



Student  
Investment  
Fund

**Annual Report**  
**1998**

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This report and the financial statements contained herein are submitted for the general information of the fund's donors. For more information on The University of Tulsa Student Investment Fund, send an e-mail to [beyrp@utulsa.edu](mailto:beyrp@utulsa.edu)

## Letter to Our Shareholders

### Background

In 1990, Frank M. Engle made the first contribution to the Finance Excellence Fund. His vision was to create a fund to provide scholarships to help attract and retain outstanding students and to provide the resources necessary to attract nationally prominent faculty to the University. Friends of Finance adopted Mr. Engle's vision and began to raise additional funds from generous individuals and businesses. As of December 31, 1998, the fund raised almost \$380,000 in contributions. In 1997 the University of Tulsa Board of Trustees approved the Finance Department's proposal to establish a Student Investment Fund (SIF). The first SIF class, under the direction of Professor Larry Johnson, was offered in the summer of 1997. SIF students spent the summer and fall semesters of 1998 researching SIFs at other universities, writing by-laws, operating and investment procedures, selecting brokers, and determining space and equipment needs. In April of 1998, \$300,000 was transferred to the SIF class for management. On April 23, 1998, the first securities, COHU, Inc. and Tidewater, Inc. were purchased.



*Keven Guynn, SEO*

### The Purpose of SIF

The purpose of the SIF class is to provide students with the opportunity to apply financial theories and models learned in the course of their academic career in making real investment decisions and managing a real portfolio of financial assets.

### SIF Goals and Style

The goals of the SIF are to minimize risk and to attain a return that exceeds the S&P500 Index. To meet these goals, an enhanced index portfolio has been established. At least fifty percent of the portfolio is invested in an S&P500 Index mutual fund. The remainder of the portfolio is actively managed and is designed to enhance the returns of the S&P500 Index fund.

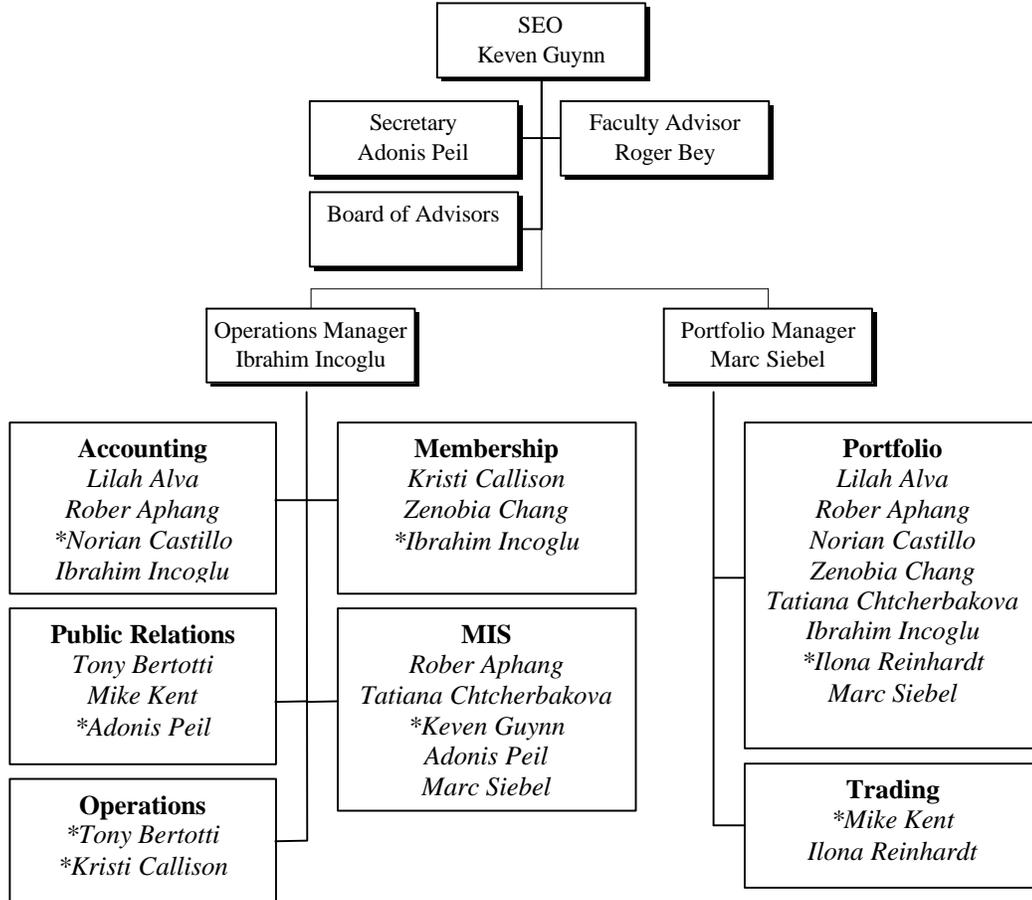
### The Role of SIF Members

The current Student Investment Fund is composed of a diverse group of 13 students from nine countries around the world. The Fund is managed like an investment management company. Every student has a role in making the fund a success. As the organizational structure chart on Page 2 illustrates, the management team is made up of an SEO (Student Executive Officer), who is in charge of running the class, a Portfolio Manager and an Operations Manager. Seven committee chairs report to the managers, and the managers report to the SEO. Each student serves on at least two of the seven committees, which are in charge of everything from accounting, MIS, asset allocation, and trading, to soliciting new members, public relations and operations. The Faculty Advisor leads discussions on various investment and portfolio topics, and the Board of Advisors oversees the entire SIF.



**From left to right, top row:** Ilona Reinhardt, Mike Kent, Keven Guynn, and Marc Siebel.  
**Second row:** Adonis Peil, Zenobia Chang, Lilah Alva, Tony Bertotti, Kristi Callison, Dr. Roger Bey.  
**Seated:** Ibrahim Incoglu, Rober Aphan, Tatiana Chtcherbakova, and Norian Castillo.

## Organizational Structure Chart



\* Indicates committee chair.

## Performance

The Fund's original investment style was to invest in small cap value stocks. However, in October of 1998 it was decided that this investment style was too difficult for the SIF to implement and would not meet the SIF's long-term goals. Thus, the small cap securities in the portfolio were sold and a large cap blend style was initiated. As of December 31, 1998, the SIF portfolio consisted of 15 securities, an S&P500 Index Fund, and a Money Market Fund. The return on the SIF portfolio from April 13, 1998 to December 31, 1998 was 7%. American Online and Microsoft Corporation were the best performing stocks. The returns for 1998 were low because much of the money was held in cash equivalents for most of the year until appropriate securities could be identified and researched. All of the current individual securities in the portfolio were purchased in November and December of 1998.

## Conclusion

The SIF class has been an invaluable experience for all the students who have participated. We realize that we are fortunate to attend one of a handful of schools that allows students to manage a portion of the University's endowment, and feel privileged to be able to gain such hands on experience in Portfolio Management. We extend our thanks to all the generous donors who have made this experience possible. We hope to maximize the returns on the SIF portfolio, provide many student scholarships and much faculty support from the portfolio earnings, and make you proud that your contributions have provided outstanding educational returns.

Sincerely,

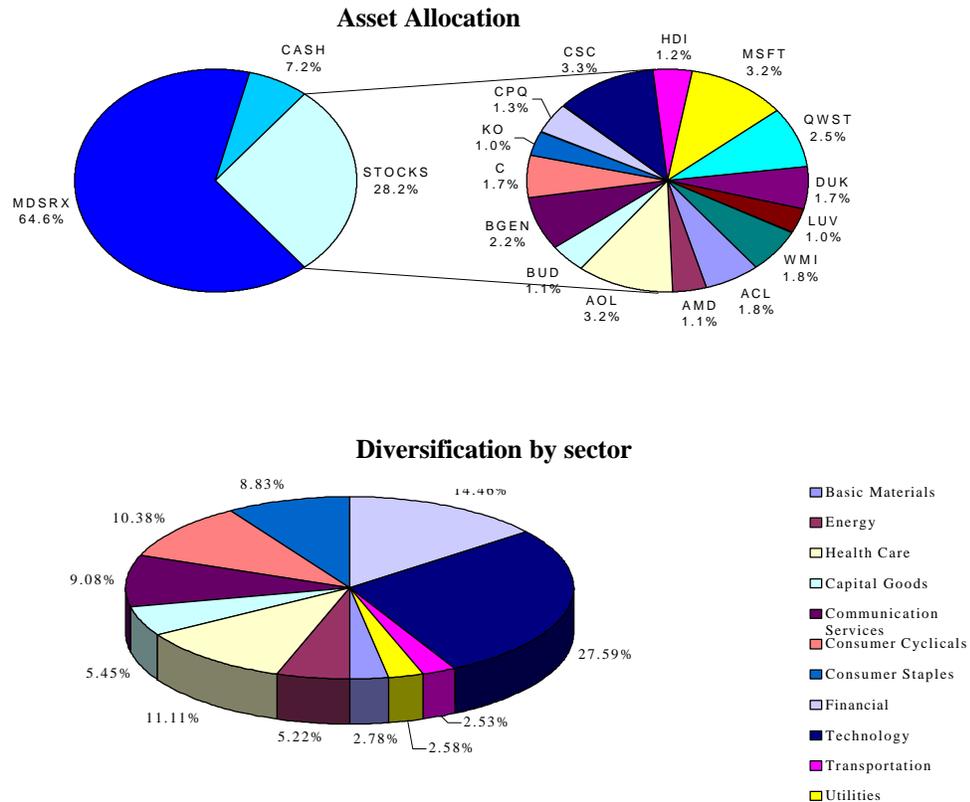
Keven Guynn  
Student Executive Officer

## Market Recap

1998 was filled with volatility in the stock market because of collapsing economies in emerging markets, large market corrections, and uncertain earnings. The Dow-Jones Industrial Average fell 20% in October 1998, which was the biggest correction since 1990. Despite the volatility of the DOW and collapsing emerging market economies,

the U.S. economy came out on top. During the fourth quarter of 1998, the U.S. economy grew at an annualized rate of more than 6%. The SIF weathered these storms just like other investors and portfolio managers, and came out learning some valuable lessons. The most important being that we are living in a truly global marketplace.

