

Analysis on

the **market response** to the **medium-term investment values**
of ETFs tracking CSI Cloud Computing & Big Data Index

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URP Report

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01

Background

PART ONE



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Background



Abroad:

1971

US launch world's first index fund, but **failed**

1987

the **great crash** of the stock market, avoid the risk of individual stocks through the "stock basket"

1993

Standard & Poor's Depositary Receipts was born in US

1976

Vanguard Group of **John Bogle**, launched Vanguard 500 index fund

1990

[1] Toronto Stock Exchange launched the world's **first** ETF, Index Participation Shares (TIPs)

China:

2004

China's **first** ETF--50ETF, established

2008

Global financial crisis

2012&2013

CSI 300 ETF index launched, bonds, gold ETFs also launched

2015

Abnormal volatility of the stock market

4/2025

total size: exceeded 4 trillion yuan
10% growth compared to the end of 2024

9/23/2024

total size: 3.5 trillion
size of equity ETFs: **2.74 trillion**
A500 release, ETF size 218.7 billion, share 205%

Huijin Company, bought many ETFs, entered the market with huge sums of money, stabilized the market

Background



ETF Categories

Broad-based ETFs

Themed ETFs

Narrow-based ETFs

Cloud Computing

Big Data

【²】 ETF is an important force in today's market and has become a **new investment tool** in China.

【³】 become the two most promising and influential industries due to the **rapid development of digital infrastructure** and the **strong support of government policies**

Correlated, find something **new**

Explore the **response** of thematic ETFs with **cloud computing** and **big data** as indicators in the market and **whether they are welcomed and accepted by the market.**



