

# Thai investor clusters and their financial literacy

**Arnond Sakworawich, Ph.D.**

**Tanakorn Likitapiwat, Ph.D.**

**Thunyachad Roongsrisawad, M.Sc.**



สำนักงานคณะกรรมการกำกับหลักทรัพย์และตลาดหลักทรัพย์  
The Securities and Exchange Commission

# Rationale

Market Segmentation

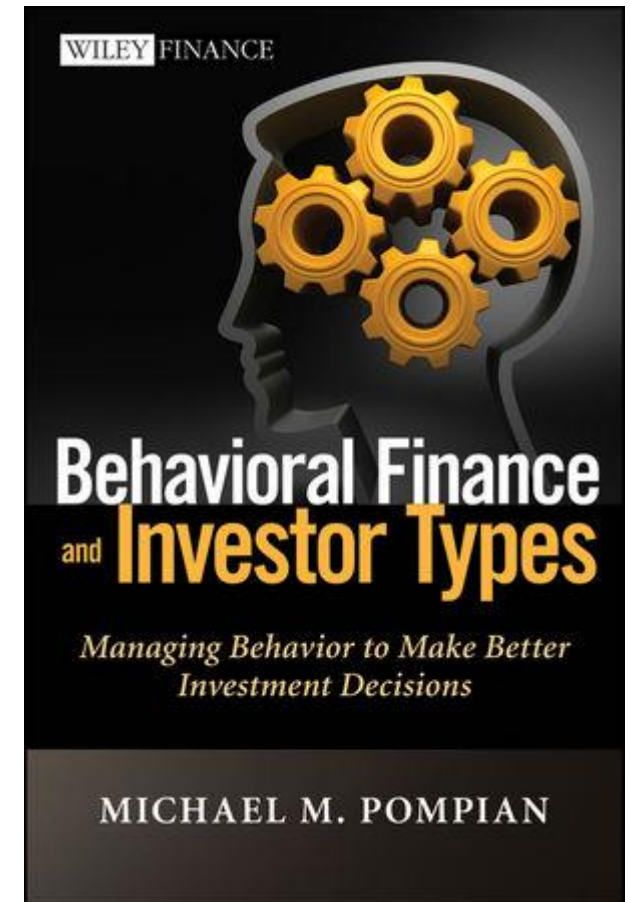
Demographic segmentation

Psychographic segmentation

**Behavioral segmentation**

Investor type

Customer relationship management



# Financial Literacy



BANK OF THAILAND



BETTER POLICIES FOR BETTER LIVES



## **OECD\*/Thailand Seminar on Financial Inclusion and Financial Literacy in Asia**

**16-17 December 2014  
Mandarin Oriental Hotel  
Bangkok, Thailand**

# Financial Literacy

Chart 1: Content of the Financial Literacy Survey

Financial Literacy		
Financial Knowledge	Financial Behavior	Financial Attitude
<ul style="list-style-type: none"><li>- Division</li><li>- Time value of money</li><li>- Interest paid on loan</li><li>- Calculation of principal plus interest</li><li>- Calculation of compound interest</li><li>- Credit Bureau</li><li>- Deposit Protection Policy</li></ul>	<ul style="list-style-type: none"><li>- Considered purchase</li><li>- Timely bill payment</li><li>- Keeping watch on financial affairs</li><li>- Long term financial goal setting</li><li>- Responsible and having a household budget</li><li>- Active saving</li><li>- Making informed decision and comparing information before purchase</li><li>- Not borrowing to make ends meet</li></ul>	<ul style="list-style-type: none"><li>- I find it more satisfying to spend money than to save it for the long term</li></ul>

# Research Objectives

1. Clustering Thai investor types based on their investment portfolio allocation.
2. Investigates the relationship between Thai investor clusters and their financial literacy

# Sample

Employees and self-employed in the following industries and organizations from Bangkok and Metropolitan area (N=2,255)

1. Other industries	325	employees
2. Banking and finance	363	employees
3. Soldier	196	employees
4. Merchant	108	employees
5. Insurance industry	330	employees
6. Department of Highways	300	employees
7. Provincial Electricity Authority	326	employees
8. Ministry of Commerce	307	employees

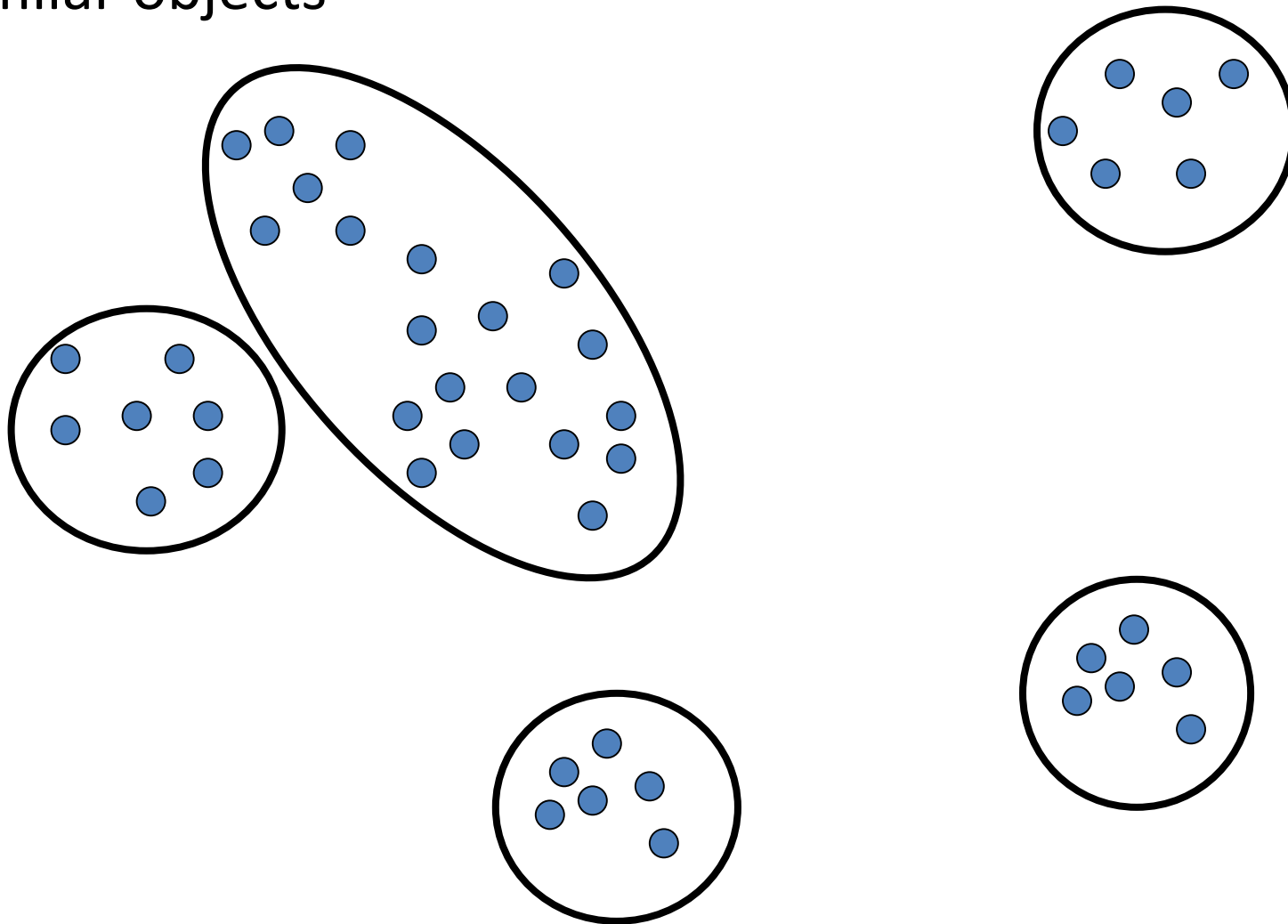
# Analysis

Using **Cluster Analysis** for clustering Thai investor based on their behavior or Proportions of their money allocated to each investment type as follows:

- |                     |                           |
|---------------------|---------------------------|
| 1. Bank Deposit     | 10. State Enterprise Bond |
| 2. GSB/BAAC Lottery | 11. Debenture             |
| 3. Common Stock     | 12. Derivatives           |
| 4. Real Estates     | 13. Informal Loan         |
| 5. Precious Metal   | 14. Mutual Funds          |
| 6. Personal Share   | 15. LTF / RMF             |
| 7. Insurance Policy | 16. ETF                   |
| 8. Cooperatives     | 17. FIF                   |
| 9. Government Bond  | 18. Property Funds        |

