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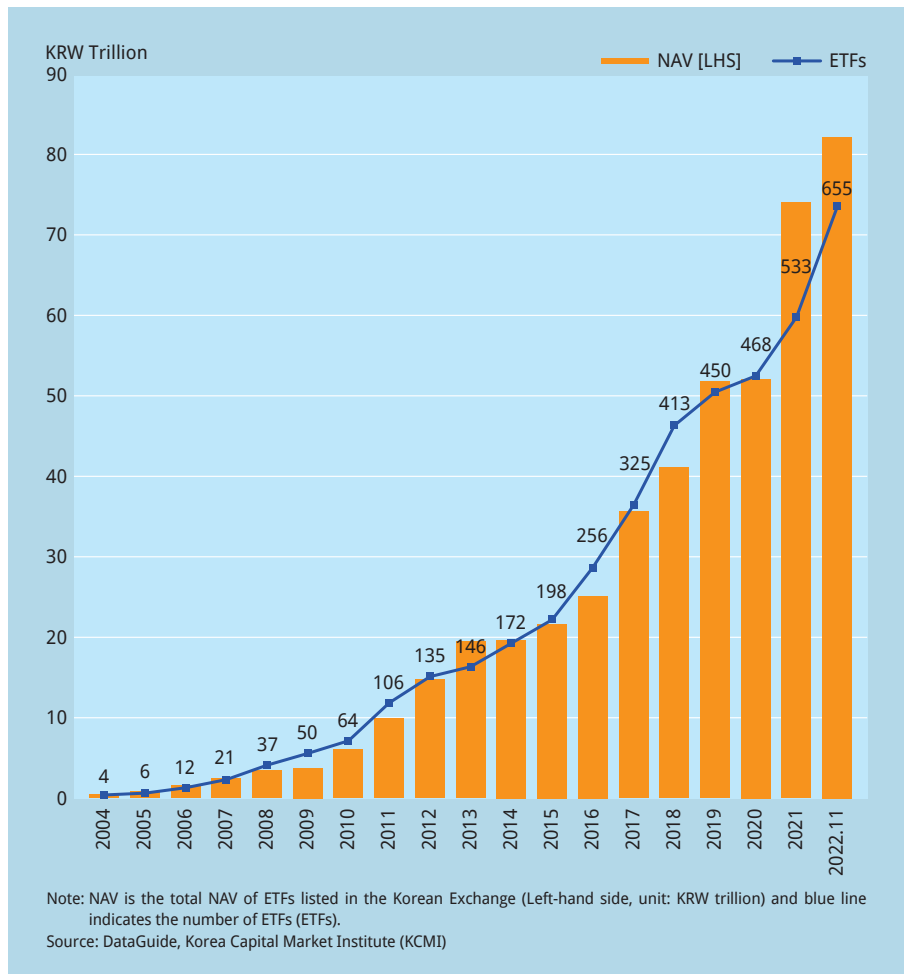
The Recent Evolution of and Challenges in the Korean ETF Market

Growth of the ETF Market in Korea

The Korean exchange traded fund (ETF) market has shown steady growth over 20 years and a remarkable performance in the recent 5 to 6 years.¹ Figure 1 shows changes in the size of the Korean ETF market. In 2004, the total net asset value (NAV) was only KRW0.5 trillion (4 listed products), but at the end of November 2022, the total NAV of the Korean ETF market reached KRW82 trillion (655 listed products). The ETF has become a widely invested product and has been preferred by many retail investors in Korea because of its simple strategic structure, low-cost portfolio investment (simply diversifying portfolio), and high liquidity. In Korea, the ETF market will continue to grow and drive the growth of the mutual fund market in the future.

It is not an exaggeration to say that the ETF has driven the growth of the mutual fund market in the 2000s. Above all, the growth trend of conventional mutual funds and the ETF market in Korea is different from other developed countries. The rapid growth of passive funds compared to

Figure 1: Market Size of Korean ETF Market



active funds is similar to other countries, but the dominant growth of ETFs is a major feature of the changes in the Korean market.² In Korea, while the conventional mutual fund market had grown rapidly before the 2008 global financial crisis, the mutual fund market stagnated after the crisis (Figure 2). At the same time ETFs began to be listed on the exchange and grew rapidly on their own. As shown in Figure 2, in 2009-10, ETFs only accounted for 2-3% of the total mutual fund market in Korea, but the market share has risen steadily to around 28% in November 2022. Especially for equity mutual funds, ETFs account for about 60%, and more than half of equity mutual funds are now ETFs. Days of conventional equity mutual funds are fading and ETFs are replacing them.

