winner  $z$ -statistic shows that only one of 34 families is a significant negative repeat winner, while none of the families is a significant negative repeat loser. These findings suggest the lack of evidence for performance persistence, superior or otherwise, over a one-year period. The repeat winner ratio is 57 percent, while the repeat loser ratio is 66 percent, but neither are significant. Taking the previous results together, past performance in the six-month and one-year intervals does not provide a meaningful guide for future investment decisions. These findings refute six-month and one-year –ve persistence reported by Malkiel (1995), Gruber (1996), and Carhart (1997).

Results for the country analysis confirm those of the overall sample. In Saudi Arabia, two of 19 families have a significant positive repeat winner  $z$ -statistic. On the other hand, two of 15 families are significant repeat losers. In Malaysia, two of eight families are significant repeat winners, while one of 19 families is a significant repeat loser. In Indonesia, only one of eight families is a significant repeat winner, while three of 10 families are significant repeat losers. In Pakistan, only one of seven families is a significant repeat loser.

### 5.3. IFFs vs. CFFs

We extend our analysis by comparing the performance persistence of IFFs and CFFs. Saudi Arabia is excluded because it has no CFFs. The discussion is based on the three intervals of one month, six months, and one year.

#### One month

Table 3 shows the contingency table of the IFFs and CFFs over a month-by-month rolling period. The repeat winner/loser ratio for the entire sample is 0.72/0.74. There is positive persistence in IFFs (2.0137) but not negative persistence (1.1032). In other words, IFFs demonstrate short-term (one-month) +ve persistence. Twenty-one IFFs have a positive repeat winner  $z$ -statistic, but only 11 of them are statistically significant. In contrast, only one of 29 IFFs has a significant negative repeat winner  $z$ -statistic. Twenty-five IFFs have a positive repeat loser  $z$ -statistic, but only two are significant. No statistical significance is found for IFFs with a negative repeat loser  $z$ -statistic. The country analysis shows that the winner/loser ratio in Saudi Arabia is 0.82/0.72; in Malaysia 0.39/0.77; in Indonesia 0.38/0.73; and in Pakistan 0.47/0.72. We find positive persistence in Saudi Arabia (1.916), Malaysia (1.974), and Indonesia (1.994), but not in Pakistan (-0.346). In Saudi Arabia, five families are statistically significant; in Malaysia and Indonesia, three families are significant; and in Pakistan, only one family is significant. However, the results indicate that there is no evidence for –ve persistence in the four countries.

Moving to CFFs, the repeat winner/loser ratio of the entire sample is 0.57/0.71. There is negative persistence in CFFs (1.933) but not positive persistence (1.013). In other words, CFFs demonstrate short-term (one-month) –ve persistence. Eighteen CFFs have a positive repeat loser  $z$ -statistic, but only six are statistically significant. Only two families have a significant negative repeat loser  $z$ -statistic. Moreover, only three of 12 CFFs have a significant positive repeat winner  $z$ -statistic, and no CFF has a significant negative repeat winner  $z$ -statistic. Individual country analysis shows that the repeat winner/loser ratio for Malaysia is 0.41/0.74; for Indonesia 0.76/0.61; and for Pakistan 0.45/0.72. We find positive persistence only in Malaysia (1.993) and negative persistence in Malaysia (1.991), Indonesia (1.952), and Pakistan (1.933). In Malaysia, two families have significant positive persistence, while three families have significant negative persistence. In Indonesia, only one family has significant positive persistence, while three families have significant negative persistence. In Pakistan, two families have significant negative persistence.

#### Six Months

Table 4 shows the contingency table of the IFFs and CFFs over a semi-annual rolling period. The repeat winner/loser ratio for the entire sample is 0.74/0.71. IFFs have non-significant positive (1.057) and negative persistence (1.103). In other words, IFFs do not demonstrate +ve or –ve persistence over a six-month period. Only eight families are statistically significant. The individual country analysis shows that the repeat winner/loser ratio in Saudi Arabia is 0.77/0.53; in Malaysia 0.45/0.81; in Indonesia 0.67/0.77; and in Pakistan 0.48/0.70. We find positive persistence only in Malaysia (1.894), and three IFFs in Malaysia are statistically significant. In contrast, we find negative persistence only in Indonesia (1.984), and three IFFs in Indonesia are statistically significant. The results conclude that there is +ve persistence in Malaysia and –ve persistence in Indonesia. No evidence is found for both Saudi Arabia and Pakistan.

