



# Agenda

## Employees' Retirement System Board Meeting

October 10, 2012 at 12:00 PM  
Conference Room C

Troy City Hall  
500 West Big Beaver  
Troy, Michigan 48084  
(248) 524-3330

### Roll Call

### Minutes from the September 12, 2012 Meeting

### Retirement Requests

<b>Name</b>	Jeffrey Biegler
<b>Pension Program</b>	DC
<b>Retirement Date</b>	11-03-12
<b>Department</b>	Recreation
<b>Service Time</b>	13 Years, 11 Mths

### Other Business

Review 12/31/11 ERS Actuarial Report  
Review RFI – Investment Consultant

### Investments

### Public Comment

### Adjourn

A meeting of the Employees' Retirement System Board of Trustees was held on Wednesday September, 2012 at Troy City Hall, 500 W. Big Beaver Road, Troy, MI 48084.

The meeting was called to order at 12:07 p.m.

**Trustees Present:** Mark Calice  
Thomas J. Gordon, II  
Steve Pallotta  
Michael Culpepper  
Dave Henderson

**Trustees Absent:** Milton Stansbury  
Thomas Darling, CPA  
William R. Need (Ex-Officio)

**Also Present:** Justin Breyer  
Monica Irelan  
Brian Kishnick

**Minutes**

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**Resolution # ER – 2012-09-16**

Moved by Pallotta  
Seconded by Gordon

RESOLVED, That the Minutes of the August 8, 2012 meeting be approved.

Yeas: All-5  
Absent: Milton Stansbury  
Thomas Darling, CPA

**Retirement Request**

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**Resolution # ER – 2012-09-17**

Moved by Gordon  
Seconded by Pallotta

RESOLVED, That the following retirement requests be approved:

<b>Name</b>	John R Ulinski
<b>Pension Program</b>	DB
<b>Retirement Date</b>	9/12/12- (deferred)
<b>Department</b>	Police
<b>Service Time</b>	17 years, 11 months

Yeas: All-5  
Absent: Milton Stansbury  
Thomas Darling, CPA

**Other Business – Draft RFI for Investment Consultant**

The Board reviewed the Request for Information for the Investment Consultant, but decided to postpone deliberation until October.

**Investments – Royal Bank of Scotland**

**Resolution # ER – 2012-09-18**

Moved by Culpepper  
Seconded by Pallotta

RESOLVED, That the board authorizes the Pension administrator to immediately tender Royal Bank of Scotland Bonds as per John C. Grant and Rebecca S. Sorensen's recommendation.

Yeas: All-5

Absent: Milton Stansbury  
Thomas Darling, CPA

**Resolution # ER – 2012-09-19**

Moved by Gordon  
Seconded by Pallotta

RESOLVED, That the board authorizes the Pension administrator to transfer all revenue from the sales of Royal Bank of Scotland Bonds into the MFS Diversified Income Fund

Yeas: All-5

Absent: Milton Stansbury  
Thomas Darling, CPA

**INVESTMENTS**

**Resolution # ER – 2012-07-17**

Moved by Stansbury  
Seconded by Pallotta

RESOLVED, That the board authorizes the Pension Administrator to execute the following:

Sell: 5,000 shares of Rio Tinto

Yeas: All-5

Absent: Milton Stansbury  
Thomas Darling, CPA

**Public Comment**

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None.

The next meeting is October 10, 2012 at 12:00 p.m. at Troy City Hall, Conference Room C, 500 W. Big Beaver Road, Troy, MI 48084.

The meeting adjourned at 12:59 p.m.

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Mark Calice, Chairman

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Tom Darling, Administrator

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**CITY OF TROY EMPLOYEES RETIREMENT SYSTEM**  
FORTY-EIGHTH ANNUAL ACTUARIAL VALUATION  
DECEMBER 31, 2011

# OUTLINE OF CONTENTS

<b>Page</b>	<b>Items</b>
--	<b>Cover Letter</b>
	<b>Valuation Results, Comments and Conclusion</b>
A-1	Computed City contributions
A-2	Computed City contributions – comparative statement
A-3	Comments and conclusion
A-4	Derivation of actuarial gain (loss)
	<b>Summary of Benefit Provisions and Valuation Data Submitted by the Retirement System</b>
B-1	Summary of benefit provisions
B-3	Reported asset information
B-8	Retired life data
B-12	Vested terminated member data
B-13	Active member data
	<b>Financial Principles, Actuarial Valuation Process, Actuarial Cost Methods, Actuarial Assumptions and Definitions of Technical Terms</b>
C-1	Financial principles
C-4	Actuarial valuation process
C-5	Actuarial cost methods
C-6	Actuarial assumptions in the valuation process
C-9	Actuarial assumptions used for the valuation
C-15	Definitions of technical terms
	<b>Certain Disclosures Required by Statements No. 25 and No. 27 of the Governmental Accounting Standards Board</b>
D-1	Actuarial accrued liability
D-2	Schedule of funding progress
D-3	Supplementary information

September 7, 2012

The Board of Trustees  
City of Troy Employees Retirement System  
Troy, Michigan

Submitted in this report are the results of the 48<sup>th</sup> Annual Actuarial Valuation of the assets, benefit values, reserves and contribution requirements associated with payments provided by the City of Troy Employees Retirement System.

This report was prepared at the request of the Board and is intended for use by the City of Troy Employees Retirement System and those designated or approved by the City of Troy Employees Retirement System. This report may be provided to parties other than the Retirement System only in its entirety and only with the permission of the Retirement System.

The purpose of the valuation is to measure the System's funding progress, to determine the employer contribution rate for the fiscal years ending June 30, 2013 and June 30, 2014, and to determine the actuarial information for Governmental Accounting Standards Board (GASB) Statement No. 25 and No. 27. The date of the valuation was December 31, 2011.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

This report should not be relied on for any purpose other than the purpose described above. Determinations of the financial results associated with the benefits described in this report in a manner other than the intended purpose may produce significantly different results.

To the best of our knowledge, the information contained in this report is accurate and fairly represents the actuarial position of the City of Troy Employees Retirement System as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The valuation was based upon data, furnished by your staff, concerning financial operations and individual participants and vested former participants. We checked for internal and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the information.

The Board of Trustees  
City of Troy Employees Retirement System  
September 7, 2012  
Page 2

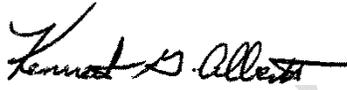
The actuaries submitting this report are independent of the plan sponsor.

One or more of the undersigned are Members of the American Academy of Actuaries (where indicated with the designation of M.A.A.A.) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,



Randall J. Dziubek,  
A.S.A., E.A., M.A.A.A.



Kenneth G. Alberts

KA:RJD:mrB

DRAFT

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**SECTION A**

**VALUATION RESULTS, COMMENTS AND  
CONCLUSION**

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**COMPUTED CITY CONTRIBUTIONS  
OF THE RETIREMENT SYSTEM  
FOR THE FISCAL YEARS BEGINNING JULY 1, 2012 AND JULY 1, 2013**

1. Actuarial Present Value of All Future Benefits*:	
- Active	\$ 35,317,190
- Terminated Vested	\$ 1,016,254
- Retired	<u>\$ 125,716,820</u>
- Total	\$ 162,050,264
2. Funding Value of Assets	\$ 145,522,890
3. Actuarial Present Value of Future Employee Contributions	\$ 1,464,906
4. City's Remaining Unfunded Present Value of Benefits After Recognition of Funding Value of Assets and Future Employee Contributions (1) - (2) - (3)	\$ 15,062,468
5. Actuarial Present Value of Future Salary	\$ 43,120,739
6. Projected Payroll 1/1/2012 - 12/31/2012#	\$ 5,225,018
7. City's Annual Normal Cost for Year Ending June 30, 2013 (4) / (5) * (6) Plus Interest at 6.5% for 6 Months	\$ 1,883,530
8. City's Annual Normal Cost for Year Ending June 30, 2014 (7) Projected Forward with Expected Payroll of \$5,047,157	\$ 1,845,880

\* An actuarial present value is the present day value of a payment or series of payments that may become payable in the future. To determine an actuarial present value you need to use assumptions for the probability a payment will be paid, in what amount, and when. The probability the payment will be paid is determined by the eligibility provisions and the demographic assumptions for rates of withdrawal, disability, death, and retirement. The amount is determined by the benefit formula and assumptions for salary increases. The "when" determines how long an investment today would earn investment return before it needs to be paid. For example, if the probability of \$1,000 being paid in 10 years is 75% and assumed investment return is 6.5%/year, the actuarial present value is  $\$1,000 \times 75\% / (1.065)^{10} = \$400$ .

# Projected payroll reflects only those active employees covered by the closed Retirement System. This amount is expected to decline in the future until all active employees have terminated/retired, at which point it will be \$0. Note, the relationship between computed City contributions and payroll will become less and less meaningful each year.

**COMPUTED CITY PENSION CONTRIBUTIONS  
COMPARATIVE STATEMENT**

Fiscal Year Beginning July 1	Valuation Date December 31	% of Payroll Contributions		Valuation Payroll
		General	Public Safety	
1985	1984 *	13.49 %	19.23 %	\$ 10,518,429
1986	1985	13.29	18.75	11,373,793
1987	1986 *	13.67	17.59	12,048,592
1988	1987 *	14.91	16.34	13,083,451
1989	1988	14.69	15.98	14,162,413
1990	1989 *	13.11	19.39	14,774,001
1991	1990 *	13.09	22.99	16,105,129
1992	1991	11.65	21.21	17,323,677
1993	1992	10.02	17.82	17,619,701
1994	1993 *	9.24	20.09	18,518,880
1995	1994	8.00	18.62	17,598,618
1996	1995 *	7.23	16.23	19,039,969
1997	1996	3.66	13.40	20,535,959
1998	1997 *	0.00	10.99	16,133,023
1999	1999 *	0.05	0.00	15,056,554
2000	2000 *@	0.00	0.00	15,441,200
2001	2001 *	0.00	0.00	14,566,460
2002	2002	1.69	0.00	13,552,549
2003	2003	1.87	0.00	13,052,713
2004	2004	3.64	0.00	12,572,374
2005	2005	4.97	0.00	12,099,631
2006	2006 *	1.79	1.79	11,471,511
2007	2007 *	4.10	4.10	11,045,745
2008	2008	13.57	13.57	10,953,297
2009	2009	26.62	26.62	10,483,020
2010	2010	27.16	27.16	8,959,340
<b>2011</b>	<b>2011</b>	<b>36.57</b>	<b>36.57</b>	<b>5,427,637</b>

\* After changes in benefit provisions/cost method/actuarial assumptions.

@ After change in asset valuation method.

## COMMENTS AND CONCLUSION

**COMMENT A:** For the plan year ended December 31, 2011, the System experienced a liability gain of approximately \$1.6 million and an asset loss of approximately \$0.5 million. The primary source of the gain was pay increases that were less than assumed. The gain was partially offset by mortality losses (less actual deaths than assumed). In aggregate, the gain was approximately 1.1% of total System liabilities. This resulted in a decrease in the annual contribution requirement in aggregate due to lower system costs as a result of this gain.

**COMMENT B:** During the year ended December 31, 2011, 44 members retired under an early retirement incentive program (ERIP). The ERIP had several different effects on the valuation results this year; including:

- Increasing the total liabilities by approximately \$3 million.
- Reducing the number of active members covered in this plan from 115 to 70. (There was also 1 disability retiree.)
- Increasing the average future working lifetime of the active group (due to the retirement of later career members).

The combined result was a decrease in the annual contribution requirement in aggregate due to the longer financing period (the average future working lifetime of remaining active members). It is important to note that the ERIP resulted in other payroll and fringe benefits savings outside of the Retirement System.

**COMMENT C:** During the year ended December 31, 2011, 14 members of the DC plan annuitized their account balances and became retirees of this system. If the City/System is going to continue to allow this kind of activity going forward, we recommend a study be undertaken to:

- Ensure the conversion factors continue to be appropriate (or are updated as necessary);
- Review the risks associated with allowing this kind of activity in a closed plan;
- Discuss the long-term funding implication of this kind of activity.

**CONCLUSION:** It is the actuary's opinion that the required contribution rate determined by the most recent actuarial valuation is sufficient to meet the Retirement System's funding objective. In addition, to ensure that the Retirement System maintains the ability to pay retiree benefits when due, and to reduce the likelihood of future required contribution amounts increasing from the current level, continued timely receipt of annual computed contributions is essential.

## DERIVATION OF ACTUARIAL GAIN/LOSS YEAR ENDED DECEMBER 31, 2011

The actuarial gains or losses realized in the operation of the Retirement System provide an experience test. Gains and losses are expected to cancel each other over a period of years (in the absence of double-digit inflation) and sizable year to year fluctuations are common. Detail on the derivation of the actuarial gain/loss is shown below, along with a year by year comparative schedule.

	Total Liability - (PV Future Benefits)	- Funding Value of Assets	- PV Future Employee Contributions	= Unfunded PV Future Benefits			
(1) Start of year	\$ 150,847,173	\$ 133,400,223	\$ 1,920,579	\$ 15,526,371			
(2) Employer and employee contributions	0	3,079,191	(289,303)	(2,789,888)			
(3) Benefits paid	(9,124,671)	(9,124,671)	0	0			
(4) Interest accrual	9,828,826	8,794,848	115,435	918,543			
(5) Expected before changes: (1) + (2) + (3) + (4)	151,551,328	136,149,591	1,746,711	13,655,026			
(6) DC transfers <sup>#</sup>	9,855,745	9,855,745	0	0			
(7) Change from revised benefit provisions*	2,809,372	0	(243,360)	3,052,732			
(8) Change from actuarial assumptions	0	0	0	0			
(9) Expected amount after changes: (5) + (6) + (7)+(8)	164,216,445	146,005,336	1,503,351	16,707,758			
(10) Actual at end of year	162,050,264	145,522,890	1,464,906	15,062,468			
(11) Gain/Loss: (9) - (10)	\$ 2,166,181	\$ 482,446	\$ 38,445	\$ 1,645,290			
Gain/Loss as percent of present value of future benefit at start of year	1.4% Gain	-	0.3% Loss	-	0.0% N/A	=	1.1% Gain

\* Includes Early Retirement Incentive Program (ERIP) from 2011.

# Liability due to the annuitizing of Defined Contribution accounts was assumed to be equal to the asset transfer. Transfers were assumed to occur mid-year for purposes of calculating interest.

### Valuation

Date December 31	Actuarial Gain (Loss) As % of Beginning PVFB*
2002	(3.2) %
2003	1.6
2004	(3.7)
2005	(0.7)
2006	(0.6)
2007	0.3
2008	(5.2)
2009	(6.0)
2010	1.2
<b>2011</b>	<b>1.1</b>

\* Prior to 2007 this exhibit shows Actuarial Gain (Loss) as a % of Beginning Actuarial Accrued Liabilities.

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## **SECTION B**

**SUMMARY OF BENEFIT PROVISIONS AND  
VALUATION DATA SUBMITTED BY THE  
RETIREMENT SYSTEM**

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**BENEFIT PROVISIONS EVALUATED AND/OR CONSIDERED  
(DECEMBER 31, 2011)**

**REGULAR RETIREMENT** (no reduction factor for age):

*Eligibility* - T.P.O.A., T.F.S.O.A. and T.C.O.A. members: 25 years of service; or age 60 with 10 years of service. General AFSCME, General Clerical Members, Classified or Exempt: Age 50 with 27 years of service; or age 55 with 25 years of service; or age 60 with 10 years of service.

*Mandatory Retirement Age* - None.

*Annual Amount*

Division	Benefit	Supplemental Benefit
T.P.O.A.	2.80% * FAC to 25 years 1.00% * FAC 26-30 years	
T.C.O.A.	2.80% * FAC to 25 years 1.00% * FAC 26-30 years	
T.F.S.O.A.	2.25% * FAC * Service	0.25% * FAC * Service
General AFSCME	2.25% * FAC * Service	0.25% * FAC * Service
General Classified/Exempt	2.25% * FAC * Service	0.25% * FAC * Service
General Clerical	2.25% * FAC * Service	0.25% * FAC * Service

*Type of Final Average Compensation* - Highest 3 years out of last 10. Some lump sums are included but payment of sick or vacation leave is not included.

**EARLY RETIREMENT (AGE REDUCTION FACTOR USED):**

*Eligibility* - Age 55 with 10 years of service.

*Annual Amount* - Computed as regular retirement benefit but reduced by 1/2% for each month by which retirement precedes age 60.

**DEFERRED RETIREMENT** (vested benefits):

*Eligibility* - 10 years of service. Benefit payable at age 60.

*Annual Amount* - Same as regular retirement but based on credited service and final average compensation at termination.

**DUTY DISABILITY RETIREMENT:**

*Eligibility* - No age or service requirement. Worker's compensation must be payable.

*Annual Amount* - Same as regular retirement. Upon termination of worker's compensation the benefit is recomputed to grant service credit for the period in receipt of worker's compensation. Minimum benefit is based on 10 years of credited service (66-2/3% of final average compensation for non-command/exempt public safety members, while in receipt of worker's compensation).

**NON-DUTY DISABILITY RETIREMENT:**

*Eligibility* - 5 years of service (10 years for Exempt and Classified, AFSCME employees hired after 2/96).

*Annual Amount* - Same as regular retirement, but with a minimum benefit based on 10 years of credited service.

**DUTY DEATH BEFORE RETIREMENT:**

*Eligibility* - No age or service requirement.

*Annual Amount* - Widow's benefit equal to regular retirement benefit actuarially reduced in accordance with a 100% joint and survivor election. Minimum benefit is 25% (50% for T.F.S.O.A., Command Officers and T.P.O.A.) of final average compensation. If no widow, children under 18 share equally in 25% (50% for Command Officers and T.P.O.A.) of final average compensation.

**NON-DUTY DEATH BEFORE RETIREMENT:**

*Eligibility* - 10 years service.

*Annual Amount* - Same as regular retirement but reduced in accordance with a 100% joint and survivor election.

**AUTOMATIC DEATH BENEFIT AFTER RETIREMENT: NONE.**

**POST-RETIREMENT ADJUSTMENTS:** One-time increases were granted in 1973, 1977, 1978, 1981, 1983, 1989 and 1999.

**HEALTH INSURANCE PREMIUM SUBSIDY:** Post-retirement health insurance premiums are subsidized by the City as follows:

- T.C.O.A. - Fully paid after 7/1/94.
- T.P.O.A. - 4% per complete year, retired after 2/20/1996.
- T.F.S.O.A.- 4% per complete year, retired after 1/1/99.
- AFSCME - 4% per complete year, retired after 1/1/01.
- Classified Exempt, Clerical - \$400/month or 4% per complete year, whichever is greater.
- Retirees from prior provisions - \$400/month or 3% per complete year, whichever is greater.

Liabilities for the health insurance premium subsidy are included in the City's OPEB valuation report and not included in the Retirement System valuation (this report).

**MEMBER CONTRIBUTIONS:** Expressed as percentages of compensation as follows:

- 1.5% for clerical members
- 3.0% for T.F.S.O.A.
- 1.5% for classified and Exempt members
- 1.5% for AFSCME
- 4.0% for T.P.O.A.
- 4.0% for T.C.O.A.

## REPORTED FUND BALANCE (MARKET VALUE)

Reserves	Reported Fund Balance December 31,	
	2011	2010
Reserve for Employees' Contributions	\$ 2,443,190	\$ 3,446,321
Reserve for Employer Contributions	90,584,179	96,935,023
Reserve for Retired Benefit Payments	50,317,983	34,009,886
Reserve for Undistributed Investment Income	0	0
Reserve for Health Insurance Premiums	32,392,068	38,669,579
Total Fund Balance	\$175,737,420	\$173,060,809

Valuation assets are equal to reported market value of assets (excluding health reserves), except that all realized and unrealized gains and losses are spread over a period of years, with 20% recognition the first year. Such spreading reduces the fluctuation in the City's computed contribution rate which might otherwise be caused by market value fluctuations. The details of the spreading technique are shown on page B-4. The valuation assets as of December 31, 2011 total \$145,522,890.

