

Unit Trust Data Analysis

PROJECT AIM

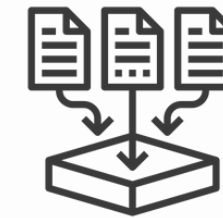
PLANNING



BRAINSTORMING

Financial Analysis

- What we can get from the website?
- What is the structure of the website?
- Feasibility of scrapping the website
- What data are the must for analysing?



DATA COLLECTION

Web scraping

HSBC Unit Trust Website (risk level, performance (annualized return), fund house)



DATA PREPROCESSING

Data cleaning & transformation

Remove the irrelevant parts, manipulate and transform the raw data in a useful and efficient format.



ANALYSIS

Visualization

Highlight the useful information such as annualized return by risk level, Equity holdings sector allocation and geographical allocation

PROJECT AIM

PLANNING

KEY TERMS

Performance
- by Annualised return

Based on bid to bid/ NAV to NAV prices of the fund with dividend reinvested

Risk Level

Risk Level of the fund assigned by HSBC with considering the std. , alpha and beta.
(Level 1 = lowest risk , Level 5 = highest risk)

Sector / Industry

Equity holdings sector allocation

Geo / Countries

Equity holdings geographical allocation

BUSINESS VALUE

POTENTIAL USAGE

Major Stakeholders

Potential Investors

Potential applications

Find out the potential returns of HSBC Unit Trust and potential best fit funds

HSBC Current Customers

Find out the best fit funds for their needs by risk level and performance

Competitors of HSBC

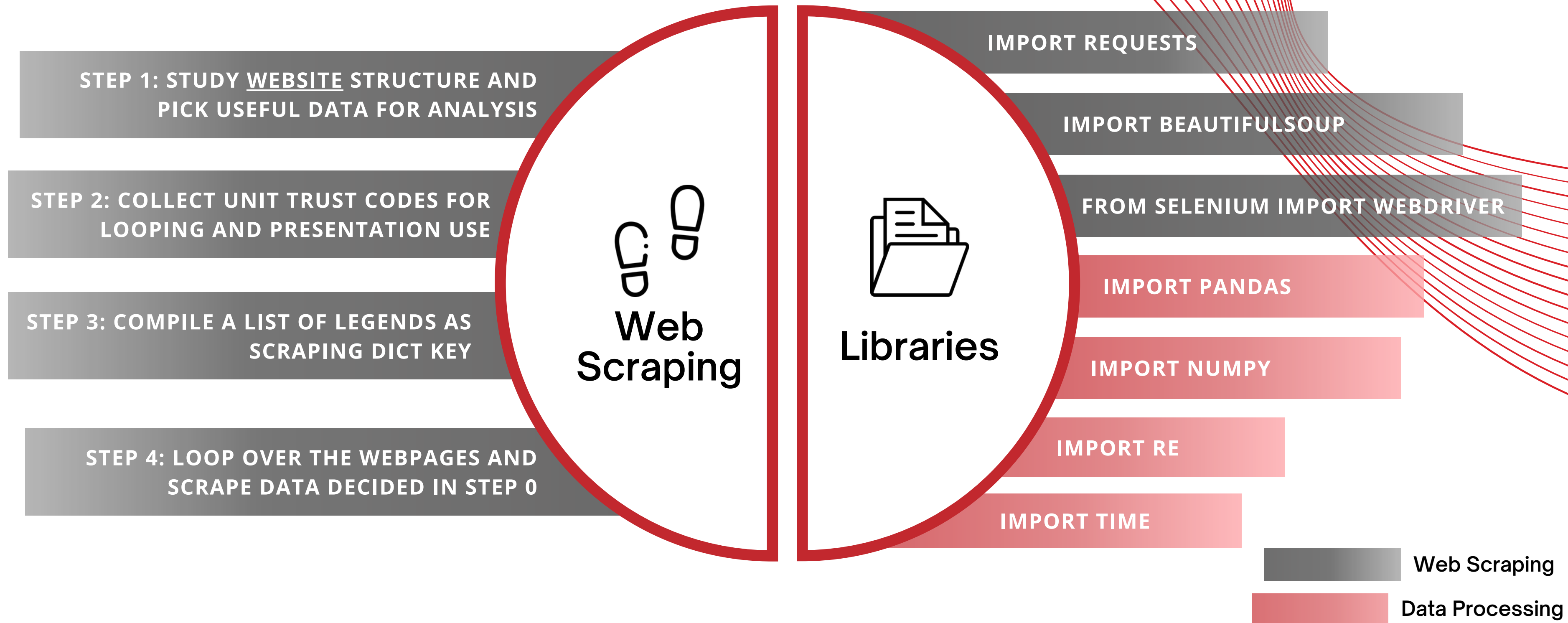
Find out the best funds performance from HSBC and improve their strategy