02

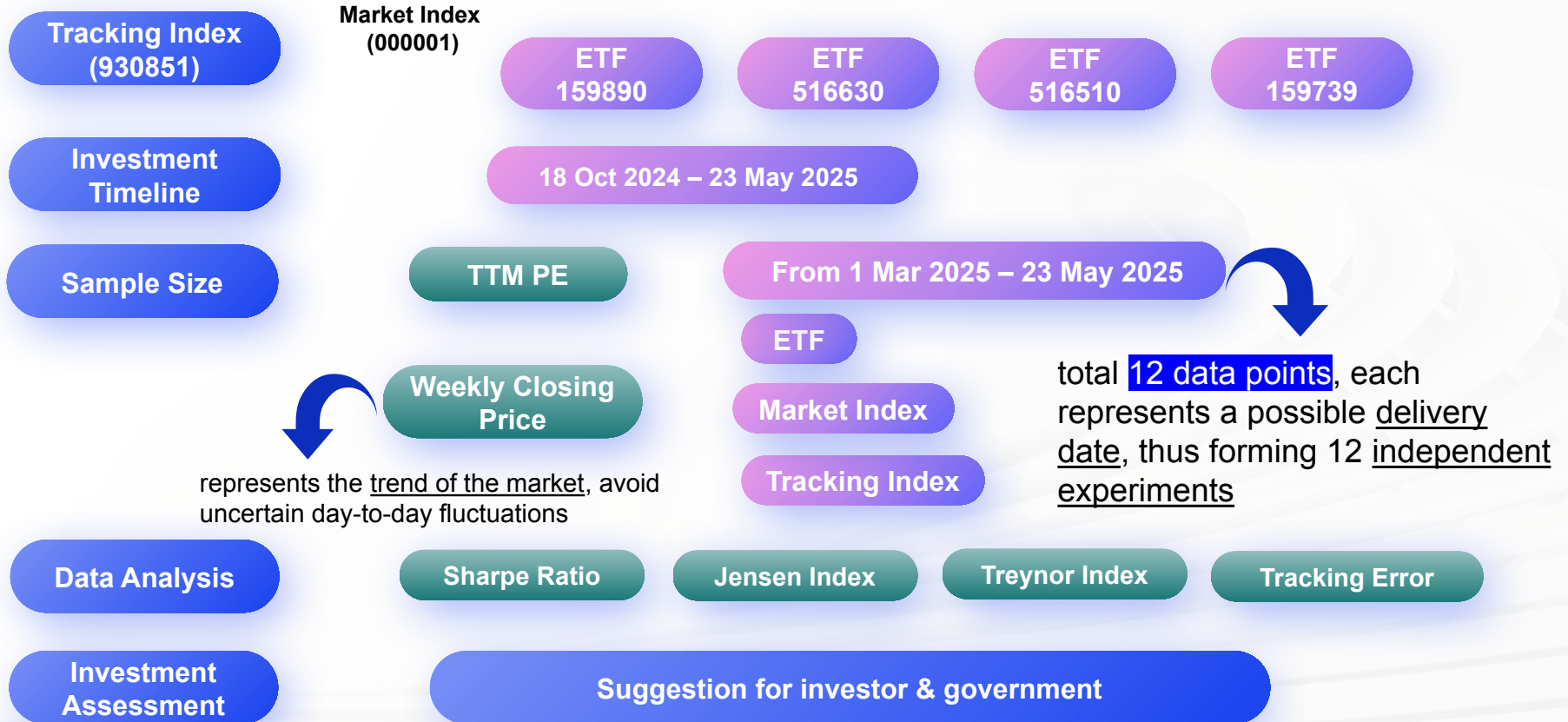
PART TWO

Methodology



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Methodology



03

Data Collection

PART THREE



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Data Collection – Prime Data



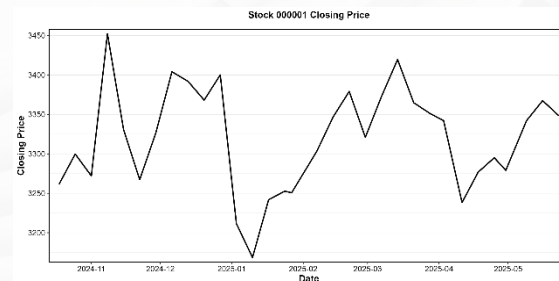
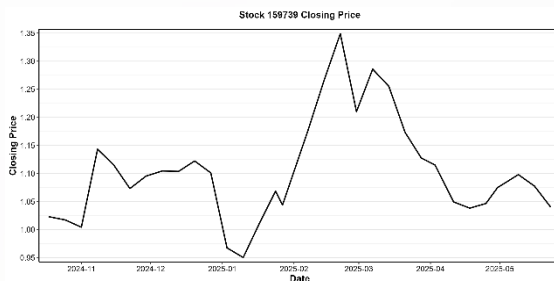
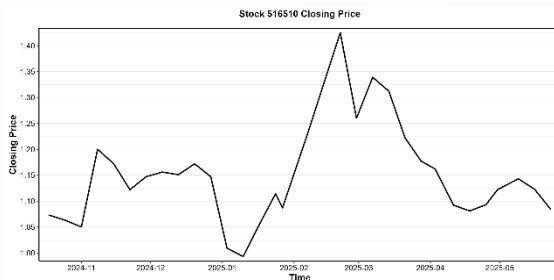
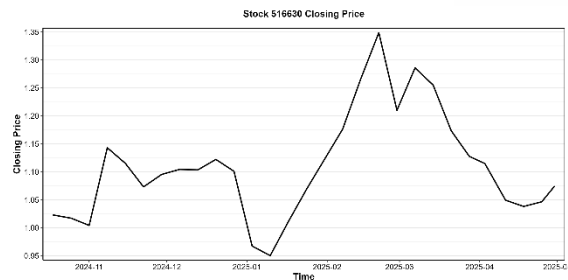
Table 1: Data Collection - Friday closing price