## Portfolio Distribution



## Portfolio at a Glance

### **ACE LTD (ACL)**

ACL provides diverse insurance/reinsurance to clients in the U.S. & Europe. The company's core lines have been competitive and policy renewal rates remain good. Some new lines like property catastrophe reinsurance may be volatile, but this should be balanced by diversification efforts.

### **ADVANCED MICRO DEVICES INC (AMD)**

AMD supplies microprocessors for the fast-growing, sub-\$1000 personal computer market, where it has 50% market share. Its key customers include Compaq, IBM and Hewlett-Packard. AMD's product technology is competitive with Intel, who is the overall microprocessor leader.

### **AMERICA ONLINE INC (AOL)**

AOL is the largest online service with over 8 million subscribers worldwide. The company also owns AOL Studios, which creates, markets and distributes original interactive titles, properties and new channels on America Online & the World Wide Web, and CompuServe, an online service targeting high-end users

### **ANHEUSER BUSCH COS INC (BUD)**

BUD is the world's largest brewer with 45% U.S. market share. Some of the company's products include Budweiser, Michelob and Busch. BUD has just restructured and shed all businesses other than beer, can manufacture, and Busch Gardens & Sea

World. BUD hopes to achieve a 10% long-term EPS growth rate through rapid growth of international beer earnings, share repurchases, and acquisitions of Latin American and Asian brewers.

***BIOGEN INC (BGEN)***

BGEN is a biotech company with over \$150 million in royalty streams due primarily from alpha-interferon and hepatitis B patents. The company is pursuing 3 additional drug candidates: Amevive for psoriasis, Adentri for congestive heart failure and Antova for various autoimmune diseases including lupus and immune thrombocytopenic purpura.

***CITIGROUP INC (C)***

The Travelers Group and Citicorp merger made Citigroup a financial-services company with unparalleled diversification. Citigroup offers global consumer finance services, asset management, and property/casualty & life insurance. Subsidiaries include Travelers Property & Casualty Corp., Solomon Smith Barney Holdings, Inc., Primerica Financial Services & Commercial Credit Company.

***COCA COLA CO (KO)***

KO is the world's largest manufacturer/distributor of soft-drink concentrate & syrups. The company has 48% global market share & over 50% share outside the U.S. Returns are expected to be superior, driven by strong, accelerating volume growth (8-9%), capital appreciation in minority equity investments in bottlers, and strong balance sheet & free cash flow.

***COMPAQ COMPUTER CORP (CPQ)***

Compaq Computer is the world's largest manufacture of personal computers. CPQ is trying to reduce costs by deploying a build-to-order/configure-to-order manufacturing process. The company has acquired Digital & Tandem in order to become a leading enterprise computing player.

***COMPUTER SCIENCES CORP (CSC)***

CSC is leading supplier of information-systems, professional services, software development, consulting, systems integration & outsourcing. CSC is being awarded 15-20% of all outsourcing contracts from clients like DuPont, CNA, JP Morgan, Hughes Aircraft & British-Aerospace.

***DUKE ENERGY CORP (DUK)***

DUK provides electricity to 2 million N. & S. Carolina customers, and gas via a 22,000-mile

system serving Mid-Atlantic, New England, Midwest & Gulf Coast states following the 6/97 PanEnergy merger. Duke's assets include strong management, solid demographics, financial position, regulatory environment & renowned technical capabilities, combined with PanEnergy's aggressive management, proven trading/marketing capability & significant gas position make DUK the first large-scale electric/gas convergence story.

***HARLEY DAVIDSON INC (HDI)***

HDI is the only major US maker of motorcycles and the nation's #1 seller of heavyweight motorcycles (it controls about half of the heavyweight motorbike market in the US). Its worldwide network includes more than 1,200 dealers.

***MICROSOFT CORP (MSFT)***

Microsoft is the world's #1 software company. Its software includes the Windows (95, 98, and NT) operating systems, Excel spreadsheets, word processing programs, presentation tools, and reference works. The Microsoft Network provides online content with its Internet Explorer browser. With NBC, the company operates cable news channel MSNBC. MSFT also provides free e-mail and other services.

***SOUTHWEST AIRLINES CO (LUV)***

LUV offers high-frequency airline service at low fares between 50+ airports in U.S. The company has been consistently profitable for 20+ years. Although the carrier is increasing its long haul flying it remains committed to short-haul, high frequency markets.

***QWEST COMMNC INTL INC (QWST)***

QWST leased long-distance (LD) circuits to other LD companies on a wholesale basis and retail LD services to end users utilizing its existing owned fiber-optic, its microwave network in the East and leased capacity throughout the rest of the country. With the completion of a 13,000-route-mile nationwide fiber-optic, QWST will be the lowest-cost, highest-tech network with abundant capacity for sale.

***WASTE MANAGEMENT INC (WMI)***

WMI is the largest solid-waste company in the U.S. The company has major market positions in New York City & Los Angeles. Its large-scale size increase has resulted from industry consolidation & an aggressive, focused management team with excellent operating disciplines.

## Performance Summary

At the end of 1998, the SIF portfolio consisted of 15 common stocks, an S&P500 Index Fund, and a Money Market Fund. A high proportion of the Fund was allocated to the Merrill Lynch S&P500 index, in order to be in line with SIF investment policies. From April 13, 1998 to December 31, 1998, the SIF portfolio's total return was 7%, compared to the S&P500, which had a return of 11%. The returns for 1998 were low because much of the money was held in cash equivalents for most

of the year until appropriate securities could be identified and researched. The SIF portfolio's total gain before expenses was \$21,485, which resulted in a total portfolio value of \$343,180 by the end of 1998. As the following tables illustrate, the highest returns came from America Online, Microsoft Corp., and Compaq Computer Corp., while the worst performers were Coca-Cola Company, and Advanced Micro Devices.

(As of December 31, 1998)

Symbol	Company	Purchase			Market Value		Return	
		Date	Shares	Cost Basis	12/31/98	Gain (\$)	(%)	
ACL	ACE Limited	08/03/98	180	5,258.70	6,198.75	940.05	17.88	
AMD	Advanced Micro Dev Inc	11/12/98	130	3,773.58	3,770.00	(3.57)	(0.10)	
AOL	American Online	11/12/98	70	6,105.05	10,858.75	4,753.70	77.87	
BGEN	Biogen	11/20/98	90	7,286.85	7,470.00	183.15	2.51	
BUD	Anheuser-Bush Companies Inc.	11/20/98	60	3,534.15	3,937.50	403.35	11.41	
C	Citigroup	12/02/98	120	5,665.80	5,962.50	296.70	5.24	
CPQ	Compaq Computer Corp	12/04/98	105	3,625.39	4,410.00	784.61	21.64	
CSC	Computer Science Corp	12/04/98	175	10,111.06	11,243.75	1,132.69	11.20	
DUK	Duke Power Co	12/04/98	90	5,661.23	5,765.63	104.40	1.84	
HDI	Harley-Davidson Inc	12/11/98	90	3,872.48	4,263.75	391.28	10.20	
KO	Coca-Cola Company	12/11/98	50	3,538.88	3,350.00	(188.88)	(5.13)	
LUV	Southwest Airlines	12/11/98	150	3,313.50	3,403.13	89.63	2.71	
MSFT	Microsoft Corp	12/11/98	80	9,117.20	11,095.00	1,977.80	21.69	
QWST	Qwest Communications	12/22/98	175	7,486.06	8,750.00	1,263.94	16.88	
WMI	Waste Management Inc.	12/22/98	135	6,154.65	6,294.38	139.73	2.27	
	Individual Common Stocks			84,504.56	96,773.13	12,268.56	62.72	
MDSRX	Merrill Lynch S&P 500 Index Fund	06/09/98	14,514	210,166.42	221,770.31	11,603.89	10.89	
CASH	Cash / Cash Equivalents			20,992.18	24,636.73	3,644.55	3.30	
				<b>315,663.16</b>	<b>343,180.17</b>	<b>27,517.01</b>		

### Top Three Holdings in Terms of Dollar Value

	Value (\$)	% of Total Assets
Computer Science Corp.	11,244	3.3
Microsoft Corp.	11,095	3.2
America Online	10,859	3.2

### Top Three Performers in Terms of Returns

	Value	Return (%)
America Online	10,859	77.87
Microsoft Corp.	11,095	21.69
Compaq Computer Corp.	4,410	21.64

## Investment Strategy

The SIF changed its investment strategy from small capitalization value/growth stocks to large capitalization stocks, in October of 1998. This decision was made because large companies are the

biggest beneficiaries of low inflation. Large companies also have greater bargaining power with suppliers and the ability to control costs better than smaller companies due, to economies of scale.