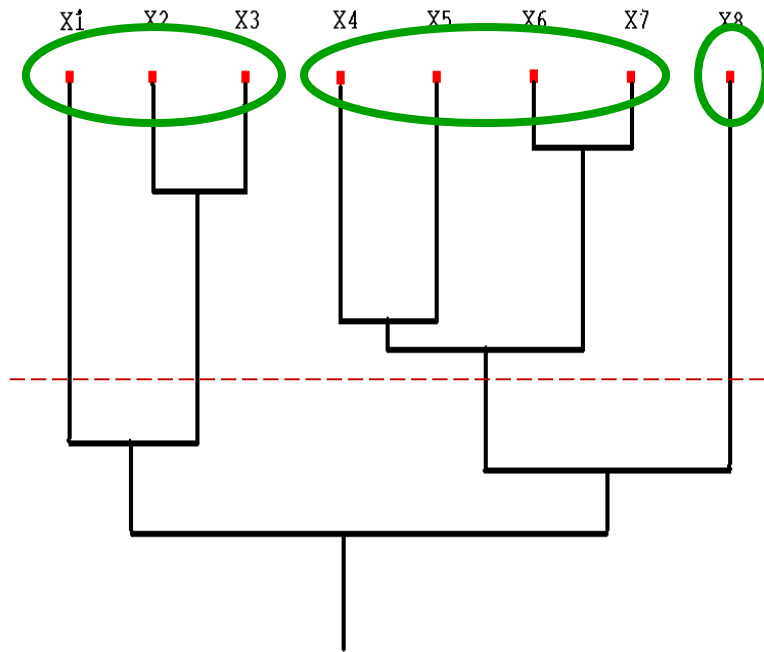
# Cluster Analysis

**Clustering:** the process of grouping a set of objects into classes of similar objects

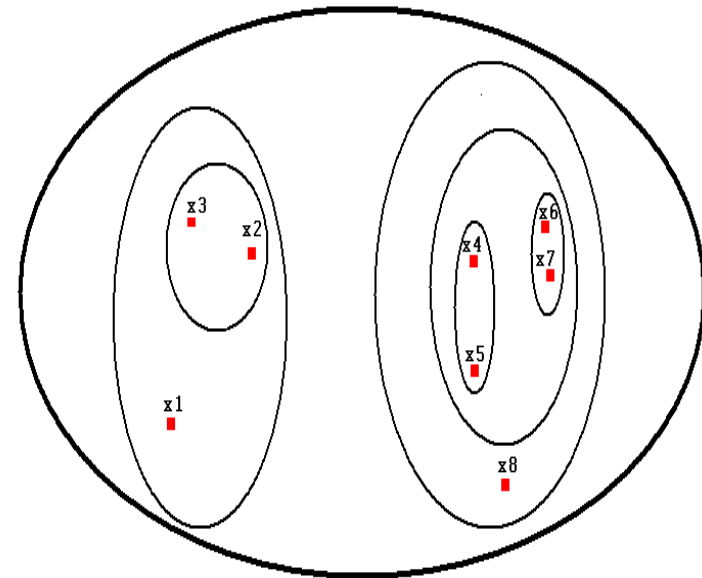




# Hierarchical Clustering



**Dendrogram**



**Venn Diagram of  
Clustered Data**

- **Agglomerative (bottom-up):**
  - Start with each document being a single cluster.
  - Eventually all documents belong to the same cluster.

# **Thai investors are classified into three clusters using investment proportions**

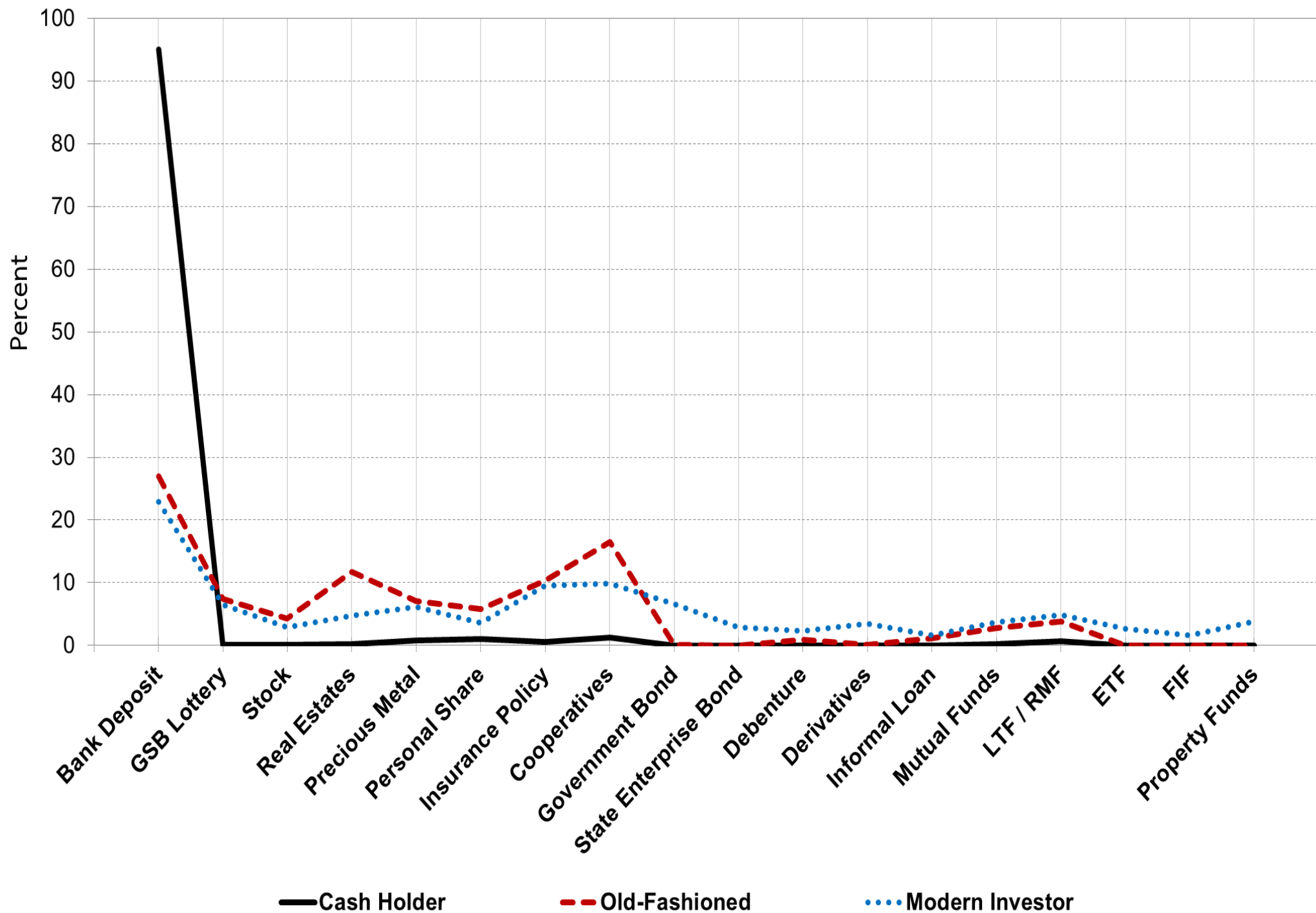
(Proportions of their money allocated to each investment type)