As mentioned, the status of ETFs in the Korean fund market is unrivaled. Thus, it is very important to examine the recent changes in the Korean ETF market. The variety of policies to revitalize traditional mutual funds have yet to get results. Com-

pared to active mutual funds, low-cost (low expense ratio and zero fees), quite good performance, and above all, the possibility of real-time trading (creation and redemption) make the ETFs peerless in the Korean fund market. The future issue of the Korean fund market is to identify the growth of ETFs. This article addresses the characteristics of recent changes and future challenges in the Korean ETF market.

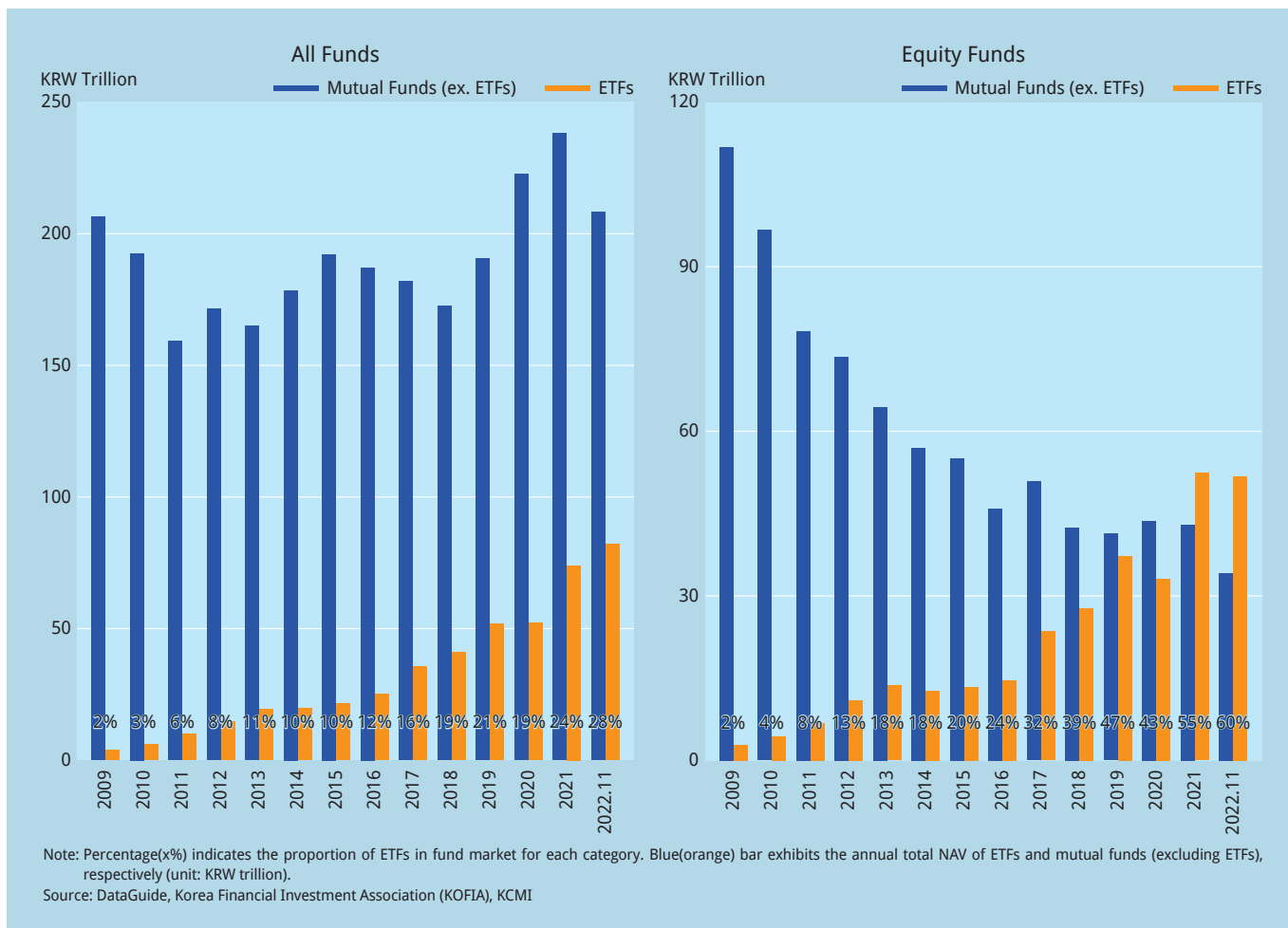
Rise of Thematic and Active ETFs

A recent change in the Korean ETF market is the rise of thematic ETFs and the introduction of active ETFs on Korea Exchange