**In financing actuarial accrued liabilities**, valuation assets of \$145,522,890 were distributed as follows:

Reserves for	Valuation Assets Applied to Actuarial Accrued Liabilities for			Totals
	Active Members	Retirants & Beneficiaries	Contingency Reserve	
Employees' Contributions	\$ 2,443,190			\$ 2,443,190
Employer Contributions	90,584,179			90,584,179
Retired Benefit Payments		\$50,317,983		50,317,983
Valuation Asset Adjustment	2,177,538			2,177,538
<b>Totals</b>	<b>\$95,204,907</b>	<b>\$50,317,983</b>		<b>\$145,522,890</b>

**DERIVATION OF VALUATION ASSETS**  
**MARKET VALUE WITH 20% RECOGNITION OF THE DIFFERENCE BETWEEN**  
**THE MARKET RATE OF RETURN AND THE PROJECTED RATE OF RETURN**

	2010	2011	2012	2013	2014	2015
A. Funding Value Beginning of Year	\$ 132,464,823	\$ 133,400,223				
B. Market Value End of Year	134,391,230	143,345,352				
C. Market Value Beginning of Year	120,831,163	134,391,230				
D. Non-Investment Net Cash Flow (EE + ER cont.) - (Ret Ben. + Refunds)	(5,413,479)	3,810,265				
E. Investment Income:						
E1. Market Total: B-C-D	18,973,546	5,143,857				
E2. Assumed Rate	6.50%	6.50%				
E3. Amount for Immediate Recognition: E2 * (A+D/2)	8,434,275	8,794,848				
E4. Amount for Phased-In Recognition: E1-E3	10,539,271	(3,650,991)				
F. Phased-In Recognition of Investment Income:						
F1. Current Year: 0.20*E4	2,107,854	(730,198)				
F2. First Prior Year	2,937,565	247,752	\$(730,198)			
F3. Second Prior Year	(8,466,090)	0	247,752	\$(730,198)		
F4. Third Prior Year	679,073	0	0	247,752	\$(730,198)	
F5. Fourth Prior Year	656,202	0	0	0	247,751	\$(730,199)
F6. Total Recognized Investment Gain	(2,085,396)	(482,446)	(482,446)	(482,446)	(482,447)	(730,199)
<b>G. Funding Value End of Year: A+D+E3+F6</b>	<b>\$ 133,400,223</b>	<b>\$ 145,522,890</b>				
H. Difference between Market & Funding Value	991,007	(2,177,538)				
I. Recognized Rate of Return	4.89%	6.14%				
J. Ratio of Funding Value to Market Value	99%	102%				

## ASSET INFORMATION REPORTED FOR VALUATION COMPARATIVE STATEMENT

Year Ended December 31	Revenues					Expenses			Assets Year-End *
	Employee Contrib.	Employer Contrib.	Investment Income	Misc. Income	Retirement Benefits	Contrib. Refunds	Health Insurance	Misc. Expenses	
1985	\$ 1,011	\$1,483,547	\$ 3,952,592	\$ 0	\$ 349,086	\$ 11,087	\$ 18,268	\$ 3,026	\$ 25,952,007
1990	1,558	2,401,060	3,861,487	0	782,167	19,292	68,886	4,984	56,013,922
1991	1,760	3,081,239	11,116,274	0	878,775	1,431	87,281	0	69,245,708
1992	6,177	2,626,564	7,134,901	0	1,040,882	14,188	100,340	5,600	77,852,340
1993	24,939	2,647,753	7,900,961	0	1,115,225	392	119,120	6,000	87,185,256
1994	144,934	2,950,360	(187,532)	0	1,351,290	590	152,637	6,300	88,582,201
1995	198,746	3,156,148	20,889,448	0	1,819,840	14,066	220,291	6,600	110,765,746
1996	335,144	3,311,550	16,325,274	0	2,013,257	3,047	251,138	11,300	128,458,972
1997	371,811	3,167,814	25,544,354	0	2,459,287	11,273	329,312	16,404	154,726,675
1998	340,807	2,819,785	21,825,629	0	2,666,133	19,105,397	449,779	19,846	160,216,807
1999	335,828	1,795,070	12,085,389	0	2,860,935	1,095,796	481,660	28,782	167,220,855
2000	421,161	1,113,993	3,075,759	0	3,156,251	7,349,663	688,138	27,515	160,610,201
2001	398,572	1,303,079	2,162,267	0	3,351,223	6,753,854	693,345	28,998	153,646,699
2002	364,130	1,532,439	(7,992,398)	0	3,496,301	7,249,513	942,054	31,653	135,831,349
2003	343,629	1,543,286	25,064,474	0	3,843,356	10,230	1,102,076	29,334	157,797,742
2004	333,305	1,571,547	12,763,027	0	4,482,783	335,998	1,254,559	29,322	166,362,959
2005	309,731	972,454	2,995,153	0	4,923,401	2,613	1,368,331	53,247	164,292,705
2006	308,887	247,688	14,764,828	0	5,529,394	57,875	1,592,311	32,382	172,402,146
2007	315,677	218,653	15,286,055	0	5,924,256	5,516	1,855,527	47,947	180,389,285
2008	316,708	376,155	(44,700,324)	0	6,204,282	0	2,101,958	62,349	128,013,235
2009	7,651,667 #	838,969	33,216,875	0	7,944,132	0	2,558,948	67,073	159,150,593
2010	285,047	1,953,321	22,366,478	0	7,596,953	0	3,042,783	54,894	173,060,809
<b>2011</b>	<b>10,145,048 #</b>	<b>2,789,888</b>	<b>2,455,082</b>	<b>0</b>	<b>9,124,671</b>	<b>0</b>	<b>3,535,596</b>	<b>53,140</b>	<b>175,737,420</b>

\* Includes assets for retiree health benefits.

# Includes amounts moved from the City's defined contribution plan for employees choosing to transfer to the Employees Retirement System.

**SUMMARY OF  
CURRENT ASSET INFORMATION \*  
REPORTED FOR VALUATION**

**Market Value of Assets**

	<u>12/31/2011</u> <u>Market Value</u>	<u>12/31/2010</u> <u>Market Value</u>
Cash & equivalents	\$ 9,582,177	\$ 4,781,044
Government bonds	12,899,336	16,220,312
Corporate bonds	13,843,282	19,985,248
Stock	126,636,694	123,260,256
Bond mutual funds	12,349,586	8,813,949
Other (annuities)	426,345	0
Total assets	<u>175,737,420</u>	<u>173,060,809</u>
Less accounts payable	<u>0</u>	<u>0</u>
Net assets available for benefits	<u><u>\$175,737,420</u></u>	<u><u>\$173,060,809</u></u>

**Revenues and Expenses**

	<u>2011</u>	<u>2010</u>
Balance - January 1	\$ 173,060,809	\$ 159,150,593
Revenues		
Employees' contributions #	10,145,048	285,047
Employer contributions	2,789,888	1,953,321
Investment income	2,455,082	22,366,478
Miscellaneous	0	0
Expenses		
Benefit payments	9,124,671	7,596,953
Refunds of member contributions	0	0
Administrative expenses	53,140	54,894
Investment expenses	44,307	
Health insurance premiums	3,535,596	3,042,783
Miscellaneous	<u>0</u>	<u>0</u>
Balance - December 31	<u><u>\$ 175,737,420</u></u>	<u><u>\$ 173,060,809</u></u>

\* Includes assets for retiree health benefits.

# Includes amounts moved from the City's defined contribution plan for employees choosing to transfer to the Employees Retirement System.

## RECENT HISTORICAL MARKET VALUE RATES OF RETURN

<b>Year Ending</b>	<b>Rate of Return</b>	<b>Five Year Average</b>	<b>Ten Year Average</b>
2002	(5.4)%		
2003	18.7%		
2004	8.2%		
2005	1.8%		
2006	9.2%	6.2%	
2007	9.1%	9.3%	
2008	(25.3)%	(0.4)%	
2009	26.2%	2.7%	
2010	14.4%	5.1%	
2011	1.4%	3.6%	4.9%

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**RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS  
DEFINED BENEFIT PLAN  
COMPARATIVE STATEMENT**

Year Ended December 31	Added to Rols			Removed from Rols		Rols End of Year		% Incr. Annual Benefit	Average Annual Benefit	Present Value of Benefits	Expected Removal
	No.	Annual Benefit	Post-Ret. Increases	No.	Annual Benefit	No.	Annual Benefit				
1986	8	\$ 64,758		1	\$ 3,820	71	\$ 531,906	12.9%	7,492	\$ 6,006,326	1.3
1987	6	45,628		3	12,295	74	565,239	6.3	7,638	6,307,514	1.6
1988	6	82,290		2	8,825	78	538,704	13.0	8,188	6,997,601	1.7
1989	6	71,518	\$ 26,993	1	4,836	83	732,379	14.7	8,824	7,902,521	1.9
1990	5	102,108		2	13,370	86	821,117	12.1	9,548	8,852,756	2.1
1991	10	185,752		6	53,568	90	953,301	16.1	10,592	10,403,174	2.2
1992	10	154,697		4	41,160	96	1,066,838	11.9	11,113	11,711,334	2.4
1993	6	110,685		3	26,135	99	1,151,388	7.9	11,630	12,514,776	2.6
1994	21	648,681			(1,572)	120	1,798,497	56.2	14,987	20,491,084	2.7
1995	6	84,312		4	55,506	122	1,827,303	1.6	14,978	21,287,811	2.9
1996	20	446,833		6	60,831	136	2,213,305	21.1	16,274	25,459,651	2.0
1997	14	420,457		1	10,217	149	2,623,545	18.5	17,608	30,537,712	2.8
1998	8	163,633		4	56,055	153	2,731,123	4.1	17,850	31,402,870	3.6
1999	10	286,293		3	69,193	160	2,948,223	7.9	18,426	33,748,959	4.0
2000	11	340,403		8	59,325	163	3,229,301	9.5	19,812	37,083,835	4.0
2001	9	240,483		3	24,905	169	3,444,879	6.7	20,384	39,424,271	4.4
2002	8	189,284		6	59,479	171	3,574,684	3.8	20,905	40,667,169	4.4
2003	15	521,015		4	17,957	182	4,077,742	14.1	22,405	47,046,673	4.4
2004	21	615,572		7	87,193	196	4,606,121	13.0	23,501	53,030,527	4.8
2005	14	520,152		5	101,352	205	5,024,921	9.1	24,512	57,995,428	4.8
2006	15	609,624		3	29,746	217	5,604,799	11.5	25,829	64,573,648	4.8
2007	18	459,496		3	53,602	232	6,010,693	7.2	25,908	68,494,664	5.5
2008	11	176,381		3	30,933	240	6,156,141	2.4	25,651	69,351,765	5.8
2009	23	1,270,351		8	114,219	255	7,312,273	18.8	28,676	84,166,668	6.4
2010	17	547,081		7	93,784	265	7,765,570	6.2	29,304	88,664,507	6.4
<b>2011</b>	<b>62</b>	<b>3,024,612</b>		<b>5</b>	<b>49,056</b>	<b>322</b>	<b>10,741,127</b>	<b>38.3</b>	<b>33,358</b>	<b>125,716,820</b>	<b>6.8</b>

**RETIREES AND BENEFICIARIES - DECEMBER 31, 2011**  
**TABULATED BY VALUATION DIVISIONS**

**DEFINED BENEFIT MEMBERS**

<b>Valuation Division</b>	<b>No.</b>	<b>Annual Benefits</b>	<b>Age</b>
General	215	\$ 5,385,649	67.6 years
Public Safety	<u>107</u>	<u>5,355,478</u>	60.8 years
Totals	322	\$ 10,741,127	

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**RETIREES AND BENEFICIARIES INCLUDED IN DEFINED BENEFIT VALUATION  
 TABULATED BY TYPE OF BENEFITS BEING PAID  
 DECEMBER 31, 2011**

Type of Benefits Being Paid	Number	Annual Benefits
Age and Service benefits		
Regular benefit - benefit terminating at death of retirant	96	\$ 2,690,980
100% Joint and Survivor benefit		
Option A	80	3,937,629
Option C	62	2,291,871
50% Joint and Survivor benefits		
Option B	22	606,394
Option D	23	743,242
Survivor Beneficiary	<u>27</u>	<u>319,415</u>
Total age and service benefits	310	\$10,589,531
Casualty benefits		
Non-Duty Disability - Regular		
- Retiree - Regular benefit	1	\$ 29,547
- Retiree - Option C	1	12,097
- Beneficiary	4	21,843
Duty- Disability - Option A	1	7,866
Non-Duty Death benefit	3	44,206
Duty Death benefit	<u>2</u>	<u>36,037</u>
Total Casualty benefits	12	151,596
<b>Total Benefits Being Paid</b>	<b>322</b>	<b>\$10,741,127</b>

**RETIREES AND BENEFICIARIES INCLUDED IN DEFINED BENEFIT VALUATION  
BY ATTAINED AGES  
DECEMBER 31, 2011**

<b>Attained Ages</b>	<b>No.</b>	<b>Annual Pensions</b>
40-44	1	\$ 45,670
45-49	7	296,027
50-54	39	1,826,795
55-59	62	2,763,848
60-64	75	3,070,498
65-69	48	1,217,117
70-74	29	719,110
75-79	21	392,225
80-84	26	274,788
85-89	12	118,935
90-94	2	16,115
95-99	0	0
<b>Totals</b>	<b>322</b>	<b>\$ 10,741,127</b>

**VESTED TERMINATED MEMBERS INCLUDED IN DEFINED BENEFIT VALUATION  
BY ATTAINED AGES  
DECEMBER 31, 2011**

<b>Attained Ages</b>	<b>Estimated</b>	
	<b>No.</b>	<b>Annual Benefits</b>
48	1	\$ 5,110
50	1	13,230
52	2	15,012
53	1	8,033
54	1	16,662
56	1	13,419
57	1	3,414
58	1	11,442
59	2	31,580
<b>Totals</b>	<b>11</b>	<b>\$ 117,902</b>

**ACTIVE MEMBERS - DECEMBER 31, 2011**  
**TABULATED BY VALUATION DIVISIONS**

**DEFINED BENEFIT MEMBERS**

<b>Valuation Division</b>	<b>No.</b>	<b>Annual Payroll</b>	<b>Average Age</b>	<b>Average Service</b>	<b>Average Pay</b>
General	25	\$ 1,440,202	51.8 years	17.8 years	\$57,608
Public Safety	<u>45</u>	<u>3,987,435</u>	44.5 years	17.6 years	88,610
Totals	70	\$ 5,427,637			

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## ACTIVE MEMBERS INCLUDED IN DEFINED BENEFIT VALUATION

Valn. Date Dec. 31	Active Members					Average				
	General		Public Safety			Valuation Payroll	Age	Service	Pay	% Incr.
	Class/ Exempt	Other	Comm/ Other	TPOA	Total					
1972		183		66	249	\$ 2,907,267	36.1 yrs.	4.7 yrs.	\$11,676	7.6 %
1973		205		64	269	3,434,997	36.2	4.9	12,770	9.4
1974		222		68	290	4,123,892	36.3	5.3	14,220	11.4
1975		247		81	328	4,996,368	36.2	5.5	15,233	7.1
1976		254	20	62	336	5,615,394	36.8	6.2	16,712	9.7
1977		269	18	63	350	5,970,264	37.7	6.5	17,058	2.1
1978		261	18	69	348	6,628,692	38.0	7.2	19,048	11.7
1979		282	22	72	376	7,700,464	37.9	7.2	20,480	7.5
1980		279	21	86	386	8,947,885	38.0	7.6	23,181	13.2
1981	100	167	25	87	379	9,697,649	38.4	8.3	25,587	10.4
1982	92	163	32	78	365	9,954,722	39.0	9.2	27,273	6.6
1983	94	140	30	78	342	10,214,049	39.2	10.0	29,866	9.5
1984	97	135	32	74	338	10,518,429	39.2	11.3	31,120	4.2
1985	103	139	32	79	353	11,373,793	39.2	11.1	32,220	3.5
1986	108	141	37	79	365	12,048,592	39.5	11.0	33,010	2.5
1987	116	143	41	84	384	13,083,451	40.0	11.3	34,071	3.2
1988	118	142	43	86	389	14,162,413	40.4	11.7	36,407	6.8
1989	122	144	47	86	399	14,774,001	40.5	11.7	37,028	1.7
1990	128	148	46	90	412	16,105,129	41.1	12.0	39,090	5.6
1991	129	150	44	98	421	17,323,677	41.5	12.0	41,149	5.3
1992	132	150	45	96	423	17,619,701	42.0	12.7	41,654	1.2
1993	134	150	47	93	424	18,518,880	42.6	13.1	43,677	4.9
1994	128	147	39	87	401	17,598,618	43.0	13.4	43,887	0.5
1995	127	153	43	95	418	19,039,969	43.4	13.6	45,550	3.8
<b>1996@</b>	<b>135 *</b>	<b>160</b>	<b>44</b>	<b>95</b>	<b>434</b>	<b>20,535,959</b>	<b>43.2</b>	<b>13.1</b>	<b>47,318</b>	<b>3.9</b>
1997	55 *	146	37	102	340	16,133,023	42.4	12.1	47,590	0.6
1998	59	116 *	40	99	314	16,201,219	43.0	13.3	51,761	8.8
1999	55	85 #	40	99	279	15,056,554	43.4	14.4	54,553	5.4
2000	55	76	29	97 *	257	15,441,200	44.1	14.8	60,317	10.6
2001	56	73	20	92	241	14,566,460	44.7	14.7	60,442	0.2
2002	59	66	21	71	217	13,552,549	45.7	15.8	62,454	3.3
2003	56	61	19	69	205	13,052,713	46.5	16.3	63,672	1.9
2004	52	54	19	61	186	12,572,374	46.9	16.9	67,593	6.2
2005	48	51	21	54	174	12,099,631	47.7	17.4	69,538	2.9
2006	44	46	20	51	161	11,471,511	48.0	17.6	71,252	2.5
2007	37	40	21	49	147	11,045,745	48.1	18.1	75,141	5.5
2008	37	36	22	47	142	10,953,297	48.8	19.0	77,136	2.7
2009	30	32	20	46	128	10,483,020	48.9	19.1	81,899	6.2
2010	23	28	18	46	115	8,959,340	49.1	19.7	77,907	(4.9)
<b>2011</b>	<b>9</b>	<b>16</b>	<b>11</b>	<b>34</b>	<b>70</b>	<b>5,427,637</b>	<b>47.1</b>	<b>17.7</b>	<b>77,538</b>	<b>(0.5)</b>

\* Includes 1 member on leave of absence.

# Includes 3 members on leave of absence.

@ Represents the peak of active membership.

**ADDITIONS TO AND REMOVALS FROM ACTIVE MEMBERSHIP  
ACTUAL AND EXPECTED NUMBERS**

Year Ended Dec. 31	Normal Retirement		Disability Retirement		Died-In-Service		Terminations			Active Members End of Year
	A	E	A	E	A	E	Trans. to DC	Other	E	
							A	A		
1991	9	8.7	0	1.1	0	1.0		6	24.8	421
1992	7	6.6	0	1.2	0	1.0		4	23.1	423
1993	6	9.1	0	1.2	0	1.2		11	21.4	424
1994	19	14.6	0	1.2	1	1.1		12	20.5	401
1995	3	8.6	0	1.2	1	1.2		10	17.8	418
1996	15	8.7	0	1.3	0	0.8		9	23.5	434
1997	13	8.7	0	1.3	0	0.8	98	10	23.5	340
1998	4	6.9	0	0.8	0	0.8	28	3	18.6	314
1999	7	8.6	0	0.7	0	0.5	26	7	14.7	279
2000	9	9.3	0	0.6	0	0.4	11	3	10.3	257
2001	4	6.9	0	0.6	1	0.5	10	1	8.2	241
2002	6	5.3	0	0.8	0	0.5	19	0	6.5	217
2003	10	4.4	0	0.7	1	0.4	0	1	5.3	205
2004	15	13.5	0	0.6	0	0.4	0	4	3.5	186
2005	10	13.5	1	0.6	0	0.4	0	1	3.5	174
2006	13	10.6	0	0.6	0	0.4	0	1	3.1	161
2007	13	9.5	0	0.6	0	0.4	0	1	2.6	147
2008	5	11.5	0	0.5	0	0.3	0	0	2.3	142
2009	14	11.7	0	0.5	0	0.3	0	0	2.0	128
2010	12	12.8	1	0.5	0	0.3	0	0	1.7	115
<b>2011</b>	<b>44</b>	<b>13.1</b>	<b>1</b>	<b>0.4</b>	<b>0</b>	<b>0.2</b>	<b>0</b>	<b>0</b>	<b>1.4</b>	<b>70</b>
<b>5-Yr. Totals</b>	<b>88</b>	<b>58.6</b>	<b>2</b>	<b>2.5</b>	<b>0</b>	<b>1.5</b>	<b>0</b>	<b>1</b>	<b>10.0</b>	

A represents actual number.

E represents expected number based on assumptions outlined in Section C.

**GENERAL (CLERICAL) - DECEMBER 31, 2011**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Age Group	Years of Accrued Service						Totals	
	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Salary
35-39		1					1	\$ 53,101
40-44			1				1	48,320
45-49		1					1	67,944
50-54		1	1				2	101,570
60				1			1	53,963
66			1				1	48,886
68		1					1	43,097
<b>Totals</b>		<b>4</b>	<b>3</b>	<b>1</b>			<b>8</b>	<b>\$ 416,881</b>

While not used in the financial computations, the following group averages are computed and shown because of their general interest:

Age: 52.6 years.

Service: 16.2 years.

Annual Pay: \$52,110

**GENERAL (CLASSIFIED AND EXEMPT) - DECEMBER 31, 2011**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Age Group	Years of Accrued Service					Totals		
	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Salary
40-44			1	1			2	\$ 144,247
45-49							0	0
50-54			1	3			4	244,083
55-59			2	1			3	195,285
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>\$ 583,615</b>

While not used in the financial computations, the following group averages are computed and shown because of their general interest:

Age: 50.8 years.  
Service: 19.2 years.  
Annual Pay: \$64,846

**GENERAL (AFSCME) - DECEMBER 31, 2011**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Age Group	Years of Accrued Service						Totals	
	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Salary
40-44		1					1	\$ 38,092
45-49			1				1	62,984
50-54		1	1	1			3	172,790
55-59			1	1			2	113,847
61			1				1	51,993
<b>Totals</b>		<b>2</b>	<b>4</b>	<b>2</b>			<b>8</b>	<b>\$ 439,706</b>

While not used in the financial computations, the following group averages are computed and shown because of their general interest:

Age: 52.2 years.

Service: 17.8 years.

Annual Pay: \$54,963

**PUBLIC SAFETY – (T.F.S.O.A.) - DECEMBER 31, 2011**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Age Group	Years of Accrued Service						Totals	
	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Salary
60							0	\$ -
<b>Totals</b>							<b>0</b>	<b>\$ -</b>

While not used in the financial computations, the following group averages are computed and shown because of their general interest:

Age: 0.0 years.

