BACHELOR of ECONOMICS
International Program

Thammasat University | Thailand

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CHAPTER 4

Mutual Funds and Other Investment Companies

Outline

- Investment company
- Types of investment company
- Mutual funds
- Cost of investment in mutual funds
- ETFs
- Mutual fund performance
- Information on mutual funds

Investment Companies

- These companies perform several important functions for investors:
  - Administration & record keeping
  - Diversification & divisibility
  - Professional management
  - Reduced transaction costs

Net Asset Value

- Used as a basis for valuation of investment company shares
  - Selling new shares
  - Redeeming existing shares

Calculation

$$\frac{\text{Market Value of Assets - Liabilities}}{\text{Shares Outstanding}}$$

Types of Investment Companies

- Unit Trusts
- Managed Investment Companies
  - Open-End
    - Open-end: shares outstanding change when new shares are sold or old shares are redeemed
    - Priced at Net Asset Value(NAV)
  - Closed-End
    - no change in shares outstanding unless new stock is offered
    - Priced at Premium or discount to NAV

Figure 4.1 Closed-End Mutual Funds

FUND	NAV	MKT PRICE	PREM/ DISC %	52-WEEK RETURN %
Adams Express Company (ADX)	17.37	15.01	−13.59	20.80
Advent/Clay Enhcd G & I (LCM)	19.72	17.33	−12.12	3.94
BlackRock S&P 500 Pr Eq (PEFX)	10.35	10.22	−1.26	6.68
BlackRock Str Div Achvr (BDT)	15.50	13.66	−11.87	4.31
Blue Chip Value Fund (BLU)	5.98	6.09	1.84	13.18
Clay/Ray James SB-1 Eqty (RYJ)	22.04	19.79	−10.21	14.51
Cohen & Steers CE Oppty (FOF)	18.32	16.91	−7.70	NS
Dreman/Claymore Div&Inc (DCS)	23.12	20.01	−13.45	3.65
DWS Dreman Val Inc Edge (DHG)	17.75	15.01	−15.44	NS
Eaton Vance T-M D-E Inc (ETY)	19.24	17.63	−8.37	NS
Gabelli Div & Inc Tr (GDV)	25.00	21.69	−13.24	22.76
Gabelli Equity Trust (GAB)	9.68	9.64	−0.41	21.39
General Amer Investors (GAM)	45.90	40.87	−10.96	21.00

FIGURE 4.1 Closed-end mutual funds

Source: Data compiled from *The Wall Street Journal* Online, September 28, 2007.

Types of Investment Companies Continued

- Other investment organizations
  - Commingled funds
  - REITs
  - Hedge Funds

Mutual Funds—Investment Policies

- Money Market
- Equity
- Sector
- Bond
- Balanced
- Asset Allocation and Flexible
- Index
- International

Table 4.1 U.S. Mutual Funds by Investment Classification

TABLE 4.1

U.S. mutual funds by investment classification

	Assets ($ billion)	% of Total Assets	Number of Funds
Equity funds			
Capital appreciation focus	$ 2,701.0	25.9%	3,070
World/international	1,314.1	12.6	915
Total return	1,896.5	18.2	785
Total equity funds	$ 5,911.6	56.8%	4,770
Bond funds			
Corporate	$ 272.2	2.6%	289
High yield	156.2	1.5	207
World	59.4	0.6	113
Government	193.0	1.9	309
Strategic income	448.6	4.3	364
Single-state municipal	154.9	1.5	481
National municipal	210.0	2.0	230
Total bond funds	$ 1,494.4	14.4%	1,993
Hybrid (bond/stock) funds	$ 653.1	6.3%	508
Money market funds			
Taxable	$ 1,988.1	19.1%	576
Tax-exempt	366.4	3.5	273
Total money market funds	$ 2,354.5	22.6%	849
Total	$10,413.6	100.0%	8,120

Note: Column sums subject to rounding error.
Source: Investment Company Institute, 2007 *Mutual Fund Fact Book*.

How Funds Are Sold

- Direct-marketed funds
- Sales force distributed
- Revenue sharing on sales force distributed
  - Potential conflicts of interest
- Financial Supermarkets

Costs of Investing in Mutual Funds

- Fee Structure
  - Operating expenses
  - Front-end load
  - Back-end load
  - 12 b-1 charges
    - distribution costs paid by the fund
    - Alternative to a load

Fees and Mutual Fund Returns: An Example

Initial NAV = $20

Income distributions of $.15

Capital gain distributions of $.05

Ending NAV = $20.10:

$$\text{Rate of Return} = \frac{\$20.10 - \$20.00 + \$.15 + \$.05}{\$20.00} = 1.5\%$$

Table 4.2 Impacts of Costs on Investment Performance

TABLE 4.2

Impact of costs on investment performance

	Cumulative Proceeds (All Dividends Reinvested)		
	Fund A	Fund B	Fund C
Initial investment*	$10,000	$10,000	$ 9,200
5 years	17,234	16,474	15,502
10 years	29,699	27,141	26,123
15 years	51,183	44,713	44,018
20 years	88,206	73,662	74,173

*After front-end load, if any.