(KRX), where most ETFs are stock-index ETFs. In terms of the number of products, 73% of products are stock-index ETFs and the others are bond-index ETFs (13%), commodity ETFs (5%), real-estate ETFs (2%), and mixed-asset ETFs (8%).³ Among stock-index ETFs, the recent driving forces of growth are thematic and active products.

Figure 3 shows the number of newly listed ETFs on KRX, excluding bond-index and other ETFs. In this figure, stock-index ETFs are generally divided into two groups: passive and active products. Passive products are designed to track a specific index like an index fund and active products are purposed to outperform the benchmark index but they can be traded at a fair value in the exchange market. Passive ETFs are then classified into four sub-categories: broad-index, sector, smart-beta, and thematic ETF. Broad-index ETFs usually track an index representing the stock market (or major indices, such as KOSPI200, TOPIX, and S&P500). Sector (industry) ETFs track

Figure 2: Comparison between ETFs and Conventional Mutual Funds



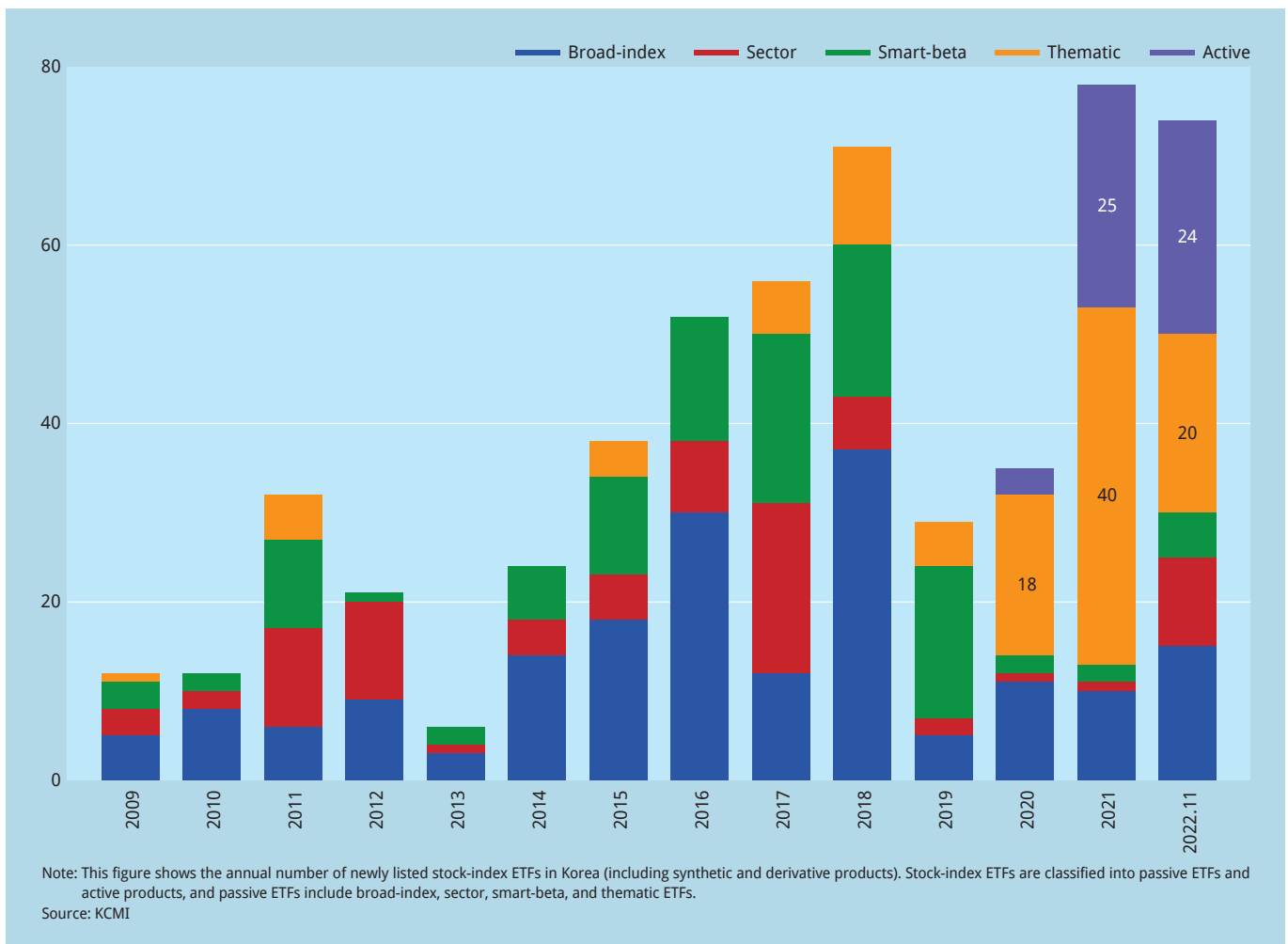
an industry index in which the sector is classified according to predefined criteria. Smart-beta ETFs are a kind of strategic ETF that tracks a basket portfolio based on characteristics (e.g., factor models) of equity, for example, value, growth, momentum, and low-volatility. Lastly, thematic ETFs track a basket index composed of equities related to a specific theme or trend. As shown in Figure 3, most newly listed passive ETFs are thematic products. In 2021, 40 thematic ETFs were listed, which is 75% of all new-listed passive equity ETFs and 44% of all newly listed ETFs in Korea. The total NAV of thematic ETFs now accounts for 17% (25%) among all (equity) ETFs in Korea and their trading volume has grown fast. On the other hand, the number of active equity ETFs is rapidly increasing in the Korean ETF markets. In the recent 2 years, about 50 active equity ETFs are listed in KRX and they constitute about 22% (32%) of all (stock-index) newly listed ETFs as shown in Figure 3.