Service: 0.0 years.

Annual Pay: \$0

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**PUBLIC SAFETY (T.P.O.A.) - DECEMBER 31, 2011**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Age Group	Years of Accrued Service						Totals	
	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Salary
30-34		2					2	\$ 149,694
35-39		4					4	336,833
40-44		5	8	1			14	1,117,743
45-49			3	5			8	669,177
50-54				3			3	239,287
55-59				2			2	196,348
60				1			1	77,969
<b>Totals</b>	<b>0</b>	<b>11</b>	<b>11</b>	<b>12</b>	<b>0</b>		<b>34</b>	<b>\$ 2,787,051</b>

While not used in the financial computations, the following group averages are computed and shown because of their general interest:

Age: 44.3 years.  
Service: 17.3 years.  
Annual Pay: \$81,972

**PUBLIC SAFETY (T.C.O.A.) - DECEMBER 31, 2011**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Age Group	Years of Accrued Service					Totals		
	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Salary
35-39		1					1	\$ 102,646
40-44		2	3				5	531,823
45-49			1	2			3	333,596
50-54				1	1		2	232,319
55-59								
<b>Totals</b>		<b>3</b>	<b>4</b>	<b>3</b>	<b>1</b>		<b>11</b>	<b>\$ 1,200,384</b>

While not used in the financial computations, the following group averages are computed and shown because of their general interest:

Age: 45.1 years.  
Service: 18.5 years.  
Annual Pay: \$109,126

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## **SECTION C**

**FINANCIAL PRINCIPLES, ACTUARIAL VALUATION  
PROCESS, ACTUARIAL COST METHODS,  
ACTUARIAL ASSUMPTIONS AND DEFINITIONS OF  
TECHNICAL TERMS**

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## **BASIC FINANCIAL PRINCIPLES AND OPERATION OF THE RETIREMENT SYSTEM**

***Benefit Promises Made Which Must Be Paid For.*** A retirement program is an orderly means of handing out, keeping track of, and financing pension promises to a group of employees. As each member of the retirement program acquires a unit of service credit the member is, in effect, handed an "IOU" which reads: "The City of Troy Employees Retirement System promises to pay you one unit of retirement benefits, payments in cash commencing when you retire."

The principal related financial question is: When shall the money required to cover the "IOU" be contributed? This year, when the benefit of the member's service is received? Or, some future year when the "IOU" becomes a cash demand?

The Constitution of the State of Michigan is directed to the question:

"Financial benefits arising on account of service rendered in each fiscal year shall be funded during that year and such funding shall not be used for financing unfunded accrued liabilities."

This Retirement System meets this requirement by having as its ***financial objective the establishment and receipt of contributions which will fund the expected benefits over the average future working lifetimes of the remaining active members.***

The accumulation of invested assets ***is a by-product of pre-funding a retirement system, not the objective.*** Investment income is a major contributor to the retirement program, and the amount is directly related to the amount of contributions and investment performance.

If contributions to the retirement program are less than the preceding amount, the difference, *plus investment earnings not realized thereon*, will have to be contributed at some later time (or benefits will have to be reduced) to satisfy the fundamental fiscal equation under which all retirement programs must operate:

$$\mathbf{B = C + I - E}$$

The aggregate amount of **B**enefit payments to any group of members and their beneficiaries cannot exceed the sum of:

The aggregate amount of **C**ontributions received on behalf of the group

... plus ...

**I**nterest earnings on contributions received and not required for immediate cash payments of benefits

... minus ...

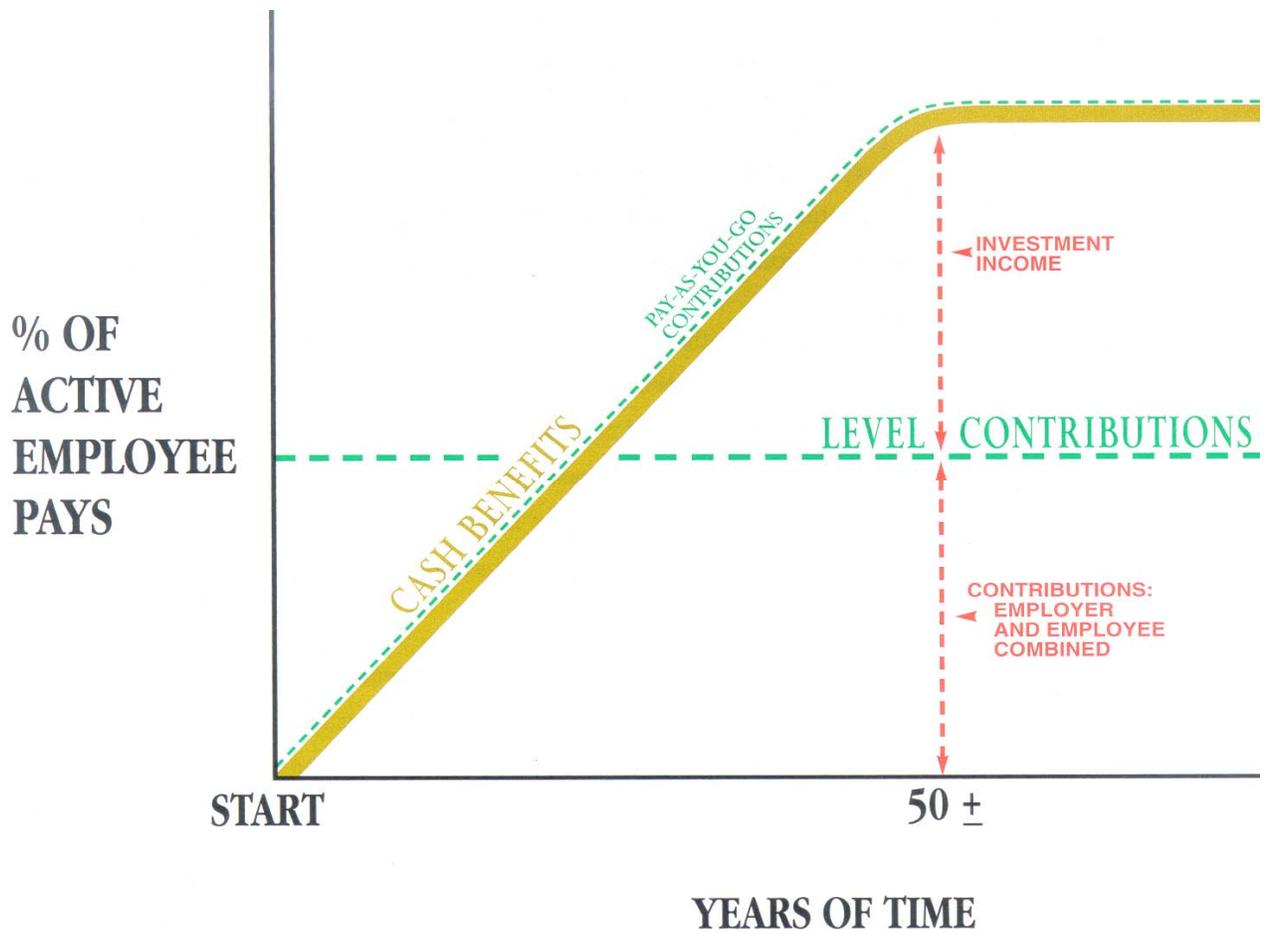
The **E**xpenses of operating the program.

There are retirement programs designed to defer the bulk of contributions far into the future. The present contribution rate for such systems is *artificially low*. The fact that the contribution rate is destined to increase relentlessly to a much higher level is often ignored.

*This method of financing is prohibited in Michigan by the state constitution.*

*Computed Contribution Rate Needed to Finance Benefits.* From a given schedule of benefits and from the data furnished, the actuary calculates the contribution rate *by means of an actuarial valuation* - the technique of assigning monetary values to the risks assumed in operating a retirement program.

Pre-funding retirement benefits results in each generation of taxpayers paying for the benefits earned during that generation. Deferring the bulk of contributions into the future can result in the next generation paying for the benefits earned in the current generation.



**CASH BENEFITS LINE.** This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

**LEVEL CONTRIBUTION LINE.** Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

- Economic Risk Areas
  - Rates of investment return
  - Rates of pay increase
  - Changes in active member group size
- Non-Economic Risk Areas
  - Ages at actual retirement
  - Rates of mortality
  - Rates of withdrawal of active members (turnover)
  - Rates of disability

## THE ACTUARIAL VALUATION PROCESS

The *financing diagram* on the previous page shows the relationship between the two fundamentally different philosophies of paying for retirement benefits: the method where contributions match cash benefit payments (or barely exceed cash benefit payments, as in the Federal Social Security program) which is an *increasing contribution method*; and the *level contribution method* which equalizes contributions between the generations.

---

The *actuarial valuation* is the mathematical process by which the level contribution rate is determined, and the flow of activity constituting the valuation may be summarized as follows:

- A. *Covered Person Data*, furnished by plan administrator.
  - Retired lives now receiving benefits
  - Former employees with vested benefits not yet payable
  - Active employees
- B. + *Asset data* (cash & investments), furnished by plan administrator
- C. + *Assumptions concerning future financial experience in various risk areas*, which assumptions are established by the Board of Trustees after consulting with the actuary
- D. + The *funding method* for employer contributions (the long-term, planned pattern for employer contributions)
- E. + *Mathematically combining the assumptions, the funding method, and the data*
- F. = Determination of:
  - Plan financial position
  - and/or New Employer Contribution Rate

## ACTUARIAL COST METHODS USED FOR THE VALUATION

The funding method used in this actuarial valuation is the *Aggregate Cost Method*. Under this method the Actuarial Present Value of Projected Benefits of the group included in the valuation, less the sum of the Funding Value of Assets and the Actuarial Present Value of Future Member Contributions is allocated over a future scheduled period. This allocation is performed for the group as a whole, not as a sum of individual allocations. The portion of this Actuarial Present Value allocated to a specific year is called the City's Annual Normal Cost. Under this method, actuarial gains (losses) reduce (increase) future Normal Costs.

DRAFT

## ACTUARIAL ASSUMPTIONS IN THE VALUATION PROCESS

The actuary calculates contribution requirements and actuarial present values of a retirement system by applying actuarial assumptions to the benefit provisions and people information of the system, using the actuarial cost methods described on page C-5.

The principal areas of risk which require assumptions about future experience are:

- (i) Long-term rates of investment return to be generated by the assets of the System.
- (ii) Patterns of pay increases to members.
- (iii) Rates of mortality among members, retirees and beneficiaries.
- (iv) Rates of withdrawal of active members.
- (v) Rates of disability among active members.
- (vi) The age patterns of actual retirements.

In making a valuation, the actuary calculates the monetary effect of each assumption for as long as a present covered person survives - - - a period of time which can be as long as a century.

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The employer contribution rate has been computed to remain level from year to year so long as benefits and the basic experience and make-up of members do not change. Examples of favorable experience which would tend to reduce the employer contribution rate are:

- (1) Investment returns in excess of 6.5% per year.
- (2) Member non-vested terminations at a higher rate than outlined on page C-11.
- (3) Mortality among retirees and beneficiaries at a higher rate than indicated by the RP-2000 Combined Healthy Mortality Table.

Examples of unfavorable experience which would tend to increase the employer contribution rate are:

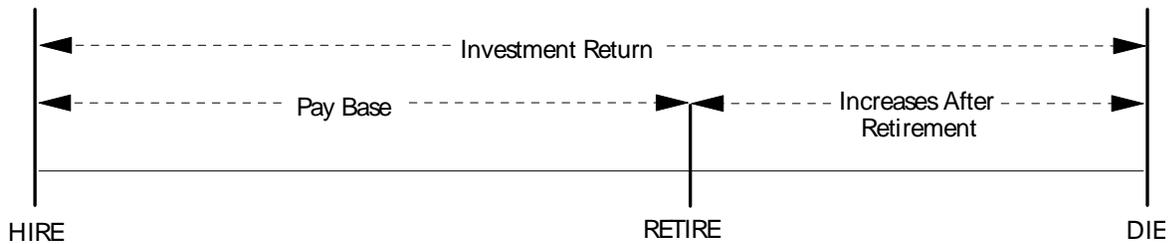
- (1) Pay increases in excess of the rates outlined on page C-9.
- (2) An acceleration in the rate of retirement from the rates outlined on page C-12.

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Actual experience of the system will not coincide exactly with assumed experience, regardless of the choice of the assumptions, the skill of the actuary or the precision of the calculations. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time to time one or more of the assumptions is modified to reflect experience trends (but not random or temporary year to year fluctuations).

## RELATIONSHIP OF ECONOMIC ASSUMPTIONS IN COMPUTING CONTRIBUTIONS TO A RETIREMENT SYSTEM



### **Investment Return**

An increase in this assumption reduces computed contributions. The assumption operates over all parts of an employee's lifetime.

### **Pay Base**

An increase in this assumption increases computed contributions. However, a 1% increase in this assumption, coupled with a 1% increase in Investment Return reduces computed contributions. This is because the Pay Base assumption operates only over an employee's working lifetime, while the Investment Return assumption operates over the employee's entire lifetime, and therefore has a greater effect.

### **Increases After Retirement**

An increase in this element increases computed contributions.

---

If Investment Return, Pay Base, and Increases After Retirement are each increased by equal amounts, computed contributions remain the same (except in plans using Final Average Pay as a factor in computing benefits; the multi-year average used for Final Average Pay causes computed contributions to decrease slightly).

If Investment Return and Pay Base are increased by equal amounts, with no change in Increases After Retirement, computed contributions decrease – sometimes significantly. The decreases represent the projected devaluation of an employee's benefits following retirement.

## ACTUARIAL ASSUMPTIONS USED FOR THE VALUATION

**Investment Return** (net of expenses).

6.5% per year, compounded annually. This rate consists of a real rate of return of 3.0% per year plus a long-term rate of wage inflation of 3.5% per year.

This assumption is used to equate the value of payments due at different points in time and was first used for the December 31, 1995 valuation. The 3.5% wage inflation assumption was first used for the December 31, 2007 valuation. Approximate rates of investment return, for the purpose of comparisons with assumed rates, are shown below:

	Year Ended December 31				
	2011	2010	2009	2008	2007
Recognized Rate of Investment Return of Funding Value of Assets	6.1%	4.9%	2.9%	0.7%	7.2%

The nominal rate of return was computed using the approximate formula  $i = I$  divided by  $1/2 (A + B - I)$ , where  $I$  is actual investment income (after smoothing gains and losses) net of expenses,  $A$  is the beginning of year valuation asset value, and  $B$  is the end of year valuation asset value.

**These rates of return should not be used for measurement of an investment advisor's performance or for comparisons with other systems -- to do so will mislead.**

**Pay Projections.** These assumptions are used to project current pays to those upon which benefits will be based. The assumptions were first used for the December 31, 2007 valuation.

Annual Rate of Pay Increase for Sample Ages			
Sample Ages	Base (Economic)	Merit and Longevity	Total
35	3.5	2.5	6.0
40	3.5	2.2	5.7
45	3.5	1.7	5.2
50	3.5	1.2	4.7
55	3.5	0.7	4.2
60	3.5	0.2	3.7

Changes actually experienced in average pay have been as follows:

Increase in	Year Ended December 31					3-Year Average	5-Year Average
	2011	2010	2009	2008	2007		
Average pay	(0.5)%	(4.9)%	6.2%	2.7%	5.5%	0.2%	1.7%

Note: The changes in average pay shown above are affected by changes in active membership during the year as well as individual annual pay increases of the members.

**Mortality Table.** The RP-2000 Combined Healthy Mortality Table, for males and females. This table was first used for the December 31, 2007 valuation. Sample values follow:

Sample Attained Ages	Single Life Retirement Values			
	Present Value of \$1.00 Monthly for Life		Future Life Expectancy (Years)	
	Men	Women	Men	Women
	50	\$156.42	\$161.11	30.80
55	146.11	152.04	26.18	28.91
60	133.49	140.76	21.74	24.38
65	118.85	127.55	17.61	20.12
70	102.73	112.76	13.88	16.23
75	85.47	96.73	10.57	12.74
80	68.04	79.91	7.75	9.68

This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement.

Disabled and Pre-Retirement Mortality rates are static tables and do not reflect any future mortality improvements.

**Rates of separation from active membership.** The rates do not apply to members eligible to retire and do not include separation on account of death or disability. This assumption measures the probabilities of members remaining in employment.

Sample Ages	Years of Service	Percent Separating Within Next Year	
		General	Public Safety
ALL	0	30.00 %	15.00 %
	1	20.00	10.00
	2	15.00	8.00
	3	10.00	7.00
	4	7.00	6.00
25	5 & Over	6.00	5.00
30		6.00	4.50
35		6.00	3.55
40		6.00	1.45
45		3.50	0.75
50		1.50	0.75
55		1.50	0.75
60		1.50	0.75

The rates were first used for the December 31, 1975 valuation.

**Rates of Disability.** These assumptions represent the probabilities of active members becoming disabled.

Sample Ages	Percent Becoming Disabled Within Next Year	
	Men	Women
20	0.08 %	0.10 %
25	0.08	0.10
30	0.08	0.10
35	0.08	0.10
40	0.20	0.36
45	0.27	0.41
50	0.49	0.57
55	0.89	0.77
60	1.41	1.02
65	1.66	1.23

These rates were first used for the December 31, 1976 valuation.

**Rates of Retirement.** These rates are used to measure the probabilities of an eligible member retiring during the next year.

Retirement Ages	Percent of Active Members Retiring Within Next Year			
	General	Public Safety		
		T.F.S.O.A. & Exempt	T.C.O.A.	T.P.O.A.
43			35	40
44			25	40
45			20	40
46			15	40
47			15	40
48			15	40
49			15	35
50	15	35	15	20
51	10	25	25	15
52	5	20	30	15
53	5	15	100	15
54	5	15		15
55	5	15		15
56	5	15		15
57	5	15		25
58	5	25		100
59	5	30		100
60	5	100		
61	5			
62	30			
63	10			
64	10			
65	100			

T.P.O.A, T.F.S.O.A. and T.C.O.A. members were assumed to be eligible for retirement after 25 years of service, or after attaining age 60 with 10 or more years of service. General AFSCME, General Clerical, and Classified or Exempt members were assumed to be eligible for retirement after attaining age 50 with 27 years of service, or age 55 with 25 years of service; or age 60 with 10 years of service.

These rates were first used for the December 31, 1973 valuation. The rates for Classified, Exempt and Command Officers were first used for the December 31, 1981 valuation. The rates for Non-Classified/Exempt General members were first used for the December 31, 1986 valuation.

**SUMMARY OF ASSUMPTIONS USED  
DECEMBER 31, 2011**

**Pensions in an Inflationary Environment**

**VALUE OF \$1,000/MONTH RETIREMENT BENEFIT  
To an Individual Who Retires at Age 60  
In an Environment of 3.50% Inflation**

<u>Age</u>	<u>Value</u>
60	\$1,000
61	966
62	933
63	901
64	871
65	842
70	708
75	596
80	502
85	423

The life expectancy of a 60 year old male retiree is age 82. The life expectancy for a 60 year old female retiree is age 84. Half of the people will outlive their life expectancy. The effects of even moderate amounts of inflation can be significant for those who live to an advanced age.

**SUMMARY OF ASSUMPTIONS USED**  
**MISCELLANEOUS AND TECHNICAL ASSUMPTIONS**  
**DECEMBER 31, 2011**

**Marriage Assumption.** 90% of males and 90% of females are assumed to be married for purposes of death-in-service benefits.

**Pay Increase Timing.** Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

**Decrement Timing.** Decrements of all types are assumed to occur mid-year.

**Eligibility Testing.** Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

**Benefit Service.** Exact fractional service is used to determine the amount of benefit payable.

**Decrement Relativity.** Decrement rates are used without adjustment for multiple decrement table effects.

**Decrement Operation.** Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.

**Normal Form of Benefit.** The assumed normal form of benefit is the straight life form.

**Incidence of Contributions.** Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.

## DEFINITIONS OF TECHNICAL TERMS

**Accrued Service.** Service credited under the system which was rendered before the date of the actuarial valuation.

**Actuarial Accrued Liability.** The difference between the actuarial present value of system benefits and the actuarial present value of future normal costs. Also referred to as "past service liability".

**Actuarial Assumptions.** Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

**Actuarial Cost Method.** A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future benefits" between future normal costs and actuarial accrued liability. Sometimes referred to as the "actuarial funding method".

**Actuarial Equivalent.** One series of payments is said to be actuarially equivalent to another series of payments if the two series have the same actuarial present value.

**Actuarial Gain (Loss).** The difference between actual unfunded actuarial accrued liabilities and anticipated unfunded actuarial accrued liabilities -- during the period between two valuation dates. It is a measurement of the difference between actual and expected experience.

**Actuarial Present Value.** The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payments.

**Amortization.** Paying off an interest-discounted amount with periodic payments of interest and (generally) principal -- as opposed to paying off with a lump sum payment.

**Aggregate Cost Method** is a method where the Actuarial Present Value of Projected Benefits of the group included in the valuation, less the sum of the Funding Value of Assets and the Actuarial Present Value of Future Member Contributions is allocated over a future scheduled period. This allocation is performed for the group as a whole, not as a sum of individual allocations. The portion of this Actuarial Present Value allocated to a specific year is called the **City's Annual Normal Cost**. Under this method, actuarial gains (losses) reduce (increase) future Normal Costs.

**Credited Projected Benefit.** The portion of a member's projected benefit attributable to service before the valuation date - allocated based on the ratio of accrued service to projected total service and based on anticipated future compensation.