Fund House

Find out the trend and characteristics(e.g. industries) of well performance funds and improve their strategy

DATA COLLECTION

WEB SCRAPING



DATA PREPROCESSING



Change string to numeric values for analysis

1) Replace the null data to 0

```
df['Annualised_return'] = df['Annualised_return'].replace("-", "0")
```

2) Remove symbols affecting type change

```
round(float(x.replace("%", ""))/100, 4)
```

```
round(float(x.replace(",", "", "")), 4)
```

```
round(x.str.extract('([\+\-]\d+\.\d+)', 4)
```

DATA PREPROCESSING

- Shortlist of dataframe.head(10)

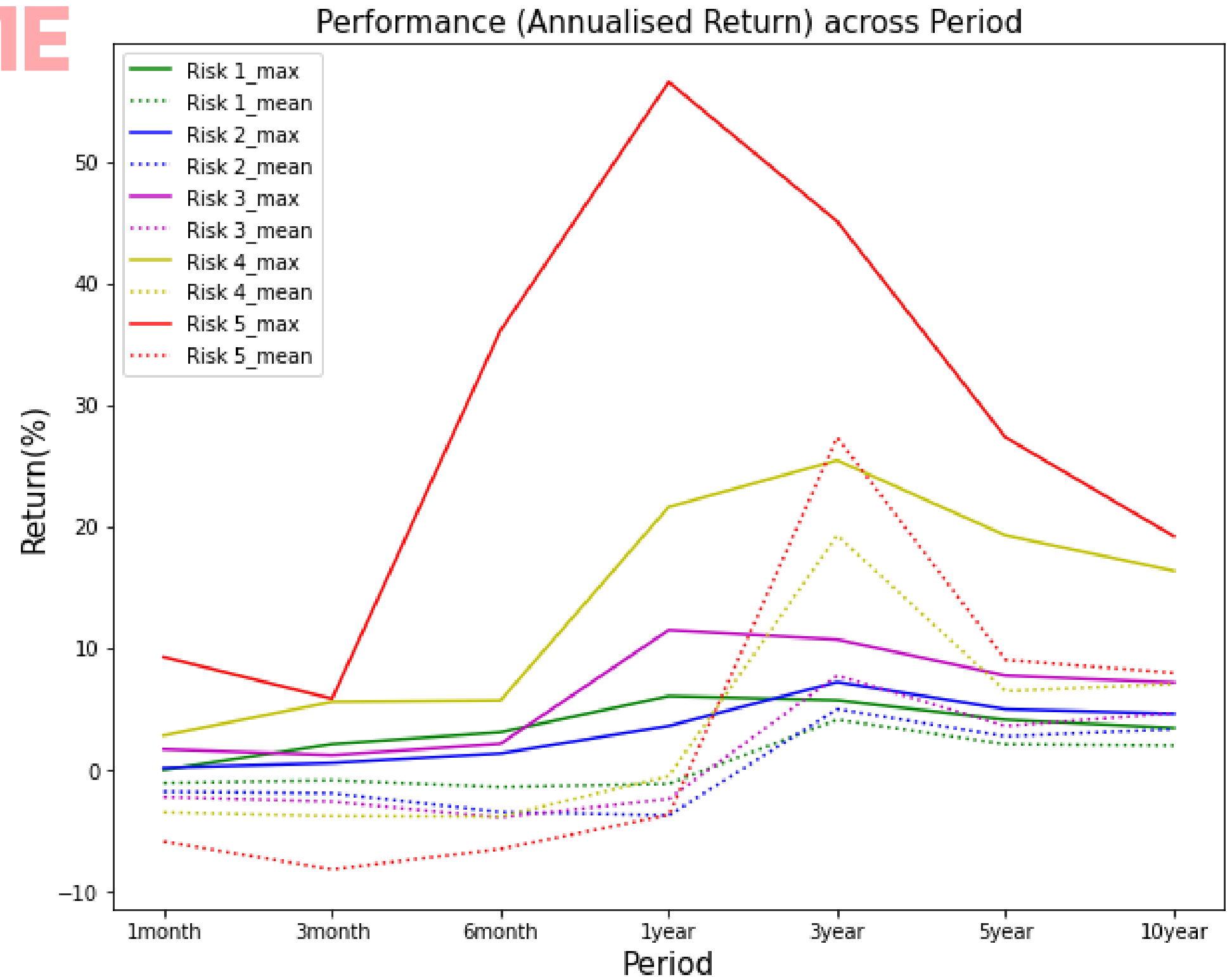
	Code	Fund_Name	fund_house	HSBC_risk_level	HSBC_min_investment_amount_USD	Equity_holdings_sector_max	Equity_holdings_country_max
0	U61710	BlackRock World Energy Fund (Class A2-EUR) U61710	BlackRock	5	952.0	Energy	United States
1	U43242	BlackRock World Energy Fund (Class A2) U43242	BlackRock	5	1000.0	Energy	United States
2	U62680	MRF-HSBC Jintrust Dynamic Strategy Mixed Sec I...	HSBC Jintrust Fund Management Company Limited	5	1600.0	Financial Services	United States
3	U62253	NINETY ONE GSF-GLOBAL NATURAL RESOURCES FUND (...)	Ninety One	5	1000.0	Basic Materials	United States
4	U62254	NINETY ONE GSF-GLOBAL NATURAL RESOURCES FUND (...)	Ninety One	5	1000.0	Basic Materials	United States