## SIF Asset Allocation Methods

The underlying basis of the SIF asset allocation is Markowitz's mean-variance optimization model. The SIF students have made the model operational on an Excel spreadsheet. The current goal is for the SIF to outperform the S&P500 Index. SIF's investment policy constrains the portfolio as follows:

- No more than 7% of the portfolio can be invested in an individual stock.

- No more than 25% of the portfolio can be invested in any one industry.
- No less than 50% can be invested in the S&P500 Index Fund.
- Financial derivatives cannot be used.
- Short sales are not allowed.
- Securities cannot be purchased on margin.

## Financial Highlights

Annual Time Weighted ROI	9.19%
Expenses	\$3,480
Net Income	\$18,180
Total Assets	\$343,180

As the following table illustrates, the SIF return on investment from April 13, 1998 to December 31, 1998 was 7%, while the risk was well below those of the S&P500 and Russell 2000 indexes.

Risk and Return Comparison	SIF (1)	S&P 500	RUSSELL 2000
Return (1)	7.09%	11%	-12%
Risk (2)	3.8	5.3	-7.4

(1) Return for 04/12/98 through 12/31/98 period.

(2) Risk measured by the coefficient of variation of average monthly returns for 04/12/98 - 12/31/98 period.

## Financial Statements

### Balance Sheet

Amounts in US dollars 12/31/98

#### Assets

Cash / Cash Equivalents	
Cash (TU account)	\$ 1,695
Cash (Merrill Lynch account)	\$ 1
Cash equivalent (Money Fund)	<u>\$ 22,941</u>
Total Cash / Cash Equivalents	\$ 24,637
Index Funds, at value (cost \$210,166; for details see Page 5)	\$ 221,770
Comon stocks, at value (cost \$84,505; for details see Page 5)	\$ 96,773
<b>Total Assets</b>	<b>\$ 343,180</b>

#### Capital

Paid in capital	\$ 325,000
Capital gains (losses)	<u>\$ 18,180</u>
	<b>\$ 343,180</b>

### Income Statement

Amounts in US dollars From 04/13/98 Until 12/31/98

#### Investment Income

Dividends	<u>\$ 13,996</u>
<b>Total Income</b>	<b>\$ 13,996</b>

#### Expenses

EMA Initial Annual Fee	\$ 150
Interactive Service Fee	\$ 25
Operating Expenses	
Supplies and Expenses	\$ 444
Memberships and Subscriptions	\$ 103
Computer	<u>\$ 2,758</u>
Total Operating Expenses	\$ 3,305
Other expenses	<u>\$ -</u>
<b>Total Expenses</b>	<b>\$ 3,480</b>

#### Realized and Unrealized Gain (loss)

Unrealized Gain (loss)	\$ 23,872
Realized Gain (loss)	<u>\$ (16,209)</u>
<b>Net gain (loss)</b>	<b>\$ 7,663</b>

<b>Net income</b>	<b>\$ 18,180</b>
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# *Student Investment Fund*

# **Country Analysis**



## COUNTRY REPORT: PERU

By: Rober Aphant



### GENERAL BACKGROUND

#### Economy

Beginning with Alberto Fujimori's election as President on July 28, 1990, Peru has emerged as a major economic success story after two decades of economic deterioration (including hyperinflation and lack of growth) caused by anti-business policies, protectionism, heavy state controls on economic activity, and an active terrorist insurgency. Since President Fujimori was first elected in 1990, Peru's government has dramatically shifted its economic policies towards a more free-market orientation, and has eliminated nearly all trade, investment, and foreign exchange controls. The government imposed an austerity program that removed price controls and ended subsidies on many basic items and allowed the *inti*, the national currency at that time, to float against the United States dollar.

#### Politics

Questions and controversy continue regarding the legality of President Fujimori possible bid for a third presidential term in 2000, when his current term expires. Although Article 135 of Peru's constitution bars a president from seeking a third term, ambiguity exists as to whether this applies to Fujimori, whose first term started in 1990, prior to adoption of the current constitution. In May 1997, a constitutional tribunal voted against a legal interpretation that would have allowed Fujimori to seek a third term. Following this, the Fujimori-controlled Congress removed three judges from the tribunal, leading to large anti-government protests. In December 1997, Peru's Congress passed a law which Fujimori's opponents claim will allow him to run for a third term. President Fujimori has not indicated publicly whether or not he will run for reelection even if allowed to do so.

#### Disputes—international

For more than 50 years, Peru and its northern neighbor, Ecuador, have disputed a large swath of rain forest now part of Peru. This dispute has resulted in three wars, including a brief one in 1995 in the disputed Cordillera del Condor region along Peru's northeastern border. Peru claims (and Ecuador disputes) that the two countries' border was set under a 1942 treaty known as the Rio Protocol. In 1998, a round of peace talks between Ecuador and Peru concluded successfully. Peru's President Alberto



Figure 1: Map of South America

Fujimori and Ecuador's newly elected President Jamil Mahuad signed a permanent settlement.

#### Terrorism

In December 1996 Túpac Amaru rebels seized the residence of the Japanese ambassador in Lima, taking hundreds of hostages, including foreign diplomats and Peruvian government officials. The rebels demanded the release of imprisoned comrades, and freed all but 72 of their hostages while negotiating with the government. After a four-month-long standoff, Fujimori ordered a military raid on the mansion to free the hostages. Commandos killed all of the rebels, and one hostage and two soldiers died in the attack. This incident was a psychological setback in Peru's campaign against terrorism, which many had thought was over. Since 1980, when the Maoist-inspired Shining Path terrorist movement took up arms, more than 30,000 people had been killed. In recent years, however, Peru's government had largely suppressed terrorism, particularly since a 1992 crackdown highlighted by the government's declaration of a state of emergency.

## ECONOMY

In the 1980s, the economy suffered from hyperinflation, declining per capita output, and mounting external debt. Peru was shut off from IMF and World Bank support in the mid-1980s because of its huge debt arrears. An austerity program implemented shortly after the Fujimori government took office in July 1990 contributed to a third consecutive yearly contraction of economic activity, but the slide came to a halt late that year, and in 1991 output rose 2.4%. After a burst of inflation as the austerity program eliminated government price subsidies, monthly price increases eased to the single-digit level and by December 1991 dropped to the lowest increase since mid-1987. Lima obtained a financial rescue package from multilateral lenders in September 1991, although it faced \$14 billion in arrears on its external debt. By working with the IMF and World Bank on new financial conditions and arrangements, the government succeeded in ending its arrears by March 1993. In 1992, GDP fell by 2.8%, in part because a warmer-than-usual El Niño current resulted in a 30% drop in the fish catch, but the economy rebounded as strong foreign investment helped push growth to 6.4% in 1993, 13.1% in 1994, and 7.3% in 1995. Growth slowed to 2.5% in 1996 as the government adopted tight fiscal and monetary policy to reduce the current account deficit and meet its IMF targets. Growth then rebounded to 7.2% in 1997 even as inflation fell to its lowest level in 23 years (see charts 1 and 2). In 1998 growth rate drop to 0.6% due to economic shocks stemming from the Asian financial crisis and the El Niño weather events; nevertheless, the capital inflows that surged to record levels in early 1997 have remained strong during last year. Peru's cumulative growth from 1993 to 1997 has been the highest in Latin America (see chart 3).