Date	516510	516630	159890	159739	930851	000001
<i>Oct.18th</i>	1.073	1.042	1.081	1.023	4154.43	3261.56
<i>Oct.25th</i>	1.063	1.03	1.074	1.0173	4128.66	3299.7
<i>Nov.1st</i>	1.05	1.02	1.061	1.0043	4076.27	3272.01
<i>Nov.8th</i>	1.2	1.16	1.21	1.1432	4649.87	3452.3
<i>Nov.15th</i>	1.172	1.14	1.179	1.1152	4535.79	3330.73
<i>Nov.22nd</i>	1.122	1.09	1.131	1.0732	4356.48	3267.19
<i>Nov.29th</i>	1.147	1.11	1.155	1.0954	4444.6	3326.46
<i>Dec.6th</i>	1.156	1.12	1.165	1.1045	4478.92	3404.08
<i>Dec.13th</i>	1.151	1.12	1.159	1.1036	4462.96	3391.88
<i>Dec.20th</i>	1.172	1.14	1.183	1.1223	4538.93	3368.07
<i>Dec.27th</i>	1.1470	1.1100	1.160	1.1010	4450.90	3400.14
<i>Jan.3rd</i>	1.0090	0.9790	1.019	0.9674	3902.77	3211.43
<i>Jan.10th</i>	0.9930	0.9600	1.002	0.9503	3830.79	3168.52
<i>Jan.17th</i>	1.0550	1.0210	1.065	1.0110	4077.42	3241.82
<i>Jan.24th</i>	1.1140	1.0800	1.127	1.0686	4308.85	3252.63
<i>Jan.31st</i>	1.0870	1.0524	1.101	1.0438	4207.23	3250.60
<i>Feb.7th</i>	1.2320	1.1900	1.246	1.1764	4752.29	3303.67
<i>Feb.14th</i>	1.3290	1.2900	1.346	1.2661	5121.28	3346.72
<i>Feb.21st</i>	1.4250	1.3800	1.444	1.3490	5457.72	3379.11
<i>Feb.28th</i>	1.2600	1.2200	1.274	1.2101	4894.57	3320.90
<i>Mar.7th</i>	1.3390	1.3000	1.358	1.2859	5203.12	3372.55
<i>Mar.14th</i>	1.3120	1.2700	1.324	1.2552	5077.41	3419.56
<i>Mar.21st</i>	1.2220	1.1900	1.239	1.1734	4742.95	3364.83
<i>Mar.28th</i>	1.1770	1.1400	1.193	1.1277	4555.42	3351.31
<i>Apr.3rd</i>	1.1620	1.1300	1.178	1.1449	4503.00	3342.01
<i>Apr.11th</i>	1.0920	1.0620	1.109	1.0494	4236.15	3238.23
<i>Apr.18th</i>	1.0810	1.0500	1.098	1.0382	4190.53	3276.73
<i>Apr.25th</i>	1.0930	1.0600	1.107	1.0466	4224.72	3295.06
<i>May.3rd</i>	1.1220	1.0880	1.139	1.0748	4339.98	3279.03
<i>May.9th</i>	1.1430	1.1120	1.162	1.0980	4434.88	3342.00
<i>May.16th</i>	1.1230	1.0890	1.138	1.0775	4351.81	3367.46
<i>May.23rd</i>	1.0840	1.0520	1.1	1.0400	4195.74	3348.37

Reasons for collecting data on Friday closing prices:

- 1: The trade-off between relatively large sample size and excessive data.
- 2: Friday's closing price represents investors' rational judgment, excluding the influence of weekend information.