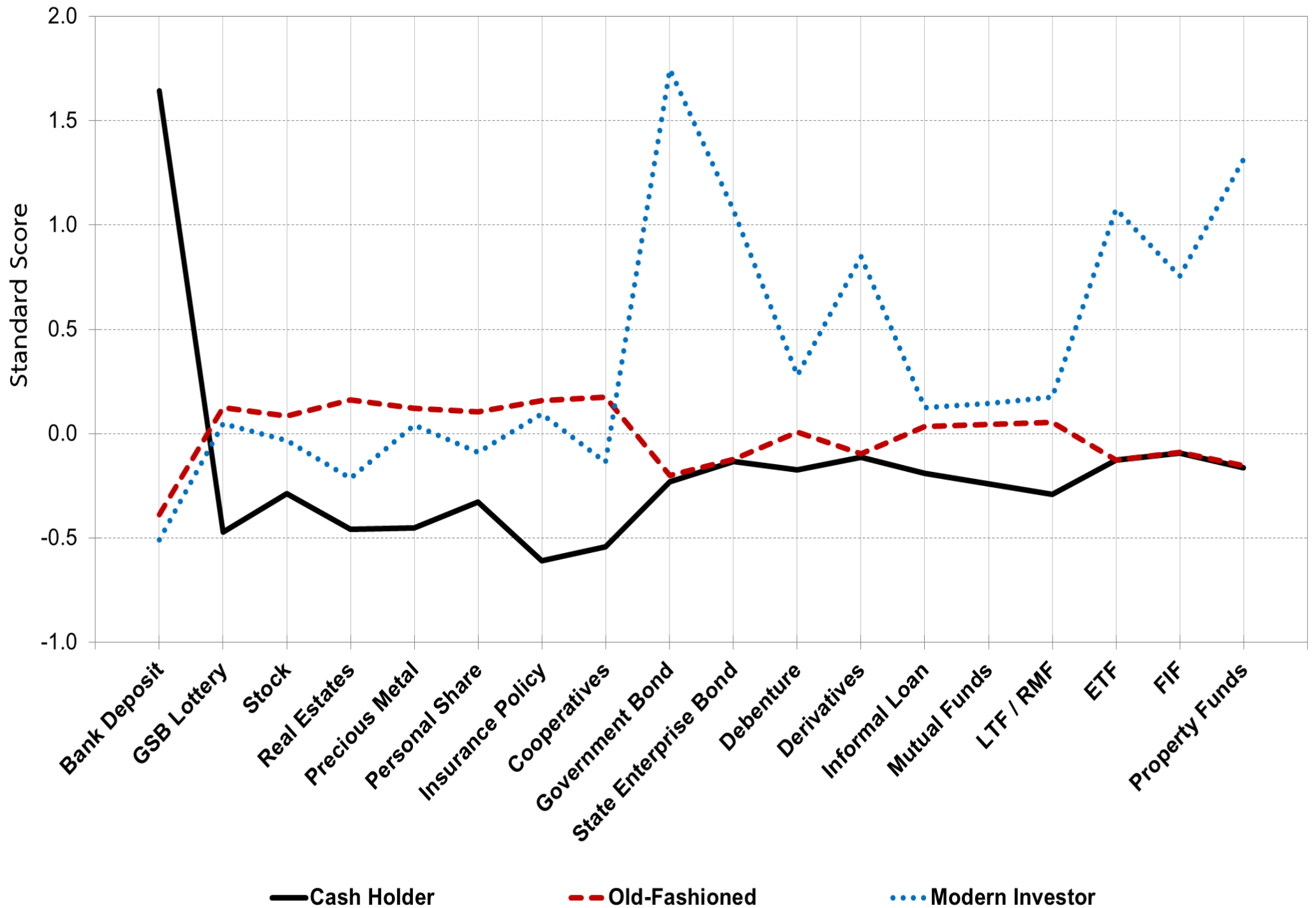
**2,255  
Investors**

Investment types	Investor Types			Total
	Cash Holder	Old-Fashioned	Modern Investor	
1. Bank Deposit	95.02	26.94	22.88	39.91
2. GSB Lottery	0.15	7.48	6.54	5.94
3. Stock	0.10	4.29	2.94	3.32
4. Real Estates	0.21	11.72	4.74	8.72
5. Precious Metal	0.79	7.06	6.18	5.74
6. Personal Share	0.98	5.77	3.61	4.60
7. Insurance Policy	0.54	10.39	9.56	8.36
8. Cooperatives	1.30	16.51	9.93	12.82
9. Government Bond	0.00	0.11	6.58	0.77
10. State Enterprise Bond	0.00	0.02	2.84	0.31
11. Debenture	0.00	0.91	2.30	0.88
12. Derivatives	0.00	0.06	3.46	0.41
13. Informal Loan	0.00	1.16	1.62	0.98
14. Mutual Funds	0.26	2.81	3.70	2.40
15. LTF / RMF	0.64	3.80	4.91	3.29
16. ETF	0.00	0.00	2.70	0.29
17. FIF	0.00	0.01	1.56	0.17
18. Property Funds	0.00	0.03	3.83	0.42

Current portfolio allocation classified by investor types



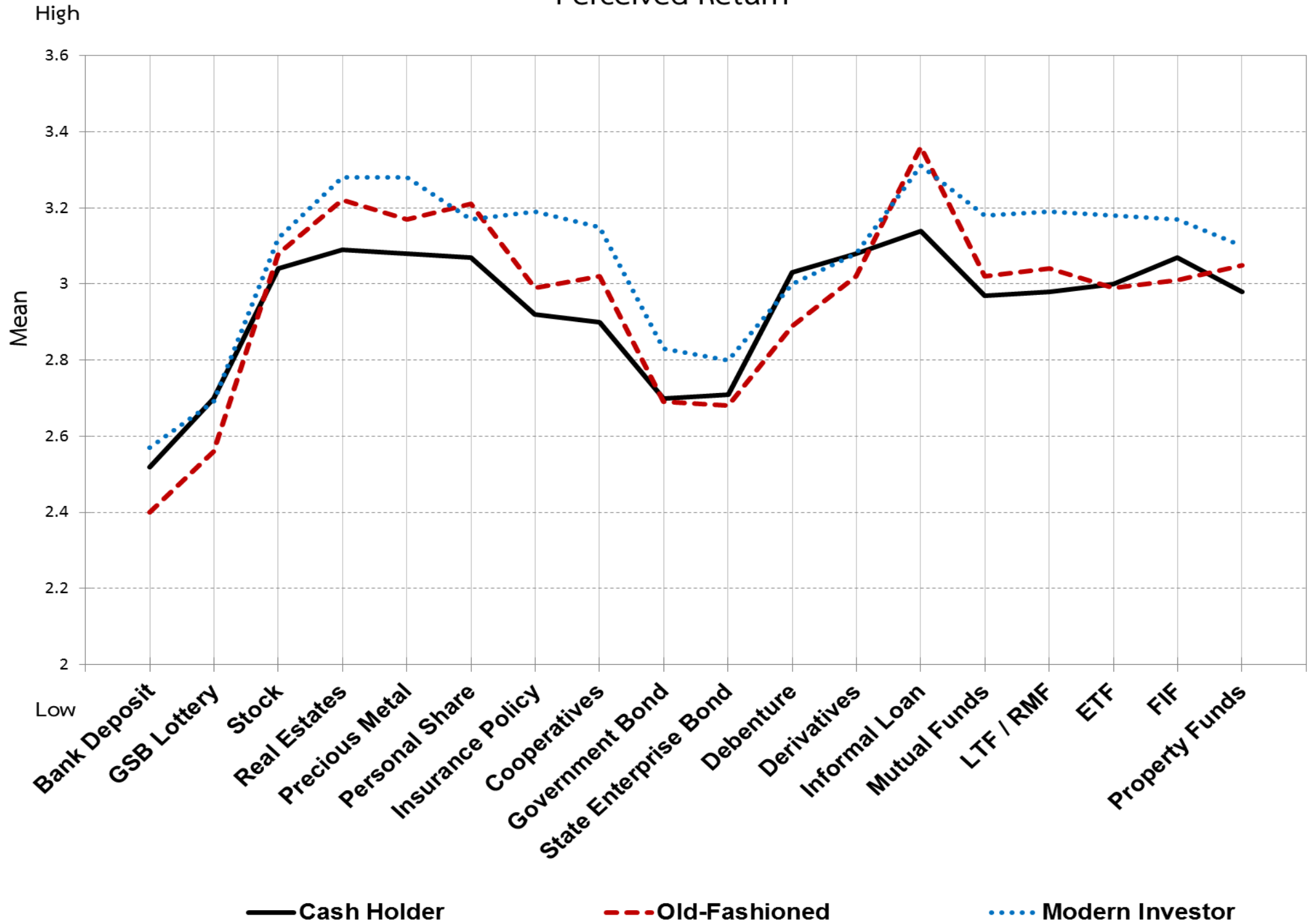
Current portfolio allocation classified by investor types