Annualised_returns: 1 month	Annualised_returns: 3 month	Annualised_returns: 6 month	Annualised_returns: 1 year	Annualised_returns: 3 year	Annualised_returns: 5 year	Annualised_returns: 10 year
0.0931	0.0562	0.3615	0.5657	0.0429	-0.0190	-0.0149
0.0896	0.0256	0.3043	0.4563	0.0394	-0.0093	-0.0285
-0.0336	-0.0534	0.0287	0.2531	0.4511	0.2406	NaN
0.0446	0.0012	0.1481	0.2757	0.1579	0.0753	0.0100
0.0446	0.0012	0.1481	0.2757	0.1579	0.0753	0.0100

ANALYSIS

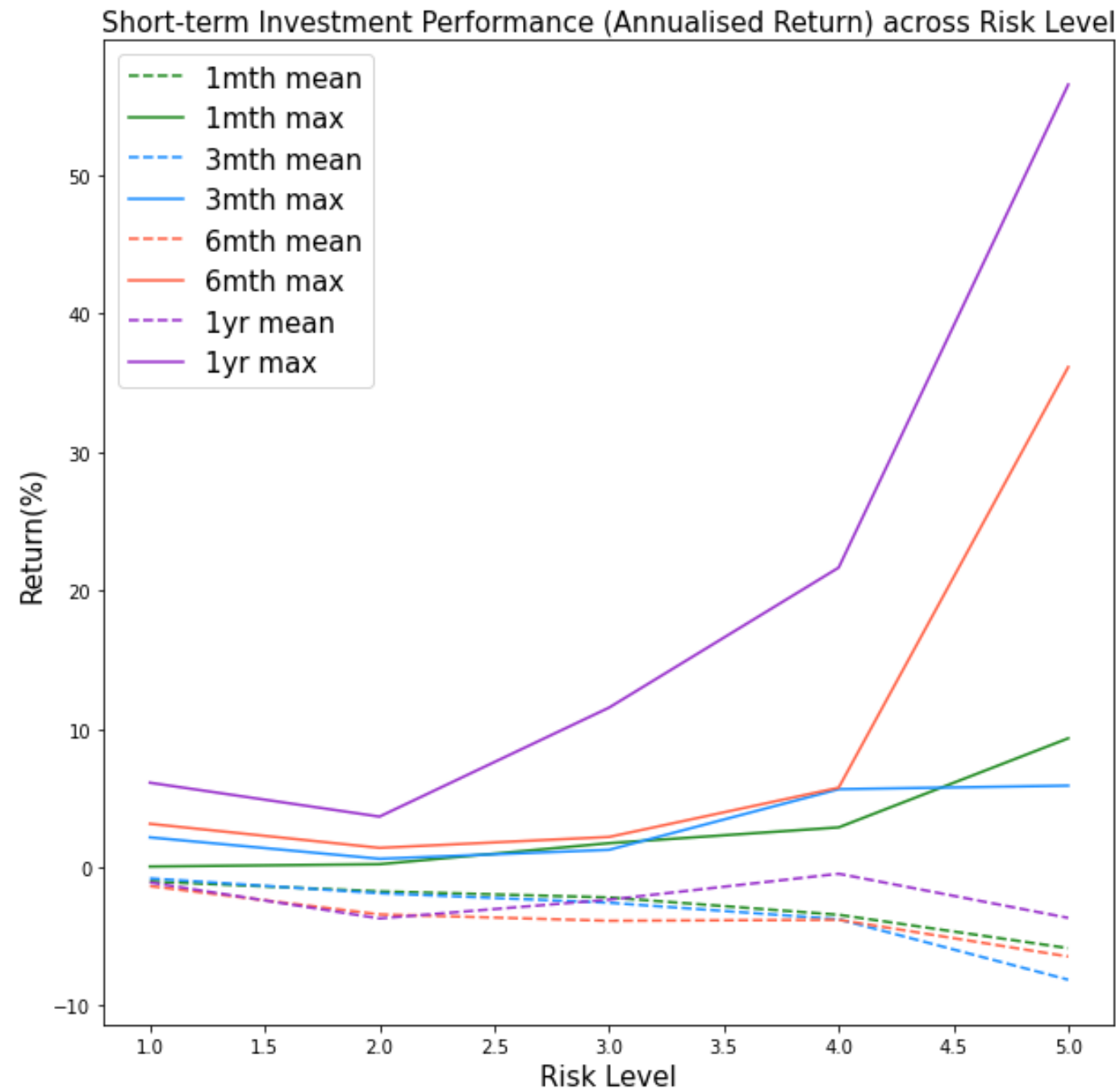
PERFORMANCE OVER TIME

- Given to any risk level product, return within **1month - 1year fell behind 0**, gradually picked up and **got positive at 3year+**
- Given to **short-term** investment, **risk 1 return is the best comparing to others**
- Regardless of the risk level, there was a **spike at 3year** but decline at 5-10 years
- **High risk products** started at a low point but the **return picked up after certain period** of time