**Experience Gain (loss).** The difference between actual actuarial costs and assumed actuarial costs – during the period between two valuation dates.

**Funding Value of Assets.** Also referred to as actuarial value of assets, smoothed market value of assets, or valuation assets.

Valuation assets recognize assumed investment return fully each year. Differences between actual and assumed investment return are phased in over a closed 5 year period. During periods when investment performance exceeds the assumed rate, valuation assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, valuation assets will tend to be greater than market value. If assumed rates are exactly realized for 4 consecutive years, valuation assets will become equal to market value.

**Normal Cost.** The portion of the actuarial present value of future benefits that is assigned to the current year by the actuarial cost method. Sometimes referred to as "current service cost".

**Unfunded Actuarial Accrued Liabilities.** The difference between actuarial accrued liabilities and valuation assets. Sometimes referred to as "unfunded past service liability" or "unfunded supplemental present value".

Most retirement systems have unfunded actuarial accrued liabilities. They arise each time new benefits are added and each time an actuarial loss occurs.

The existence of unfunded actuarial accrued liabilities is not in itself bad, any more than a mortgage on a house is bad. Unfunded actuarial accrued liabilities do not represent a debt that is payable today. What is important is the ability to amortize the unfunded actuarial accrued liabilities and the trend in their amount (after due allowance for devaluation of the dollar).

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## **SECTION D**

### **CERTAIN DISCLOSURES REQUIRED BY STATEMENTS NO. 25 AND NO. 27 OF THE GOVERNMENTAL ACCOUNTING STANDARDS BOARD**

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**This information is presented in draft form for review by the City's auditor. Please let us know if there are any items that the auditor changes so that we may maintain consistency with the City's financial statements.**

## ACTUARIAL ACCRUED LIABILITY

The actuarial accrued liability is a measure intended to help users assess (i) a pension fund's funded status on a going concern basis, and (ii) progress being made toward accumulating the assets needed to pay benefits as due. The excess of the Actuarial Present Value of Projected Benefits of the group included in an Actuarial Valuation over the Actuarial Value of Assets is allocated **on a level basis over the payroll of the group between the valuation date and assumed exit**. This allocation is performed for the group as a whole, not as a sum of individual allocations. That portion of the Actuarial Present Value allocated to a valuation year is called the Normal Cost. The Actuarial Accrued Liability is equal to the Actuarial Value of Assets. Under this method, the Actuarial Gains (Losses), as they occur, reduce (increase) future Normal Costs.

The preceding methods comply with the financial reporting standards established by the Governmental Accounting Standards Board.

The Present Value of Projected Benefits was determined as part of an actuarial valuation of the plan as of December 31, 2011. Significant actuarial assumptions used in determining the Present Value of Projected Benefits include (a) a rate of return on the investment of present and future assets of 6.5% per year compounded annually, (b) projected salary increases of 3.5% per year compounded annually, (c) additional projected salary increases of 0.0% to 2.5% per year attributable to seniority/merit, and (d) that there will be no cost of living adjustments after retirement.

Actuarial Present Value of All Past and Future Benefits	
Active members	\$ 35,317,190
Retired members and beneficiaries currently receiving benefits	125,716,820
Vested terminated members not yet receiving benefits	<u>1,016,254</u>
Total	162,050,264
Actuarial Value of Assets (market value was \$143,345,352)	145,522,890
Present Value of Future Employee Contributions	<u>1,464,906</u>
Unfunded Present Value of Future Benefits	\$ 15,062,468

During the year ended December 31, 2011, the Plan experienced a net change of \$11,203,091 in the actuarial present value of projected benefits. There were no changes in actuarial assumptions or benefits during the year. The City experienced a large number of retirements due to an Early Retirement Incentive. There was also a method change resetting the phase-in of the unrecognized investment performance as of 12/31/2010.

**REQUIRED SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF FUNDING PROGRESS**  
(\$ AMOUNTS IN THOUSANDS)

<b>Actuarial Valuation Date December 31</b>	<b>Actuarial Value of Assets# (a)</b>	<b>Actuarial Accrued Liability* (AAL) (b)</b>	<b>Unfunded AAL (b)-(a)</b>	<b>Funded Ratio (a)/(b)</b>	<b>Active Member Covered Payroll (c)</b>	<b>Unfunded AAL as a Percentage of Active Member Covered Payroll ((b-a)/c)</b>
1995	\$ 94,730	\$ 85,625	\$ (9,105)	110.6	\$19,040	(47.8) %
1996	106,334	92,845	(13,489)	114.5	20,536	(65.7)
1997	120,718	105,689	(15,029)	114.2	16,133	(93.2)
1998	109,474	90,869	(18,605)	120.5	16,201	(114.8)
1999	118,595	94,661	(23,934)	125.3	15,057	(159.0)
2000	123,956	99,740	(24,216)	124.3	15,441	(156.8)
2001	123,669	97,140	(26,529)	127.3	14,566	(182.1)
2002	117,372	95,527	(21,845)	122.9	13,553	(161.2)
2003	126,738	103,558	(23,180)	122.4	13,053	(177.6)
2004	126,802	109,364	(17,438)	115.9	12,572	(138.7)
2005	128,790	113,260	(15,530)	113.7	12,100	(128.4)
2006	132,168	119,299	(12,869)	110.8	11,472	(112.2)
2007	132,917	123,162	(9,755)	107.9	11,046	(88.3)
2008	128,249	126,138	(2,111)	101.7	10,953	(19.3)
2009	132,465	139,519	7,054	94.9	10,483	67.3
2010	133,400	139,232	5,832	95.8	8,959	65.1
<b>2011</b>	<b>145,523</b>	<b>153,564</b>	<b>8,041</b>	<b>94.8</b>	<b>5,428</b>	<b>148.1</b>

# Smoothed-market value.

\* Reflects entry age normal actuarial cost method to comply with GASB Statement No. 50.

**REQUIRED SUPPLEMENTARY INFORMATION  
SCHEDULE OF EMPLOYER CONTRIBUTIONS**

<b>Fiscal Year Ending June 30</b>	<b>Actuarial Valuation Date December 31</b>	<b>Annual Required Contribution* (In thousands)</b>
1995	1993	\$3,146
1996	1994	3,267
1997	1995	3,367
1998	1996	2,759
1999	1997	2,655
2000	1998	1,087
2001	1999	1,174
2002	2000	1,461
2003	2001	1,605
2004	2002	1,482
2005	2003	117
2006	2004	213
2007	2005	273
2008	2006	273
2009	2007	428
2010	2008	1,361
2011	2009	2,505
<b>2012</b>	<b>2010</b>	<b>N/A</b>

\* Since it was stated to the actuary that the City's practice is to contribute the percent of payroll employer contribution rate shown in the actuarial valuation results, the values shown are the actual contributions reported by the City in the fiscal year. Also, for fiscal years ending in 2004 and earlier, annual required contributions include contributions for retiree health benefits.

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION  
SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

Valuation Date	12/31/2011
Actuarial Cost Method	Aggregate
Asset Valuation Method	5-year smoothed market
Actuarial Assumptions:	
Investment Rate of Return*	6.5%
Projected Salary Increases*	3.5% - 7.5%
*Includes Inflation	3.5%

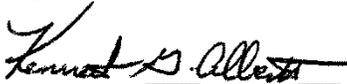
September 7, 2012

Mr. Thomas Darling  
Assistant City Manager  
City of Troy  
500 West Big Beaver Road  
Troy, Michigan 48084

Dear Tom:

Enclosed are 25 copies of the report of the Forty-Eighth Annual Actuarial Valuation of the City of Troy Employees Retirement System.

Respectfully submitted,



Kenneth G. Alberts

KGA:mrh  
Enclosures

cc: Rehman Robson  
Randall Dziubek, GRS  
Brad Armstrong, GRS

**Rehmann Robson**  
**5750 New King – Suite 100**  
**Troy, MI 48098**

DRAFT



September 6, 2012

To: The Board of Trustees

From: Thomas Darling, System Administrator

Subject: Draft RFI for investment consultant

Please find attached a draft copy of the Request For Information (the "RFI") for investment consultant services requested by both the City of Troy Employee Retirement System and the City of Troy Retiree Healthcare System.

The purpose the draft RFI is to allow the Board of Trustees an opportunity to review the scope and content before final issuance scheduled on October 15, 2012.

You may submit any suggested revisions to me directly by email to [t.darling@troymi.gov](mailto:t.darling@troymi.gov) or delivery to the City Manager's office in care of my attention (address in letterhead above).

Revisions received prior to October 3<sup>rd</sup> will be reviewed by the System Administrator and if appropriate, incorporated into a 2<sup>nd</sup> draft RFI to be reviewed at the regular scheduled meeting on October 10, 2012. Any final revisions will be discussed at this meeting and incorporated into the draft document for final issuance on October 15, 2012.

If you have any questions please contact me at 248-524-3330 or by email [t.darling@troymi.gov](mailto:t.darling@troymi.gov).

**REQUEST FOR INFORMATION  
CITY OF TROY EMPLOYEES RETIREMENT SYSTEM**

**RE: THE SELECTION OF AN INVESTMENT CONSULTANT**

**I. OVERVIEW**

The trustees of the City of Troy Employees Retirement System and the City of Troy Retiree Health Care System (“Retirement Boards”) are in the process of reviewing their investment consultant services. The purpose of this Request for Information (RFI) is to gain adequate information from which the Retirement Boards may evaluate such services.

The City of Troy Employees Retirement System had a total market value of approximately One Hundred Seventy Six Million Five Hundred Thousand (\$176,500,000) Dollars as of June 30, 2012. The City of Troy Retiree Health Care System had a total market value of approximately Twenty Eight Million (\$28,000,000) as of the same date.

The City of Troy Employees Retirement System’s portfolio consists of approximately 70% equity, 18% fixed income, 2% alternative assets and 10% cash and is managed by the Board of Trustees.

The City of Troy Retiree Health Care System portfolio consists of mutual funds as directed by the Board of Trustees.

**A. SCOPE OF SERVICES**

The primary role of the Investment Consultant is to provide objective, third-party advice and counsel that will enable the Retirement Boards to make well-informed and well-educated decisions regarding the investment of the Retirement System’s assets. Contractual services for investment consulting will include, but not be limited, to the following:

**1. Development Investment Policy, Objectives and Guidelines**

Assist the Retirement Boards in the development and periodic review of a policy statement that properly reflects the Retirement Boards’ tolerance for risk and that best helps the Retirement Boards’ meet their rate-of-return, funded status and administrative expense objectives.

**2. Asset Allocation Studies**

Conduct an asset allocation study to determine whether or not the current asset allocations falls within the investment objectives and guidelines.

**3. Investment Manager Search**

When deemed necessary, assist the Retirement Boards in their due diligence and search for new investment manager(s) utilizing the appropriate data base.

**4. Development of Investment Manager Performance Standards/Guidelines**

Assist the Retirement Boards in the development and review of performance standards and guidelines with which the Retirement Boards can measure each investment manager's progress. Attend monthly meetings or special meetings as requested by the Retirement Boards.

**5. General Consulting Services**

Provide general consulting services as requested by the Retirement Boards. These might include custodial search and selection, etc.

**6. Performance Measurement & Monitoring**

Monitoring the performance of the investment manager(s) to provide the Retirement Boards with the ability to determine the manager's progress toward achieving the investment objectives.

**7. Monitor compliance with Act 314**

Monitoring the investment of the Retirement Systems' assets with regards to the asset limitations under Public Act 314 of 1965, as amended, with written quarterly reports submitted to the Retirement Boards'.

**8. Assist in Fund Diversification**

Assist the Retirement Boards' in the development of an investment manager structure that provides adequate diversification with respect to the number and types of investment managers to be retained by the Retirement Boards'.

**B. MINIMUM REQUIREMENTS**

1. The Investment Consultant must have a minimum of five (5) years experience in providing qualified retirement plan services.

2. The Investment Consultant must be a registered investment advisor under the Investment Advisors Act of 1940.
3. The Investment Consultant shall acknowledge its responsibilities as a fiduciary under Public Act 314 of 1965, as amended.
4. The firm must provide investment consulting services for a retirement system with assets in excess of \$150 million.
5. If you are affiliating or partnering with a national firm, or are a local office of a national firm, the minimum qualification requirements herein must be satisfied by the individual(s) or entity submitting this proposal.
6. The Investment Consultant must attend monthly meetings, as well as special meetings upon request by the Retirement Boards, at no cost to the Retirement Systems.

### **C. SUBMISSION REQUIREMENTS**

To achieve a uniform review process and obtain the maximum degree of comparability, **it is required** that the submission be organized in the following manner:

1. **Title Page:**  
  
Please indicate the RFI subject, the name of your organization, address, telephone number, name of contact person and date.
2. **Table of Contents:**  
  
Clearly identify the material by section and page number.
3. **Response to Request for Information:**  
  
Please respond to each question in order of sequence in the Request for Information (Section II).
4. **Submission:**  
  
The Retirement Boards requests that an electronic version and eight (8) hard copies be submitted.

Submissions must be presented to the Retirement Boards' in a sealed envelope clearly marked as follows:

Investment Consultant RFI  
City of Troy Employees Retirement System  
Attn: Thomas Darling  
500 W. Big Beaver Road  
Troy, Michigan 48084

Your response to this RFI must be received at the above address by **4:00 p.m. on Friday October 26, 2012**

## II. REQUEST FOR INFORMATION

### A. FIRM INFORMATION

1. Name of your firm, its address, telephone number, and primary contact for the request for information. Give the names of the persons who will be authorized to make presentations for your organization, their titles, addresses, and telephone numbers.
2. Briefly state your organizations understanding of the nature of the work.
3. Is your organization a subsidiary, parent, or affiliate of any other firm? If so, please describe in detail. Also, do any of these affiliates provide any other retirement fund services such as investment management, actuarial work, etc? If you provide more than one service, how do you protect against conflicts of interest? Have you ever included your own firm, subsidiary or sponsored investment vehicle in a manager search you are conducting?
4. What is the number of full time employees in your firm? How many professionals have left your company in the last 3 years.
5. What is the location of your nearest office?
6. Please submit biographical profiles on the individual(s) who will be assigned to our account. Also, where are these individuals located? Who will attend review meetings? Be specific as to experience, performance measurement, manager search, investment policy consulting.
7. What public funds experience do you have? Provide a list of all public pension fund clients and dollars managed under contract to

date. Please provide a minimum of 3 references by name of client, type of client, contact person, address and telephone number.

If you have additional institutional consulting experience please complete the following matrix:

Number of managed accounts by asset size									
Size (Millions)	Corporate Systems		Endowments/Foundations		Public Pension Funds		Other		
	Clients	Amount	Clients	Amount	Clients	Amount	Clients	Amount	
0-99									
100-199									
200-499									
500-999									
Over 1 billion									
<b>Total</b>									

8. If you have lost any clients in the last 3 years, please explain.
9. Please explain size, composition, and source of your performance measurement data base. What indices are used for relative comparisons? If you do not maintain databases, whose database do you use?
10. Why is your firm uniquely qualified to service our account?
11. Disclose formal or informal business relationships with investment managers or other service providers to pension trust funds.
12. Provide as an attachment to your response a complete copy of your most recent form ADV as filed with the SEC.
13. What is your firm's position on Commission Recapture Programs and how would the Board's participation in such programs effect your services?

**B. INVESTMENT POLICY/ASSET ALLOCATION GUIDELINES**

1. Provide an outline of the principle steps you would follow when developing a statement of Investment Policy and Objectives. Does your investment policy and asset allocation analysis fully integrate liabilities with assets? How do you interface with the retirement system's actuary?
2. How many meetings would be required with the Retirement Boards? Who would attend from your firm?

3. Provide an outline of the issues and items that would be covered in a typical policy statement.
4. What is your approach to development of asset allocation guidelines? Please describe this process in detail, including application of major variables (e.g. - risk tolerance, emerging liabilities, etc.).
5. What asset classes are included in your work?
6. What geographic areas of the world do you consider appropriate for pension asset investments?
7. Does your approach include passive strategies such as indexation? If so, please describe.

### **C. INVESTMENT MANAGER SELECTION**

1. What is the procedure and criteria you will follow in the selection of additional investment advisors? And how long might the process take from start to finish?
2. How many firms do you track for manager search purposes? How many managers have made final presentations from the total search data base?
3. Do the consultants assigned to our account actually interface with prospective managers? How much time do they spend in an average week interviewing managers? How many managers a week do our assigned consultants see? Is due diligence performed for all managers offices? If so, please explain your due diligence process. How are consultants apprized with respect to developments about managers?
4. What computer systems do you utilize to help in your manager screening? Which are purchased and which are proprietary?
5. Do you monitor your success in selecting managers? Explain how you measure the level of success of existing managers. Please be specific.
6. What criteria is used to recommend termination of a manager?

7. Do you believe that when a manager is not performing that the consultant who presented this manager also be held accountable? If so, how?
8. Do you have any arrangements with broker-dealers under which you or a related company will benefit if money managers place trades for their clients with such broker-dealers?

#### **D. PERFORMANCE EVALUATION**

1. Specifically describe your performance evaluation system and the philosophy behind it. Is your system propriety or did you obtain it from another supplier?
2. How soon following the end of a reporting period can you have copies of evaluation reports to us? How frequently do you recommend performance evaluation reviews?
3. Provide samples of your standard reports. How much variation is available from your standard report?
4. Describe and illustrate any special indices constructed by your firm.
5. Please describe, in detail, the optimal role that your firm would like to take in manager presentations to the Retirement Boards. What other services are provided, such as custodian search.
6. Please provide 1 year, 3 year, 5 year and 10 year performance results on an annualized basis for a minimum of 5 public employee retirement system clients. If possible, these clients should include all Michigan public employee plans. The performance results should be based upon the period in which you served as the investment consultant and include, at a minimum, total fund performance on an annualized basis as of December 31, 2011, with a comparison against the appropriate policy index. Said performance results may also include a breakdown of fund performance by asset class with the appropriate benchmark index and peer group rankings. Please identify each client by the size of its total plan assets, its asset allocation and the state in which it is located. You may also provide any appropriate commentary explaining over/under performance and your role in the investment process.

#### **E. CUSTODIAL SERVICES**

Does your firm provide custodial services?

## **F. FEES**

1. Please indicate your fee schedule for investment performance analysis services, asset allocation, investment policy, manager search, custodial search, custodial services, etc. If your fee schedule is based on soft dollars, please also quote each service by type on a hard dollar basis.
2. Would you charge separately for travel expenses? If so, explain in detail your policy.
3. What other costs or expenses might we incur with your firm?
4. Do you offer payment by cash on a pro rata quarterly basis billed in arrears?
5. If services are also quoted on a soft dollar basis, what is the cost in cents per share? What is the commission to cash conversion ratio? Also, how do you report to us on commissions received?
6. What percentage of typical equity managers trades do you feel should be used for client directed brokerage purposes?
7. Do you give credit for commissions received above services? What type of recapture is used for those excess commissions?
8. Please provide all complaints received by the Securities and Exchange Commission and the National Association of Securities Dealers. Has your firm been involved in litigation within the last five years or is there any pending litigation arising out of your performance? If your answer is yes, explain fully.
9. Describe the various types of insurance and indemnification provided to protect clients of service(s) proposed, including (Be sure to include specific dollar coverage).
10. Are you willing to acknowledge in writing that you have a fiduciary obligation as an investment adviser to the plan while providing the consulting services we are seeking?

## **OTHER REQUIREMENTS**

1. Pre-Qualification: Inviting a response does not assume a "prequalification" of any proposer.

2. Preparation Cost: The Retirement Boards will not be liable for any costs incurred in preparation of submissions.
3. Certification as to "Request for Information" Content: By submitting information, it is understood and agreed that the responder has fully read and understands the "Request for Information" and has full knowledge of the scope, nature, quantity, and quality of work to be performed. Unless specified to the contrary, submitting information will be interpreted as agreement to all provisions in and requirements of the RFI.
4. Additional Information and Instruction: The responder shall furnish such additional information as the Retirement Boards may reasonably require. The Retirement Boards reserves the right to investigate the qualifications of all responders as it deems appropriate.
5. Rejection: The Retirement Boards reserves the right to reject any or all information, the right in its sole discretion to accept the information which it considers most favorable to the Retirement Boards interest, and the right to waive minor irregularities in the procedures. The Retirement Boards further reserve the right to seek new information when such a procedure is in its best interest.
6. Binding for 90 Days: All information submitted shall be binding for ninety (90) calendar days following the above due date for receipt of information to allow for evaluation.
7. Timeliness: Information received by the Retirement Boards after the time specified for opening will not be considered.
8. Completeness: All information required by the Request for Information shall be supplied to constitute an acceptable submission.

The Retirement Boards appreciates the time and effort you will have expended in responding to this RFI.