Notes:

1. Fund A is no-load with .5% expense ratio.
2. Fund B is no-load with 1.5% expense ratio.
3. Fund C has an 8% load on purchases and a 1% expense ratio.
4. Gross return on all funds is 12% per year before expenses.

Trading Scandal with Mutual Funds

- Late trading – allowing some investors to purchase or sell later than other investors
- Market timing – allowing investors to buy or sell on stale net asset values
  - International
- Net effect is to transfer value from other shareholders to privileged traders
  - Reduction in the rate of return of the mutual fund

Exchange Traded Funds

- ETF allow investors to trade index portfolios like shares of stock
- Examples - SPDRs and WEBS
- Potential advantages
  - Lower taxes
  - Trade continuously
  - Lower costs
- Potential disadvantages
  - Prices can depart by small amounts from NAV

Table 4.3 EFT Sponsors and Products

A. ETF Sponsors

Sponsor	Product Name
Barclays Global Investors	i-Shares
Merrill Lynch	HOLDRS (Holding Company Depository Receipts: "Holders")
StateStreet/Merrill Lynch	Select Sector SPDRs (S&P Depository Receipts: "Spiders")
Vanguard	VIPER (Vanguard Index Participation Equity Receipts: "Vipers")

B. Sample of ETF Products

Name	Ticker	Index Tracked
Broad U.S. indexes		
Spiders	SPY	S&P 500
Diamonds	DIA	Dow Jones Industrials
Cubes	QQQQ	NASDAQ 100
iShares Russell 2000	IWM	Russell 2000
Total Stock Market VIPERS	VTI	Wilshire 5000
Industry indexes		
Energy Select Spider	XLE	S&P 500 energy companies
iShares Energy Sector	IYE	Dow Jones energy companies
Financial Sector Spider	XLF	S&P 500 financial companies
iShares Financial Sector	IYF	Dow Jones financial companies
International indexes		
WEBS United Kingdom	EWU	MCSI U.K. Index
WEBS France	EWQ	MCSI France Index
WEBS Japan	EWJ	MCSI Japan Index

TABLE 4.3

ETF sponsors and products

Mutual Fund Investment Performance: A First Look

- Evidence shows that average mutual fund performance is generally less than broad market performance
- Evidence that performance is consistent from one period to the next is suggestive but inconclusive

Figure 4.2 Diversified Equity Funds versus Wilshire 5000 Index

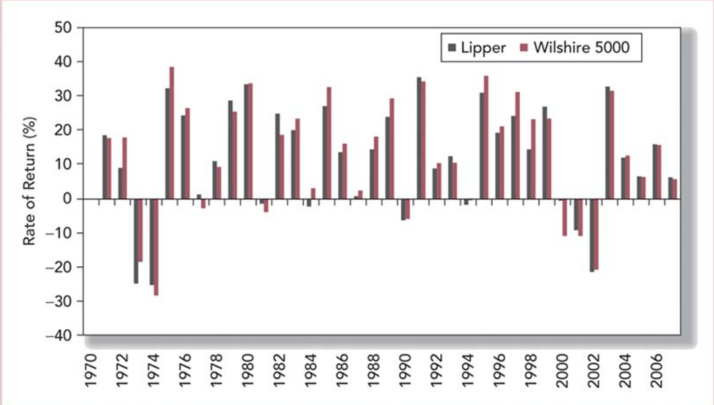


FIGURE 4.2 Diversified equity funds versus Wilshire 5000 index

Table 4.4 Consistency of Investment Results

TABLE 4.4

Consistency of investment results

Initial Period Performance	Successive Period Performance: Top Half	Successive Period Performance: Bottom Half
A. Malkiel study, 1970s		
Top half	65.1%	34.9%
Bottom half	35.5	64.5
B. Malkiel study, 1980s		
Top half	51.7	48.3
Bottom half	47.5	52.5

Source: Burton G. Malkiel, "Returns from Investing in Equity Mutual Funds 1971–1991," *Journal of Finance* 50 (June 1995), pp. 549–72. Reprinted by permission of the publisher, Blackwell Publishing, Inc.