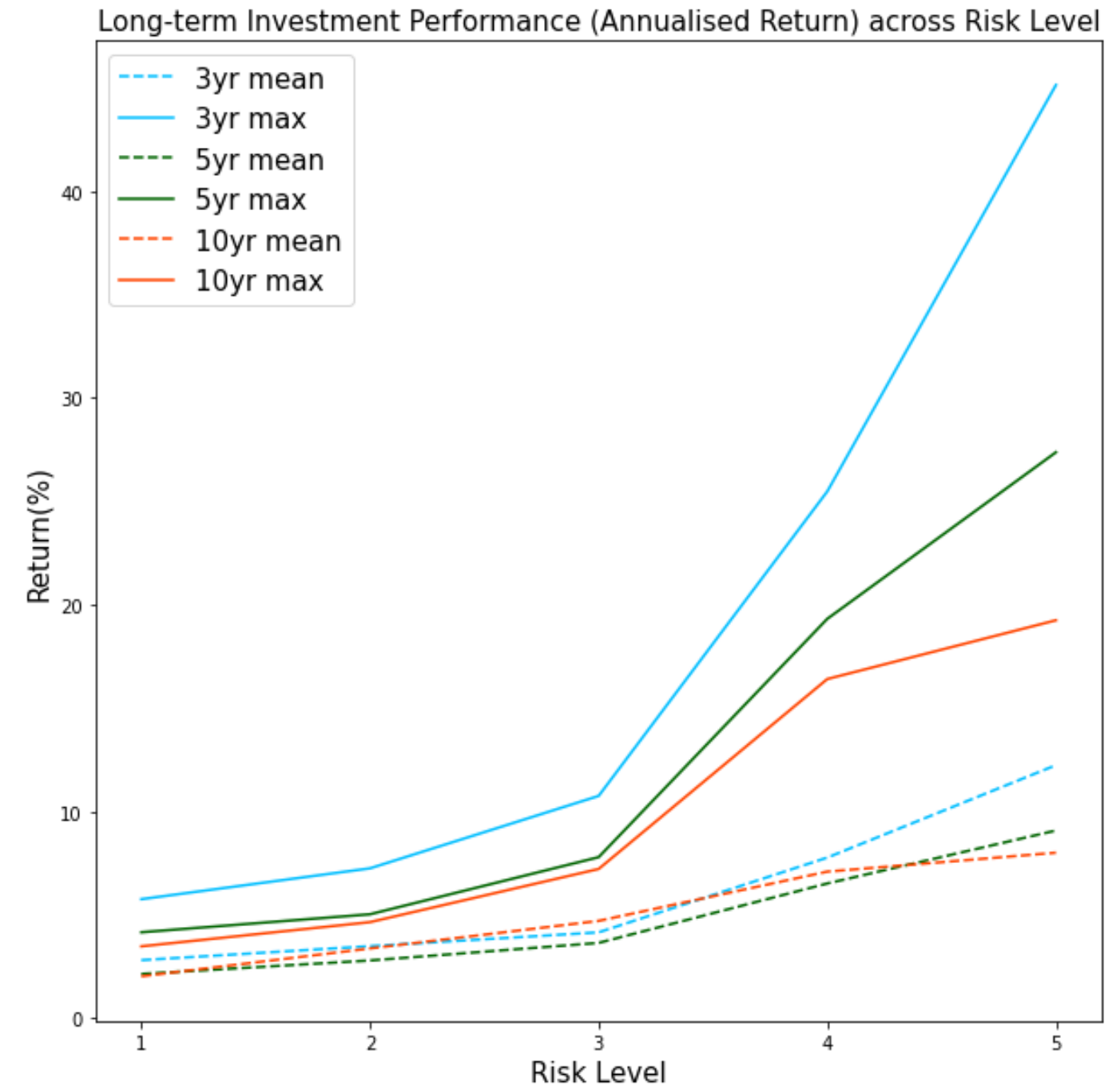


ANALYSIS

PERFORMANCE ACROSS RISK LEVEL



- Return for investment **<6months were low** across risk level, even fell behind when the risk level is getting higher.



- Given to any risk level, return of **3year+** investments were all **positive** and grew when risk level increase.