Data Collection – Descriptive Figures



04

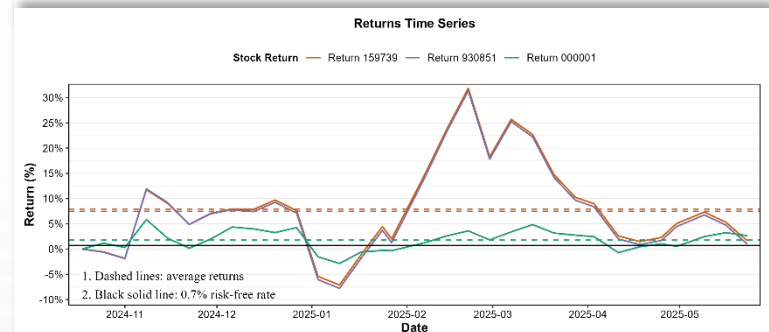
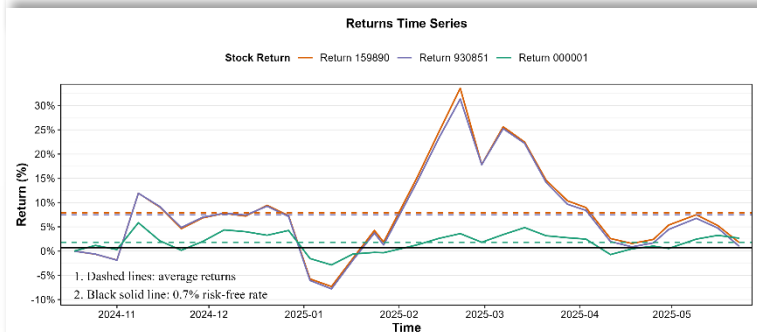
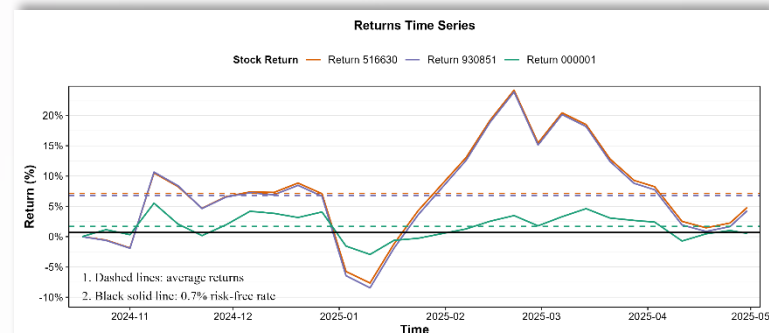
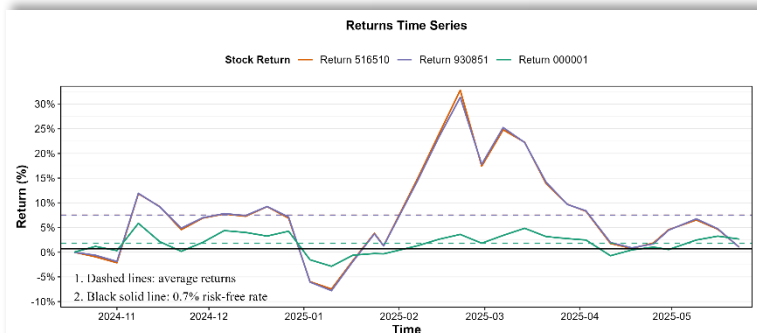
PART FOUR

Data Analysis



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Data analysis – View of Return On Investment