Information on Mutual Funds

- Wiesenberger's Investment Companies
- Morningstar (www.morningstar.com)
- Yahoo (biz.yahoo.com/funds)
- Investment Company Institute (www.ici.org)
- Directory of Mutual Funds

Returns with Foreign Exchange

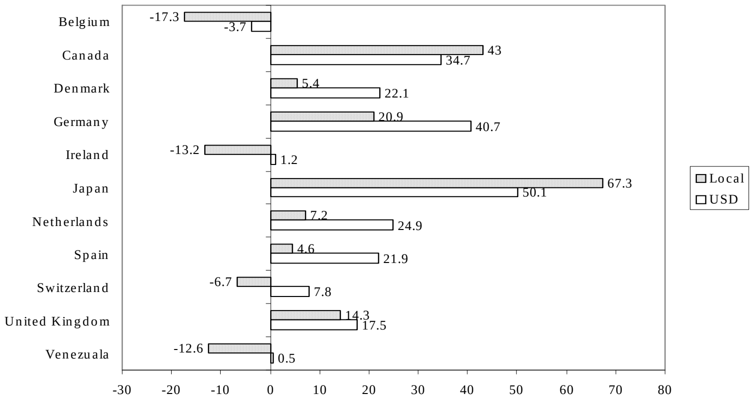
- Return in US is a function of two factors:

1. Return in the foreign market

2. Return on the foreign exchange

$$1 + r(US) = \left[1 + r_f(UK)\right]\frac{E_1}{E_0}$$

Exchange Rate Risk



1999 Country Returns in Local Currency and USD
Source: *WSJ* 3 January 2000

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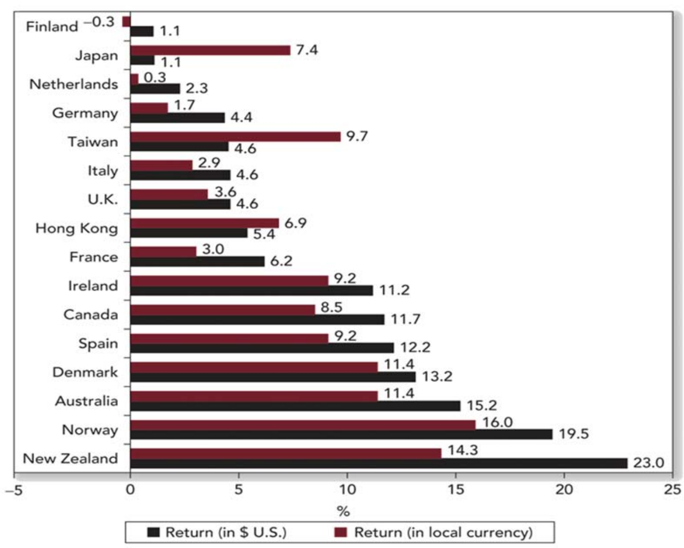

FIGURE 25.2 Stock market returns in U.S. dollars and local currencies for 2005

Foreign Exchange Risk

Foreign Exchange Risk

- Variation in return related to changes in the relative value of the domestic and foreign currency
- Total return = investment return & return on foreign exchange
- Foreign exchange rate risk can be hedged. But it is difficult to completely hedge exchange rate risk of future returns on funds.

Diversification Benefits

Evidence shows international diversification is beneficial

- It's possible to expand the efficient frontier above domestic only frontier
- It's possible to reduce the systematic risk level below the domestic only level