# Perceived Return

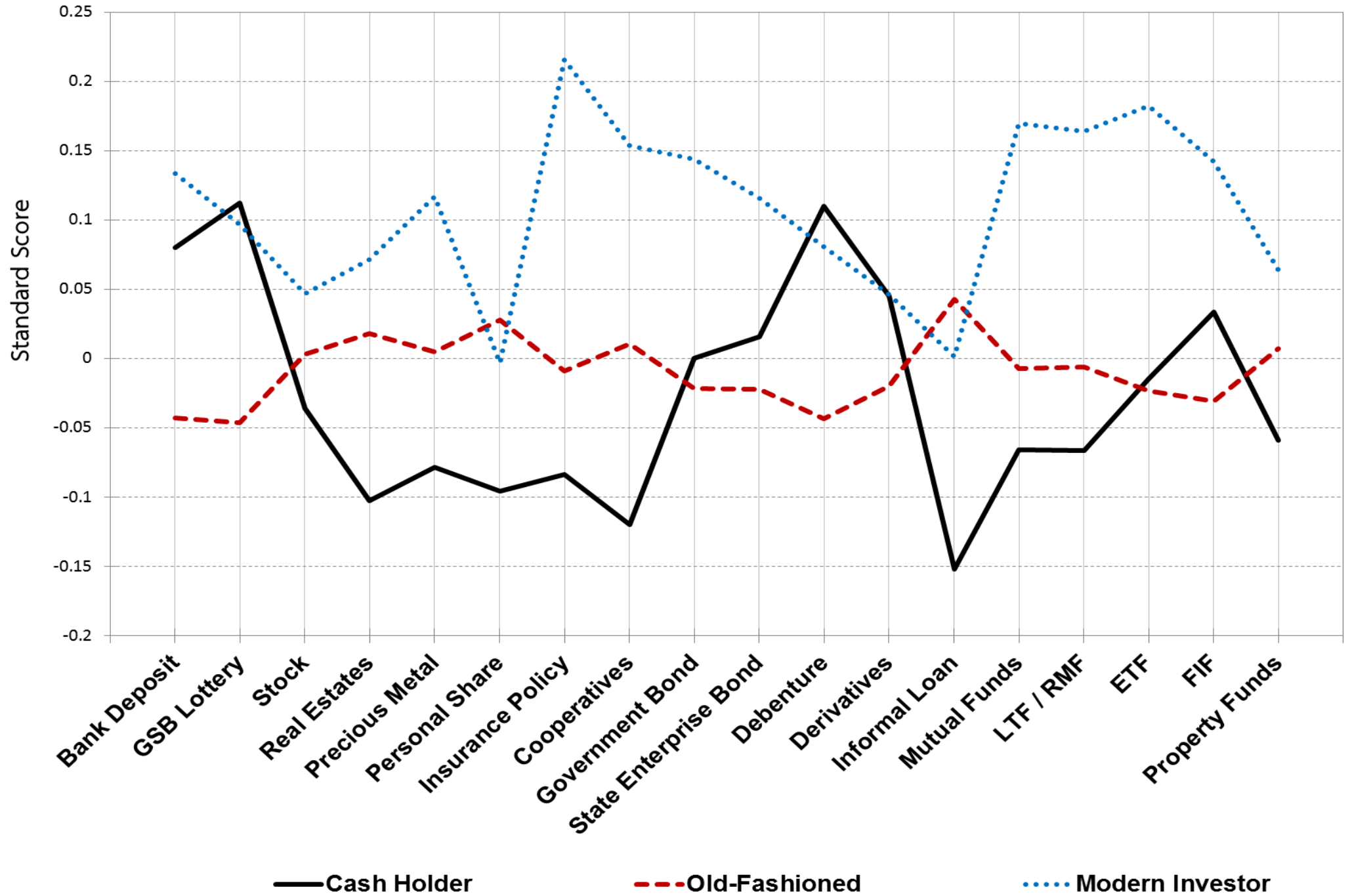
Investor types	Mean			Rank of mean within same investor types			Rank of mean across investor types		
	Cash Holder	Old-Fashioned	Modern Investor	Cash Holder	Old-Fashioned	Modern Investor	Cash Holder	Old-Fashioned	Modern Investor
Bank Deposit	2.52	2.40	2.57	18	18	18	2	3	1
GSB Lottery	2.70	2.56	2.69	16	17	17	1	3	2
Stock	3.04	3.08	3.12	7	5	11	3	2	1
Real Estates	3.09	3.22	3.28	2	2	2	3	2	1
Precious Metal	3.08	3.17	3.28	3	4	2	3	2	1
Personal Share	3.07	3.21	3.17	5	3	8	3	1	2
Insurance Policy	2.92	2.99	3.19	13	12	4	3	2	1
Cooperatives	2.90	3.02	3.15	14	8	10	3	2	1
Government Bond	2.70	2.69	2.83	16	15	15	2	3	1
State Enterprise Bond	2.71	2.68	2.80	15	16	16	2	3	1
Debenture	3.03	2.89	3.00	8	14	14	1	3	2
Derivatives	3.08	3.02	3.08	3	8	13	1	3	1
Informal Loan	3.14	3.36	3.31	1	1	1	3	1	2
Mutual Funds	2.97	3.02	3.18	12	8	6	3	2	1
LTF / RMF	2.98	3.04	3.19	10	7	4	3	2	1
ETF	3.00	2.99	3.18	9	12	6	2	3	1
FIF	3.07	3.01	3.17	5	11	8	2	3	1
Property Funds	2.98	3.05	3.10	10	6	12	3	2	1