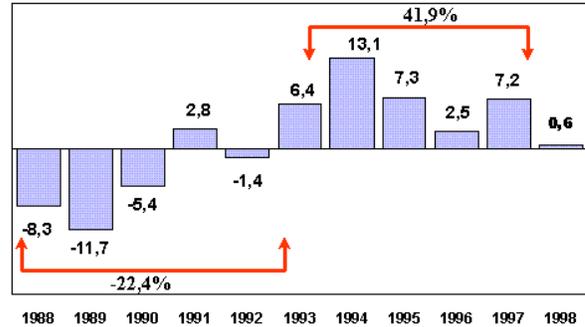


Chart 2: 1988-1998 Annual GDP growth  
Source: Ministry of Economy of Peru

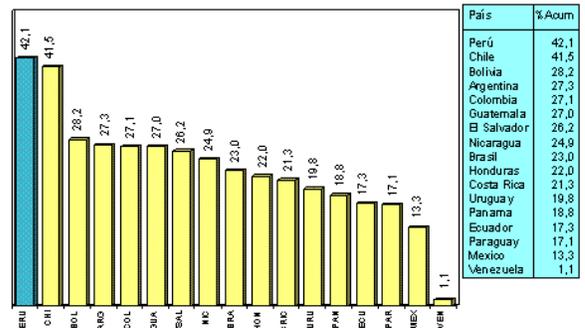


Chart 3: 1993-1997 GDP growth in Latin America  
Source: Ministry of Economy of Peru

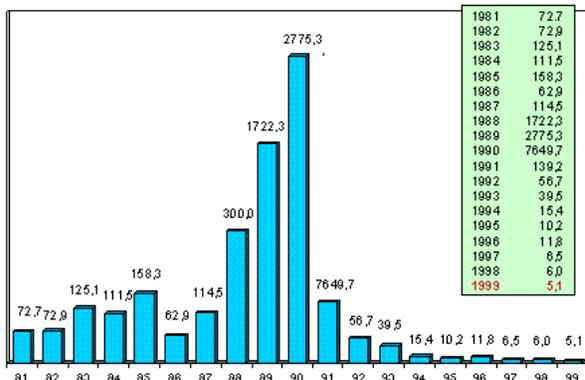


Chart 1: 1981-1999 Annual Inflation  
Source: Ministry of Economy of Peru

In December 1997, South America's main trading bloc, the Southern Cone Common Market (Mercosur - consisting of Argentina, Brazil, Uruguay, and Paraguay) agreed to extend by six months trade preferences afforded to the Andean Community (ANCOM), of which Peru is a member.

ANCOM was set up in March 1996 by leaders of Bolivia, Colombia, Ecuador, Peru, and Venezuela. At that time, the five national leaders expressed their intent to move towards a single market along the lines of the European Union, although significant policy differences needed to be worked out.

The Peruvian economy has become increasingly market-oriented, with major privatizations completed since 1990 in the mining, electricity, and telecommunications industries. Between 1992 and 1995, this program raised about \$5 billion (plus \$4 billion in investment pledges). Recently, privatization has continued at a somewhat slower pace. In 1998, for instance, the program is expected to earn \$600 million

in revenues for the government. The government privatized 28 state companies during 1997, and hopes to complete privatization of state companies by 2000. Privatization of state-owned companies is a central element in the government's plans to attract foreign investment and move Peru's economy to a more free-market-oriented stance.

About 33 percent of Peru's working population is engaged in farming. Most of the coastal area is devoted to the raising of export crops; on the montaña and the sierra are mainly grown crops for local consumption. Many farms in Peru are very small and are used to produce subsistence crops; the country also has large cooperative farms. The chief agricultural products, together with the approximate annual yield (in metric tons) in the early 1990s, were sugarcane (7 million), potatoes (989,000), rice (827,000), corn (510,000), seed cotton (108,000), coffee (165,000), and wheat (73,000).

Until recently the world's largest coca leaf producer (source of supply for the most of the world's cocaine base), Peru has committed to eliminate the area of coca under cultivation, reducing it by about 60% in the last couple of years, from 115,300 hectares in 1995 to less than 50,000 hectares at the end of 1998.

Although the economy remains primarily agricultural, the mining and fishing industries have become increasingly important. Peru relies primarily on the export of raw materials—chiefly minerals, farm products, and fish meal—to earn foreign exchange for importing machinery and manufactured goods. The fishing industry is extremely important to the country's economy and accounts for a significant portion of Peru's exports. It underwent a remarkable

expansion after World War II (1939-1945); the catch in the early 1990s was about 6.9 million metric tons annually. More than three-fifths of the catch is anchovies, used for making fish meal, a product in which Peru leads the world.

The extractive industries figure significantly in the Peruvian economy. Peru ranks as one of the world's leading producers of copper, silver, lead, and zinc; petroleum, natural gas, iron ore, molybdenum, tungsten, and gold are extracted in significant quantities. Annual production in the early 1990s included 1.8 million metric tons of iron ore; 323,000 metric tons of copper; 1572 metric tons of silver; 194,000 metric tons of lead; and 598,000 metric tons of zinc. About 42 million barrels of crude petroleum were produced, along with 42,000 metric tons of natural gas.

A major discovery of hydrocarbon reserves in the Camisea field by a Shell company in the mid 1980s is expected to turn Peru from a net importer of hydrocarbons to a net exporter. The deposits contain some 11 trillion cubic feet of natural gas and 600 million barrels of natural gas liquids. This is enough to serve Peru's current energy needs for over a century. Camisea contains about seven times Peru's total current oil reserves. In June 1996, Shell and Mobil signed a \$2.68 billion contract to develop the giant Camisea natural gas field, but decided in July 1998 not to proceed with the second phase of the Camisea Project. The government has declared that the remaining part of the Camisea project will be granted in concession during the third quarter of 1999.

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*Top two reasons to visit Peru? First, our world known tourist attractions (Machu Picchu ruins, Nazca lines, etc.), and second and most important, Foreign Investments Are Very Welcome.*

*Rober Aphan*

## Fact Sheet

<b>Country size:</b>	496,225 sq. mi. (comparable to France, Germany and Spain altogether) Third largest country in South America.	
<b>Type of government:</b>	Republic	
<b>President:</b>	Alberto Fujimori (since July 28, 1990; reelected on April 9, 1995)	
<b>Population:</b>	26 million people (half is under 21 years old).	
<b>Ethnic Groups:</b>	Indian (45%), Mestizo (37%), White (15%), Other (Asian and Black, 3%)	
<b>Languages:</b>	Spanish (official), Quechua (official) and Aymara.	
<b>Literacy:</b>	88.7% (male 94.5%)	
<b>Major cities:</b>	Lima (capital, 7 million inh.), Arequipa (700,000), Trujillo (600,000)	
<b>Religion:</b>	Roman Catholic (95% of population)	
<b>Three regions of land (vertical strips):</b>	<b>The Coast:</b>	<b>a coastal plain lying on the Pacific Ocean</b>
	The Sierra:	the Andes mountains or the highlands.
	The Selva:	the Amazonian jungle
<b>Records:</b>	<ul style="list-style-type: none"><li>• Titicaca: highest lake in the world (Puno, Andes Mountains)</li><li>• Amazon river: 2<sup>nd</sup> longest and widest river of the world (4,000 mi. or 6,440 km long)</li><li>• Huascarán: 2<sup>nd</sup> highest peak in South America, 14<sup>th</sup> in the world (22,205 ft or 6,768 m.)</li><li>• One of the 5 countries with greatest biological diversity in the world<ul style="list-style-type: none"><li>- 84 of the world's 103 known ecological zones</li><li>- 28 different climates</li></ul></li></ul> <p>The finest cotton fiber, the smoothest avocado and the largest-grained and most tender corn</p>	
<b>Currency:</b>	1 Nuevo Sol (S/.) = 100 centimos (US\$1 = S/3.40)	
<b>Minimum wage:</b>	\$100 monthly.	
<b>Gross Domestic Product :</b>	\$61.3 billion (1997E) - \$2400 per capita	
<b>Purchasing Power Parity:</b>	110.2 billion (1997E) - \$4200 per capita	
<b>GDP Real Growth Rate:</b>	0.6% (1998) - 41.9% (1993-1997)	
<b>Foreign Exchange Reserves:</b>	\$11.8 billion (1997E)	
<b>Exports:</b>	\$6.8 billion (1997E); Copper (18%), fish meal (14%), zinc (7%), oil (5%)	
<b>Imports:</b>	\$8.3 billion (1997E); Raw materials (41%), capital goods (31%), consumer goods (23%)	
<b>Trading Partners:</b>	USA (23% of total trade), Japan (7%), Chile (6%), Colombia (6%), Brazil (5%), Germany (5%), Venezuela (4%), China (4%), U.K. (4%)	
<b>Inflation Rate:</b>	6.01% (1998)	



**Student  
Investment  
Fund**

**Industry  
Analysis**

## Industry Report-Pharmaceuticals

- Economic Trends Shaping the Industry:
  1. Consumer confidence index at 127.6 in Jan 1999
  2. Growth of 5.6% of GDP in fourth quarter
- Other Trends:
  1. Increase of the over 65 population
  2. Worldwide drug sales rising at 8-10% per year
  3. Decrease in the review period
  4. Increase in the overall drug approvals
  5. Changes in health care impact drug marketing
  6. Possible restrictions
  7. Research and Development
- Possible Threats
- Barriers to Entry

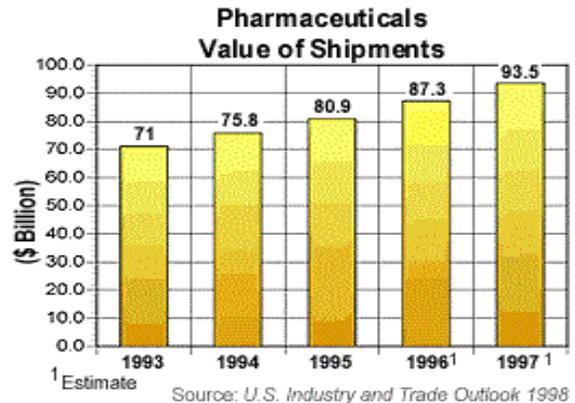
### Economic Factors

The demand for pharmaceuticals is fairly inelastic. The typical consumer is not particularly price sensitive because third parties pay for a large portion of the expense. In the over 65 segment of the market, third party coverage is not complete. This group of consumers will be more price sensitive than the general population.