ANALYSIS

FUNDHOUSE PERFORMANCE

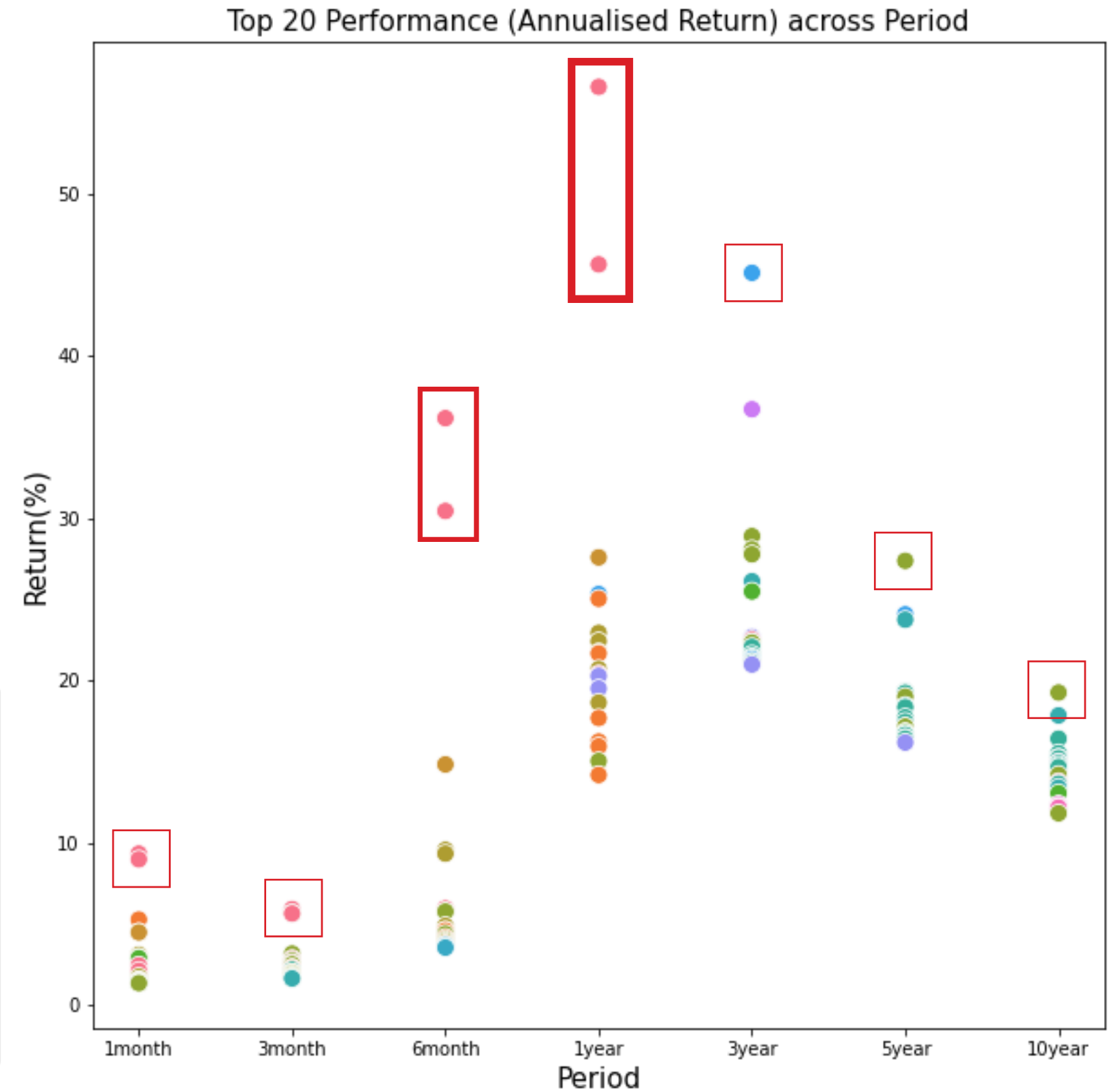
Short-term Investment (1month - 1year):

BlackRock

Long-term Investment (3 - 10year):