Moving to CFFs, the repeat winner/loser ratio of the entire sample is 0.63/0.79. CFFs have non-significant positive (0.754) and negative (0.932) persistence. In other words, CFFs do not demonstrate +ve or –ve persistence over a six-month period. Only three conventional families are statistically significant. The individual country analysis shows that the repeat winner/loser ratio in Malaysia is 0.35/0.86; in Indonesia 0.84/0.68; and in Pakistan 0.52/0.71. The results show negative persistence only in Indonesian CFFs (1.909). In other words, only CFFs in Indonesia demonstrate –ve persistence over a six-month period. The results are not significant in Malaysia (0.659) and Pakistan (0.543). CFFs do not demonstrate positive persistence in all countries (Malaysia: -0.4327, Indonesia: 1.2341, Pakistan: 0.3245). In summary, there is only evidence for –ve persistence only in Indonesia, not in Malaysia and Pakistan.



### One year

Table 5 shows the contingency table of the IFFs and CFFs over a yearly rolling period. The repeat winner/loser ratio for the entire sample is 0.61/0.62. IFFs have non-significant positive (0.848) and negative persistence (0.794). In other words, IFFs do not demonstrate +ve or -ve persistence over a one-year period. Only one IFF is statistically significant. The individual country analysis shows that the repeat winner/loser ratio in Saudi Arabia is -0.122/0.161; in Malaysia 0.973/0.803; in Indonesia 0.665/0.75; and in Pakistan 0.744/0.65. We do not find any evidence of both positive and negative persistence over a one-year period, as the results are not significant across all four countries. Only one IFF in Saudi Arabia is statistically significant. The results conclude that there is no evidence for +ve and -ve persistence in IFFs over a one-year period. The results for CFFs are similar to those of IFFs. We find no evidence supporting the presence of +ve or -ve persistence over a one-year period for the overall sample and for each country.

### 6. Conclusion

The paper has examined performance persistence in both IFFs and CFFs in four emerging markets. We find that there is superior performance persistence across the whole sample over a one-month interval. Investors can thus use past-month performance information to select prospective fund families. We conclude that +ve persistence is evidence in fund families. Similarly, we find -ve persistence in the sample over a one-month period. However, +ve and -ve persistence for a longer period, i.e., six months and one year, are not supported. The overall IFF sample demonstrates +ve persistence up to one month, whereas the overall CFF sample exhibits -ve persistence up to one month.

All four countries demonstrate superior persistence over a one-month period. Malaysia demonstrates superior persistence over a six-month interval, while Indonesia shows inferior persistence over a single month. IFFs are positively persistent in all countries, except Pakistan, over a one-month period. Only Malaysian CFFs show +ve persistence, while those in Indonesia, Pakistan, and Malaysia demonstrate -ve persistence. Over a longer period, there is evidence of +ve persistence in Malaysian IFFs and -ve persistence in Indonesian IFFs and CFFs. The persistent superior performance over a one-month period may be attributed to the weak form efficiency of those markets. Put differently, the markets lack information efficiency. Their investors are typically uninformed, and informed investors are comparatively weaker when competing with genuinely skilled fund managers. As a result, the superior performance of the fund family persists to the next month. This phenomenon may also be attributed to the lack of sophistication of investors.

The results encourage investors to invest in families that focus on Islamic funds. The findings evince short-term (one-month) performance persistence. Investors can thus meaningfully use past-month performance information to select superior-performing families. Fund families in Malaysia are more attractive because their short-term persistence continues up to six months. Investors, especially foreign ones, may thus be more confident with the performance of those fund families. Islamic finance is embedded within the Sharia, which emphasizes fairness, transparency, and trust while supporting financial inclusion and socio-economic development. Sharia promotes cooperation between economic agents, as illustrated through its emphasis of profit-loss sharing ventures.

This study has two limitations. First, its scope is limited to four Islamic countries from the Middle East and Southeast Asia, thus the results may not be conclusive. We therefore recommend researchers to extend research to other Islamic countries, especially those with a high number of Islamic funds. Second, the scope is limited to equity funds, which are the most common form of mutual fund. Future work may consider other types of funds and examine their persistence.

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