# Perceived Return





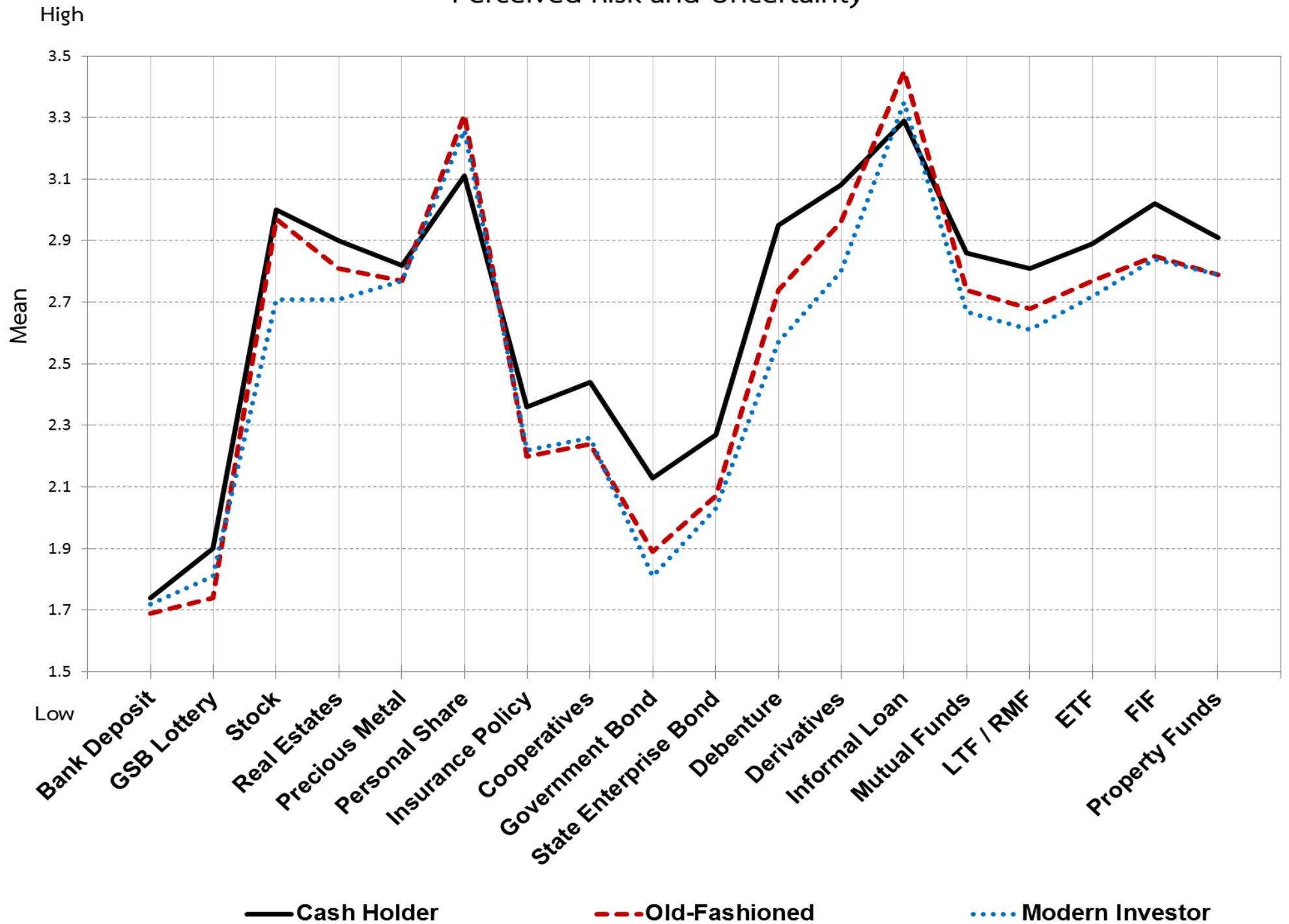
# Perceived Return



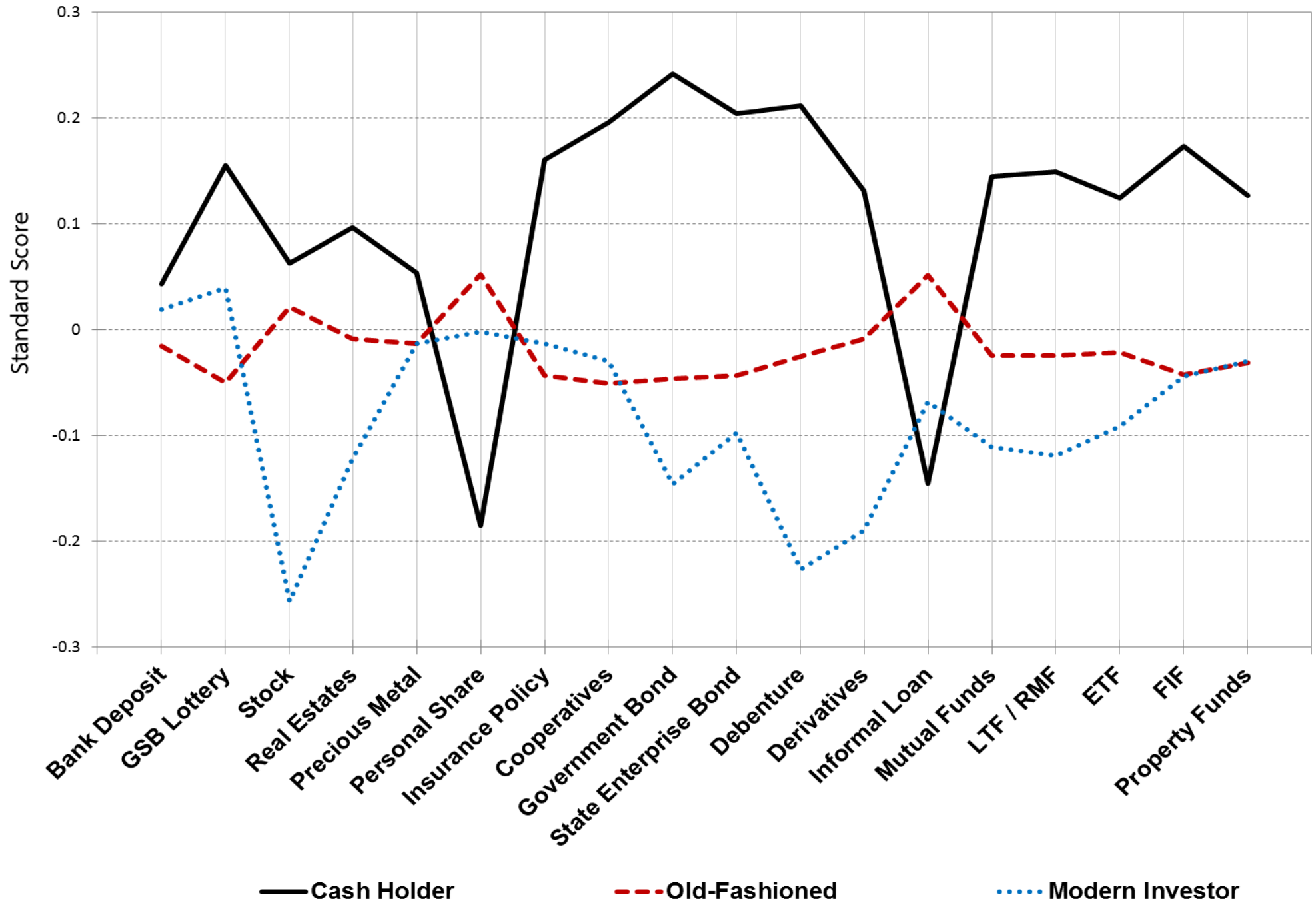
# Perceived Risk and Uncertainty

Investor types	Mean			Rank of mean within same investor types			Rank of mean across investor types		
	Cash Holder	Old-Fashioned	Modern Investor	Cash Holder	Old-Fashioned	Modern Investor	Cash Holder	Old-Fashioned	Modern Investor
Bank Deposit	1.74	1.69	1.72	18	18	18	1	3	2
GSB Lottery	1.90	1.74	1.81	17	17	16	1	3	2
Stock	3.00	2.97	2.71	5	3	8	1	2	3
Real Estates	2.90	2.81	2.71	8	6	8	1	2	3
Precious Metal	2.82	2.77	2.77	11	8	6	1	2	2
Personal Share	3.11	3.31	3.26	2	2	2	3	1	2
Insurance Policy	2.36	2.20	2.22	14	14	14	1	3	2
Cooperatives	2.44	2.24	2.26	13	13	13	1	3	2
Government Bond	2.13	1.89	1.81	16	16	16	1	2	3
State Enterprise Bond	2.27	2.07	2.03	15	15	15	1	2	3
Debenture	2.95	2.74	2.57	6	10	12	1	2	3
Derivatives	3.08	2.96	2.80	3	4	4	1	2	3
Informal Loan	3.29	3.45	3.35	1	1	1	3	1	2
Mutual Funds	2.86	2.74	2.67	10	10	10	1	2	3
LTF / RMF	2.81	2.68	2.61	12	12	11	1	2	3
ETF	2.89	2.77	2.72	9	8	7	1	2	3
FIF	3.02	2.85	2.84	4	5	3	1	2	3
Property Funds	2.91	2.79	2.79	7	7	5	1	2	2