Portfolio

Value	Name	Ticker ...	Shares	Cost Basis	Quote/Price	Market Value	Gain/Loss	Gain/Los...	52-Week Ra...	Page 1 P/E ratio
<b>Large Cap Stocks</b>				*		<b>77,200,871.38</b>	*	*		
	3M COMPANY X	MMM	5,000	443,493.23	93.72	468,600.00	25,106.77	5.66	68.63-94.30	15.31
	ABBOTT LABORATORIES X	ABT	23,000	441,421.41	69.705	1,603,215.00	1,161,793.59	263.19	48.96-70.41	22.63
	AFLAC INC X	AFL	25,000	360,357.96	47.5802	1,189,505.00	829,147.04	230.09	32.74-50.33	8.71
	ALCOA INC X	AA	10,000	129,882.87	8.79	87,900.00	-41,982.87	-32.32	7.97-11.66	109.87
	AMERICAN TOWER CORP SBI	AMT	5,000	318,090.87	72.50	362,500.00	44,409.13	13.96	51.05-75.62	63.04
	AMGEN INC X	AMGN	3,100	160,274.49	86.52	268,212.00	107,937.51	67.35	52.85-86.67	18.53
	APPLE INC X	AAPL	6,750	1,939,414.26	666.50	4,498,875.00	2,559,460.74	131.97	354.24-705.07	15.67
	AT&T INC COM X	T	20,000	467,191.29	38.09	761,800.00	294,608.71	63.06	27.41-38.58	51.47
	AUTOMATIC DATA PROCESSING INC. ...	ADP	3,000	114,228.86	58.87	176,610.00	62,381.14	54.61	45.85-59.50	20.88
	BANK OF AMER CORP X	BAC	10,000	168,536.26	9.03	90,300.00	-78,236.26	-46.42	4.92-10.10	9.61
	BARD C R INC X	BCR	5,000	401,462.03	105.53	527,650.00	126,187.97	31.43	80.80-108.31	17.92
	BED BATH & BEYOND INC	BBBY	2,500	134,595.33	62.55	156,375.00	21,779.67	16.18	53.15-75.84	14.61
	BOEING CO X	BA	5,000	364,115.95	69.88	349,400.00	-14,715.95	-4.04	56.90-77.83	12.07
	C S X CORP X	CSX	26,000	394,706.68	20.94	544,440.00	149,733.32	37.94	17.83-23.71	11.76
	CATALYST HEALTH SOLUTIONS INC	CHSI	5,000	118,588.81	89.50 e	447,500.00	328,911.19	277.35	-	
	Caterpillar Inc X	CAT	5,000	359,277.67	85.12	425,600.00	66,322.33	18.46	67.54-116.95	9.52
	CELGENE CORP X	CELG	4,000	225,746.44	78.74	314,960.00	89,213.56	39.52	58.53-80.42	22.89
	CHESAPEAKE ENERGY CORP X	CHK	12,000	431,511.51	19.09	229,080.00	-202,431.51	-46.91	13.32-29.87	6.28
	CHEVRON CORP	CVX	16,900	952,506.84	117.10	1,978,990.00	1,026,483.16	107.77	86.68-118.53	8.72
	CHEVRON CORP NEW	CVX	8,000	284,761.85	117.10	936,800.00	652,038.15	228.98	86.68-118.53	8.72
	CISCO SYS INC	CSCO	20,000	640,103.11	19.07	381,400.00	-258,703.11	-40.42	14.93-21.30	12.80
	CIT GROUP INC X	CIT	9,162	435,487.64	39.17	358,875.54	-76,612.10	-17.59	27.68-43.35	N/E
	CIT GROUP INC NEW COM NEW ...	CIT	3,047	*	39.17	119,350.99	*	*	27.68-43.35	N/E
	CLIFFS NAT RESOURCES INC X	CLF	12,000	406,067.53	38.09	457,080.00	51,012.47	12.56	32.25-78.85	3.81
	COCA COLA CO X	KO	24,000	239,435.81	38.455	922,920.00	683,484.19	285.46	31.67-40.66	20.35
	COLGATE-PALMOLIVE CO X	CL	10,000	421,673.47	108.28	1,082,800.00	661,126.53	156.79	86.19-109.84	21.44
	CORNING INC X	GLW	10,000	99,139.24	13.3834	133,834.00	34,694.76	35.00	10.62-15.75	9.42
	Costco Wholesale Corp	COST	5,000	422,060.72	99.50	497,500.00	75,439.28	17.87	78.41-103.51	27.72
	CUMMINS INC X	CMI	2,000	194,811.59	91.0136	182,027.20	-12,784.39	-6.56	79.53-129.51	9.05
	DANAHER CORP	DHR	12,000	259,890.35	56.47	677,640.00	417,749.65	160.74	39.34-57.15	18.33
	DIRECTV X	DTV	4,920	0.00	52.73	259,431.60	259,431.60	0.00	39.82-55.17	13.66
	DIRECTV COM USD0.01 X	DTV	10,080	0.00	52.73	531,518.40	531,518.40	0.00	39.82-55.17	13.66
	DISCOVERY COMMUNICATIONS ...	DISCK	520	7,491.05	56.59	29,426.80	21,935.75	292.83	33.19-56.92	
	DISCOVERY COMMUNICATIONS 25470...	DISCA	520	8,343.07	60.2199	31,314.35	22,971.28	275.33	35.65-60.48	21.74
	DOMINION RESOURCES INC. 8.375%	DRU	10,000	250,000.00	27.939	279,390.00	29,390.00	11.76	27.71-29.74	
	DOVER CORP X	DOV	9,000	336,204.77	58.20	523,800.00	187,595.23	55.80	43.64-67.20	13.05
	DOW CHEMICAL CO X	DOW	15,000	465,165.62	28.79	431,850.00	-33,315.62	-7.16	20.61-36.08	18.34
	DUKE ENERGY CORP COM USD0.001 (...)	DUK	3,200	0.00	64.975	207,920.00	207,920.00	0.00	57.51-71.13	19.34

## Portfolio

Value	Name	Ticker ...	Shares	Cost Basis	Quote/Price	Market Value	Gain/Loss	Gain/Los...	52-Week Ra...	Page 2 P/E ratio
	DUKE ENERGY CORP NEW	X DUK	8,841	0.00	64.975	574,443.97	574,443.97	0.00	57.51-71.13	19.34
	E M C CORP MASS	X EMC	2,000	27,723.00	27.1499	54,299.80	26,576.80	95.87	19.99-30.00	22.44
	EBAY INC	EBAY	5,000	138,547.45	48.51	242,550.00	104,002.55	75.07	27.41-50.65	17.02
	EMC CORP MASS	X EMC	17,000	209,532.02	27.1499	461,548.30	252,016.28	120.28	19.99-30.00	22.44
	EMERSON ELECTRIC CO	X EMR	4,000	161,023.63	48.435	193,740.00	32,716.37	20.32	39.50-53.78	14.86
	EXPRESS SCRIPTS HLDG CO COM	ESRX	4,050	0.00	64.75	262,237.50	262,237.50	0.00	34.47-65.39	32.05
	EXXON MOBIL CORP	XOM	4,000	4,724.61	91.613	366,452.00	361,727.39	7,656.24	69.21-92.57	9.63
	FACTSET RESEARCH SYSTEMS INC	FDS	1,500	26,270.06	94.841	142,261.50	115,991.44	441.53	85.38-109.20	23.02
	FACTSET RESH SYSTEMS INC	FDS	2,000	62,713.03	94.841	189,682.00	126,968.97	202.46	85.38-109.20	23.02
	FASTENAL CO	FAST	8,000	159,461.13	44.50	356,000.00	196,538.87	123.25	31.24-55.05	32.96
	FIDELITY NATIONAL INFORMATION SE...	FIS	1,000	6,493.26	31.02	31,020.00	24,526.74	377.73	22.53-34.85	18.03
	FISERV INC	X FISV	8,000	317,883.66	74.1797	593,437.60	275,553.94	86.68	49.35-74.42	18.14
	FLUOR CORP NEW	X FLR	5,000	266,815.15	56.82	284,100.00	17,284.85	6.48	44.16-64.67	16.10
	FORD MTR CO DEL COM	X F	10,000	167,073.80	9.9301	99,301.00	-67,772.80	-40.56	8.82-13.05	2.29
	FRANKLIN RES INC	BEN	3,000	303,299.19	126.05	378,150.00	74,850.81	24.68	87.71-128.20	14.78
	FREEMONT-MCMORAN COPPER	& ... FCX	20,000	344,809.31	39.60	792,000.00	447,190.69	129.69	28.85-48.96	11.93
	GENERAL DYNAMICS CRP	X GD	4,000	292,920.00	66.71	266,840.00	-26,080.00	-8.90	54.72-74.54	9.74
	GENERAL ELECTRIC CO	X GE	16,000	47,910.68	22.915	366,640.00	318,729.32	665.26	14.02-23.00	19.26
	GENERAL MOTORS CO	GM	2,037	228,544.97	23.99	48,867.63	-179,677.34	-78.62	18.72-27.68	8.54
	GENERAL MOTORS COMPANY	GM	6,997	394,100.00	23.99	167,858.03	-226,241.97	-57.41	18.72-27.68	8.54
	GENL ELECTRIC CO	X GE	10,000	357,402.80	22.915	229,150.00	-128,252.80	-35.88	14.02-23.00	19.26
	GENL MILLS INC	X GIS	5,000	190,632.65	40.12	200,600.00	9,967.35	5.23	36.75-41.06	15.67
	GENUINE PARTS CO	X GPC	5,000	316,434.00	61.301	306,505.00	-9,929.00	-3.14	48.53-66.50	15.96
	GILEAD SCIENCES INC	GILD	10,000	323,035.51	70.01	700,100.00	377,064.49	116.73	34.45-70.39	21.09
	GOOGLE INC CL A	X GOOG	3,000	1,640,952.14	758.64	2,275,920.00	634,967.86	38.70	480.60-765.99	22.49
	GREEN MTN COFFEE	ROASTE... GMCR	13,000	182,521.65	23.6327	307,225.10	124,703.45	68.32	17.11-96.77	10.84
	HALLIBURTON CO HOLDING CO FRML...	HAL	10,000	90,007.95*	33.41	334,100.00	*	*	26.28-40.43	9.86
	HARTFORD FINCL SERVICES	GRO... HIG	5,000	337,662.20	19.77	98,850.00	-238,812.20	-70.73	14.56-23.29	58.15
	HARTFORD FINL SVCS GROUP INC	... HIG	5,200	52,076.40	19.77	102,804.00	50,727.60	97.41	14.56-23.29	58.15
	HEALTH CARE REIT INC	HCN	7,000	184,525.41	59.51	416,570.00	232,044.59	125.75	43.65-62.80	92.98
	HESS CORP	X HES	2,000	112,204.73	52.93	105,860.00	-6,344.73	-5.65	39.67-67.86	14.31
	HONEYWELL INTL INC	X HON	14,172	720,472.29	61.50	871,578.00	151,105.71	20.97	41.22-62.00	23.03
	INTEL CORP	X INTC	8,000	170,016.84	22.91	183,280.00	13,263.16	7.80	20.40-29.27	9.71
	INTUITIVE SURGICAL INC	ISRG	5,000	516,251.62	504.81	2,524,050.00	2,007,798.38	388.92	341.21-594.89	35.88
	JOHNSON CTLS INC	JCI	6,000	52,142.82	27.583	165,498.00	113,355.18	217.39	23.37-35.95	10.95
	JPMORGAN CHASE & CO	X JPM	5,000	113,523.16	40.885	204,425.00	90,901.84	80.07	27.85-46.49	9.19
	KRAFT FOODS INC CLASS A	X KFT	5,000	154,406.59	27.92	139,600.00	-14,806.59	-9.59	27.39-42.54	13.75
	LIBERTY MEDIA CORP	X LMCA	183	5,030.35	106.94	19,570.02	14,539.67	289.04	58.51-107.75	19.99
	LKQ CORP	LKQX	6,000	33,844.21	18.69	112,140.00	78,295.79	231.34	11.13-20.02	22.25

Portfolio

Value	Name	Ticker ...	Shares	Cost Basis	Quote/Price	Market Value	Gain/Loss	Gain/Los...	52-Week Ra...	Page 3 P/E ratio
	MCDONALDS CORP	X MCD	21,100	988,961.81	91.10	1,922,210.00	933,248.19	94.37	83.74-102.22	17.09
	MCKESSON CORP	MCK	5,000	393,168.79	87.23	436,150.00	42,981.21	10.93	66.61-97.23	14.44
	MERCK & CO INC NEW COM	X MRK	16,147	0.00	45.72	738,240.84	738,240.84	0.00	30.54-45.87	20.97
	METTLER-TOLEDO INTL	MTD	5,000	386,376.45	173.25	866,250.00	479,873.55	124.20	126.10-190.02	20.29
	MICROSOFT CORP	X MSFT	22,546	805,324.31	29.97	675,703.62	-129,620.69	-16.10	24.26-32.95	14.99
	MORGAN STANLEY	X MS	8,340	101,081.02	16.935	141,237.90	40,156.88	39.73	11.58-21.19	14.11
	NORFOLK SOUTHERN CORP	X NSC	8,000	449,719.06	65.45	523,600.00	73,880.94	16.43	57.57-78.50	11.21
	O REILLY AUTOMOTIVE INC NEW COM	ORLY	4,000	94,174.23	83.85	335,400.00	241,225.77	256.15	63.75-107.13	19.32
	OMNICOM GROUP	X OMC	2,000	79,140.93	52.20	104,400.00	25,259.07	31.92	35.34-54.76	15.26
	OMNICOM GROUP INC	X OMC	8,000	274,205.25	52.20	417,600.00	143,394.75	52.29	35.34-54.76	15.26
	ONEOK INC NEW	OKE	30,000	403,242.36	48.59	1,457,700.00	1,054,457.64	261.49	31.21-49.36	29.99
	ORACLE CORP	X ORCL	10,000	131,772.17	31.935	319,350.00	187,577.83	142.35	24.91-33.81	15.89
	ORACLE CORPORATION	X ORCL	15,000	169,473.85	31.935	479,025.00	309,551.15	182.65	24.91-33.81	15.89
	PANERA BREAD CO CL A	PNRA	10,000	677,619.70	172.83	1,728,300.00	1,050,680.30	155.05	100.52-174.92	33.36
	PEABODY ENERGY CORP	BTU	5,000	378,864.58	22.05	110,250.00	-268,614.58	-70.90	18.78-47.81	6.35
	PEPSICO INC	X PEP	35,000	1,224,345.80	70.88	2,480,800.00	1,256,454.20	102.62	58.50-73.66	18.70
	PERRIGO CO	X PRGO	8,000	290,240.24	118.97	951,760.00	661,519.76	227.92	87.01-119.51	28.46
	PERRIGO COMPANY	X PRGO	5,000	497,217.21	118.97	594,850.00	97,632.79	19.64	87.01-119.51	28.46
	PFIZER INC	X PFE	7,000	63,480.04	25.295	177,065.00	113,584.96	178.93	17.05-25.41	21.62
	PNC FINANCIAL SCVS GRP 6.125% FIX...	PNUFL	5,000	125,000.00	27.92	139,600.00	14,600.00	11.68	24.29-100.25	
	PRAXAIR INC	PX	6,000	249,987.48	104.58	627,480.00	377,492.52	151.00	89.75-116.93	18.74
	PROCTER & GAMBLE CO	X PG	22,625	224,489.81	69.10	1,563,387.50	1,338,897.69	596.42	59.07-69.97	22.15
	PROGRESS ENERGY INC	PGN	8,000	346,785.36	57.40 e	459,200.00	112,414.64	32.42	-	
	PVH CORPORATION COM USD1.00	... PVH	5,000	370,614.45	94.92	474,600.00	103,985.55	28.06	53.51-95.98	18.58
	RAYMOND JAMES FIN INC 6.90%	RJD	1,200	30,000.00	27.61	33,132.00	3,132.00	10.44	25.20-27.88	
	REINSURANCE GROUP OF AMERICA	RGA	5,000	230,659.06	57.44	287,200.00	56,540.94	24.51	44.67-60.69	7.45
	REPUBLIC SERVICES INC CL A	RSG	5,000	136,304.01	27.6501	138,250.50	1,946.49	1.43	25.15-31.32	15.28
	RESMED INC	X RMD	5,000	157,157.54	40.99	204,950.00	47,792.46	30.41	23.37-41.24	23.97
	ROPER INDS INC	ROP	14,000	443,423.89	109.53	1,533,420.00	1,089,996.11	245.81	64.90-111.40	23.86
	SCANA CORP NEW	X SCG	5,000	174,228.40	48.61	243,050.00	68,821.60	39.50	38.49-50.34	16.20
	SCHLUMBERGER LIMITED COM STK U...	SLB	24,000	417,120.56	71.73	1,721,520.00	1,304,399.44	312.72	54.79-80.78	
	SIGMA ALDRICH CORP	X SIAL	8,000	46,954.88	72.66	581,280.00	534,325.12	1,137.95	58.60-74.94	19.48
	SMUCKER J M CO NEW	SJM	4,000	241,085.93	87.25	349,000.00	107,914.07	44.76	70.00-87.73	21.33
	SPECTRA ENERGY CORP	SE	5,200	104,737.84	29.69	154,388.00	49,650.16	47.40	23.17-32.27	17.99
	SPECTRA ENERGY CORP COM	SE	13,800	0.00	29.69	409,722.00	409,722.00	0.00	23.17-32.27	17.99
	ST JUDE MEDICAL INC	X STJ	5,000	167,454.45	42.96	214,800.00	47,345.55	28.27	32.13-44.80	16.98
	STAPLES INC	SPLS	5,000	110,520.10	11.45	57,250.00	-53,270.10	-48.20	10.57-16.93	8.61
	Starbucks Corp	X SBUX	5,000	278,067.05	49.685	248,425.00	-29,642.05	-10.66	35.12-62.00	27.60
	STRYKER CORP	SYK	20,000	95,643.89	54.41	1,088,200.00	992,556.11	1,037.76	44.55-57.15	14.95

## Portfolio

Value	Name	Ticker ...	Shares	Cost Basis	Quote/Price	Market Value	Gain/Loss	Gain/Los...	52-Week Ra...	Page 4 P/E ratio
	SYSCO CORP	SY	20,000	250,669.51	31.52	630,400.00	379,730.49	151.49	25.09-31.90	16.59
	T ROWE PRICE GROUP INC	TROW	5,000	251,288.72	62.83	314,150.00	62,861.28	25.02	44.68-66.00	21.15
	TAIWAN SEMICONDUCTOR MANUFAC...	TSM	5,000	55,263.45	15.95	79,750.00	24,486.55	44.31	11.26-16.15	
	TARGET CORP X	TGT	5,000	257,157.95	63.42	317,100.00	59,942.05	23.31	47.25-65.80	14.55
	TEVA PHARMACEUTICAL INDS LTD ADR	TEVA	2,000	68,320.60	41.03	82,060.00	13,739.40	20.11	35.16-46.65	14.76
	TEVA PHARMACEUTICALS IND LTD ...	TEVA	9,000	275,754.65	41.03	369,270.00	93,515.35	33.91	35.16-46.65	14.76
	TEXTRON INC X	TXT	8,000	0.00	25.64	205,120.00	205,120.00	0.00	16.37-29.18	18.31
	THE GOLDMAN SACHS GROUP INC PF...	GSF	10,000	250,000.00	26.41	264,100.00	14,100.00	5.64	23.75-26.52	
	TOTAL S.A SPONS ADR	TOT	5,000	396,646.85	49.99	249,950.00	-146,696.85	-36.98	41.75-57.06	
	TRACTOR SUPPLY COMPANY	TSCO	4,000	81,375.30	97.29	389,160.00	307,784.70	378.23	58.49-101.28	27.48
	TRANSOCEAN LTD SWITZERLAND NEW	RIG	20,050	1,146,568.24	45.3899	910,067.49	-236,500.75	-20.63	38.21-60.09	
	UNION PACIFIC CORP X	UNP	5,000	232,104.24	120.0175	600,087.50	367,983.26	158.54	77.73-129.27	15.55
	UNITED PARCEL SERVICE CL B X	UPS	10,000	618,507.38	73.035	730,350.00	111,842.62	18.08	61.27-81.79	18.03
	UNITED TECHNOLOGIES CORP X	UTX	17,000	572,110.61	78.39	1,332,630.00	760,519.39	132.93	66.87-87.50	13.70
	URBAN OUTFITTERS INC	URBN	5,000	77,065.25	37.13	185,650.00	108,584.75	140.90	21.47-40.65	29.47
	US BANCORP 6.00% SERIES G	UBDLP	5,000	*	28.50	142,500.00	*	*	24.47-28.60	
	VARIAN MEDICAL SYSTEMS INC ...	VAR	5,000	176,963.75	61.35	306,750.00	129,786.25	73.34	48.72-71.95	16.85
	VERIZON COMMUNICATIONS X	VZ	15,420	373,967.92	45.91	707,932.20	333,964.28	89.30	35.32-48.77	45.46
	VISA INC CL A X	V	4,000	377,027.06	136.74	546,960.00	169,932.94	45.07	81.71-137.90	100.54
	VISA INC COM CL A X	V	5,000	394,366.14	136.74	683,700.00	289,333.86	73.37	81.71-137.90	100.54
	WALGREEN CO X	WAG	5,000	196,513.07	36.67	183,350.00	-13,163.07	-6.70	28.53-37.34	12.64
	WALGREEN CO NEW X	WAG	10,000	339,582.10	36.67	366,700.00	27,117.90	7.99	28.53-37.34	12.64
	WALMART STORES INC X	WMT	10,000	538,761.04	74.61	746,100.00	207,338.96	38.48	51.63-75.24	15.71
	WALT DISNEY CO	DIS	10,000	152,049.30	52.44	524,400.00	372,350.70	244.89	28.19-53.40	17.31
	WASTE MANAGEMENT INC	WM	10,000	162,506.96	31.725	317,250.00	154,743.04	95.22	29.77-36.35	16.02
	WATERS CORP	WAT	10,000	739,217.91	84.85	848,500.00	109,282.09	14.78	70.88-94.47	18.13
	WATSCO INC X	WSO	5,000	306,014.09	78.0507	390,253.50	84,239.41	27.53	50.45-80.10	27.88
	WEATHERFORD INTERNATIONAL LIMI...	WFT	5,000	97,405.56	12.09	60,450.00	-36,955.56	-37.94	10.85-18.33	
	WELLS FARGO & CO NEW X	WFC	5,000	27,288.16	35.45	177,250.00	149,961.84	549.55	22.61-36.60	11.74
	YUM! BRANDS INC X	YUM	27,800	279,636.04	66.71	1,854,538.00	1,574,901.96	563.20	47.15-74.44	20.85
	<b>Small Cap Stocks</b>			<b>6,784,374.96</b>		<b>7,417,517.50</b>	<b>633,142.54</b>	<b>9.33</b>		
	ALMOST FAMILY INC	AFAM	5,000	200,124.66	21.25	106,250.00	-93,874.66	-46.91	12.50-26.87	10.12
	AMERICAN SCIENCE & ENGINE...	ASEI	3,000	259,595.93	65.60	196,800.00	-62,795.93	-24.19	46.30-78.99	29.68
	ARES CAPITAL CORP COM STK USD0...	ARCC	5,000	79,468.68	17.04	85,200.00	5,731.32	7.21	12.76-17.68	10.14
	BIO-REFERENCE LABS INC NEW	BRLI	5,000	110,670.39	30.71	153,550.00	42,879.61	38.75	11.41-31.00	21.78
	BRADY CORP CL A X	BRC	4,000	64,506.67	29.48	117,920.00	53,413.33	82.80	24.72-34.94	N/E
	BRUKER CORP X	BRKR	5,000	78,022.84	13.26	66,300.00	-11,722.84	-15.02	9.91-17.10	26.52
	CLEAN ENERGY FUELS CORP X	CLNE	5,000	101,643.37	13.30	66,500.00	-35,143.37	-34.58	9.02-24.75	N/E