The economy has been doing very well in the recent past with an increase in the GDP of 5.6% in the fourth quarter of 1998. The consumer confidence is also at a very high level of 127.6. They believe that the economy will continue to grow which stimulates more spending. Consumers will continue to demand name brand drugs and be less likely to seek out alternatives.

### Other Factors

Today's market is a huge business and is growing at a rate of 8-10%. There are several underlying factors that help the industry growth. The primary factor is the increasing growth of the over 65 population. This group will increase by 17% over the next 12 years. This will greatly affect overall spending in the industry because this population group uses three times as many prescriptions as their younger counterparts. This will drive annual expenditures on health



products in the US well beyond its present \$111 billion. US expenditures on drugs and other medical nondurables came to about \$95 billion in 1997, and spending for medical equipment such as eyeglasses, hearing aids, artificial limbs, and wheelchairs came to about \$16 billion.

Another important trend is the increase in drug discoveries along with changes in the FDA review process. Discoveries in rational drug design and molecular biology are yielding large numbers of new compounds while the FDA is helping bring down the cost of drug development. They began streamlining the review process in 1992, which dramatically decreased the overall review process. The average review time for a drug introduced in 1997 was 19 months down from 35 months the year before. Drug approval also increased to 121 new drugs approved in 1997, up from an average of only 70 each year from 1990 to 1994. This allows the companies to get more drugs to market in a shorter period of time.

In the international marketplace, US firms account for more than 40% of the \$120 billion market for medical devices and more than 30% of the \$265 billion pharmaceutical market. These companies and others like them seek to sustain their traditional 30% operating margin, which is twice that of the average S&P 500 corporation. This is easier to understand when you considers that the top five prescription drugs in 1996 -- Glaxo Wellcome's Zantac (losing its patent in 1998), Astra Merck's Prilosec (jointly

owned by Merck and Astra), Eli Lilly's Prozac, Amgen's Epogen and Pfizer's Zoloft generated \$7.5 billion in US sales alone. This means that the ten biggest US pharmaceutical companies posted almost \$22 billion in profits on \$127 billion in sales for 1997.

Historically, doctors were deemed the only ones qualified to prescribe drugs, and pharmacists the only ones to dispense them, so advertising and marketing targeted these two groups. Not until a drug was approved for OTC sales did marketing and advertising shift to the ultimate consumers, the patients. All that has changed. In 1997 direct-to-consumer advertising for prescription drugs rose nearly 50%, leading more patients to make brand-name requests of physicians.

Today managed care providers wield broad decision-making power on which drugs their members can buy. Managed care has taken hold of the medical device industry as well. Although 40% of US medical products are bought by hospitals, that still leaves more than half of all purchases made by managed care buyers, a number expected to rise to 75% over the next five years. Additionally, a new type of organization has sprung up called a pharmacy-benefit management firm (PBM), which processes benefit claims, sells drugs by mail, and negotiates pricing with drug firms. An estimated 115 million Americans are enrolled in drug programs run by PBMs. Pharmaceutical companies are buying PBMs to try to control their distribution channels and enhance their efforts to target their largest potential customers for their products.

The end result of all these acquisitions is an industry more and more vertically integrated from drug development to marketing to health care to distribution. A growing public concern is that as alliances form and acquisitions are made, the patient is the last consideration in the process. The Justice Department is taking a hard look at some of the largest mergers of drug developers and distribution companies, and the FDA is concerned over the marketing clout of huge PBMs acquired by major drug firms. With major medical breakthroughs hard to come by, one can bet the volatility and jockeying for position that characterizes the pharmaceutical and medical products industry will continue for some time.

### Possible Threats

Although these products are price elastic, a downturn in the economy would negatively impact the products whose patents have expired, because consumers would go more towards the generic alternatives. Because development, clinical trials, and FDA approval can take up to ten years for completion, that leaves a shelf life of 10 to 12 years before the patent expires. Once the patent expires the companies have to try and keep their consumers from switching to a generic label that costs considerably less than the prescription form. To counteract generic drugs, drug companies also introduce over-the-counter (OTC) versions of prescription drugs once the patent expires. Glaxo Wellcome, whose leading stomach remedy Zantac dropped off the charts when the patent expired, brought out over-the-counter Zantac 75.

### Barriers to Entry

The branded prescription pharmaceutical industry ranks among the highest in the U.S. in terms of barriers to entry. Substantial economic, regulatory, and legal obstacles stand in the way of potential new competitors. Getting a drug to market takes years of research and millions of dollars to discover, develop, and gain approval for a new chemical compound or final product. The challenge is that only one in 5,000 compounds discovered ever reaches the pharmacy shelf, and fewer than one-third of companies recoup their R&D investment. Additionally, the technology used for discovering compounds is expensive and constantly changing. It is extremely hard to acquire the capital to enter this market and to do the required level of research and development to get products to market.

### Major Companies in the Industry

	MRK	GLX	BMJ
Stock Price	85.00	65.375	65.625
Earnings Growth	13.06%	12.70%	10.09%
Sales	26,898	12,934	18,284
Income	5,248	2,733	3,141
Sales Growth	13.79%	-1.80%	9.40%
P/E	38	44.1	41.7
Net Profit Margin	20%	21%	17%

### Bristol-Myers Squibb

Bristol-Myers Squibb can cure your headache and change your hair color. The New York City-based company's best-known brands include Excedrin and Bufferin analgesics, Clairol hair color, and the Sea Breeze skin care line.

However, more than half of its health and personal care sales comes from pharmaceuticals, particularly anticancer, cardiovascular, and anti-infective treatments. The company also makes infant formula, nutritional supplements, and orthopedic products.

Bristol-Myers Squibb focuses on creating product franchises by producing several leading products within each market. For example, its TAXOL, Paraplatin, Platinol, and VePesid make it a leading producer of anticancer drugs. It is also growing through small to medium-sized purchases, licensing, and alliances with a special emphasis on expanding its business operations worldwide.

With the expiration of the patent for its Capoten cardiovascular drug (one of the company's biggest sellers, with sales of more than \$1 billion), Bristol-Myers Squibb has revved up research and development efforts to find new revenue producers instead of depending on licensing drugs developed by other companies. The company wants to double the number of new compounds it annually develops, expanding into antitumor, antiviral, cholesterol reduction, and antidepressant drugs.

### **Merck**

Merck gets irked when challenged for its perch as the nation's largest drugmaker. Headquartered in Whitehouse Station, New Jersey, Merck is the top US drug company and is tied for first in the world with Glaxo Wellcome in prescription drugs. The company's corporate medicine cabinet includes a wide range of products, such as drugs for elevated cholesterol levels (Zocor and Mevacor) and AIDS (Crixivan, the leading protease inhibitor). For hypertension, Merck's Vasotec and Prinivil control around 40% of the US market.

The company doesn't treat just humans: Merial, its joint venture with Rhone-Poulenc, is one of the world's top animal health companies. In addition, its Merck-Medco pharmacy benefits management and drug distribution subsidiary has helped push sales of Merck products, a useful practice in the highly competitive drug industry. In Merck's case, the year 2000 problem is a thing called "patent expiration." As patents expire on some of Merck's hypertension and high-cholesterol drugs (its two largest markets), the company is depending on new products to fuel growth. Propecia (a prescription tablet for

treating male baldness) is one of these candidates, but this hair-raising elixir must do battle with Pharmacia & Upjohn's well-established Rogaine. Merck is exploring a new class of painkillers called COX-2 inhibitors, as a possible treatment for arthritis. In clinical trials, its Vioxx has been less likely to produce debilitating side effects such as stomach disorders (common in current arthritis pain treatments).