Data analysis – Calculation

Figure 1: Data Analysis - Calculation Logic

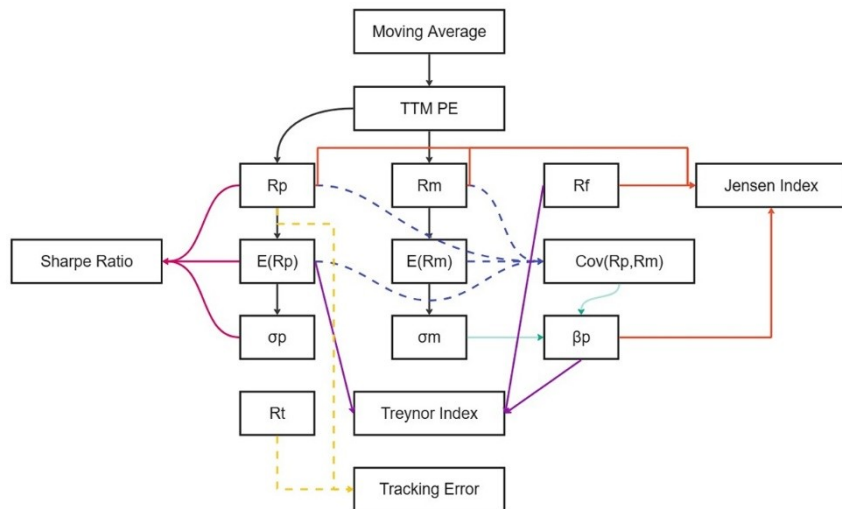


Table 3: Data Analysis - Equations

$$1. \text{ Sharpe Ratio} = \frac{E(R_p) - R_f}{\sigma_p} \quad (1)$$

$$2. \text{ Jensen index} = R_p - [R_f + \beta_p (R_m - R_f)] \quad (2)$$

$$3. \text{ Treynor index} = \frac{E(R_p) - R_f}{\beta} \quad (3)$$

$$4. \text{ Risk Free Return Rate } (R_f) = \frac{7}{12} = 0.64\% \quad (4)$$

$$5. \text{ Tracking Error} = \frac{a-b}{b} \quad (5)$$

E as Relative error between ETF rise/fall %a & tracking index rise/fall %b

Sharpe Ratio

Return - Individual
stock Risk

Jenson Index

Fund manager
benefits

Treynor Index

Return - Systematic
Risk

β & E

Data analysis – Results



Calculation Results

	516510	516630	159890	159739
Sharpe Ratio	0.949	0.94	1.044	1.028
Jensen Index	0.051	0.05	0.059	0.037
Treynor Index	0.047	0.049	0.052	0.028
Beta Coefficient	2.135	2.101	2.125	2.976
Tracking Error	0.042	0.015	0.245	0.097
Tracking Error (1)	(-0.002,0.086)	(-0.038 0.067)	(-0.038 0.053)	(-0.039,0.155)
Tracking Error (2)	(-0.045,0.130)	(-0.090 0.120)	(-0.321 0.810)	(-0.019,0.213)
Tracking Error (3)	(-0.089,0.173)	(-0.143 0.172)	(-0.604 1.093)	(-0.077,0.271)

Data analysis - Exogenous Shock



Factors

Mutual Swap Facility and Policy Initiatives

The implementation of the mutual swap facility and other supportive policies injected substantial liquidity into the market, directly boosting ETF prices.

Presented results

The combination of increased liquidity and positive investor sentiment led to a notable increase in ETF prices, exemplified by the 5.29% rise of ETF930851 on October 18.

October
18th , 2024

01

02

03

Optimistic Market Outlook and Enhanced Confidence

Positive market sentiment and the confidence-boosting statements from the Financial Street Forum encouraged investors to actively buy assets, driving up ETF prices.

Subjective
Factors



ETF930851

Data analysis - Exogenous Shock



Objective cause

Presented results

February
28th, 2025

- **Tariff Announcement and Stagflation Concerns :**
Trump's 25% tariff on Canada and Mexico sparked stagflation fears and market panic.

- The Asia-Pacific stock market fell sharply, with many stocks, especially in the cloud computing sector, hitting daily limits down or dropping over 10%.



- **Risk Aversion and Regulation :**
Increased market risk aversion and new regulations on data centers and cloud computing reduced investor confidence.

Subjective cause



ETF930851

Data analysis - Exogenous Shock



Objective cause

The U.S. government suddenly announced harsh tariffs against China.

01

02

03

Presented results

A-share's three major stock indexes opened sharply lower, with over 5,300 companies' stock prices falling, leading to a "mass limit down" scenario.

It triggered extreme panic and massive selling by investors in the market.