Why are these kinds of ETFs growing fast? At first, on the demand side, many retail investors have been surging into the stock market after the COVID-19 situation. At the end of 2021, the number of retail investors exceeded 13 million, which is more than double the number before COVID-19. Young people, aged 30s or below, who are more likely to prefer direct investment to indirect products, now account for 40% of investors.⁴ Of course, ETFs are one of the indirect investment products, but investors prefer to trade equities by themselves so they show a similar preference for ETFs rather than other conventional mutual funds. Furthermore, the growth of retirement pension plans is one of the key demand factors for the growth of ETFs. The reserves of retirement pension plans, such as Defined Contribution (DC) and Individual Retirement Pension (IRP) accounts which must be managed by account holders, keep growing.⁵ In summary, the expansion of the investor base is a ma-

major macroeconomic factor in the growth of ETFs in Korea.

Generally, retail investors or IRP account holders who want to invest in an ETF face a selection problem. There are lots of ETFs listed on KRX (more than 650 products), so their recognition or visibility in the ETF universe is important. In terms of investors' interests, thematic and active ETFs have superior visibility compared to other ETFs. To increase visibility, thematic or active ETFs tend to use keywords to focus investors' attention. The majority of thematic and active ETFs have keywords to attract investors' attention, for instance, Renewable Energy, Korean Webtoon & Drama, Golf, K-Game, K-POP, K-Food, Innovation, CO₂, Mobility, Metaverse, MZ-generation, Platform, and Electrical Vehicle. One active ETF has the keyword 'K-Stock' in its product name. In the case of thematic ETFs, people can easily understand which portfolio they will invest in through the product name, while in the case of active ETFs, the prod-

Figure 3: New-listed Stock-index ETFs in Korea



uct names attempt to give investors the belief that the ETF will outperform the stock market. These attention-grabbing products are related to competition among fund managers (e.g., Ben-David et al., 2021). If investors do not recognize or understand products (or underlying indices), it is hard to gain their attention, such as smart-beta ETFs in the Korean ETF market.

