



INVESTMENT STRATEGIES

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AGENDA

- **PROBLEM STATEMENT**
- **INVESTMENT OPTIONS**
- **PAIRWISE COMPARISON**
- **DECISION UNDER RISK**
- **RECOMMENDATIONS**



PROBLEM STATEMENT

- *If you were given the opportunity to invest \$10,000 today, given the uncertain state of the present economic outlook, how would you invest that money?*
- **Conditions**
 - **INVESTORS AGE (25-40 YEARS)**
 - **INVESTMENT AMOUNT (\$10,000)**
 - **RISK AVERSE**
 - **SECURITIES (STOCKS, BONDS, CDs, REAL ESTATE)**



OBJECTIVE

- **DATA COLLECTION FROM INVESTORS.**
(CLASS FELLOWS, PEERS AT WORK)

- **ANALYZE DATA USING PCM.**

- **COMPARISON WITH EXPERT OPINION.**



SECURITIES OPTIONS

- **STOCKS**
- **BONDS**
- **CERTIFICATES OF DEPOSIT**
- **REAL ESTATE**



SURVEY QUESTIONS

Stocks	
Bonds	
CDs	
Real Estate	

**IF YOU WERE GIVEN \$10,000
TO INVEST, AND HAD TO PICK
ONLY ONE OF THE
FOLLOWING OPTIONS, IN
WHICH WOULD YOU MAKE
YOUR INVESTMENT?**

PLEASE SELECT ONLY ONE



PCM SURVEY QUESTION

GIVEN THE SAME OPPORTUNITY WITH \$10,000, PLEASE RANK THE FOLLOWING OPTION PAIRS IN ORDER OF IMPORTANCE. RANK THE OPTION THAT YOU PREFER WITH A HIGHER NUMBER. PLEASE USE EXACTLY 100 TOTAL POINTS FOR EACH PAIR. IF YOU HAVE NO PREFERENCE FOR EITHER MEMBER OF THE PAIR, USE 50 FOR EACH. PLEASE DO NOT USE 0 OR 100.

Example

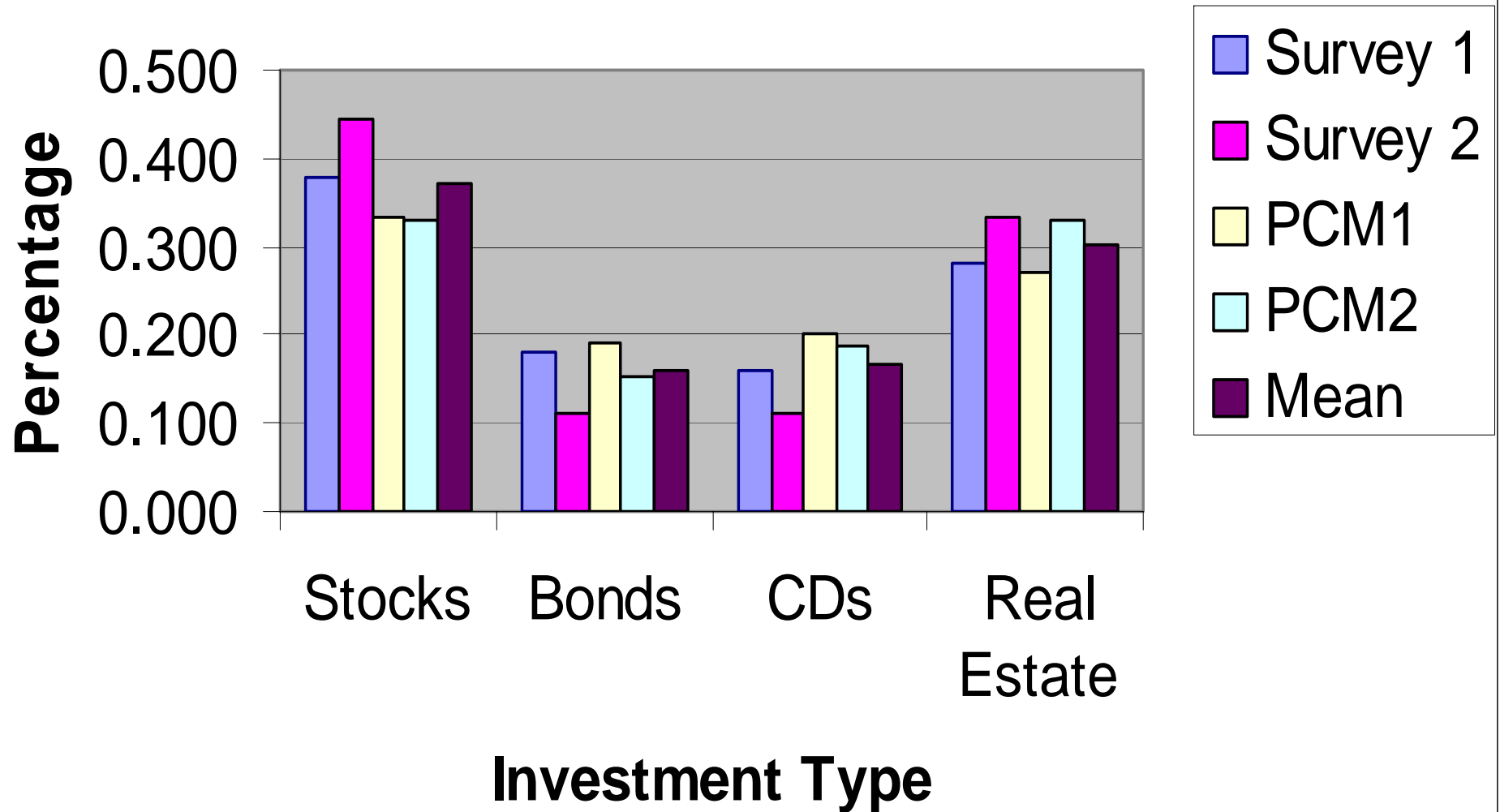
<i>Stocks</i>	<i>64</i>	<i>Real Estate</i>	<i>36</i>
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PCM SUMMARY