# Perceived Risk and Uncertainty



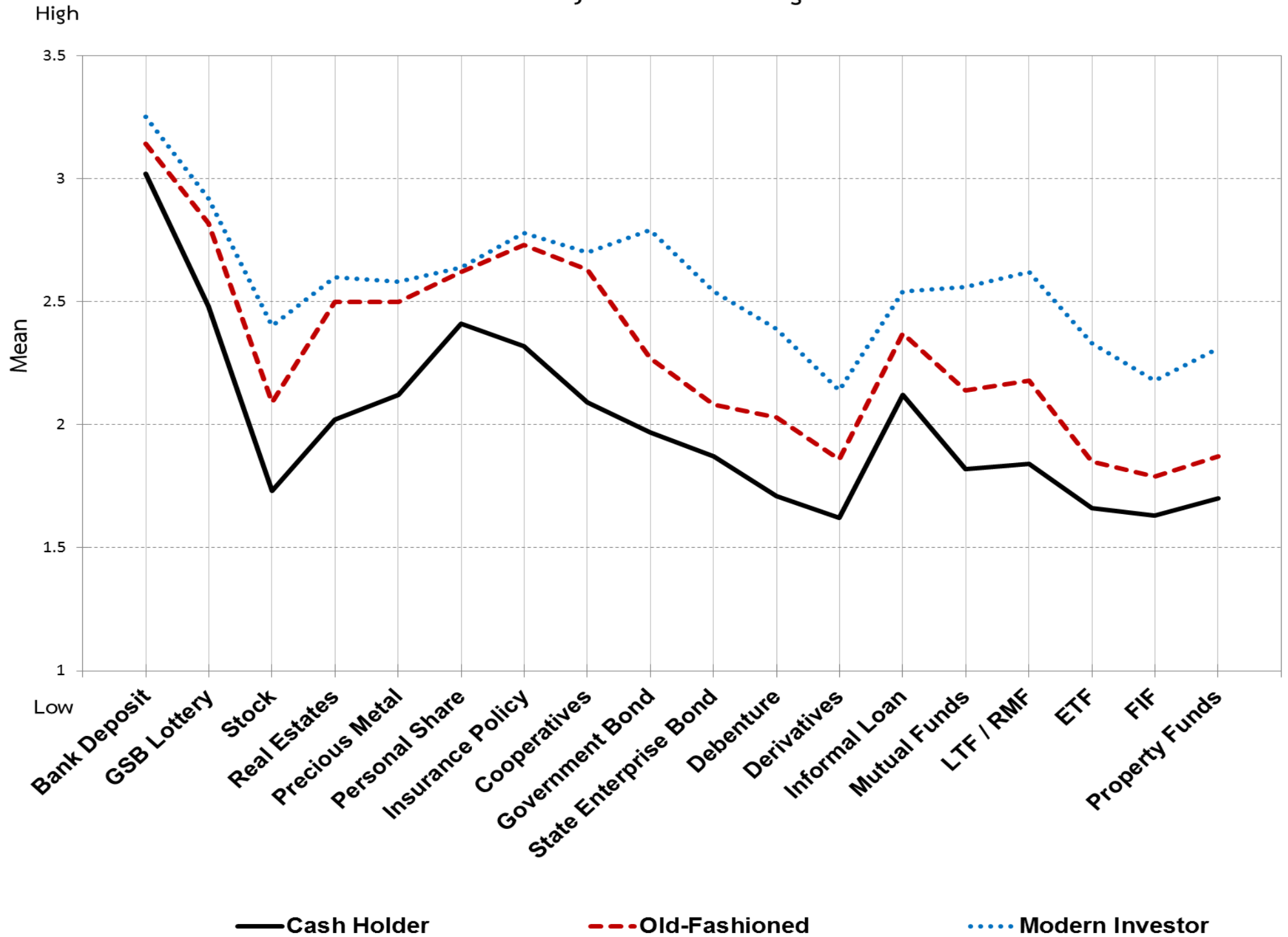
## Perceived Risk and Uncertainty



# Subjective Knowledge

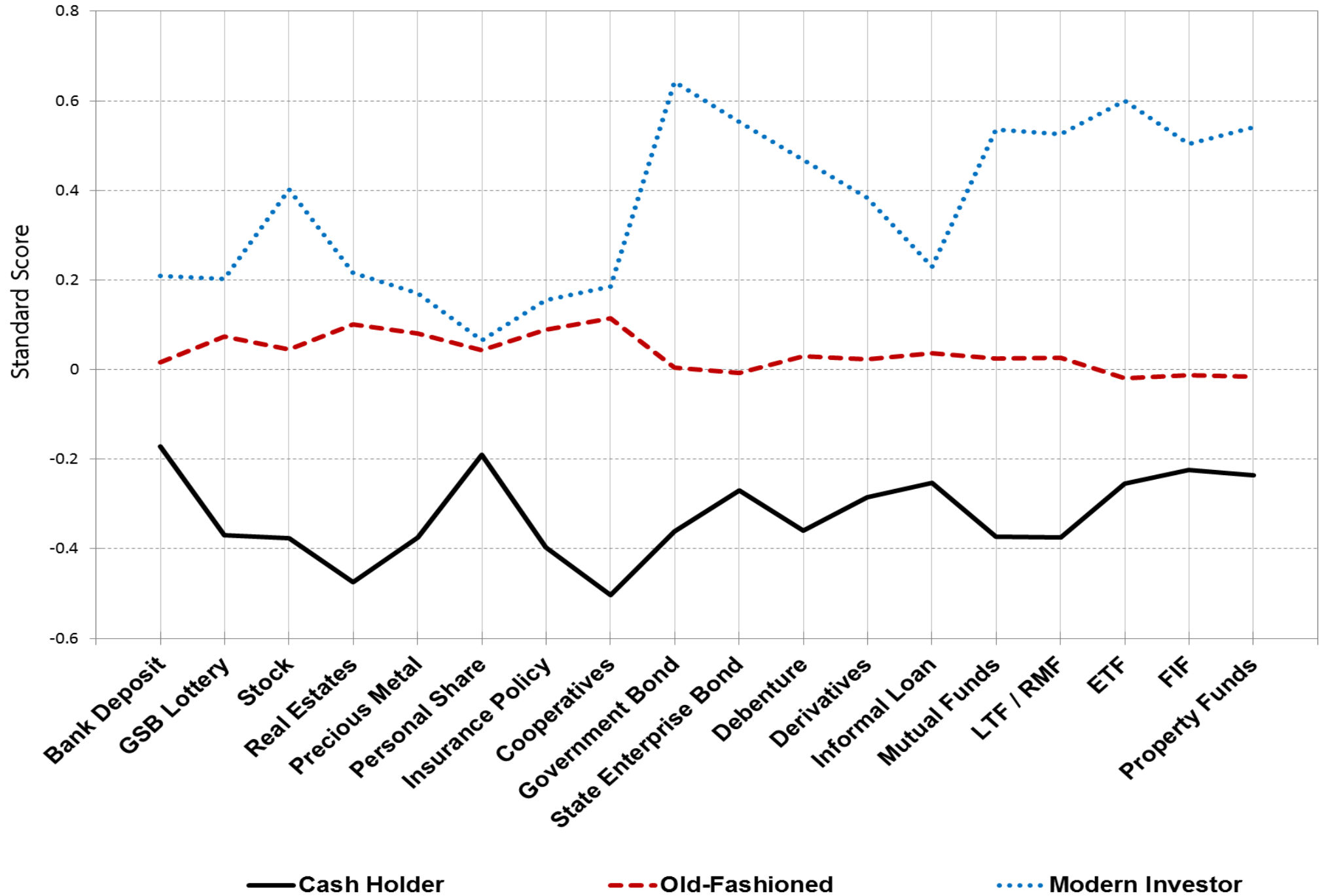
Investor types	Mean			Rank of mean within same investor types			Rank of mean across investor types		
	Cash Holder	Old-Fashioned	Modern Investor	Cash Holder	Old-Fashioned	Modern Investor	Cash Holder	Old-Fashioned	Modern Investor
Bank Deposit	3.02	3.14	3.25	1	1	1	3	2	1
GSB Lottery	2.48	2.82	2.92	2	2	2	3	2	1
Stock	1.73	2.09	2.40	13	12	13	3	2	1
Real Estates	2.02	2.50	2.60	8	6	8	3	2	1
Precious Metal	2.12	2.50	2.58	5	6	9	3	2	1
Personal Share	2.41	2.62	2.64	3	5	6	3	2	1
Insurance Policy	2.32	2.73	2.78	4	3	4	3	2	1
Cooperatives	2.09	2.63	2.70	7	4	5	3	2	1
Government Bond	1.97	2.27	2.79	9	9	3	3	2	1
State Enterprise Bond	1.87	2.08	2.54	10	13	11	3	2	1
Debenture	1.71	2.03	2.39	14	14	14	3	2	1
Derivatives	1.62	1.86	2.14	18	16	18	3	2	1
Informal Loan	2.12	2.37	2.54	5	8	11	3	2	1
Mutual Funds	1.82	2.14	2.56	12	11	10	3	2	1
LTF / RMF	1.84	2.18	2.62	11	10	7	3	2	1
ETF	1.66	1.85	2.33	16	17	15	3	2	1
FIF	1.63	1.79	2.18	17	18	17	3	2	1
Property Funds	1.70	1.87	2.31	15	15	16	3	2	1