## Portfolio

Value	Name	Ticker ...	Shares	Cost Basis	Quote/Price	Market Value	Gain/Loss	Gain/Los...	52-Week Ra...	Page 5 P/E ratio	
	COGNEX CORP	X	CGNX	5,000	169,104.43	34.98	174,900.00	5,795.57	3.43	24.91-44.80	21.33
	COPANO ENERGY LLC COM	UNIT...	CPNO	10,000	298,179.02	33.026	330,260.00	32,080.98	10.76	24.24-38.03	N/E
	CULLEN FROST BANKERS INC	X	CFR	5,000	240,511.85	57.56	287,800.00	47,288.15	19.66	43.57-61.11	15.47
	DARLING INTL INC		DAR	10,000	66,595.12	18.2484	182,484.00	115,888.88	174.02	11.24-18.82	15.87
	DECKERS OUTDOOR CORP		DECK	10,000	120,928.51	38.09	380,900.00	259,971.49	214.98	34.59-118.90	8.58
	DIAMOND FOODS INC		DMND	5,000	391,490.70	19.4299	97,149.50	-294,341.20	-75.18	16.15-79.75	8.75
	DIEBOLD INC		DBD	5,000	228,607.62	33.29	166,450.00	-62,157.62	-27.19	25.75-42.93	11.06
	Flowers Foods Inc		FLO	7,500	127,229.34	19.405	145,537.50	18,308.16	14.39	18.32-24.20	21.80
	GAMESTOP CORP NEW	(HOLDI...	GME	1,000	24,452.66	21.49	21,490.00	-2,962.66	-12.12	15.32-26.66	9.18
	GAMESTOP CORP NEW CL A		GME	5,000	126,433.80	21.49	107,450.00	-18,983.80	-15.01	15.32-26.66	9.18
	GFI GROUP INC		GFIG	5,000	38,710.45	3.195	15,975.00	-22,735.45	-58.73	2.20-4.94	N/E
	GLOBAL PAYMENTS INC	X	GPN	8,000	349,288.46	42.64	341,120.00	-8,168.46	-2.34	38.26-53.93	17.99
	HILLENBRAND INC	X	HI	5,000	97,745.28	18.70	93,500.00	-4,245.28	-4.34	16.75-24.18	11.27
	IDEX CORP		IEX	10,500	215,255.25	41.51	435,855.00	220,599.75	102.48	29.29-44.14	17.15
	IDEX CORPORATION		IEX	2,250	29,507.37	41.51	93,397.50	63,890.13	216.52	29.29-44.14	17.15
	INTERNATIONAL GAME TECHNOLOGY...		IGT	20,000	469,182.13	13.35	267,000.00	-202,182.13	-43.09	10.92-18.17	18.04
	JOS A BANK CLOTHIERS INC		JOSB	10,000	316,007.42	48.71	487,100.00	171,092.58	54.14	39.54-56.43	14.00
	LENDER PROCESSING SVCS INC COM...		LPS	500	5,045.66	28.05	14,025.00	8,979.34	177.96	12.91-29.96	38.42
	LENNOX INTL INC	X	LII	5,000	210,437.94	48.09	240,450.00	30,012.06	14.26	24.52-51.30	25.58
	MANITOWOC INC		MTW	10,000	150,593.40	13.4513	134,513.00	-16,080.40	-10.68	5.76-16.97	21.35
	MEDNAX INC		MD	5,000	361,070.85	73.95	369,750.00	8,679.15	2.40	59.24-76.67	16.15
	NEUSTAR INC CL A		NSR	5,000	132,566.45	40.95	204,750.00	72,183.55	54.45	24.78-41.00	22.26
	PENGROWTH ENERGY CORP		PGH	10,000	203,637.46	6.491	64,910.00	-138,727.46	-68.12	5.79-11.17	
	PERKINELMER INC		PKI	5,000	140,405.95	29.93	149,650.00	9,244.05	6.58	17.45-30.92	1,496.50
	PORTFOLIO RECOVERY ASSOC	INC	PRAA	5,000	240,392.99	102.78	513,900.00	273,507.01	113.77	58.29-106.47	16.16
	QUALITY SYSTEMS INC		QSII	5,000	36,690.60	17.72	88,600.00	51,909.40	141.48	15.04-49.22	14.52
	SODASTREAM INTL LTD ORD		SODA	5,000	359,589.59	36.18	180,900.00	-178,689.59	-49.69	27.60-48.13	
	SOUTH JERSEY IND INC		SJI	5,000	187,934.87	52.9701	264,850.50	76,915.63	40.93	46.52-57.99	16.55
	SYNNEX CORP		SNX	5,000	179,012.80	32.5522	162,761.00	-16,251.80	-9.08	24.66-44.25	7.73
	SYNTEL INC		SYNT	5,000	167,334.95	64.40	322,000.00	154,665.05	92.43	42.24-64.94	17.41
	TESORO LOGISTICS LP		TLLP	100	2,100.00	43.195	4,319.50	2,219.50	105.69	22.41-47.24	26.34
	THORATEC CORP NEW		THOR	5,000	148,140.05	35.46	177,300.00	29,159.95	19.68	27.84-38.07	26.46
	TRUE RELIGION APPAREL INC		TRLG	5,000	56,159.45	20.79	103,950.00	47,790.55	85.10	20.22-37.82	11.18
	<b>International Stocks</b>				<b>2,311,689.37</b>		<b>2,355,426.00</b>	<b>43,736.63</b>	<b>1.89</b>		
	BAIDU INC SPONS ADS REPR 0.10 OR...		BIDU	5,000	590,629.90	111.815	559,075.00	-31,554.90	-5.34	99.71-154.15	112.94
	Bank of Nova Scotia	X	BNS	5,000	267,163.70	54.81	274,050.00	6,886.30	2.58	45.79-57.57	15.66
	BP PLC SPONS ADR		BP	5,000	276,165.38	42.44	212,200.00	-63,965.38	-23.16	33.62-48.34	6.32
	DIAGEO PLC NEW GB SPON	ADR	DEO	2,000	128,034.73	114.25	228,500.00	100,465.27	78.47	73.23-115.00	

Portfolio

Value	Name	Ticker ...	Shares	Cost Basis	Quote/Price	Market Value	Gain/Loss	Gain/Los...	52-Week Ra...	P/E ratio	
	GENPACT LTD	X	G	5,000	79,583.73	16.98	84,900.00	5,316.27	6.68	13.37-19.52	
	RENESOLA LTD		SOL	5,000	117,135.18	1.44	7,200.00	-109,935.18	-93.85	1.16-3.38	
	RESEARCH IN MOTION LTD-CAD		RIMM	5,000	327,864.86	8.175	40,875.00	-286,989.86	-87.53	6.22-24.74	1.48
	RIO TINTO PLC SPON ADR	X	RIO	10,000	107,399.61	47.2701	472,701.00	365,301.39	340.13	40.50-63.18	
	SHIRE PLC ADR		SHPGY	5,000	351,945.37	87.98	439,900.00	87,954.63	24.99	80.09-108.79	N/E
	TYCO INTERNATIONAL LTD(SWITZERL...		TYC	1,250	65,766.91	28.82	36,025.00	-29,741.91	-45.22	27.82-58.12	12.75
<b>Cash</b>				<b>5,395,910.24</b>			<b>5,395,910.24</b>	<b>0.00</b>	<b>0.0</b>		
Cash				5,395,910.24			5,395,910.24				
<b>Other</b>				<b>687,500.00</b>			<b>784,905.43</b>	<b>97,405.43</b>	<b>14.17</b>		
	ENTERGY MISSISSIPPI INC. 6.20%		EFM	10,000	250,000.00	28.11	281,100.00	31,100.00	12.44	26.43-30.00	
	ENTERGY TEXAS INC 7.875%		EDT	10,000	250,000.00	29.45	294,500.00	44,500.00	17.80	27.63-30.95	
	MOTORS LIQ CO GUC TR UBI		MTLQU	511	0.00	17.63	9,008.93	9,008.93	0.00	10.00-18.05	
	QWEST CORPORATION 7.00%		CTX	7,500	187,500.00	26.7062	200,296.50	12,796.50	6.82	24.81-27.35	
<b>Unclassified</b>					*		<b>20,530,049.10</b>	*	*		
<b>Asset Mixture</b>					*		<b>17,613,330.05</b>	*	*		
	AMER FUNDS CAPITAL WORLD ...		CWGIX	19,972.622	704,136.81	36.34	725,805.08	21,668.27	3.08	29.54-36.88	
	BLACKROCK ALL-CAP ENERGY & RES...		BACAX	47,921.441	*	13.15 e	630,166.95	*	*	10.92-15.32	
	CLEARBRIDGE ENERGY MLP OPPORT...		EMO	10,527.5771	3,418.08*	21.5688	227,067.20	*	*	15.00-23.93	
	COLUMBIA SELIGMAN COMMU...		SLMCX	57,895.635	1,725,626.68	44.10	2,553,197.50	827,570.82	47.96	37.96-50.45	
	EATON VANCE FLOATING RATE ...		EVBLX	112,871.61	1,059,948.71	9.40	1,060,993.13	1,044.42	0.10	8.88-9.40	
	INVESCO EUROPEAN GROWT...		AEDAX	25,760.924	979,857.77	32.98	849,595.27	-130,262.50	-13.29	26.92-33.42	
	LORD ABBET FLOATING RATE FUN...		LFRA	346,078.854	3,244,395.33	9.37	3,242,758.86	-1,636.47	-0.05	8.72-9.38	
	MAINSTAY CONVERTIBLE CLASS A		MCOAX	79,362.963	10,843.65*	15.06	1,195,206.22	*	*	13.43-15.51	
	MFS DIVERSIFIED INCOME FUND ...		DIFAX	143,533.173	1,559,717.32	11.52	1,653,502.15	93,784.83	6.01	9.77-11.66	
	PIMCO TOTAL RETURN FUND CLA...		PTTAX	201,818.551	2,168,073.37	11.61	2,343,113.38	175,040.01	8.07	10.69-11.61	
	PIMCO UNCONSTRAINED BOND FU...		PUBAX	185,068.421	2,061,275.34	11.66	2,157,897.79	96,622.45	4.69	10.84-11.66	
	THORNBURG INTERNATIONAL VAL...		TGVAX	37,119.913	1,017,662.80	26.24	974,026.52	-43,636.28	-4.29	22.45-27.22	
Totals:				A=avg cost 76,749,415.5...			131,298,009.70	54,548,594.1...	71.07*		

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Jeffrey A. Johnson  
Daniel O. McNamara, CFP, CIFA

October 3, 2012

Thomas Darling, CPA  
Director of Financial Services  
City of Troy Retirement Plan Board  
500 W Big Beaver Rd  
Troy, MI 48084

Dear Tom,

We are currently recommending two purchases:

<u>Purchase</u>	<u>Price</u>	<u>Dividend</u>	<u>Yield</u>
Noble Energy Inc. (NBL)	\$93.88	\$.88	.94%
Westlake Chemical Corp. (WLK)	\$73.74	\$.75	1.00%

Please find the attached summary of our rationale for the above recommendations. Feel free to call if you have any questions or would like additional information.

Thank you for the opportunity to provide you with our financial services.

Sincerely,



Robert W. Sibbs, CPA, CFP  
Principal



Daniel McNamara, MBA, CFP  
Financial Advisor

Encls. (2)

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Jeffrey A. Johnson  
Daniel O. McNamara, CFP, CTFA

October 3, 2012

## Investment Recommendation

### Purchase

Noble Energy Inc. (NBL)

Price \$93.88

Annual Dividend \$.88

Yield .94%

Noble Energy, founded in 1932 and based in Houston, is an independent energy company engaged in worldwide exploration and production of oil and natural gas. The company's project inventory is comprised of a large number of low risk on shore developments and an extensive number of high impact offshore exploration opportunities.

Noble's domestic business is focused in three core areas: the Denver-Julesburg (DJ) basin in Colorado, the Marcellus Shale of Pennsylvania and West Virginia and the deep water Gulf of Mexico (GOM). The company holds over 860,000 net acres in the DJ Basin. Over 85 horizontal wells were drilled in 2011 and the company expects to drill twice that many in 2012. In the Marcellus Shale, Noble created a joint venture with Consol Energy in 2011. The joint venture holds over 620,000 net acres where Noble is concentrating in the wet gas areas. New directional drilling and fracturing techniques have substantially improved the economics of drilling in these low risk areas. The company has six actively producing offshore locations in the deep water GOM. The company is appraising its largest GOM discovery at Gunflint.

Noble's international business is concentrated in West Africa and the Eastern Mediterranean. The company's project at Aseng, offshore Equatorial Guinea, began producing at 50 thousand barrels per day in November 2011 and production at the Alen liquefied natural gas (LNG) is projected to begin in 2013.

In the Eastern Mediterranean, in the last several years the company estimates the gross discovery of 35 trillion cubic feet (Tcf) of natural gas.

In 2011 the company produced 222 thousand barrels of oil equivalents per day (MBoe/d). In July, Noble estimated that 2012 production would be between 242 and 250 MBoe/d. The company currently estimates that production will increase to 490 MBoe/d by 2016, a 17% annual growth rate.

The current consensus of analysts' earnings estimates for 2012 and 2013 are \$4.81 and \$6.48, respectively. We feel that the market has discounted the value of Noble's stock due to concerns about political risks surrounding its Eastern Mediterranean reserves. However, the announcement of a partner to assist with the development may alleviate these fears and serve as a catalyst for the stock price. We recommend purchase.

# Noble Energy Inc

**S&P Recommendation** BUY ★ ★ ★ ★

**Price**  
\$92.71 (as of Sep 28, 2012)

**12-Mo. Target Price**  
\$103.00

**Investment Style**  
Large-Cap Growth

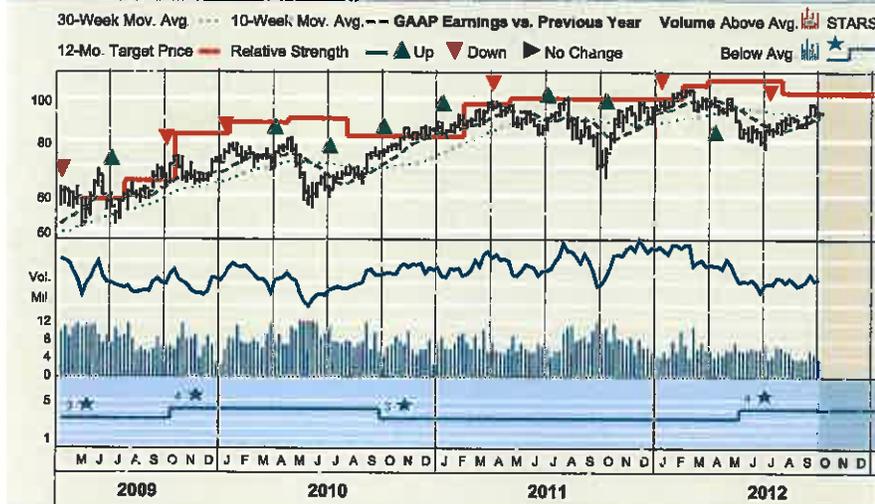
**GICS Sector** Energy  
**Sub-Industry** Oil & Gas Exploration & Production

**Summary** This independent exploration and production company is engaged in the exploration, development and production of oil and natural gas worldwide.

**Key Stock Statistics** (Source: S&P, Vickers, Company reports)

52-Wk Range	\$105.46-65.91	S&P Oper. EPS 2012 E	4.53	Market Capitalization(B)	\$16.486	Beta	1.03
Trailing 12-Month EPS	\$3.89	S&P Oper. EPS 2013 E	6.39	Yield (%)	0.95	S&P 3-Yr. Proj. EPS CAGR(%)	15
Trailing 12-Month P/E	23.8	P/E on S&P Oper. EPS 2012 E	20.5	Dividend Rate/Share	\$0.88	S&P Credit Rating	BBB
\$10K Invested 5 Yrs Ago	\$13,903	Common Shares Outstg. (M)	177.8	Institutional Ownership (%)	92		

**Price Performance**



**Qualitative Risk Assessment**

LOW MEDIUM HIGH

Our risk assessment reflects our view of NBL's participation in the cyclical, competitive and capital-intensive exploration and production sector of the oil and gas industry, and its international operations, which carry heightened political and operational risk.

**Quantitative Evaluations**

**S&P Quality Ranking** B+

D C B- B B+ A- A A+

**Relative Strength Rank** MODERATE

66  
LOWEST = 1 HIGHEST = 90

**Revenue/Earnings Data**

	1Q	2Q	3Q	4Q	Year
<b>Revenue (Million \$)</b>					
2012	1,112	966.0	--	--	--
2011	899.0	954.0	924.0	985.0	3,763
2010	733.0	751.0	755.0	783.0	3,022
2009	441.0	491.0	621.0	760.0	2,313
2008	1,025	1,205	1,098	573.0	3,901
2007	742.6	794.2	813.8	921.5	3,272
<b>Earnings Per Share (\$)</b>					
2012	1.47	1.49	E0.86	E1.15	E4.53
2011	0.08	1.61	2.39	-1.67	2.54
2010	1.34	1.10	1.31	0.29	4.10
2009	-1.09	-0.33	0.61	0.05	-0.75
2008	1.20	-0.84	5.37	1.72	7.58
2007	1.22	1.21	1.28	1.73	5.45

Fiscal year ended Dec. 31. Next earnings report expected: Late October. EPS Estimates based on S&P Operating Earnings; historical GAAP earnings are as reported.

**Dividend Data** (Data as of 09/28/12; Payment Data as of 08/06/12)

Amount (\$)	Date Decl.	Ex-Div. Date	Stk. of Record	Payment Date
0.220	10/25	11/03	11/07	11/21/11
0.220	01/24	02/02	02/06	02/21/12
0.220	04/23	05/03	05/07	05/21/12
0.220	07/24	08/02	08/06	08/20/12

Dividends have been paid since 1975. Source: Company reports.

Analysis prepared by Equity Analyst **Michael Kay** on Aug 13, 2012, when the stock traded at \$90.23.

**Highlights**

- Production rose 3% in 2011, driven by Equatorial Guinea, where the Aseng project was placed into service early, and the Mari-B natural gas field in Israel. NBL expects to spend \$1.25 billion in the DJ Basin in 2012, running five rigs at Wattenberg and one targeting Niobrara. NBL's 2012 production guidance is 236-244 MBOE/d, adjusted for asset sales, up 10%-15% organically, on a major ramp at Aseng, and a boost in U.S. oil, reflecting the addition of Galapagos in the deepwater GOM (10 MBOE/d) in the second quarter and development in the DJ Basin. We see gas volumes down 9% in 2012 as Marcellus (JV with CONSOL Energy) drilling is targeting liquids, and projected lower volumes at Mari-B as NBL manages production to bridge supplies to 2013, when Tamar is expected to start up.
- NBL plans 2012 capex of \$3.5 billion, with 51% onshore U.S., 7% deepwater GOM, 22% Mediterranean, 14% West Africa, and 6% other. It plans to drill 173 DJ Basin wells, 99 Marcellus JV wells and a one rig exploration program planned at Gunflint in the GOM.
- We see adjusted EPS of \$4.53 in 2012, down from \$5.21 in 2011 on lower prices, and \$6.39 in 2013, on production gains and leaner costs.

**Investment Rationale/Risk**

- Solid exploration success with an attractive inventory of prospects and large development projects characterizes NBL's portfolio, in our view. We view NBL as geographically balanced, with financial flexibility, holding \$700 million in cash with low relative debt levels. NBL appears poised to translate exploration success into development in core areas. We see U.S. gas drilling projects, shelved in favor of high impact international targets and domestic onshore oil. We see catalysts in the DJ Basin and future production growth in Israel and Equatorial Guinea. NBL's discoveries at Gunflint and Galapagos in the GOM, Tamar and Leviathan in Israel, and Aseng and Alen in EG are expected to add over 80,000 BOE/d by 2013. NBL has entered three asset sale agreements, with proceeds of over \$1 billion thus far in 2012.
- Risks to our recommendation and target price include declines in oil and gas prices and production, and exploration and geopolitical risks.
- Our 12-month target price of \$103 is based on our proved NAV estimate (\$112), a target enterprise value to 2013 EBITDA forecast of 5X, and a target multiple of 6X our 2013 cash flow per share forecast.