Mininum	0.01	0.004	0.003	0.003	Disagreement
Maximum	0.826	0.57	0.971	0.783	0.173
Mean	0.333	0.192	0.203	0.272	
St Dev	0.202	0.129	0.181	0.174	

Comparison of Two Independent Surveys



PCM SURVEY QUESTION

Person Number	Stocks	Bonds	CDs	Real Estate	Inconsistency	Person Number	Stocks	Bonds	CDs	Real Estate	Inconsistency
1	0.275	0.275	0.248	0.203	0.012	26	0.244	0.331	0.244	0.180	0.004
2	0.452	0.173	0.096	0.279	0.006	27	0.264	0.406	0.327	0.003	0.019
3	0.251	0.251	0.036	0.462	0.016	28	0.220	0.180	0.270	0.330	0.008
4	0.228	0.570	0.042	0.159	0.055	29	0.270	0.093	0.146	0.491	0.084
5	0.172	0.172	0.397	0.260	0.000	30	0.175	0.098	0.120	0.607	0.012
6	0.010	0.010	0.971	0.010	0.000	31	0.162	0.045	0.011	0.783	0.120
7	0.079	0.122	0.299	0.500	0.026	32	0.227	0.240	0.274	0.258	0.068
8	0.138	0.070	0.271	0.521	0.082	33	0.356	0.318	0.138	0.188	0.004
9	0.231	0.552	0.053	0.165	0.006	34	0.293	0.221	0.098	0.388	0.029
10	0.367	0.219	0.197	0.217	0.013	35	0.219	0.124	0.165	0.492	0.028
11	0.798	0.015	0.060	0.127	0.164	36	0.051	0.104	0.731	0.114	0.018
12	0.317	0.276	0.091	0.317	0.007	37	0.649	0.004	0.007	0.340	0.086
13	0.432	0.345	0.090	0.133	0.011	38	0.444	0.073	0.292	0.191	0.034
14	0.078	0.257	0.179	0.487	0.044	39	0.251	0.138	0.434	0.177	0.031
15	0.292	0.203	0.358	0.147	0.005	40	0.471	0.276	0.160	0.093	0.055
16	0.210	0.306	0.235	0.249	0.189	41	0.521	0.271	0.138	0.070	0.082
17	0.173	0.294	0.359	0.175	0.021	42	0.818	0.044	0.022	0.115	0.051
18	0.544	0.186	0.150	0.120	0.051	43	0.231	0.171	0.417	0.181	0.007
19	0.456	0.185	0.050	0.309	0.005	44	0.631	0.005	0.005	0.359	0.031
20	0.191	0.300	0.286	0.222	0.009	45	0.518	0.135	0.099	0.248	0.074
21	0.247	0.379	0.236	0.138	0.008	46	0.260	0.209	0.138	0.394	0.009
22	0.236	0.163	0.202	0.399	0.020	47	0.153	0.228	0.434	0.185	0.056
23	0.373	0.200	0.138	0.289	0.003	48	0.826	0.058	0.107	0.009	0.134
24	0.773	0.065	0.098	0.065	0.034	49	0.353	0.053	0.065	0.529	0.012
25	0.548	0.161	0.003	0.288	0.052	50	0.162	0.054	0.162	0.623	0.021