# Subjective Knowledge





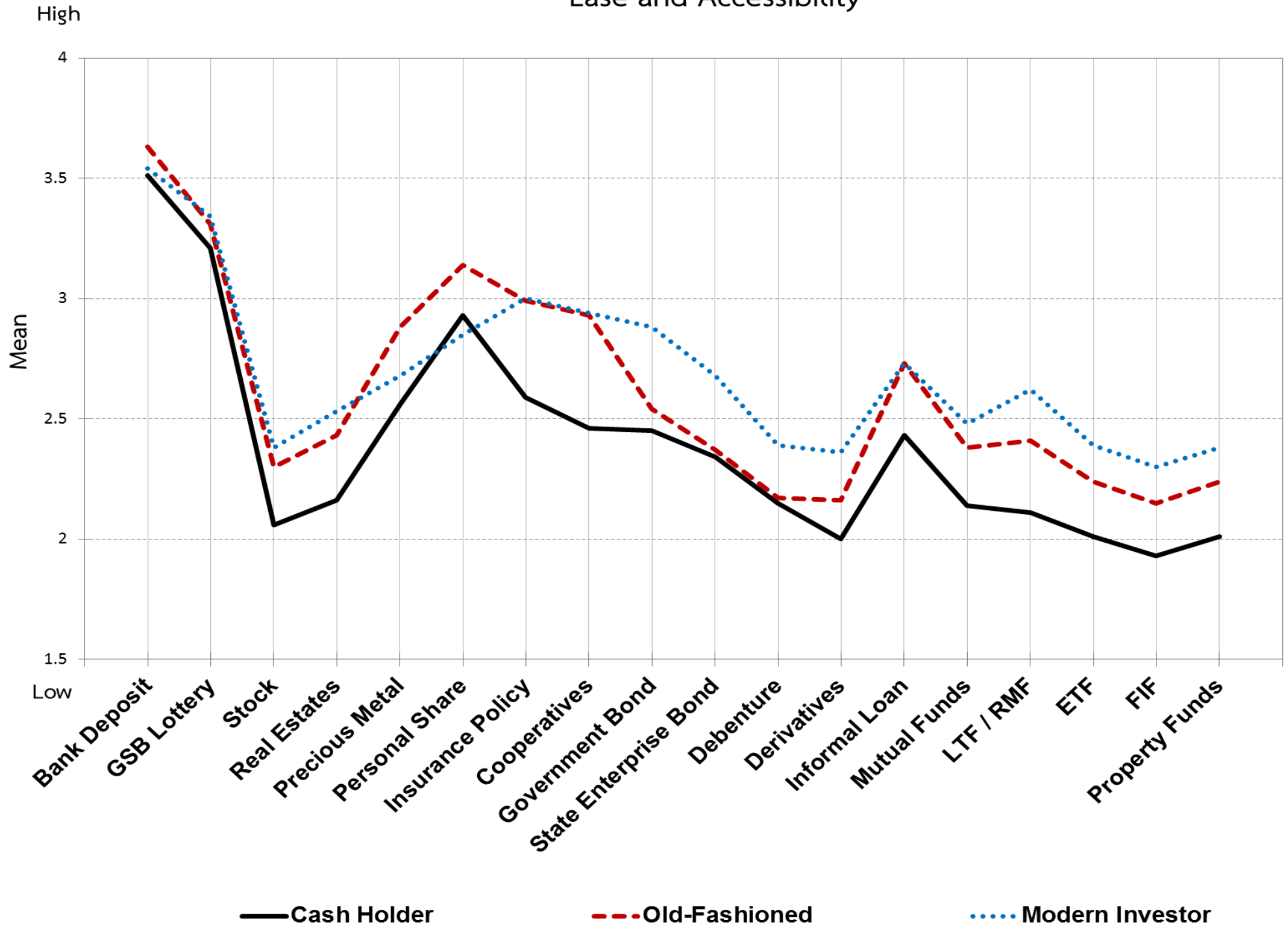
# Subjective Knowledge



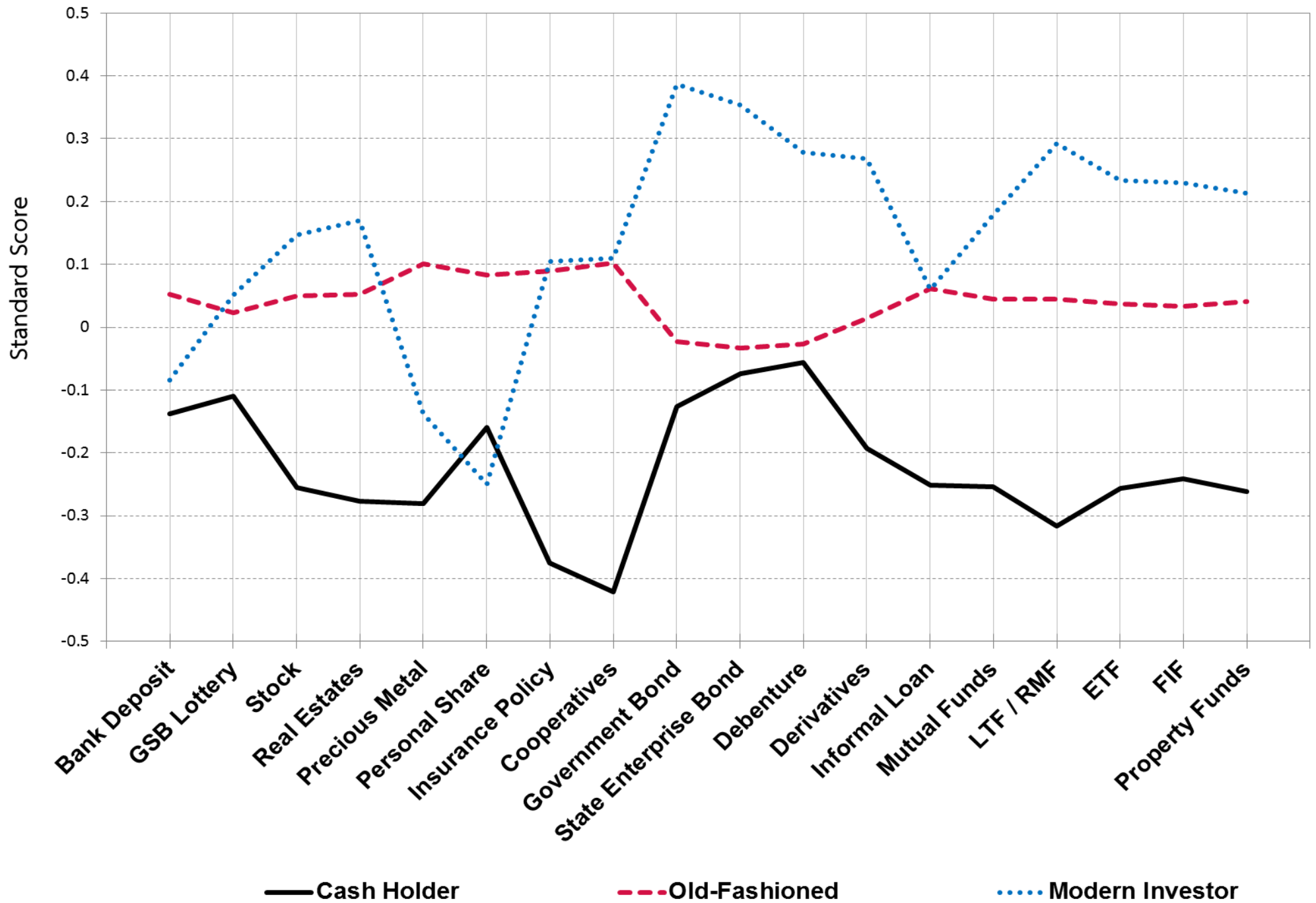
# Ease and Accessibility

Investor types	Mean			Rank of mean within same investor types			Rank of mean across investor types		
	Cash Holder	Old-Fashioned	Modern Investor	Cash Holder	Old-Fashioned	Modern Investor	Cash Holder	Old-Fashioned	Modern Investor
Bank Deposit	3.51	3.63	3.54	1	1	1	3	1	2
GSB Lottery	3.21	3.31	3.34	2	2	2	3	2	1
Stock	2.06	2.30	2.38	14	13	15	3	2	1
Real Estates	2.16	2.43	2.53	10	9	11	3	2	1
Precious Metal	2.56	2.88	2.68	5	6	8	3	1	2
Personal Share	2.93	3.14	2.85	3	3	6	2	1	3
Insurance Policy	2.59	2.99	3.00	4	4	3	3	2	1
Cooperatives	2.46	2.93	2.94	6	5	4	3	2	1
Government Bond	2.45	2.54	2.88	7	8	5	3	2	1
State Enterprise Bond	2.34	2.37	2.68	9	12	8	3	2	1
Debenture	2.15	2.17	2.39	11	16	13	3	2	1
Derivatives	2.00	2.16	2.36	17	17	17	3	2	1
Informal Loan	2.43	2.73	2.73	8	7	7	3	1	1
Mutual Funds	2.14	2.38	2.48	12	11	12	3	2	1
LTF / RMF	2.11	2.41	2.62	13	10	10	3	2	1
ETF	2.01	2.24	2.39	15	14	13	3	2	1
FIF	1.93	2.15	2.30	18	18	18	3	2	1
Property Funds	2.01	2.24	2.38	15	14	15	3	2	1

## Ease and Accessibility



## Ease and Accessibility

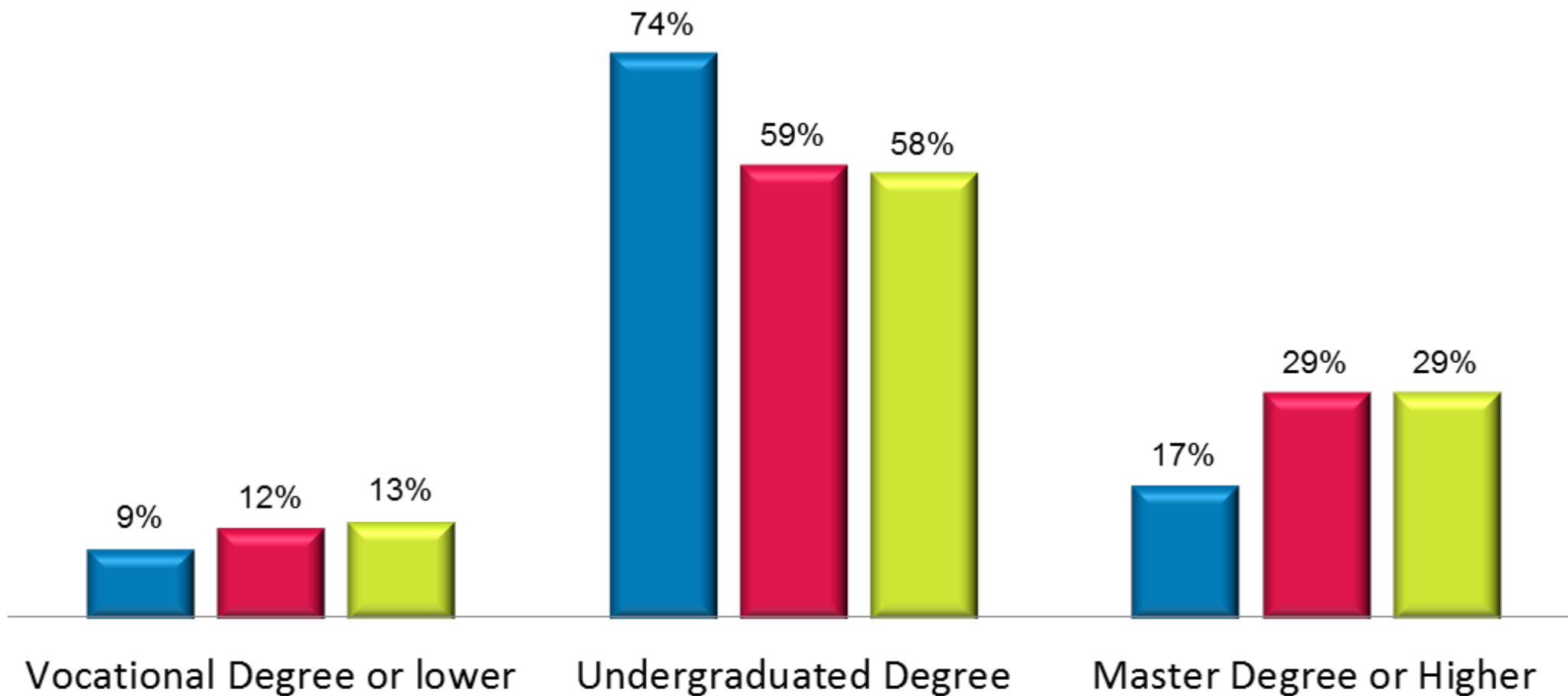


# Education and Investor Types

Education	Investor Types			Total
	Cash Holder	Old-Fashioned	Modern Investor	
Vocational Degree or lower	40	184	30	254
	9%	12%	13%	11%
Undergraduated Degree	327	928	138	1393
	74%	59%	58%	62%
Master Degree or Higher	77	461	70	608
	17%	29%	29%	27%
Total	444	1573	238	2255
	100%	100%	100%	100%