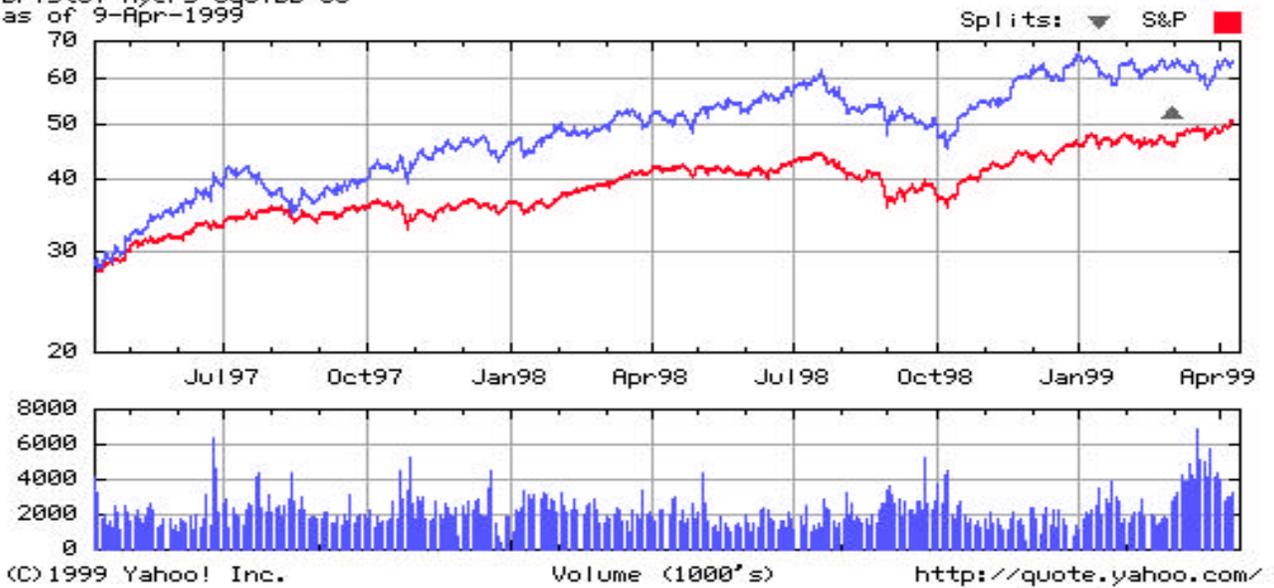
### **Glaxo Wellcome**

Glaxo Wellcome's drug habit has worsened. The Greenford, UK-based company, vying with Merck to be the #1 prescription drugmaker, produces medicines for anesthesiology, bacterial infections, cardiology, central nervous system disorders, gastrointestinal disorders, cancer, and respiratory ailments, among other applications. Despite generic rivals claiming market share, its top sellers are still Zovirax (for genital herpes and cold sores) and Zantac (once an ulcer treatment; the discovery that ulcers are bacterial has shifted its use from ulcers to heartburn). Other treatments include Combivir for AIDS, Ventolin for bronchial asthma and bronchitis, Epivir HBV (sold in some markets as Zeffix) for hepatitis B and Zofran for the nausea associated with cancer treatment. North America accounts for 45% of sales.

To offset sales losses (more than 20%) from Zantac and Zovirax, Glaxo Wellcome is spending heavily on research and development, allying with academic and startup research firms to defray development costs and diversifying its prescription drug offerings. It is working with universities in Canada, South Africa, the UK, and the US to find new treatments for antibiotic-resistant tuberculosis. Hopes were high for anti-flu inhalant Relenza, but a FDA advisory panel voted against approving the drug. Research foundation The Wellcome Trust owns about 5% of the company.

## Fundamentals

Bristol-Myers Squibb Co  
as of 9-Apr-1999



Last	64.813		Current P/E	41.8
52 Week High	68.0		EPS	\$1.55
52 Week Low	44.12		Div. Yield	1.30%
Volume	3.207 Mil		Debt/Equity	0.18
Sales	\$18,284 Mil		Net Profit Margin	17.20%
Income	\$3,141 Mil		Shares Outstanding	1,985.6 Mil
Dividend Rate	\$0.86		Market Cap	128,689.8 Mil

## Businesses

### **Medicines**

World Headquarters - Princeton, NJ

1998 Annual Sales - \$12.6 billion

Percentage of company sales - 69%

Therapeutic Areas - Cancer, Cardiovasculars and Metabolics, Pain, Management, Neurosciences, Dermatology, Immunology and Anti-Infectives, Pulmonary, Urology

### **Beauty Care**

World Headquarters - Stamford, Connecticut

1998 Annual Sales - 2.3 Billion

Percentage of Company Sales - 12%

Product Lines- Clairol, Aussie Hair Care, Herbal Essences, Hydrience, Daily Defense, Infusium 23, Loving Care, Miss Clairol, Nice n Easy, Sea Breeze, Ultress, Matrix, Biolage

### **Nutritional**

World Headquarter - Evansville, Indiana



# *Student Investment Fund*

# **Security Analysis**



## FACTSHEET

April 12, 1999

© Marc Siebel

Symbol: T (NYSE)  
 Industry: Telecommunications Services  
 Sector: Wireline

Price: \$87 15/16  
 EPS: 3.63



### Business Overview

The New York City-based company AT&T, which has more than 90 million customers, remains the #1 US telecom company and the leader in long-distance (ahead of MCI WorldCom and Sprint), but it has seen steady market-share erosion. AT&T also offers wireless phone service to more than nine million US subscribers and Internet access (AT&T WorldNet) to about a million subscribers. AT&T also provides outsourcing, consulting and networking-integration services. Under the new CEO Armstrong, AT&T underwent dramatic cost-cuttings and started an aggressive acquisition plan. AT&T started a joint venture with British Telecom worth \$10 billion. AT&T acquired Teleport Comm. and TCI, the #2 US cable company and holds a 38 % stake in @Home, which in turn owns Excite. AT&T also formed a Joint Venture with Time Warner to enter the local market.

### Capitalization

Market Cap: 149.3 bln  
 Shares Outstanding: 1.746 bln  
 1.74 bln

### Float:

**Financial Strength**  
 Current Ratio (last Q) 0.91  
 LT Debt/Equity (last Q) 0.22  
 Total Cash (last Q) \$3.18 bln

### Ratios

Price/Earnings (99e) 19  
 Price/Sales 2.58  
 Price/Book 5.7  
 Price/Cash Flow 13.6

### Management Strength

ROA 8.93 %  
 ROE 21.73 %

### Income Statement

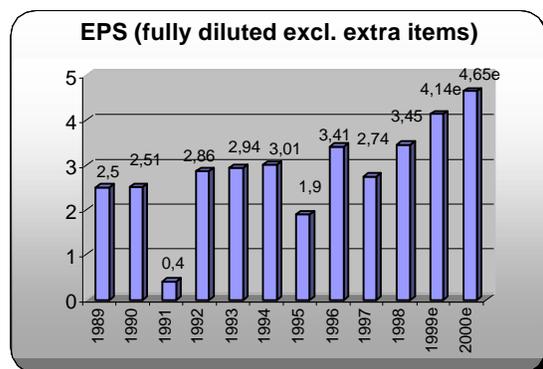
Revenues \$53.2 bln  
 Net Income \$ 5.2 bln  
 Cash Flow \$10.2 bln

### Other

Income/Employee \$51,000  
 Net Profit Margin 12.3  
 1.9

**Average Analysts Rating** 0.89

### BETA



# Security Analysis

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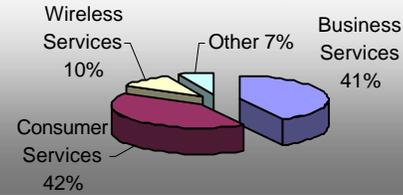
## AT&T at a Glance

### Contact:

**AT&T Corporation (NYSE: T)**  
32 Avenue of the Americas  
New York, NY 10013  
Phone: (212) 387-5400  
Fax: (800) 348-8288  
Internet: <http://www.att.com>

**Chairman & CEO: C. Michael  
Armstrong**

**Segment Disclosure of AT&T in % of  
Revenue (FY 1998)**



New York City-based AT&T has more than 80 million customers and remains the #1 US long-distance phone company. AT&T also offers wireless phone service to \$9.7 million US subscribers and Internet access (AT&T WorldNet) to \$1,1 million subscribers. That apart, AT&T provides outsourcing, consulting and networking-integration services to large businesses. AT&T runs the world's largest communications network and the largest digital wireless network in North America.

With 3.5 million registered shareowners, AT&T is the most widely held stock in the United States. Internationally, AT&T provides long-distance service to every country and territory in the world. AT&T had several joint ventures/ alliances in 44 countries. In July 1998, a major joint venture called Concert between AT&T and British Telecommunications, worth \$10 billion, was formed. On March 30, 1999 the European Commission gave its approval for the joint venture, while it still needs U.S. regulatory approval, which is expected to be given this summer. Though not required by the European Commission, AT&T announced to withdraw from the three former joint ventures: the European Unisource alliance, the Asian venture called WorldPartner, and its cooperation with Germany's Mannesmann Arcor.