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## Noble Energy Inc

## Business Summary August 13, 2012

**CORPORATE OVERVIEW.** Noble Energy is a large independent exploration and production concern, engaged in exploration, development, production and marketing of oil and natural gas. In the U.S., NBL operates primarily in the Rocky Mountains, Mid-Continent region and deepwater Gulf of Mexico. International operations are focused on offshore Israel and West Africa.

As of December 31, 2011, NBL had estimated proved reserves of 7.26 Bcfe, of which 69% was natural gas and 42% proved developed. This compares with estimated proved reserves of 6.55 Bcfe, 67% natural gas and 48% proved developed, at the end of 2010, an 11% rise, mostly reflecting bookings at Tamar, Marcellus and DJ Basin. The U.S. accounted for 47% of proved reserves. NBL believes substantial multi-year growth in reserves began in 2010 as it books reserves from discoveries at Tamar (Israel), Belinda (EG), Gunflint (GOM), Galapagos (GOM), Aseng (EG) and Diega/Carmen (EG).

**CORPORATE STRATEGY.** We believe NBL's geographical diversification has reduced dependence on any one operating region and that NBL has successfully executed a niche strategy by agreeing to undertake nontraditional construction projects with various host countries to obtain leases in potentially lucrative hydrocarbon fields. NBL aims to achieve growth in earnings and cash flow through exploration success and the development of a high-quality portfolio of assets that is balanced between U.S. and international projects. Exploration success, along with additional capex, in U.S. and international locations such as Equatorial Guinea and Israel, have resulted in solid growth in the past several years. In addition, occasional strategic acquisitions such as Patina in 2005, combined with the sale of non-core assets, have allowed NBL to enhance its asset portfolio. The result is a company with assets and capabilities in major U.S. basins coupled with a significant portfolio of international properties.

NBL's 2011 drilling capex totaled about \$3 billion, within budget, up from \$2 billion in 2010, and excluded about \$1.4 billion in acquisitions, most notably the JV with CONSOL Energy (CNX 33, Hold). About 58% was spent in the U.S. Major project development capex was \$2.5 billion, with the majority directed toward development of Galapagos in the deepwater GOM, Aseng offshore Equatorial Guinea, and Tamar offshore Israel. About \$593 million was spent on exploration. For 2012, NBL has set capex at \$3.5 billion, with 51% to onshore U.S., 7% to deepwater GOM, 22% to the Mediterranean, 14% to West Africa, and 6% other. About 16% is slated for exploration. It plans to drill 173 DJ Basin wells, 99 Marcellus JV wells and a 1 rig exploration program planned at Gunflint in the GOM.

**IMPACT OF MAJOR DEVELOPMENTS.** In July 2012, NBL announced that it had signed a definitive agreement to sell certain oil and natural gas properties in the Permian Basin to Sheridan Holding Company II, LLC, a privately held entity, for \$320 million. The transaction is expected to close in August 2012. The properties include NBL's interest in about 250 producing wells on approximately 11,000 net acres. Net daily production was over 1,500 BOE per day.

In July 2012, NBL announced it had signed a definitive agreement to sell certain oil and natural gas properties in western Oklahoma and the Texas Panhandle to Unit Corporation for \$617 million. The transaction is expected to close in September 2012. The properties include NBL's interest in about 900 producing wells on approximately 84,000 net acres. Net daily production was nearly 60 MMcfe per day.

In May 2012, NBL announced it had entered into a definitive agreement with Maersk Oil North Sea Limited for the sale of certain assets located in the U.K. North Sea, which produced approximately 4,400 BOE per day, net to NBL, in the first quarter of 2012. NBL will receive \$127 million, with closing expected by the end of the third quarter of 2012.

On August 18, 2011, NBL entered a definitive agreement to create a joint venture partnership with CONSOL Energy, Inc. for the development of their Marcellus Shale properties. Under the arrangement, NBL purchased a 50% interest in 663,350 net acres for \$1.07 billion, payable in three equal annual installments. In addition, NBL will fund \$2.13 billion of CONSOL's future drilling and completion costs. This funding obligation is expected to extend over an eight-year period and is limited to one-third of CONSOL's drilling and completion costs with an annual cap of \$400 million and a suspension of disproportionate funding at natural gas prices below \$4/MMBtu.

**FINANCIAL TRENDS.** We believe exploration success over the past 2-3 years has positioned NBL for accelerating production and reserve growth, and higher returns, from the deepwater GOM, Israel and Equatorial Guinea. Most new projects are higher-return U.S. oil related and international natural gas projects. Production for 2011 was 222 MBOE/d, up 3% from 2010. We are forecasting 11% organic production growth for both 2012 and 2013, and NBL's 2012 guidance is 236-244 MBOE/d, taking into account asset sales, up 10%-15% organically.

NBL maintains a solid balance sheet, in our view, with a long-term debt to total capitalization ratio of about 33% and \$700 million cash on hand as of June 30, 2012. We see capex surpassing cash flow by about \$1.3 billion in 2012. We expect NBL to fund the gap via asset sales or debt.

## Corporate Information

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## Officers

<b>Chmn &amp; CEO</b> C.D. Davidson	<b>SVP, Secy &amp; General Counsel</b> A.J. Johnson
<b>Pres &amp; COO</b> D.L. Stover	<b>Chief Admin Officer</b> A.L. Robison
<b>SVP &amp; CFO</b> K.M. Fisher	

## Board Members

J. L. Berenson	M. A. Cawley
E. F. Cox	C. D. Davidson
T. J. Edelman	E. P. Grubman
K. L. Hedrick	S. D. Urban
W. T. Van Kleeft	

**Domicile**  
Delaware

**Founded**  
1969

**Employees**  
1,876

**Stockholders**  
674

# Noble Energy Inc

## Quantitative Evaluations

<b>S&amp;P Fair Value Rank</b>	2	1	2	3	4	5
		LOWEST				HIGHEST

Based on S&P's proprietary quantitative model, stocks are ranked from most overvalued (1) to most undervalued (5).

**Fair Value Calculation** **\$84.50** Analysis of the stock's current worth, based on S&P's proprietary quantitative model suggests that NBL is slightly overvalued by \$8.11 or 8.7%.

**Investability Quotient Percentile**  **LOWEST = 1** **HIGHEST = 100**  
NBL scored lower than 66% of all companies for which an S&P Report is available.

**Volatility**  **LOW** **AVERAGE** **HIGH**

**Technical Evaluation** **BULLISH** Since September, 2012, the technical indicators for NBL have been BULLISH.

**Insider Activity**  **UNFAVORABLE** **NEUTRAL** **FAVORABLE**

## Expanded Ratio Analysis

	2011	2010	2009	2008
Price/Sales	4.49	5.04	5.33	2.22
Price/EBITDA	NA	NA	NA	3.77
Price/Pretax Income	23.63	14.78	NM	4.20
P/E Ratio	37.30	21.02	NM	6.42
Avg. Diluted Shares Outstg (M)	179.0	177.0	173.0	176.0

Figures based on calendar year-end price

## Key Growth Rates and Averages

Past Growth Rate (%)	1 Year	3 Years	5 Years	9 Years
Sales	24.52	1.61	1.36	13.45
Net Income	-37.52	NM	-70.33	-58.45

Ratio Analysis (Annual Avg.)	2011	2010	2009	2008
Net Margin (%)	12.04	10.12	18.76	19.84
% LT Debt to Capitalization	36.08	27.69	25.08	28.99
Return on Equity (%)	6.42	5.16	18.29	19.02

## Company Financials Fiscal Year Ended Dec. 31

Per Share Data (\$)	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Tangible Book Value	37.13	35.04	31.11	31.95	23.51	19.35	12.68	12.37	9.38	8.80
Cash Flow	12.16	9.90	7.45	12.17	9.65	7.27	6.61	5.26	3.47	2.62
Earnings	2.54	4.10	-0.75	7.58	5.45	3.79	4.12	2.70	0.78	0.16
S&P Core Earnings	2.42	3.70	-0.84	7.52	5.42	3.05	4.08	2.58	0.70	0.08
Dividends	0.80	0.72	0.72	0.66	0.44	0.28	0.15	0.10	0.09	0.08
Payout Ratio	32%	18%	NM	9%	8%	7%	4%	4%	11%	52%
Prices:High	101.27	89.00	74.09	105.11	81.71	54.64	48.75	32.30	23.00	20.38
Prices:Low	65.91	56.23	40.33	30.89	46.04	36.14	27.78	21.33	16.19	13.33
P/E Ratio:High	40	22	NM	14	15	14	12	12	29	NM
P/E Ratio:Low	26	14	NM	4	8	9	7	8	21	NM

Income Statement Analysis (Million \$)	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Revenue	3,763	3,022	2,313	3,901	3,272	2,940	2,187	1,351	1,011	1,444
Operating Income	NA	NA	NA	2,295	2,029	2,019	1,423	884	539	376
Depreciation, Depletion and Amortization	1,724	1,027	1,420	791	728	623	391	309	309	285
Interest Expense	65.0	72.0	84.0	69.0	130	117	87.5	48.2	47.0	47.7
Pretax Income	715	1,031	-264	2,061	1,368	1,096	969	516	142	42.6
Effective Tax Rate	36.6%	29.7%	50.4%	34.5%	31.0%	38.1%	33.3%	39.2%	36.5%	58.6%
Net Income	453	725	-131	1,350	944	678	646	314	89.9	17.7
S&P Core Earnings	431	654	-147	1,340	938	548	640	305	81.0	8.88

Balance Sheet & Other Financial Data (Million \$)	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Cash	1,455	1,081	1,014	1,140	660	153	110	180	62.4	15.4
Current Assets	2,418	1,838	1,678	2,158	1,569	1,069	1,176	734	478	310
Total Assets	16,444	13,282	11,807	12,384	10,831	9,589	8,878	3,443	2,843	2,730
Current Liabilities	2,268	1,422	990	1,174	1,636	1,184	1,240	665	655	472
Long Term Debt	4,100	1,977	2,008	2,241	1,851	1,801	2,031	880	776	977
Common Equity	7,265	6,848	6,157	6,309	4,809	4,114	3,231	1,460	1,074	1,009
Total Capital	11,365	8,825	8,165	10,724	8,644	7,673	5,262	2,524	2,013	2,188
Capital Expenditures	2,594	1,885	1,268	1,971	1,415	1,357	786	661	527	596
Cash Flow	2,177	1,752	1,289	2,141	1,672	1,301	1,036	623	399	303
Current Ratio	1.1	1.3	1.7	1.8	1.0	0.9	0.9	1.1	0.7	0.7
% Long Term Debt of Capitalization	36.1	22.4	24.6	20.9	21.4	23.5	38.6	34.9	38.6	44.6
% Return on Assets	3.1	5.8	NM	11.6	9.2	7.3	10.5	10.0	3.2	0.7
% Return on Equity	6.4	11.2	NM	24.3	51.7	18.8	27.5	24.8	8.6	1.7

Data as orig reptd.; bef. results of disc opers/spec. items. Per share data adj. for stk. divs.; EPS diluted. E-Estimated. NA-Not Available. NM-Not Meaningful. NR-Not Ranked. UR-Under Review.

## Noble Energy Inc

### Sub-Industry Outlook

Our fundamental outlook for the oil & gas exploration & production (E&P) sub-industry for the next 12 months is positive. Despite the volatility of crude oil prices, we think the group is generating strong production growth, especially onshore U.S., driving cash flow growth over the next several years. After 27% EPS growth in 2011, we see a 25% decline in 2012 on lower oil and gas prices, with a strong rebound in 2013.

U.S. E&Ps, heavily weighted toward gas, have switched to focus on unconventional oil and natural gas liquids. The activity remains focused onshore at new basins with high liquids content. Heavy M&A activity has persisted in 2012, as integrated and national oil companies seek growth avenues. U.S. onshore remains one of the most active areas in the world.

The U.S. Energy Information Administration (EIA) estimates that global oil demand grew by 1.19 million barrels per day (MMb/d) in 2011, to 88.26 MMb/d, and, as of September 2012, sees growth of 0.83 MMb/d in 2012, to 89.09 MMb/d, and 1.01 MMb/d in 2013, to 90.1 MMb/d. The EIA estimates global oil supply fell by 0.05 MMb/d in 2011, to 87.09 MMb/d, and forecasts supply growth of 1.91 MMb/d in 2012 and 1.52 MMb/d in 2013. On disruptions in Libya, OPEC spare production capacity is believed to have fallen to 2.2 MMb/d in the second quarter, according to the EIA, which sees OPEC production at 31.04 MMb/d.

After dipping below \$80 per barrel in May, on tempered economic and demand projections, oil prices have been on the rise on hopes that the EU, China and the U.S. will provide additional economic stimulus. Sanctions on Iran and threats to block the Strait of Hormuz, and possible Israeli action against Iran, have also aided prices. As of August 2012,

using S&P estimates based on data from IHS Global Insight, West Texas Intermediate (WTI) spot oil prices were projected to average \$91.96 per barrel in 2012 and \$89.50 in 2013, versus \$95.08 in 2011. The price differential for WTI versus Brent has widened to over \$20 per barrel.

For U.S. natural gas, we look for low prices to depress drilling activity in 2012. According to the EIA, natural gas working inventories ended the week of September 14, 2012, at about 3.5 trillion cubic feet (Tcf), up 10% from a year earlier. As of August, based on data from IHS Global Insight, S&P expects Henry Hub spot prices to average \$2.55 per million Btu in 2012 and \$3.83 in 2013, versus \$4.00 in 2011.

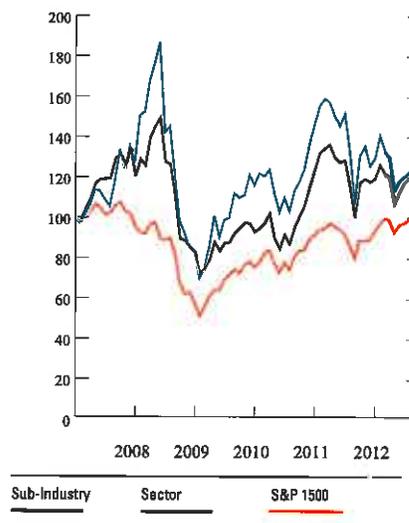
Year to date to September 21, the S&P Oil & Gas Exploration & Production Index was up 2.9%, versus a 15.9% gain in the S&P 1500 Composite Index. We think the underperformance reflected volatile oil and gas prices and demand fears.

--Michael Kay

### Stock Performance

**GICS Sector: Energy**  
**Sub-Industry: Oil & Gas Exploration & Production**

Based on S&P 1500 Indexes  
Month-end Price Performance as of 09/28/12



**NOTE:** All Sector & Sub-Industry information is based on the Global Industry Classification Standard (GICS)

### Sub-Industry : Oil & Gas Exploration & Production Peer Group\*: Exploration & Production - Medium

Peer Group	Stock Symbol	Stk.Mkt. Cap. (Mil. \$)	Recent Stock Price(\$)	52 Week High/Low(\$)	Beta	Yield (%)	P/E Ratio	Fair Value Calc.(\$)	Quality Ranking	S&P IQ %ile	Return on Revenue (%)	LTD to Cap (%)
Noble Energy	NBL	16,486	92.71	105.46/65.91	1.03	0.9	24	84.60	B+	34	12.7	36.1
Chesapeake Energy	CHK	12,119	18.87	29.87/13.32	1.27	1.9	6	19.20	B-	20	13.5	37.4
Newfield Exploration	NFX	4,228	31.32	47.40/25.01	1.42	Nil	7	36.60	B-	24	21.8	43.4
Nexen Inc	NXY	13,292	25.34	26.21/13.63	1.54	0.8	16	NA	A-	37	6.2	34.4
Pioneer Natural Resources	PXD	12,845	104.40	119.19/58.63	1.86	0.1	34	83.00	B	33	20.0	30.9
Santos Ltd ADR	SSLTY	11,125	11.65	15.52/10.01	1.25	2.3	20	NA	NR	12	29.7	25.3
Ultra Petroleum	UPL	3,361	21.98	36.72/17.62	0.86	Nil	NM	NA	B	14	38.2	46.1

NA-Not Available NM-Not Meaningful NR-Not Rated. \*For Peer Groups with more than 15 companies or stocks, selection of issues is based on market capitalization.

**S&P Analyst Research Notes and other Company News****July 26, 2012**

11:29 am ET ... S&P MAINTAINS BUY RECOMMENDATION ON SHARES OF NOBLE ENERGY (NBL 86.09\*\*\*\*): On Q2 miss and updated price forecasts, we cut our '12 EPS estimate \$2.36 to \$4.53 and '13's by \$2.61 to \$6.39. We cut our target price \$7 to \$103, on our net asset value estimate of \$112 and above-peer metrics (5X price to '13 cash flow estimates; 5.5X EV-to-'13 EBITDA estimate), on solid U.S. liquids production growth we see, major project startups and favorable production mix. Q2 EPS, before items, of \$0.77 vs. \$1.44, is \$0.65 below our estimate on higher exploration costs and prices (up 165% from Q1). NBL has entered three asset sale agreements, with proceeds seen over \$1B. /M. Kay

**May 24, 2012**

05:30 am ET ... S&P UPGRADES RECOMMENDATION ON SHARES OF NOBLE ENERGY TO BUY FROM HOLD (NBL 84.71\*\*\*\*): We see oil production rising 45% (total up 11%) in '12, starting several years of expected double-digit production and cash flow growth. NBL has a deep prospect inventory and we note strength in exploration (Israel, West Africa, GOM). After outperforming peers in early '12, shares are down 10% YTD, vs. peers down 9%. NBL trades at a 25% discount to our NAV and DCF-based target price of \$110. This is in line with similar sized E&Ps, but NBL's near/mid term growth prospects, geographic scope, margin expansion and superior cash flow generation warrant a premium, in our view. /M. Kay

**April 26, 2012**

11:09 am ET ... S&P MAINTAINS HOLD RECOMMENDATION ON SHARES OF NOBLE ENERGY (NBL 97.92\*\*\*\*): Q1 adj. EPS of \$1.75, vs. \$1.35, is \$0.38 above our forecast on better oil production from a ramp offshore Equatorial Guinea (EG), and higher price realizations. NBL's liquids mix improved to 46% (40% in Q4), providing upside to our estimates. NBL sees lower Q2 volume on maintenance in EG and lower gas volumes in Israel, but keeps '12 growth targets of 10%-15%. Galapagos in the GOM is expected online in Q2. On Q1, we lift our '12 EPS view \$0.34 to \$6.89, but keep '13's at \$9.00. We are positive on liquids mix, production growth, and cash flow prospects, but hold on valuation. /M. Kay

**March 21, 2012**

01:51 pm ET ... S&P MAINTAINS HOLD RECOMMENDATION ON SHARES OF NOBLE ENERGY (NBL 98.56\*\*\*\*): We expect NBL to ramp U.S. oil production over 30% in '12, and NBL sees a 17% production CAGR through '16. Onshore U.S. is being fueled by development at DJ Basin, where it runs 5 rigs at Wattenberg and 1 rig targeting Niobrara. It runs 2-3 rigs at Marcellus, targeting liquids. In the GOM, Galapagos is expected to add 10 MBOE/day in early '12, and it is appraising Gunflint. Aseng in Equatorial Guinea was online ahead of schedule and under budget. We lift our '12 EPS estimate \$0.65 to \$6.55 and set '13's at \$9.00. On updated DCF and NAV, we lift our target price by \$3 to \$110. /M. Kay

**February 14, 2012**

Certain Officers. Dustin A. Hatley, 45, was appointed as Vice President, Controller and Chief Accounting Officer of Noble Energy, Inc. on February 1, 2012. He previously served as the Company's Corporate Controller from February 2011 and served in other progressive positions of responsibility after joining the Company in March 2005. Prior to joining the Company, Mr. Hatley served as the Chief Accountant and Financial Reporting Manager for ENI Petroleum Co., Inc. in Houston, Texas.

**February 9, 2012**

01:46 pm ET ... S&P MAINTAINS HOLD RECOMMENDATION ON SHARES OF NOBLE ENERGY (NBL 104.35\*\*\*\*): Q4 adj. EPS of \$1.18, vs. \$1.04, beats our view by \$0.02 on oil prices. We see first production at Aseng in Equatorial Guinea in Q4 and the start-up at South Raton and Galapagos in H1 '12 fueling production growth of 12% this year, above prior forecast. NBL sees '12 capex of \$3.5B, up from \$3B, with 51% allocated to onshore U.S., most notably at the Wattenberg field in Niobrara, and Marcellus Shale. Significant development is expected at Tamar in Israel and exploration will focus on Africa and Gunflint in the GOM. We see a funding gap in '12 being bridged via cash or credit. /M. Kay

**February 6, 2012**

10:08 am ET ... S&P MAINTAINS HOLD RECOMMENDATION ON SHARES OF NOBLE ENERGY (NBL 102.70\*\*\*\*): We see a 5% decline in '11 U.S. gas volumes, offset by gas growth from Israel and Equatorial Guinea (EG). Oil volumes have been hurt by North Sea maintenance, but U.S. oil is being aided by drilling at

Wattenberg. Lower seasonal demand in Israel may impede Q4, but NBL expects start-ups in EG and the GOM. We keep our Q4 and '11 EPS estimates of \$1.16 and \$5.19, but on updated price forecasts, we cut our '12 EPS forecast \$0.44 to \$5.90. On DCF and above-peer metrics, we lift our target price by \$7 to \$107. Liquids are near 40% of volume, and exposure to weak U.S. gas is under 30%. /M. Kay

**December 28, 2011**

NBL announces a natural gas discovery at the Cyprus Block 12 prospect, offshore the Republic of Cyprus. Notes Cyprus A-1 well encountered approximately 310 feet of net natural gas pay in multiple high-quality Miocene sand intervals.