EXPERT FORECAST

	<i>Interest Rates</i> ↑ 10%	<i>Interest Rates</i> ↓ 10%	<i>Interest Rates</i> ↔
Stocks (S)	Decrease value up to 20%	No Change	Increase value by 5%
Bonds (B)	Increase value up to 10%	Decrease Value up to 10%	No Change
CDs (C)	No change of present value (Average 5%)	No change of present value (Average 5%)	No change of present value (Average 5%)
Real Estate (R)	Decrease value up to 15%	Increase value up to 15%	No change



PAYOFF MATRIX

	<i>Interest Rates</i> ↑	<i>Interest Rates</i> ↓	<i>Interest Rates</i> ↔
Stocks (S)	-2,000	0	500
Bonds(B)	1,000	-1,000	0
CDs (C)	500	500	500
Real Estate (R)	-1,500	1,500	0



REGRET MATRIX

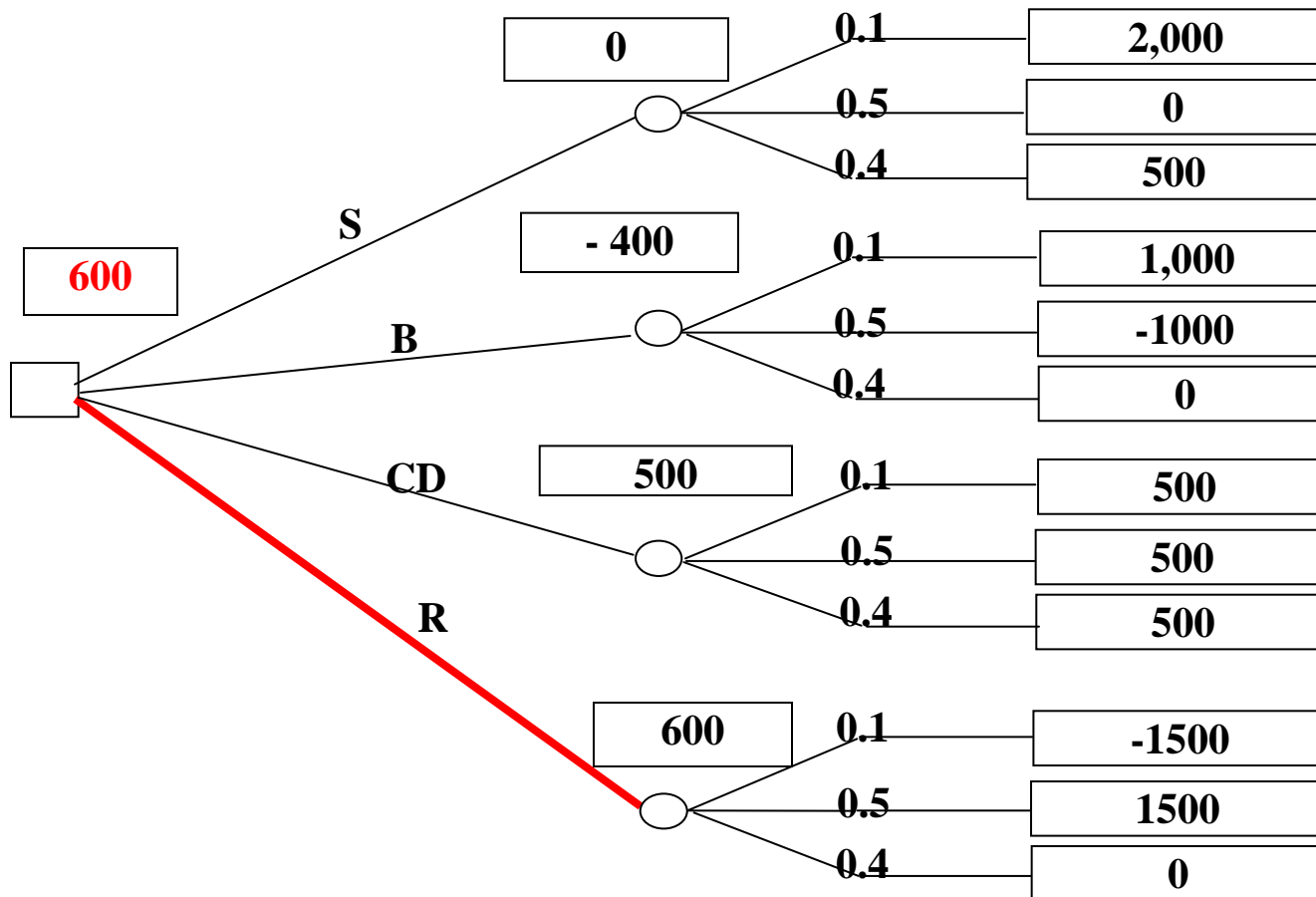
	Interest Rates ↑	Interest Rates ↓	Interest Rates ↔
Stocks (S)	3000	1,500	0
Bonds (B)	0	2,500	500
CDs (C)	500	1,000	0
Real Estate (R)	2,500	0	500