Country	Returns in U.S. Dollars: Average	Standard Dev.	Beta/U.S.	Correlation/U.S.	Returns in Local Currency: Average	Standard Dev.	Beta/U.S.	Correlation/U.S.
A. Developed countries								
U.K.	3.05	14.83	0.83	0.83	0.26	14.64	0.82	0.83
U.S.	0.63	14.89	1.00	1.00	0.63	14.89	1.00	1.00
Austria	27.65	15.08	0.41	0.40	22.62	12.24	0.48	0.74
Switzerland	4.50	15.82	0.79	0.74	0.41	16.03	0.86	0.80
Australia	14.36	16.10	0.97	0.38	7.93	9.67	0.68	0.23
Canada	12.20	17.19	0.92	0.79	6.50	13.00	0.70	0.81
New Zealand	19.70	17.27	0.63	0.55	10.13	11.33	0.37	0.48
Portugal	5.17	17.90	0.70	0.58	0.13	14.96	0.68	0.67
Singapore	6.88	18.14	0.76	0.62	5.78	16.79	0.73	0.65
Belgium	11.55	18.28	0.69	0.56	6.57	15.87	0.67	0.63
Spain	11.56	18.47	0.97	0.78	6.86	17.77	0.95	0.80
Japan	6.09	18.74	0.54	0.43	6.42	16.84	0.51	0.45
Ireland	11.55	18.99	0.90	0.71	6.93	18.81	0.89	0.70
Hong Kong	3.93	19.27	0.96	0.75	3.80	19.26	0.96	0.74
Italy	4.35	19.28	0.96	0.74	−0.45	17.91	0.94	0.78
Netherlands	1.56	19.64	1.08	0.82	−2.94	19.89	1.06	0.79
France	4.58	20.00	1.12	0.83	−0.09	19.40	1.10	0.84
Denmark	14.39	20.24	0.98	0.72	9.60	19.39	0.97	0.75
Norway	18.44	21.74	1.01	0.69	12.98	21.08	1.03	0.73
Germany	4.20	22.62	1.29	0.85	−0.42	22.21	1.27	0.85
Greece	9.13	23.42	0.85	0.54	4.35	22.50	0.82	0.54
Israel	10.62	24.38	0.87	0.53	12.46	21.05	0.70	0.50
Sweden	7.67	26.71	1.57	0.88	3.63	24.36	1.43	0.88
Korea	29.14	31.11	1.49	0.72	23.85	28.66	1.41	0.73
Finland	0.74	36.09	1.70	0.70	−3.56	36.69	1.68	0.68
B. Emerging markets								
Peru	18.29	16.02	0.16	0.14	17.65	15.54	0.12	0.12
Malaysia	7.79	16.29	0.31	0.28	7.67	16.17	0.30	0.27
Mexico	19.53	19.56	0.99	0.76	21.05	16.51	0.81	0.73
Chile	15.02	20.21	0.87	0.64	11.62	13.84	0.46	0.50
Philippines	7.12	20.85	0.46	0.33	8.01	19.42	0.50	0.38
Czech Rep.	35.19	21.73	0.64	0.44	26.22	19.88	0.56	0.42
South Africa	23.85	25.25	0.80	0.47	18.89	19.17	0.78	0.61
Hungary	23.64	25.41	0.95	0.56	17.36	22.48	0.89	0.59
Poland	16.40	26.88	1.12	0.62	10.83	23.80	0.89	0.55
China	25.55	27.00	0.34	0.19	−9.13	19.94	0.13	0.10
India	24.94	28.17	1.06	0.56	23.88	27.01	1.03	0.57
Russia	45.97	28.92	0.72	0.38	na	na	na	na
Taiwan	7.90	29.51	1.07	0.54	7.34	28.02	1.02	0.54
Thailand	25.16	32.72	0.84	0.38	23.14	29.60	0.77	0.39
Pakistan	32.15	33.60	0.62	0.28	32.61	32.48	0.56	0.26
Brazil	19.76	35.15	1.74	0.74	19.51	21.85	1.03	0.70
Argentina	5.15	38.09	0.97	0.38	28.23	43.38	0.68	0.23
Turkey	28.49	56.15	2.73	0.73	36.37	44.51	1.89	0.63
Colombia	na	na	na	na	39.85	18.62	0.39	0.31
Indonesia	na	na	na	na	20.24	25.02	0.60	0.35

TABLE 25.9

Risk and return across the globe, 2001–2005

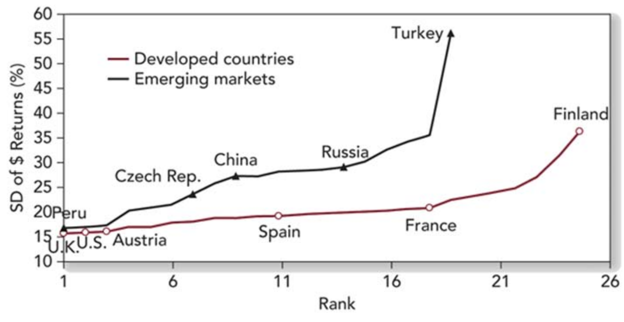

FIGURE 25.3 Annualized standard deviation of investments across the globe ($ returns, 2001–2005)

Note: Developed countries and emerging markets are ranked from low to high standard deviation.

FIGURE 25.5 Annualized average $ return of investments across the globe, 2001–2005

Note: Developed countries and emerging markets are ranked from low to high average return.