Through the acquisition of Teleport Communications, a local phone service, and Tele-Communications Inc., the #2 US cable service provider, AT&T reaches out to the local phone market. Latter acquisition includes a 38 % stake in the Internet company @Home, which in turn owns the Internet search engine Excite.

AT&T additionally entered in a deal with Time Warner in January to offer telephone service over cable systems in 33 States including interactive digital television and high-speed Internet service.

AT&T is divided in the following divisions and businesses:

- Business Services
- Consumer Markets Division (CMD)
- AT&T Wireless Services
- AT&T Solutions
- AT&T Local Services Division
- Network Services
- AT&T Labs

Whereas AT&T Solutions is an integrated partner of AT&T's Business Markets Division, the Local Service Decision, being formed as a result of its AT&T's July 1998 merger with Teleport Communications Group, leads the company's efforts to enter the local phone market.

Since November 1997, AT&T has a new CEO, who started the above mentioned aggressive acquisition path and was able to restructure the company successfully.

## External Analysis

The telecommunications services industry in the US is broadly divided into providers serving the communications market for basic voice and data services, including local exchange, cellular telephony and paging, long-distance and international services. They are provided either by wire or wireless technologies.

As of 1998 about 85 % of industry services revenues are generated by wireline telephone services. Major players in this area in the US are AT&T (T), MCI WorldCom (WCOM) and Sprint Corp. (FON). Their main business is still the long-distance market, while companies like SBC Communications, Bell Atlantic and GTE Corp. offer local services.

Due to increased competition, fostered by the Telecommunications Act (TCA) of 1996, and several mega-mergers in the industry, companies will offer “bundled” services. According to the TCA, local phone companies can offer long-distance calls once their markets are opened to competition, which is determined by a 14 point checklist. Some companies soon will get approval to enter the long-distance market.

Global spending on telecom services is expected to rise to \$1 trillion in 2001 from \$726 billion in 1997. While 75 % of this revenue derives from the US, the European Union and Japan, the US accounts for 30 %. Total US revenues are expected to increase steadily at 6 % annually from \$234 billion in 1998 to \$295.42 billion in 2002. Internet traffic (100+% annually) and wireless services (20 %) grow above average.

The following listing illustrates the market sizes of the different service segments:

- Local market: \$100 billion
- Long distance market: \$80 billion
- International market: \$400 billion
- Wireless market: \$28 billion
- Internet market: \$6.5 billion.

### **Competitors**

The biggest competitor of AT&T is MCI Worldcom, who is still number #2 in the long distance market and recently passed AT&T in terms of market capitalization. While AT&T generated \$53 billion in revenue in 1998, MCI Worldcom reached \$18 billion. Sprint Corp., which sold services for \$16 billion is ranked #3.

Additionally, local carriers will soon enter the long-distance market and try to win market shares from AT&T. The following companies are potential competitors: GTE Corp. and the Baby Bells, which were separated from AT&T in 1984. These regional Bell operating companies (RBOCs) are Bell Atlantic Corp., U.S. West, Ameritech Corp., Bellsouth Corp. and SBC Communications. The three latter will most likely enter the long distance market this year.

### **Markets and Market Share**

The core business of AT&T is still the long distance market (business and consumer services divisions), which accounted for 85 % of AT&T’s revenue in 1996. The aggressive start-up of MCI WorldCom resulted in market share erosion. As of 1995, AT&T had 53 %, MCI WorldCom 23 %, Sprint 10 % and others 14 %. The figure for AT&T decreased to 45 % in 1997, is now about 41 % and will further decrease. Once the Baby Bells get into the long distance market, they could swipe as much as 10 % of the US market each year for the next three years, analysts forecast. Price declines up to 25% within a year could occur. However, AT&T was able to reduce its reliance on long distance revenues from 85 % in 1996 to an estimated 70 % end of 1999.

In the wireless market AT&T is the #1 in terms of subscribers but not the most profitable. In 1993 the company acquired the #1 wireless service company McCaw Cellular, creating AT&T Wireless. To get this business run more effective, the company tries to transform its 8 million customers to the lower-cost, higher-margin digital service.

While the local market is still dominated by the Baby Bells and GTE Corp, the Internet market is jammed with giants like America Online, Microsoft and startups like Netcom and Earthlink. Whereas the mid sized WorldNet Internet service of AT&T gets help from the 38 % stake in @Home to size up the Internet customer base, the acquisitions of Teleport, TCI and the Joint Venture with Time Warner are steps to reach as much households as possible in the local market.

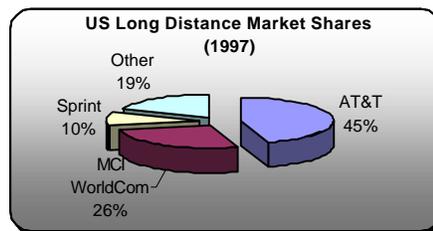
## Competitive forces

According to the Porter's model, intensity of rivalry is determined by new entrants, buyers, suppliers and substitutes.

Due to the TCA of 1996 the entry barriers in the telecommunications market are low and thus, compared to several years ago, the *threat of new entrants* is high. Most telephone companies will sooner or later be able to offer service in the long distance market. Especially the historically high entry barriers in the local market, due to the need of networks, are now low, because this barrier can be circumvented through resale. However most companies try to enter the local market by acquiring local companies, cable networks or offer wireless based services. Though capital requirements are still high, the above mentioned facts foster competition.

The *bargaining power of supplies* in the industry is relatively low., because a high number of telecommunications equipment manufacturers exist. Lucent Technologies, the cell phone manufacturers Nokia, Ericsson and Motorola, Alcatel, Tellabs, Qualcomm and ADC Telecom are major suppliers. Second, the services market is dominated by few companies like AT&T, MCI WorldCom and Sprint, resulting in high negotiating power.

Different communication channels can be seen as substitutes. Instead of doing the phone calls via wireline, customers can choose the wireless cell phones, the Internet or satellite systems like Teledesic or Iridium.



Though most companies offer most of the services, the *threat of substitutes* is relatively high. In case the satellite systems will work profitable, they could be a major threat to long-distance carriers. However, their very high initial costs should lower the impact in the next years. Internet telephony is another substitute. Using special software people can do international phone calls for free. IDC Corp. is one of the main leaders in this segment. IDC uses its Net2phone software to offer international calls for as low as 10 Cents a minute.

The *buyer bargaining power* is extremely high. Customers are very price sensitive since most services are of similar quality and only differ in rates. In the consumer market the introduction of the 10XXX numbers led to sharp market share declines of the major carriers. However, choosing the cheapest carrier means keeping up to date, comparing prices steadily and get different telephone bills, which not every customer will take into the bargain. AT&T is focusing on bundled service packages to offer the customers attractive and convenient solutions.

That apart, some *rivalry determinants*, such as industry growth, diversity of competitors, brand identity and product differences exist.

Especially the fast growing Internet services (100+%) and wireless services (20 %) will be key markets. Additionally, being in the local market is attractive since companies can offer whole service packages to the customers. That is why AT&T is aggressively entering the local market. A diversification strategy is essential to maintain earnings growth since margins and market shares of AT&T in the long distance market decrease.

## Internal Analysis

### **“New Boss – New Plan”**

On November 1, 1998, Michael C. Armstrong, the first outsider in nearly 80 years of AT&T's history, became the new CEO of AT&T. Armstrong came from Hughes Electronic where he turned things around and had been CEO for six years. Prior to that, he spent more than thirty years with IBM, finally becoming chairman of the board of IBM World Trade Corp. Mr. Armstrong serves as chairman of the President's Export Council, the premier national advisory committee on international trade to President Clinton and the secretary of commerce. Mr. Armstrong joins the boards of Thyssen-Bornemisza Group, Citigroup and Carnegie Hall.

Without the support of the management team changes won't occur. So Armstrong builds support within the senior ranks. He especially came close to Zeglis, President of AT&T, who is much valued by the board for his regulatory expertise. Zeglis, who lost out to Armstrong for the CEO title is now one of his biggest supporters.

The new CEO's efforts eased already one of AT&T's most persistent problems: morale. Mr. Armstrong management style can be described as "coaching". With his emphasis on human relations and his participation approach he increases moral among the employees.

### **Changes and Restructuring**

Major cost-cuttings and changes in the corporate structure and payrolls followed. Mr. Armstrong promised to cut costs by \$3 to \$3.5 billion annually or from 29% of revenues to an industry average of 22% in two years, which analysts said would take five years. AT&T is on track. As of 12/31/98, AT&T lowered their costs to a 24.5% of total revenues. The workforce was reduced from 128,000 to 108,000, including more than 15,000 managers. Employee perks and expensive marketing promotions, such as sending checks to new customers, were cut, too. A new compensation structure ties 75% of most employees' bonuses to quantitative goals. In the past this figure was 25 %. Top executives must comply with stock ownership targets, aligning their interests with those of the shareholders.