Subjective cause

April
7th ,



ETF930851



05

PART FIVE

Conclusion



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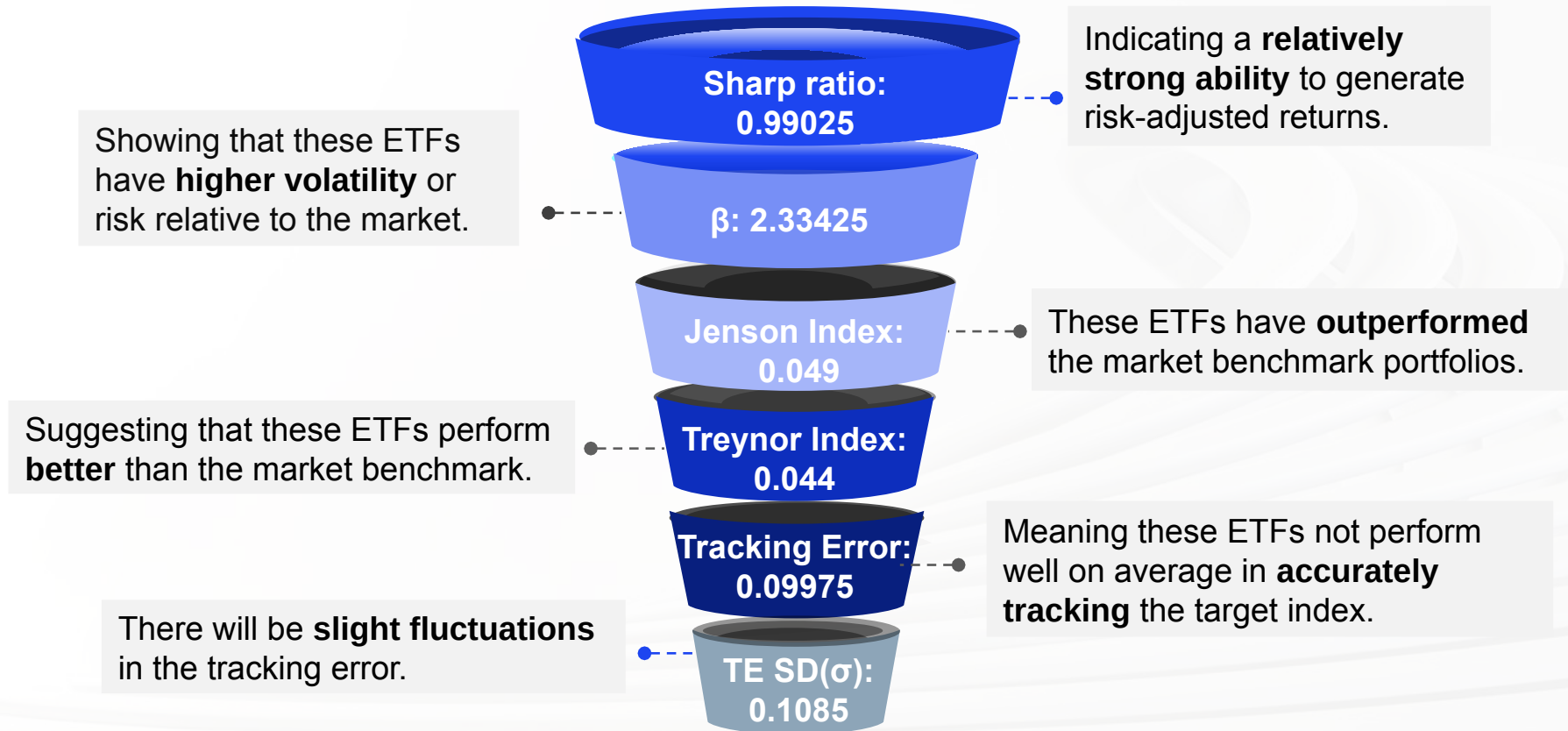
Result Discussion — Return On Investment