On the supply side, the leader advantage exists in ETF supply markets. Theoretically, there are improvement effects in liquidity and profitability (fees) for leader funds (e.g., Khomyn et al., 2021).⁶ Since the average expense ratio of ETFs is low compared to conventional mutual funds, it is difficult to compete in the ETF market. Due to ETF characteristics, such as transparency, it is also hard for fund managers to exercise their discretion and managing capabilities. Thus, there is an incentive for product differentiation. Becoming a leader could be a feasible strategy to compete in the ETF market so follower suppliers are more likely to target niche markets; specialized ETFs. Grounded on these reasons, ETF suppliers would launch thematic and active ETFs to differentiate their products and attract investors' attention.

Competition in the Korean ETF market has accelerated since 2007. The Herfindahl-Hirschman index for the ETF supply market is close to 0.3, which means that there are three groups that share the market equally. In fact, there are two oligopoly players in the Korean ETF market, Samsung and Mirae Asset Management, and their occupation was dominant. However, with the growth of thematic and active ETFs, many new funds have entered the ETF market. Samsung and Mirae's proportion of products has decreased. Overall, the thematic and active ETFs have contributed to the diversification and variety of

products and suppliers in the Korean ETF market.

Characteristics and Future Challenges to Thematic and Active ETFs

Recent empirical evidence confirms that those niche products have diversified the ETF universe and offer a wide selection of products to investors. According to analyses by Kim (2022), thematic ETFs show a low level of similarity to existing ETFs in Korea's market. By calculating cosine similarity, Kim shows that thematic ETFs exhibit a higher heterogeneity (lower similarity) to the existing ETF market than broad-index and smart-beta ETFs.⁷ Sector ETFs also have the lowest similarity because of their industry-specific portfolio and the timing of their introduction.

In addition to passive funds like thematic ETFs, active ETFs could contribute to market heterogeneity. Fundamentally, active ETFs are designed to outperform the benchmark index, so they are likely to hold a differentiated portfolio. Although active ETFs might be subject to the managing skills of fund managers, we can expect that the strategy is different from a simple buy-and-hold index portfolio. Overall, thematic and active ETFs have contributed to expanding the investment opportunity set for ETF investors.

In addition to market differentiation, the characteristics of thematic ETFs are summarized in Table 1. First, themat-

ic ETFs are traded actively compared to other passive ETFs. Since retail investors are the main demand base in the Korean ETF market, their interests are directly associated with the trading activity. Thematic ETFs have an average daily trading turnover rate of 3.0%, which is much higher than other passive ETFs. Although there is a variation in trading activity, the price divergence is quite low because of active trading. Basically, ETFs are different from conventional mutual funds so the exchange-traded price could differ from the NAV per share. To minimize the price disparity, designated authorized participants (APs) conduct arbitrage activity to reduce the price gap between NAV and ETF prices. When ETFs are liquid, arbitrage trading is facilitated, resulting in small price disparity. Owing to the high liquidity of thematic ETFs, the average price spreads are low (16 basis point on average), which allows investors to pay lower (implied) trading costs.⁸ Secondly, thematic ETFs offer a relatively concentrated portfolio. The average diversification ratio is somewhat lower than that of typical passive ETFs, which implies a lower level of portfolio diversification. Some thematic ETFs focusing on a particular theme tend to include similar equities within a portfolio, which potentially exacerbates exposure to the idiosyncratic risk of individual equities.

Lastly, thematic ETFs contain relatively overvalued equities in their basket portfolio. In terms of the average portfolio-level market-to-book ratio, stocks in thematic ETFs have a higher ratio (average 2.76), which implies either high growth opportunity or over-valuation. As Kim (2022) points out in his analysis, thematic ETFs in Korea have hardly achieved satisfying post-listing performance. According to the result⁹, thematic ETFs showed a cumu-

Table 1: Characteristics of Passive Equity ETFs in Korea

Average Characteristics	Broad-index	Sector	Smart-beta	Thematic
Average Similarity (0-1)	0.76	0.20	0.45	0.35
Average Daily Turnover (%)	1.3	1.1	0.8	3.0
Average Price Disparity (bp)	29.0	25.5	22.6	16.4
Average Diversification Ratio	1.99	1.63	2.28	1.91
Average Market-to-book	1.89	2.16	1.45	2.76

Note: This table reports the cross-sectional average characteristics of four classes of equity (passive) ETFs. Similarity is defined as cosine similarity (inner-product) between the ETF basket and the market portfolio. It normally ranges from zero to one. The higher the similarity value, the more similar to the market portfolio ETF. Daily trading turnover is trading volume divided by shares outstanding and the price disparity is the absolute value of the difference between ETF price and NAV per share divided by ETF price. The diversification ratio is computed as the weighted average of the volatility of stocks in the ETF basket portfolio normalized by portfolio-level return volatility. Market-to-book ratio is the portfolio-level summation of market value (market capitalization) divided by the sum of the book value of equity in the basket portfolio.