By reducing overlapping committees and streamlining the duties of his top managers Armstrong also tries to improve decision-making speed. Among cost-cutting decisions are also spin-offs. Just after two months in duty he sold AT&T's underperforming paging unit and also sold Universal Card Services, AT&T's credit-and-calling-card business to Citicorp for \$3.5 billion. Lin TV and AT&T Solutions Customer Care were sold, too, yielding \$10.8 billion and refocusing the company on its core business. After losing close to \$4 billion, AT&T spinned off the computer maker NCR in 1997. In the previous year AT&T spun off Lucent and sold AT&T Capital.

### **Services, Acquisitions & Alliances**

#### **Wireless**

In 1993 AT&T acquired the #1 wireless service company McCaw Cellular, creating AT&T Wireless. Today, AT&T Wireless has more than \$9.7 million customers and is aggressively moving customers to its digital service, which has lower costs and higher margins. Analysts expect the conversion rate end of 1999 to be at 80 %. AT&T's Digital One Rate (DOR) offering, which was introduced 8 months ago, attracts now more than 11 % of the AT&T Wireless customers. AT&T's '98 acquisition of Vanguard Cellular is expected to close during 2Q 99. This acquisition brought 625,000 new customers.

#### **Local**

With the \$11.3 billion acquisition of Teleport Communications Group, AT&T focuses on the \$20 billion, high margin, local business market. AT&T thereby has access to 85 US local phone markets, 66 major cities among them. In 1999 analysts expect synergies of about \$1 billion.

With the acquisition of Tele-Communications Inc. (TCI), which has been renamed AT&T Broadband & Internet Services, AT&T landed a mega deal worth \$55 billion. In February 1999, the merger has received approval from the Department of Justice and was closed in March.

AT&T also entered in a deal with Time Warner in January to offer telephone service over cable systems in 33 States. The new venture will also offer interactive digital television and high-speed Internet service. AT&T owns 77.5 % of the joint venture and will spend \$600 million on costs in the first two years. According to AT&T, the arrangement is expected to have annual sales of \$4 billion after three years. Through the acquisition of both TCI's and Time Warner's cable systems, AT&T will have the potential to directly access 35 million, or 40 % of all US households. In 4 years AT&T expects to have have access to about two third of all US households.

Another approach to enter the local market is Project Angel, a wireless based system. This plan accomplishes the goal of reaching out to the remaining US households. In the second half of 1999 a trial will be started in areas not served by AT&T.

#### **Internet**

With the purchase of TCI comes a 38 % stake, worth \$5.5 billion, in the Internet cable company @Home, which in turn owns the Internet search engine Excite. AT&T is in talks to spin out its WorldNet ISP service to @Home for \$1 billion. Thus, AT&T could get the money-losing service off its books and at the same time get an even

larger interest in @Home. AT&T could receive an equivalent of \$1000 per WorldNet customer, a very good deal, considering that ISPs generally are sold in the range of \$100 to \$250 per subscriber. Through TCI and Time Warner, AT&T will have easy access to buy content.

### ***International/long distance***

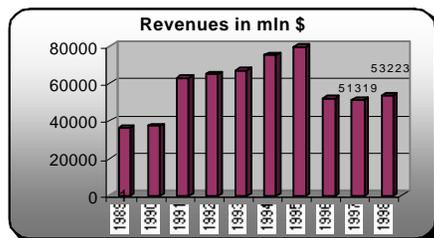
In July 1998, AT&T and British Telecom (BT) agreed to form a \$10 billion joint venture, Concert Communications. To gain approval, AT&T had to sell its long-distance service unit in the UK. The venture will combine the assets and operations of each company, including their existing international networks, all of their international traffic and products for business customers. Revenue growth is estimated to grow at 15 %. Operating profits are expected to be around \$1 billion in the venture's first full year, growing at 15 percent to 20 percent a year while capital expenditures are expected to be around \$1 billion. AT&T announced to withdraw from the WorldPartner joint venture, formed in May 1993 joined by Singapore Telecom and Japan's KDD. The same applies to Unisource Joint Venture, consisting of four European carriers from Netherlands, Spain, Sweden and Switzerland.

In December 1998, Armstrong acquired IBM's Global Network for \$5 billion in cash. The deal will be closed in the second half of 1999, giving an immediate jump in revenues of \$2.5 billion and resulting in 30,000 new customers. However, analysts are concerned by the old network of IBM from the early 80s. The aforementioned acquisitions will result in higher international exposure AT&T previously lacked. AT&T and IBM's Global Services unit also have reached agreement for outsourcing services valued at about \$4 billion over the next 10 years.

## **Financial Analysis** (Data as of 04/03/99)

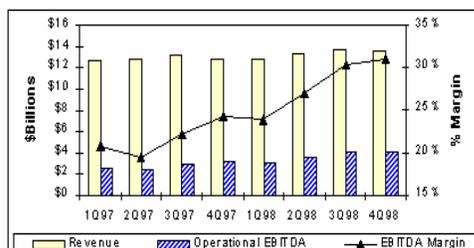
### **Revenue / Earnings / Margins**

Due to several spin-offs (Lucent, NCR Computer) in 1996 the revenue of AT&T dropped sharply. Compared to 1997 the revenue in 1998 increased 3.2 %. Within the next five years analysts expect AT&T to grow between 5 and 7% annually. The two joint ventures, the IBM deal and the stake in @Home will generate additional revenue up to \$10 Billion. The new "bundled" consumer service AT&T Personal Network and the AT&T net.working for business are major revenue drivers. The division AT&T Solutions enables the company to win major outsourcing contracts.



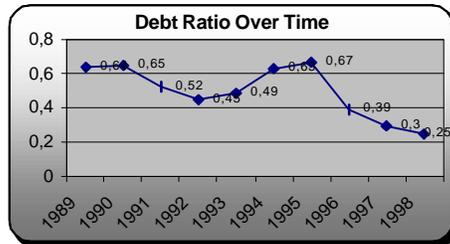
The major cut backs in the company caused a 43 % increase in earnings in 1998. If Armstrong will be able to go on with his cost cuttings and the acquisitions pay off, a positive earnings trend results. Analysts expect \$4.14 per share in 1999 and \$4.65 in 2000. In the next five years the consensus forecast for AT&T's earnings growth is 13.3 % (see Factsheet).

As a consequence, the net profit margins increased to 12.3 % in 1998 (WCOM: -14.4). Especially in the last quarters a very positive change occurred. As you can see below the EBITDA margins increased to more than 30 % in the 4Q of 1998.



### Key Ratios

By comparing the price ratios based on the earnings of '99, AT&T seems to be undervalued. While AT&T trades at a PE of 19, MCI World-com (WCOM) trades at 45.5, while the industry average is 48. Since the PE is probably not the right measure for high-tech and fast growing stocks the Price/Sales ratio is used more often. AT&T trades at a low of 2.58, still below the 3.68 industry average. WCOM has a 9.26. In terms of debt/equity ratio the company did great. As you can see, AT&T reduced the DE ratio steadily over time.



The company has strengthened its financial position, cutting \$1.6 billion from its SG&A costs in 1998 and receiving over \$12 billion in cash by divesting non-strategic assets.

The past stock performance of AT&T is disappointing compared to WCOM. In the last 12 months AT&T rose 18.6 % while WCOM rose 103 %. However, since the new CEO Armstrong started in November 1997 the stock rose from \$50 to now \$78, an increase of 56 %. This is for one due to the aggressive market entry of WCOM which caused AT&T's market share in the long distance market to decline. Additionally, AT&T is a more mature company than WCOM which in general grow at a lower pace than upcoming companies. AT&T's announcement to start a stock repurchase program of \$4 billion will foster a favorable stock performance.

### Valuation

Since AT&T pays dividends and the payout ratio is with 0.36 relatively high, I used the Dividend Discount Model (DDM). Additionally the DDM is best suited for stocks with low PEs. I decided to choose the Two-Stage Model, because I expect that AT&T, due to its acquisitions and strategic alliances will grow fast in the next five years. The aforementioned decisions will add revenue to AT&T. After that, increased competition especially in the long distance market will lead to a stable growth phase. In compliance with the consensus projections of the analysts, I assumed AT&T to grow at 13.3 % over the next five years. From then on, I expect AT&T to grow at 10 %. The Cost of Equity for AT&T is 11.90 %.

VALUE OF THE STOCK:	\$121.95
ACUTAL PRICE:	\$78 ½

According to the model the security is undervalued. The model is extremely sensitive to different growth rates in the stable period.

### Recommendation

I recommend to buy stocks of AT&T. CEO Armstrong transforms the company into a technology and Internet stock. The leaner company is aggressively focusing on the local market while reducing its reliance on the long distance market. With the consumer service "Personal Network", AT&T is already offering bundled services including Internet access, wireless services and calling cards. The joint venture with British Telecom is a major step to take advantage of the attractive international market. Compared to the industry AT&T is undervalued. However, competition will increase dramatically. Since the acquisitions need time to pay off, the purchase of AT&T is considered to be a long-term investment.

