

es the risk and return for each investor profile. The risk and return
the constrained model correspond to the points illustrated in Figure
the unconstrained model correspond to the mid-point of each group
unconstrained efficient frontier in Figure 4.2. This table shows the
d return relative to the unconstrained mean-variance model. The
at this table illustrates is the greater percentage reduction in risk at the
osa in return. The two worst cases in return reduction occur in the
profile and growth profile which both lose twelve percent in return
a sixteen and fifteen percent reduction in risk. The smallest changes
lues occur at the extremes of the efficient frontier.

Constrained Mean-Variance Model		Unconstrained Mean-Variance Model		Difference in Risk and Return	
Risk	Return	Risk	Return	Risk	Return
2.71	7.57	2.85	7.56	-0.02	-0.002
3.75	8.90	4.16	9.84	0.10	0.09
5.10	10.35	6.07	11.79	0.16	0.12
8.91	12.01	8.12	13.71	0.15	0.12
10.16	14.74	10.57	15.66	0.04	0.06

Return Comparisons for Mean-Variance Model

y the constraints show that every index is invested in except the
ars and Up Bond Index. This has increased the utilization of asset
he unconstrained model to nine in the constrained model thereby
versified portfolio. Table 4.7 summarizes the asset investment for

	Merrill Lynch 3-5 Yr. Govt	Merrill Lynch 16 yr Treasur Bills	U.S. 30-Day Treasury Bills	MSCI EAFE Index	Russell 2000 Growth	Russell 2000 Value	S&P 500 / BARRA Growth	S&P 500 / BARRA Value	NAREIT - REIT ALL	Goldman Sachs Commodity Index
Capital Preservation	5.0	0	81.0	1.1	0.5	0.5	4.2	2.4	0.7	4.5
Income	5.0	0	82.0	2.8	1.4	1.4	7.1	5.5	6.8	8.0
Income and Growth	5.0	0	47.0	4.1	2.1	2.1	5.0	19.8	5.7	9.3
Growth	5.0	0	30.0	5.2	2.8	2.8	2.8	36.4	4.3	10.7
Aggressive Growth	5.0	0	2.0	6.0	4.3	4.3	4.3	59.1	2.1	12.9

Table 4.7 Constrained Mean-Variance Asset Allocation

This table shows the percentages of the investment allocated to each asset class. The Merrill Lynch 3-5 Year Government Bond index maintains a five percent investment. U.S. 30-Day Treasury Bills still account for a large portion of the investment in the less risky investment profiles. International stocks, small cap growth and value and large cap growth all maintain a low investment percentage, with equal allocation between small cap growth and value, for each profile. The investment in real estate and commodities generally maintains about fifteen percent of the total investment, except in the case of the capital preservation profile.

To better depict the asset allocation among the investor profiles, each one is represented by a pie chart.

Figure 4.3 shows the constrained mean-variance asset allocation for the investor who prefers the least amount of risk.

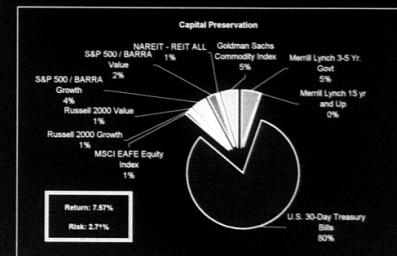


Figure 4.3 Capital Preservation

Figure 4.4 depicts the investment mix for the constrained model for a person willing to accept slightly more risk by moving money from cash and into equity.

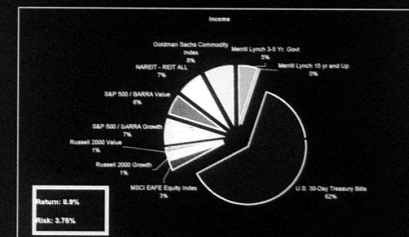


Figure 4.4 Income