SUMMARY MATRIX

	Minimum Payoff	Maximum Payoff	Maximum Regret
Stocks (S)	-2,000	500	3,000
Bonds (B)	-1,000	1,000	2,500
CDs (C)	500	500	1,000
Real Estate (R)	-1,500	1,500	2,500

DECISION UNDER RISK





COMPARISON

PREFERENCE	PCM	DECISION UNDER UNCERTAINTY	DECISION UNDER RISK
1ST	STOCKS	CERTIFICATE OF DEPOSIT	REAL ESTATE
2ND	REAL ESTATE	REAL ESTATE	CERTIFICATE OF DEPOSIT



NASDAQ COMPOSITE

Saturday, March 17 2001 11:17pm ET - U.S. Markets Closed.

NAS/NMS COMPOSITE			More Info: News - Trade :		
(NasdaqSC:^IXIC)			N/A		
Last Trade Mar 16 · 1890.91	Change -49.80 (-2.57%)		Prev Cls 1940.71	Volume N/A	Div Date N/A
Day's Range 1877.69 - 1940.71	Bid N/A	Ask N/A	Open 1914.58	Avg Vol N/A	Ex-Div N/A
52-week Range 1877.69 - 5078.86	Earn/Shr N/A	P/E N/A	Mkt Cap N/A	Div/Shr N/A	Yield N/A

COMPARISON NASDAQ / DOW / S&P

NAS/NMS COMPOSITE (NASDAQ Stock Exchange) as of 16-Mar-2001



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RECOMMENDATIONS

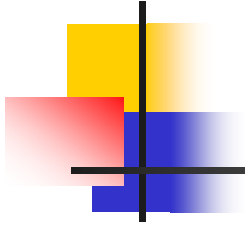
- ANNUAL COLLECTION OF DATA FOR PAIR WISE COMPARISON.
- RECORD OF ECONOMIC INDICATORS.
- CLASSIFICATION OF INVESTORS ON AGE GROUP.
- COMPARISON OF DATA WITH EXPERT OPINION.
- TREND ANALYSIS FOR FORMULATION OF STRATEGY FOR FUTURE.



CONCLUSIONS

DO NOT PUT YOUR EGGS IN ONE BASKET

- DIVERSIFICATION OF SECURITIES.
 - MAY HELP IN REDUCING SYSTEMATIC RISK
 - WILL HELP IN REDUCING UNSYSTEMATIC RISK
- DIVERSIFICATION OF PORTFOLIO.
 - MAY NOT HELP IN REDUCING SYSTEMATIC RISK
 - WILL HELP IN REDUCING UNSYSTEMATIC RISK



QUESTIONS ?