3year: HSBC Jintrust Fund Management Co. Ltd

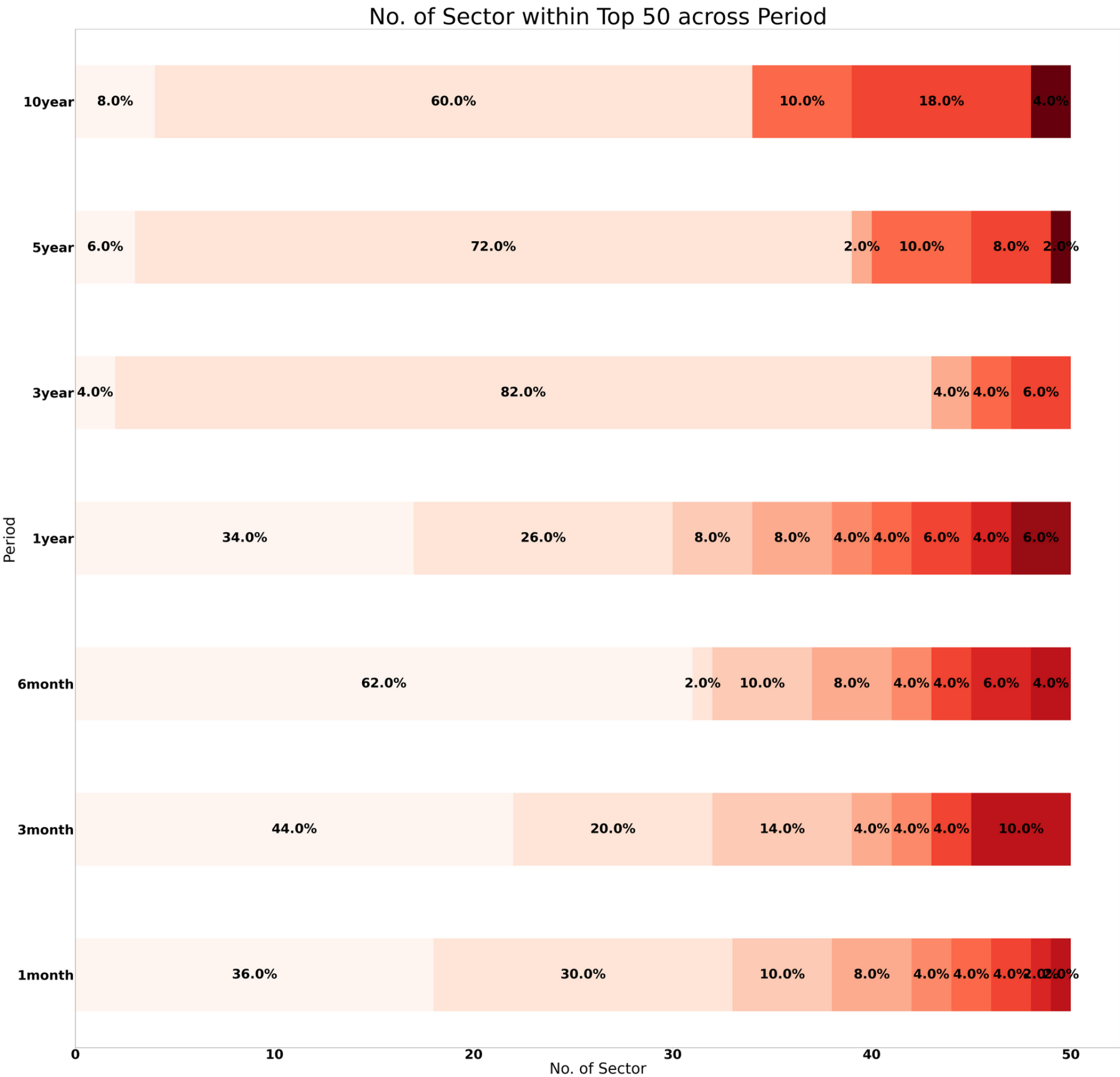
5 -10year: JP Morgan Asset Management



ANALYSIS

SECTOR PERFORMANCE

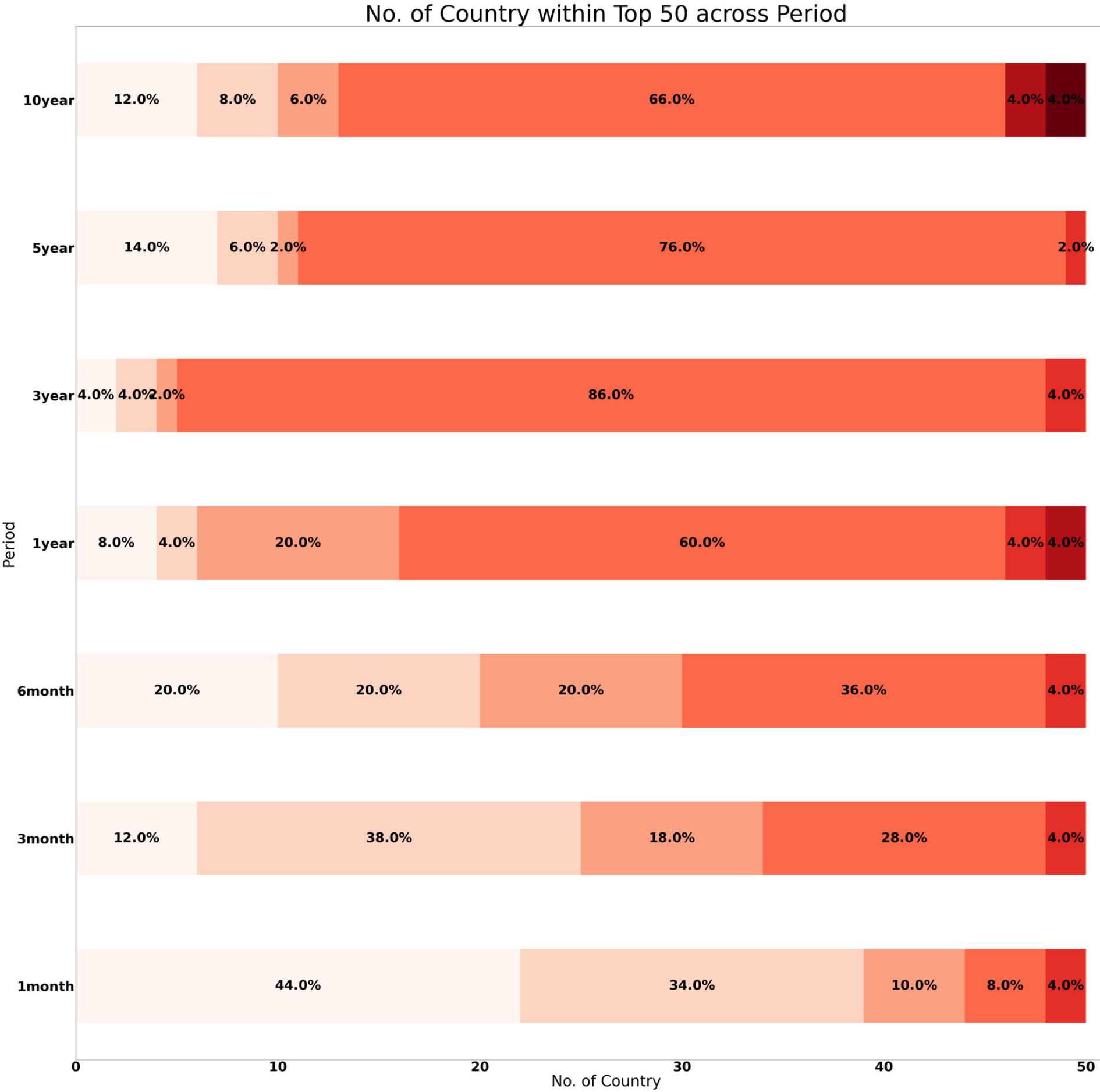
- **Financial Services** Sector has taken the lead in **short-term** investment, owning ~40%+ among top 50 performing funds.
- While **Technology** Sector took over when it comes to **long-term** investment, gaining 60%+.



ANALYSIS

GEO PERFORMANCE

- **Asia and Eurozone** funds were performing better in **short-term** return, esp. Asia, taking ~40% share among top 50.