Source: KCMI

relative excess return of -5.7% for one year after listing, underperforming the stock market in the period. The bottom 25 percentile of cumulative excess return stands at -18.3%. As for other types of passive equity ETFs, cumulative excess returns averaged nearly 0%, not much different from the market returns. One reason for this phenomenon might be over-valuation at the point of listing. Since thematic ETFs involve stocks gaining great attention from the market prior to listing, post-listing performance is poor compared to other types of passive ETFs. This is consistent with a high market-to-book ratio and associated with the attention-grabbing behavior of ETF suppliers (Ben-David et al., 2021).

The return characteristics of active equity ETFs listed on KRX are shown in Figure 4. First, active equity ETFs achieve a positive alpha compared to the benchmark index, but the magnitude is not economically significant. As seen in the left-hand panel of Figure 4, the average cumulative excess returns were 2-3% per year. The excess returns are calculated as the cumulative returns in excess of benchmarks¹⁰, and only reported for 14-month periods within a sufficient number of samples.

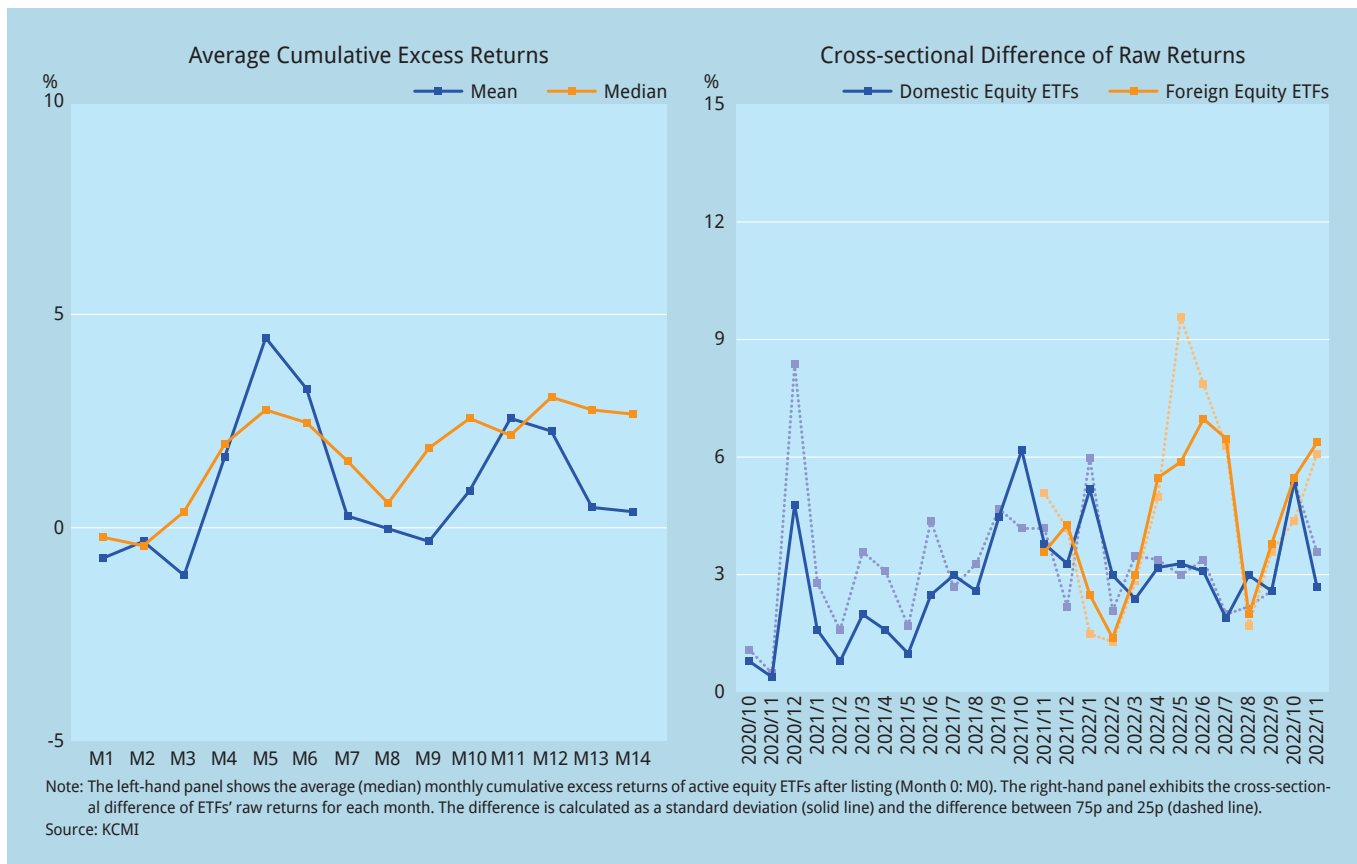
On the other hand, the return difference among ETFs is not large enough to achieve a diversity of products, as shown in the right-hand panel of Figure 4. The monthly mean of the cross-sectional standard deviation of domestic (foreign) active equity ETFs is 2.8% (3.2%). This implies that those ETFs may not use different portfolio strategies among each other. Nonetheless, the positive side is that active products have shown positive abnormal returns, so more diverse active ETFs need to be launched to revitalize the Korean mutual fund market.