# Education

■ Cash Holder   ■ Old-Fashioned   ■ Modern Investor



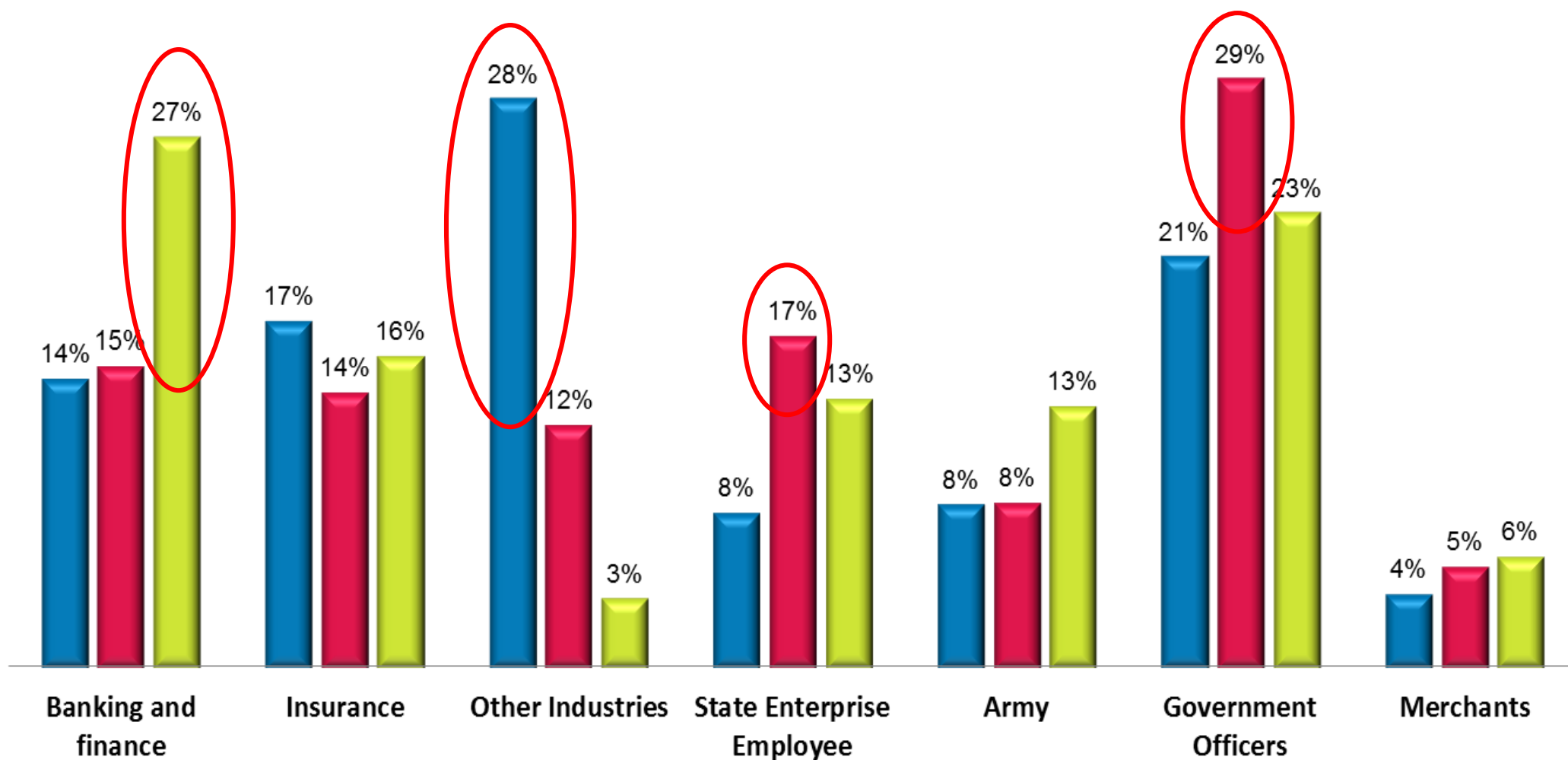
# Occupation and Investor Types

Occupation	Investor Types			Total
	Cash Holder	Old-Fashioned	Modern Investor	
Banking and finance	64	236	63	363
	14%	15%	27%	16%
Insurance	77	216	37	330
	17%	14%	16%	15%
Other Industries	126	191	8	325
	28%	12%	3%	14%
State Enterprise Employee	34	260	32	326
	8%	17%	13%	15%
Army	36	129	31	196
	8%	8%	13%	9%
Government Officers	91	462	54	607
	21%	29%	23%	27%
Merchants	16	79	13	108
	4%	5%	6%	5%
Total	444	1573	238	2255
	100%	100%	100%	100%



# Occupation

■ Cash Holder   ■ Old-Fashioned   ■ Modern Investor



# Definitions of 3 Groups

- Cash Holders = Bank Deposits is the only investment choice
- Old-Fashion = Traditional investment channels long known to investors
- Modern Investor = New investment channels newer to investors

# Main Findings

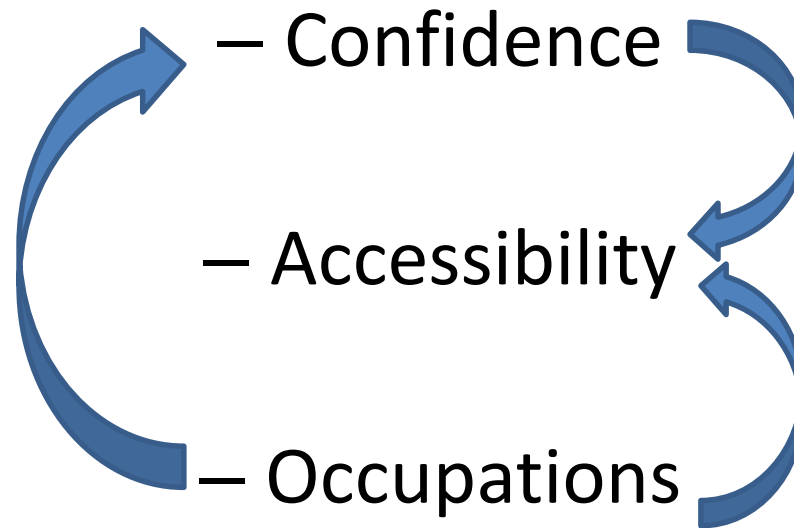
- Three groups of investment behaviors with distinct perceptions on risks and returns
- Perceived returns
  - Cash holders have **lowest** expectation on returns
  - Modern investors have **highest** expectation on returns
  - However, these are distorted probably by their fault believes. (e.g. Cash holders view stocks as having lower returns than deposit)

# Main Findings

- Perceived risks
  - Cash holders perceive **higher** risk while modern investors perceive **less** risk than it should be
  - Old-fashion are more accurate in term of risk perception
  - Risk is viewed as “default risk” and “familiarity” rather than “return volatility” (as in the case of “personal share/loan” for cash holders, and “stocks” for modern investors.

# Main Findings

- What drive distinct behaviors of each group?



Keys drivers are *Perception* and *Subjective Knowledge!!!* (OK -> SK->Buying decision)

LIAT HADAR, SANJAY SOOD, and CRAIG R. FOX\*

# Subjective Knowledge in Consumer Financial Decisions

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303

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*Research Article*



## When Knowledge Is Demotivating: Subjective Knowledge and Choice Overload

Psychological Science  
2014, Vol. 25(9) 1739–1747  
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**Liat Hadar<sup>1</sup> and Sanjay Sood<sup>2</sup>**

<sup>1</sup>Arison School of Business, Interdisciplinary Center (IDC) Herzliya, and <sup>2</sup>Anderson School of Management, University of California, Los Angeles

# Policy Implications

- Policy makers should encourage
  - Educations on financial literacy on expected return vs. risks !!!
  - Appropriate diversification especially for cash holders.
  - In the short run, “finance for non-finance” training might help.
  - In the long run, financial literacy should be trained in early age.