- While **US** is the leader for **long-term** investment, owning 60%+ in 1 year+ period.

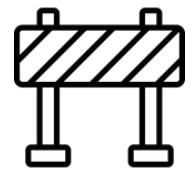


CHALLENGES & NEXT STEP



CHALLENGES

- Data **share same classes** in the web design, cannot call by unique id
- **Table position shifts** for different fund webpage
- Webpage **pop-up box** blocks the scrape processing



LIMITATION

- Current **data limited** to HSBC resources only
- Current data only reflects **former performance**



NEXT STEP

- Enrich by collecting **real-time data** from top-performing fund houses
- **Predict future trend** to provide more concrete reference to users

CONCLUSION



**SHORT-TERM
INVESTMENT**

**LONG-TERM
INVESTMENT**



Lower	RISK LEVEL	Higher
BlackRock	FUND HOUSE	HSBC/JP Morgan
Financial	SECTOR	Technology
Asia/Euro	GEOGRAPHIC	United States

APPENDIX

TOP-PERFORMING FUNDS

RISK LEVEL	SHORT-TERM INVESTMENT				LONG-TERM INVESTMENT		
	1 MONTH	3 MONTHS	6 MONTHS	1 YEAR	3 YEARS	5 YEARS	10 YEARS
1	U63135	U61687	U61687	U61687	U43095	U43095	U62388
2	U63139	U63139	U63139	U62808	U62808	U62703	U62389
3	U62624	U62906	U62906	U63012	U61703	U62962	U61703
4	U61731	U62932	U62641	U61774	U62932	U62719	U42551
5	U61710	U61709	U61710	U61710	U62680	U62737	U62737

Thank You!

Q&A