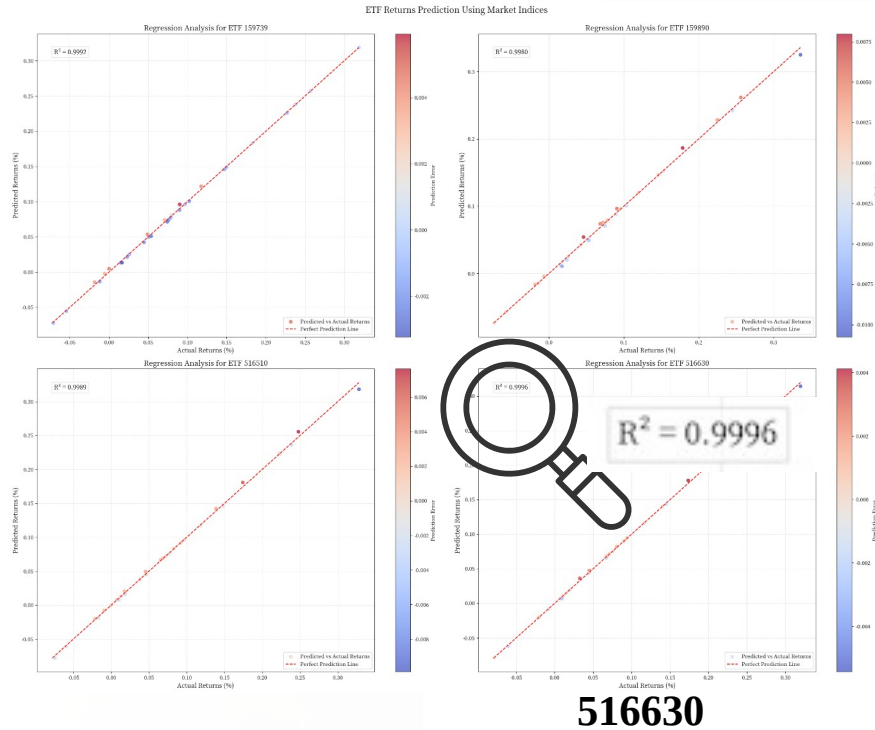
	516510	516630	159890	159739	Average
Sharpe Ratio	0.949	0.940	1.044	1.028	0.99025
Jensen Index	0.051	0.050	0.059	0.037	0.04925
Treynor Index	0.047	0.049	0.052	0.028	0.044
Beta Coefficient	2.135	2.101	2.125	2.976	2.33425
Tracking Error	0.042	0.015	0.245	0.097	0.09975
TE STDEV (σ)	0.044	0.052	0.280	0.058	0.1085
Portfolio Return	0.0834	0.0619	0.0901	0.0902	0.0814

The four ETFs have outperformed the market overall from March to May, despite underperforming on May 23rd.

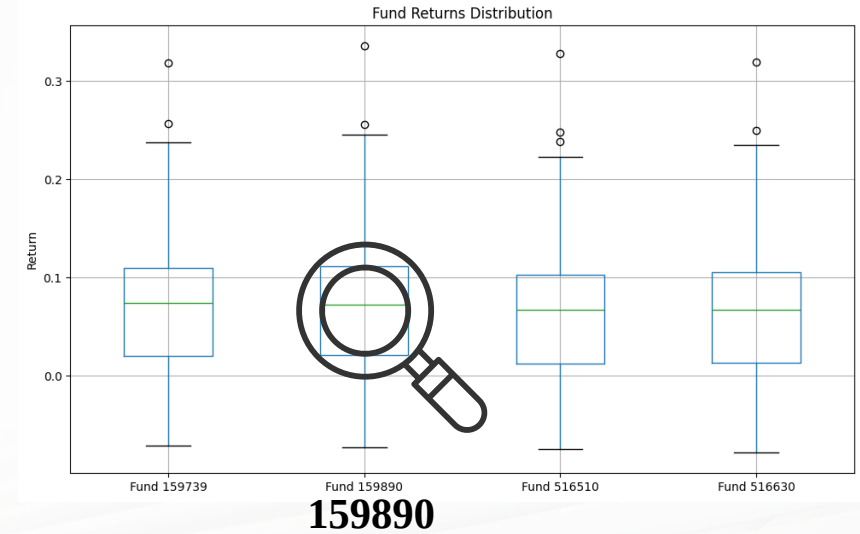
Result Discussion— Performance Metrics



Result Discussion — Comparative Analysis



Multiple Regression



Box Plot

Conclusion



01

Analysis of overall performance

The four ETFs have outperformed the market overall from March to May, despite underperforming on May 23rd.

02

Risk Assessment

The ETFs carry higher risk due to their average Beta of 2.33 and should be considered by investors with a higher risk tolerance.

03

Advices

Individual investors should assess their risk preference before investing in these ETFs. Meanwhile, governments should consider implementing policies to support the Internet of Things technology sector and promote the development of specialized ETF industries.

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THANKS

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