recently. This trend is expected to continue for the time being. In the midst of such changes, now is the time to consider how to revitalize the mutual fund market in Korea through ETFs. First, to diversify the active ETFs in Korea, policymakers have to consider relaxing the regulations. In Korea, ETFs are basically regulated under Korea Capital Market Act and the KRX rule, and active ETFs are more tightly regulated compared to those in overseas markets. The most representative regulations are correlation and transparency. Now the correlation between the benchmark index and an active ETF should be more than 0.7. If the correlation is below 0.7 in three consecutive three months, the ETF could be delisted. Also, all ETFs, including active ETFs, should disclose their portfolio deposit file (PDF) every single day, which means that their portfolio compositions are disclosed every day. Fundamentally, it is important to resolve the trade-off between portfolio transparency and confidentiality of a strategy. In the short term, policymakers need to relax the correlation regulation and discuss the possibility of non-transparent active ETFs (delaying the portfolio disclosure) in the medium and long term.

Concluding Remarks

The rise of thematic ETFs and the introduction of active ETFs are the key aspects in the evolution of the Korean ETF market

Figure 4: Return Characteristics of Active Equity ETFs



Furthermore, thematic ETFs obviously provide various kinds of passive investment tools. However, due to intensified competition and attention-grabbing behavior, some thematic ETFs show poor performance and high volatility. Competition in the ETF market might result in a decrease in investor welfare. Since there is a huge growth opportunity in the ETF market, both product suppliers and investors should consider long-term growth potential, which is not a myopic and short-term strategy. The role of thematic ETFs is not only diversifying the ETF universe but also contributing to long-term value investing through ETFs.

Notes

- 1 After the introduction, the compound annual growth rate (CAGR) of the Korean ETF market size is 32.7%, which is higher than the 25.6% of global ETF markets. (source: ET-FGI.com)
- 2 For example, in the United States, not only passive funds but also active funds are growing together. The proportion of passive funds, especially ETFs, is increasing but conventional mutual funds are also growing with ETFs. (source: Morningstar)
- 3 In terms of total NAV (fund size), stock-index ETFs account for about 75% of all ETFs, and bond-index ETFs and other ETFs constitute

about 22% and 3%, respectively.

- 4 Before the COVID-19 pandemic, only 25% of investors were aged 30s or below. (source: Korea Securities Depository (KSD))
- 5 The reserves of DC and IRP are KRW76.5 and 46.5 trillion, respectively at the end of 2021. (source: Financial Supervisory Service)
- 6 From the model of Khomyn et al. (2021), equilibrium fees and trading turnover are higher for the leader funds than for follower funds.
- 7 See Figure 2 in Kim (2022).
- 8 For example, investors looking to buy (sell) the ETF will trade the ETF at a value higher (lower) than its true value when the ETF price is higher (lower) than its NAV per share.

9 See Figures 3 and 4 in Kim (2022).

10 The benchmarks are KOSPI and KOSPI200 indices for domestic ETFs and S&P500 and NASDAQ100 indices for foreign products.

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