A. Correlation of monthly asset return 2001–2005 in $U.S. (unhedged currencies)

	Stocks							Bonds						
	U.S.	Germany	U.K.	Japan	Australia	Canada	France	U.S.	Germany	U.K.	Japan	Australia	Canada	France
Stocks														
U.S.	1.00													
Germany	0.85	1.00												
U.K.	0.83	0.88	1.00											
Japan	0.45	0.48	0.48	1.00										
Australia	0.74	0.79	0.79	0.44	1.00									
Canada	0.81	0.76	0.78	0.44	0.75	1.00								
France	0.84	0.96	0.91	0.53	0.76	0.78	1.00							
Bonds														
U.S.	−0.23	−0.40	−0.22	−0.21	−0.22	−0.20	−0.34	1.00						
Germany	−0.16	−0.18	−0.07	−0.16	−0.01	−0.08	−0.14	0.77	1.00					
U.K.	−0.15	−0.21	−0.11	−0.26	−0.10	−0.12	−0.21	0.76	0.88	1.00				
Japan	−0.04	−0.13	−0.04	−0.33	−0.06	−0.13	−0.14	0.28	0.17	0.18	1.00			
Australia	−0.28	−0.42	−0.26	−0.27	−0.24	−0.22	−0.38	0.82	0.72	0.80	0.27	1.00		
Canada	−0.01	−0.13	0.07	−0.12	0.01	0.03	−0.08	0.85	0.82	0.81	0.26	0.79	1.00	
France	−0.18	−0.22	−0.10	−0.17	−0.04	−0.10	−0.18	0.80	1.00	0.88	0.19	0.75	0.83	1.00

B. Correlation of monthly asset return 2001–2005 in $U.S. (hedged currencies)

	Stocks							Bonds						
	U.S.	Germany	U.K.	Japan	Australia	Canada	France	U.S.	Germany	U.K.	Japan	Australia	Canada	France
Stocks														
U.S.	1.00													
Germany	0.85	1.00												
U.K.	0.82	0.88	1.00											
Japan	0.43	0.43	0.44	1.00										
Australia	0.80	0.82	0.84	0.48	1.00									
Canada	0.79	0.78	0.80	0.49	0.84	1.00								
France	0.83	0.96	0.92	0.47	0.80	0.78	1.00							
Bonds														
U.S.	−0.23	−0.25	−0.07	0.00	−0.04	−0.11	−0.18	1.00						
Germany	−0.09	0.10	0.21	0.09	0.21	0.09	0.16	0.69	1.00					
U.K.	−0.10	0.02	0.18	0.01	0.12	0.03	0.07	0.64	0.88	1.00				
Japan	0.00	0.08	0.18	0.20	0.25	0.11	0.11	0.44	0.60	0.53	1.00			
Australia	0.28	0.33	0.47	0.27	0.60	0.44	0.38	0.56	0.73	0.65	0.59	1.00		
Canada	0.30	0.36	0.46	0.31	0.52	0.56	0.39	0.60	0.64	0.53	0.46	0.77	1.00	
France	−0.09	0.09	0.22	0.09	0.21	0.09	0.16	0.67	1.00	0.88	0.61	0.74	0.64	1.00

TABLE 25.10

Correlation for asset returns: Unhedged and hedged currencies

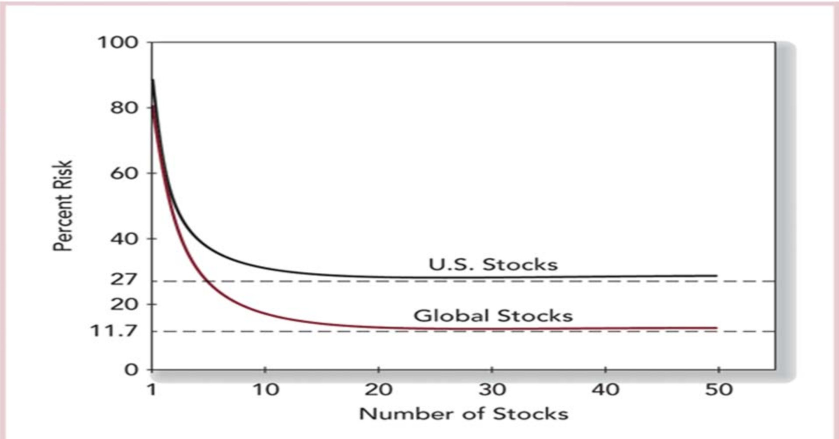

FIGURE 25.7 International diversification. Portfolio standard deviation as a percent of the average standard deviation of a one-stock portfolio

Source: B. Solnik, "Why Not Diversify Internationally Rather Than Domestically." *Financial Analysts Journal*, July/August 1974, pp. 48–54.

Summary

- Investment company
- Types of investment company
- Mutual funds
- Cost of investment in mutual funds
- ETFs
- Mutual fund performance
- Information on mutual funds
- International (Text 25.3)