**October 20, 2011**

10:51 am ET ... S&P MAINTAINS HOLD RECOMMENDATION ON SHARES OF NOBLE ENERGY (NBL 86.49\*\*\*\*): Q3 adjusted EPS of \$1.24, vs. \$1.27, beats our view by \$0.18 and the Capital IQ consensus by \$0.23, as production of 224 MBOE/day was 3% above target. Added gas in Africa and Israel and higher global crude prices boosted results. Exploration costs were below forecast. NBL ups production guidance on Marcellus JV and DJ Basin growth, and adjusting realized price forecasts, we up our '11 EPS estimate \$0.35 to \$5.19 and '12's by \$0.59 to \$6.34. We keep our \$100 target price on DCF, NAV and peer metrics, but note shares are at high-end of historical and 5-year EV/EBITDA multiples. /M. Kay

**October 19, 2011**

03:09 pm ET ... S&P MAINTAINS HOLD RECOMMENDATION ON SHARES OF NOBLE ENERGY (NBL 83.32\*\*\*\*): In previewing tomorrow's Q3 report, we expect production of 215 MBOE per day for '11, up 4.5% organically, and 224 MBOE/d in '12, up 4%. Crude oil projects in West Africa and natural gas in Israel are fueling growth rates. We see rising exploration costs in H2 '11 and service costs remaining high in several regions, notably the U.S. On lower oil prices, we cut our Q3 EPS estimate to \$1.09 from \$1.32. This compares to \$1.27 last year and the Capital IQ consensus of \$1.01. We cut our '11 estimate \$0.74 to \$4.84 and '12's by \$0.85 to \$5.75, on oil prices. Will update after AM call. /M. Kay

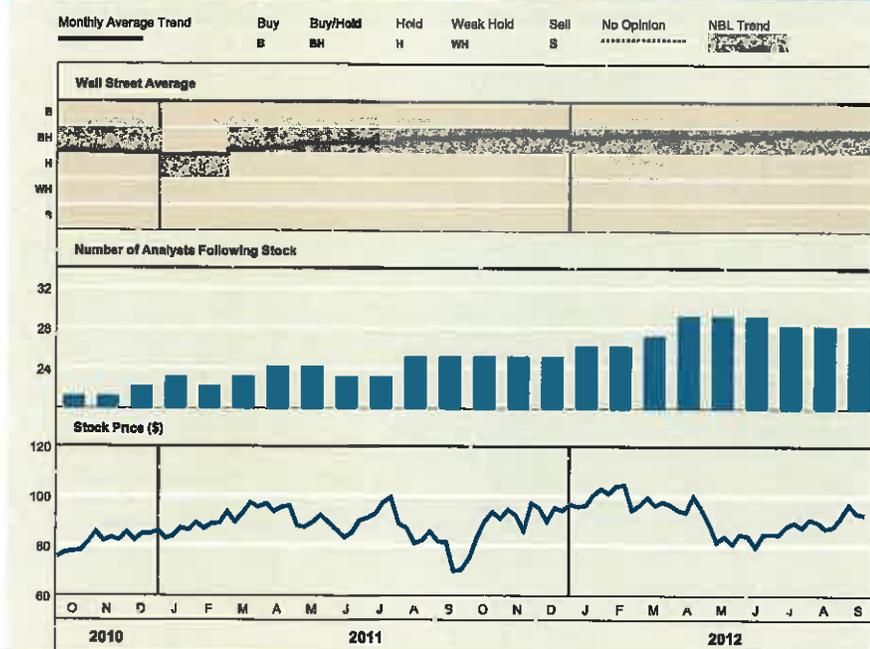
**August 18, 2011**

DOWN 4.48 to 83.46... CONSOL ENERGY says it has entered into an agreement with NBL for the joint development of CNX's 663,350 Marcellus Shale acres in Pennsylvania and West Virginia for aggregate payments to CNX of about \$3.4B. Under the agreement, NBL will acquire 50% of CNX's Marcellus Shale interest including a 50% stake in CNX's existing Marcellus Shale wells. S&P maintains hold on NBL ...

# Noble Energy Inc



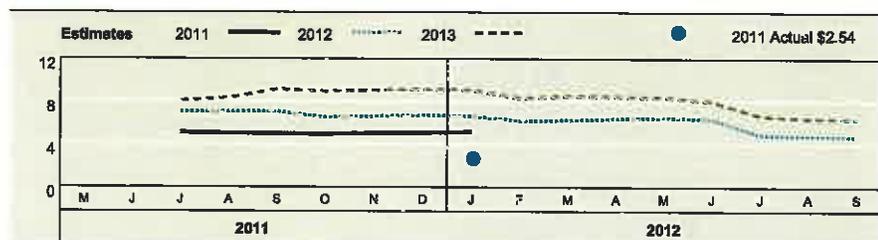
## Analysts' Recommendations



Of the total 37 companies following NBL, 28 analysts currently publish recommendations.

	No. of Ratings	% of Total	1 Mo. Prior	3 Mos. Prior
Buy	14	50	14	13
Buy/Hold	9	32	9	9
Hold	5	18	5	7
Weak Hold	0	0	0	0
Sell	0	0	0	0
No Opinion	0	0	0	0
<b>Total</b>	<b>28</b>	<b>100</b>	<b>28</b>	<b>29</b>

## Wall Street Consensus Estimates



Fiscal Years	Avg Est.	High Est.	Low Est.	# of Est.	Est. P/E
2013	6.44	8.78	4.89	25	14.4
2012	4.80	6.02	4.14	26	19.3
<b>2013 vs. 2012</b>	<b>▲ 34%</b>	<b>▲ 46%</b>	<b>▲ 18%</b>	<b>▼ -4%</b>	<b>▼ -25%</b>
Q3'13	1.67	2.00	1.20	15	55.5
Q3'12	1.07	1.75	0.71	24	86.6
<b>Q3'13 vs. Q3'12</b>	<b>▲ 56%</b>	<b>▲ 14%</b>	<b>▲ 69%</b>	<b>▼ -38%</b>	<b>▼ -36%</b>

A company's earnings outlook plays a major part in any investment decision. Standard & Poor's organizes the earnings estimates of over 2,300 Wall Street analysts, and provides their consensus of earnings over the next two years. This graph shows the trend in analyst estimates over the past 15 months.

## Wall Street Consensus Opinion

**BUY/HOLD**

## Companies Offering Coverage

Over 30 firms follow this stock; not all firms are displayed.

- Argus Research Company
- BMO Capital Markets, U.S. Equity Research
- BMO Capital Markets, Canadian Equity Research
- Barclays
- BofA Merrill Lynch
- CRT Capital Group LLC
- Canaccord Genuity
- Citigroup Inc
- Credit Suisse
- Deutsche Bank
- FBR Capital Markets & Co.
- Global Hunter Securities, LLC
- Goldman Sachs
- Howard Weil Incorporated
- ISI Group Inc.
- JP Morgan
- Johnson Rice & Company, L.L.C.
- Macquarie Research
- Morgan Keegan & Company
- Morgan Stanley
- Morningstar Inc.
- Oppenheimer & Co. Inc.
- RBC Capital Markets
- Raymond James & Associates
- Robert W. Baird & Co.
- S&P Equity Research
- Sanford C. Bernstein & Co., Inc.
- Simmons & Company International
- Societe Generale Cross Asset Research
- Sterne Agee & Leach Inc.

## Wall Street Consensus vs. Performance

For fiscal year 2012, analysts estimate that NBL will earn \$4.80. For the 2nd quarter of fiscal year 2012, NBL announced earnings per share of \$1.58, representing 33% of the total annual estimate. For fiscal year 2013, analysts estimate that NBL's earnings per share will grow by 34% to \$6.44.

# Noble Energy Inc

## Glossary

### S&P STARS

Since January 1, 1987, Standard and Poor's Equity Research Services has ranked a universe of common stocks based on a given stock's potential for future performance. Under proprietary STARS (Stock Appreciation Ranking System), S&P equity analysts rank stocks according to their individual forecast of a stock's future total return potential versus the expected total return of a relevant benchmark (e.g., a regional index (S&P Asia 50 Index, S&P Europe 350 Index or S&P 500 Index)), based on a 12-month time horizon. STARS was designed to meet the needs of investors looking to put their investment decisions in perspective. Data used to assist in determining the STARS ranking may be the result of the analyst's own models as well as internal proprietary models resulting from dynamic data inputs.

### S&P 12-Month Target Price

The S&P equity analyst's projection of the market price a given security will command 12 months hence, based on a combination of intrinsic, relative, and private market valuation metrics, including S&P Fair Value.

### Investment Style Classification

Characterizes the stock as Growth or Value, and indicates its capitalization level. Growth is evaluated along three dimensions (earnings, sales and internal growth), while Value is evaluated along four dimensions (book-to-price, cash flow-to-price, dividend yield and sales-to-price). Growth stocks score higher than the market average on growth dimensions and lower on value dimensions. The reverse is true for Value stocks. Certain stocks are classified as Blend, indicating a mixture of growth and value characteristics and cannot be classified as purely growth or value.

### S&P EPS Estimates

Standard & Poor's earnings per share (EPS) estimates reflect analyst projections of future EPS from continuing operations, and generally exclude various items that are viewed as special, non-recurring, or extraordinary. Also, S&P EPS estimates reflect either forecasts of S&P equity analysts; or, the consensus (average) EPS estimate, which are independently compiled by Capital IQ, a data provider to Standard & Poor's Equity Research. Among the items typically excluded from EPS estimates are asset sale gains; impairment, restructuring or merger-related charges; legal and insurance settlements; in process research and development expenses; gains or losses on the extinguishment of debt; the cumulative effect of accounting changes; and earnings related to operations that have been classified by the company as discontinued. The inclusion of some items, such as stock option expense and recurring types of other charges, may vary, and depend on such factors as industry practice, analyst judgment, and the extent to which some types of data is disclosed by companies.

### S&P Core Earnings

Standard & Poor's Core Earnings is a uniform methodology for adjusting operating earnings by focusing on a company's after-tax earnings generated from its principal businesses. Included in the Standard & Poor's definition are employee stock option grant expenses, pension costs, restructuring charges from ongoing operations, write-downs of depreciable or amortizable operating assets, purchased research and development, M&A related expenses and unrealized gains/losses from hedging activities. Excluded from the definition are pension gains, impairment of goodwill charges, gains or losses from asset sales, reversal of prior-year charges and provision from litigation or insurance settlements.

### Qualitative Risk Assessment

The S&P equity analyst's view of a given company's operational risk, or the risk of a firm's ability to continue as an ongoing concern. The Qualitative Risk Assessment

is a relative ranking to the S&P U.S. STARS universe, and should be reflective of risk factors related to a company's operations, as opposed to risk and volatility measures associated with share prices.

### Quantitative Evaluations

In contrast to our qualitative STARS recommendations, which are assigned by S&P analysts, the quantitative evaluations described below are derived from proprietary arithmetic models. These computer-driven evaluations may at times contradict an analyst's qualitative assessment of a stock. One primary reason for this is that different measures are used to determine each. For instance, when designating STARS, S&P analysts assess many factors that cannot be reflected in a model, such as risks and opportunities, management changes, recent competitive shifts, patent expiration, litigation risk, etc.

### S&P Quality Ranking

Growth and stability of earnings and dividends are deemed key elements in establishing S&P's Quality Rankings for common stocks, which are designed to encapsulate the nature of this record in a single symbol. It should be noted, however, that the process also takes into consideration certain adjustments and modifications deemed desirable in establishing such rankings. The final score for each stock is measured against a scoring matrix determined by analysis of the scores of a large and representative sample of stocks. The range of scores in the array of this sample has been aligned with the following ladder of rankings:

A+ Highest	B Below Average
A High	B- Lower
A- Above Average	C Lowest
B+ Average	D In Reorganization
NR Not Ranked	

### S&P Fair Value Rank

Using S&P's exclusive proprietary quantitative model, stocks are ranked in one of five groups, ranging from Group 5, listing the most undervalued stocks, to Group 1, the most overvalued issues. Group 5 stocks are expected to generally outperform all others. A positive (+) or negative (-) Timing Index is placed next to the Fair Value ranking to further aid the selection process. A stock with a (+) added to the Fair Value Rank simply means that this stock has a somewhat better chance to outperform other stocks with the same Fair Value Rank. A stock with a (-) has a somewhat lesser chance to outperform other stocks with the same Fair Value Rank. The Fair Value rankings imply the following: 5-Stock is significantly undervalued; 4-Stock is moderately undervalued; 3-Stock is fairly valued; 2-Stock is modestly overvalued; 1-Stock is significantly overvalued.

### S&P Fair Value Calculation

The price at which a stock should trade at, according to S&P's proprietary quantitative model that incorporates both actual and estimated variables (as opposed to only actual variables in the case of S&P Quality Ranking). Relying heavily on a company's actual return on equity, the S&P Fair Value model places a value on a security based on placing a formula-derived price-to-book multiple on a company's consensus earnings per share estimate.

### Insider Activity

Gives an insight as to insider sentiment by showing whether directors, officers and key employees who have proprietary information not available to the general public, are buying or selling the company's stock during the most recent six months.

### Funds From Operations FFO

FFO is Funds from Operations and equal to a REIT's net income, excluding gains or losses from sales of property, plus real estate depreciation.

### Investability Quotient (IQ)

The IQ is a measure of investment desirability. It serves

as an indicator of potential medium-to-long term return and as a caution against downside risk. The measure takes into account variables such as technical indicators, earnings estimates, liquidity, financial ratios and selected S&P proprietary measures.

### S&P's IQ Rationale:

#### Noble Energy

	Raw Score	Max Value
Proprietary S&P Measures	33	115
Technical Indicators	19	40
Liquidity/Volatility Measures	18	20
Quantitative Measures	6	75
<b>IQ Total</b>	<b>76</b>	<b>250</b>

### Volatility

Rates the volatility of the stock's price over the past year.

### Technical Evaluation

In researching the past market history of prices and trading volume for each company, S&P's computer models apply special technical methods and formulas to identify and project price trends for the stock.

### Relative Strength Rank

Shows, on a scale of 1 to 99, how the stock has performed versus all other companies in S&P's universe on a rolling 13-week basis.

### Global Industry Classification Standard (GICS)

An industry classification standard, developed by Standard & Poor's in collaboration with Morgan Stanley Capital International (MSCI). GICS is currently comprised of 10 Sectors, 24 Industry Groups, 68 Industries, and 154 Sub-Industries.

### S&P Issuer Credit Rating

A Standard & Poor's Issuer Credit Rating is a current opinion of an obligor's overall financial capacity (its creditworthiness) to pay its financial obligations. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due. It does not apply to any specific financial obligation, as it does not take into account the nature of and provisions of the obligation, its standing in bankruptcy or liquidation, statutory preferences, or the legality and enforceability of the obligation. In addition, it does not take into account the creditworthiness of the guarantors, insurers, or other forms of credit enhancement on the obligation. The Issuer Credit Rating is not a recommendation to purchase, sell, or hold a financial obligation issued by an obligor, as it does not comment on market price or suitability for a particular investor. Issuer Credit Ratings are based on current information furnished by obligors or obtained by Standard & Poor's from other sources it considers reliable. Standard & Poor's does not perform an audit in connection with any Issuer Credit Rating and may, on occasion, rely on unaudited financial information. Issuer Credit Ratings may be changed, suspended, or withdrawn as a result of changes in, or unavailability of, such information, or based on other circumstances.

### Exchange Type

ASE - American Stock Exchange; AU - Australia Stock Exchange; BB - Bulletin Board; NGM - Nasdaq Global Market; NNM - Nasdaq Global Select Market; NSC - Nasdaq Capital Market; NYS - New York Stock Exchange; OTN - Other OTC (Over the Counter); OTC - Over the Counter; QB - OTCQB; QX - OTCQX; TS - Toronto Stock Exchange; TXV - TSX Venture Exchange; NEX - NEX Exchange.

### S&P Equity Research Services

Standard & Poor's Equity Research Services U.S. includes Standard & Poor's Investment Advisory Services LLC; Standard & Poor's Equity Research Services Europe includes McGraw-Hill Financial Research Europe Limited trading as Standard & Poor's; Standard & Poor's Equity Research Services Asia includes McGraw-Hill Financial Singapore Pte. Limited's

## Noble Energy Inc

offices in Singapore, Standard & Poor's Investment Advisory Services (HK) Limited in Hong Kong, Standard & Poor's Malaysia Sdn Bhd, and Standard & Poor's Information Services (Australia) Pty Ltd.

**Abbreviations Used in S&P Equity Research Reports**  
**CAGR**- Compound Annual Growth Rate; **CAPEX**- Capital Expenditures; **CY**- Calendar Year; **DCF**- Discounted Cash Flow; **EBIT**- Earnings Before Interest and Taxes; **EBITDA**- Earnings Before Interest, Taxes, Depreciation and Amortization; **EPS**- Earnings Per Share; **EV**- Enterprise Value; **FCF**- Free Cash Flow; **FFO**- Funds From Operations; **FY**- Fiscal Year; **P/E**- Price/Earnings; **PEG Ratio**- P/E-to-Growth Ratio; **PV**- Present Value; **R&D**- Research & Development; **ROE**- Return on Equity; **ROI**- Return on Investment; **ROIC**- Return on Invested Capital; **ROA**- Return on Assets; **SG&A**- Selling, General & Administrative Expenses; **WACC**- Weighted Average Cost of Capital

**Dividends on American Depository Receipts (ADRs) and American Depository Shares (ADSs) are not of taxes (paid in the country of origin).**

## Required Disclosures

In contrast to the qualitative STARS recommendations covered in this report, which are determined and assigned by S&P equity analysts, S&P's quantitative evaluations are derived from S&P's proprietary Fair Value quantitative model. In particular, the Fair Value Ranking methodology is a relative ranking methodology, whereas the STARS methodology is not. Because the Fair Value model and the STARS methodology reflect different criteria, assumptions and analytical methods, quantitative evaluations may at times differ from (or even contradict) an equity analyst's STARS recommendations. As a quantitative model, Fair Value relies on history and consensus estimates and does not introduce an element of subjectivity as can be the case with equity analysts in assigning STARS recommendations.

## S&amp;P Global STARS Distribution

**In North America:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services North America recommended 37.5% of issuers with buy recommendations, 57.5% with hold recommendations and 5.0% with sell recommendations.

**In Europe:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services Europe recommended 32.5% of issuers with buy recommendations, 50.8% with hold recommendations and 16.7% with sell recommendations.

**In Asia:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services Asia recommended 34.7% of issuers with buy recommendations, 57.8% with hold recommendations and 7.5% with sell recommendations.

**Globally:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services globally recommended 38.5% of issuers with buy recommendations, 56.4% with hold recommendations and 7.1% with sell recommendations.

★★★★★ **5-STARS (Strong Buy):** Total return is expected to outperform the total return of a relevant benchmark, by a wide margin over the coming 12 months, with shares rising in price on an absolute basis.

★★★★ **4-STARS (Buy):** Total return is expected to outperform the total return of a relevant benchmark over the coming 12 months, with shares rising in price on an absolute basis.

★★★ **3-STARS (Hold):** Total return is expected to closely approximate the total return of a relevant benchmark over the coming 12 months, with shares generally rising in price on an absolute basis.

★★ **2-STARS (Sell):** Total return is expected to

underperform the total return of a relevant benchmark over the coming 12 months, and the share price not anticipated to show a gain.

★ **1-STARS (Strong Sell):** Total return is expected to underperform the total return of a relevant benchmark by a wide margin over the coming 12 months, with shares falling in price on an absolute basis.

**Relevant benchmarks:** In North America the relevant benchmark is the S&P 500 Index, in Europe and in Asia, the relevant benchmarks are generally the S&P Europe 350 Index and the S&P Asia 50 Index.

**For All Regions:** All of the views expressed in this research report accurately reflect the research analyst's personal views regarding any and all of the subject securities or issuers. No part of analyst compensation was, is, or will be directly or indirectly, related to the specific recommendations or views expressed in this research report.

## S&amp;P Global Quantitative Recommendations Distribution

**In North America:** As of June 29, 2012, Standard & Poor's Quantitative Services North America recommended 40.0% of issuers with buy recommendations, 20.1% with hold recommendations and 39.9% with sell recommendations.

**In Europe:** As of June 29, 2012, Standard & Poor's Quantitative Services Europe recommended 45.6% of issuers with buy recommendations, 21.0% with hold recommendations and 33.4% with sell recommendations.

**In Asia:** As of June 29, 2012, Standard & Poor's Quantitative Services Asia recommended 52.7% of issuers with buy recommendations, 18.4% with hold recommendations and 28.9% with sell recommendations.

**Globally:** As of June 29, 2012, Standard & Poor's Quantitative Services globally recommended 46.9% of issuers with buy recommendations, 19.6% with hold recommendations and 33.5% with sell recommendations.

**Additional information is available upon request.**

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# Noble Energy Inc

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(a) to (d) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, respectively.

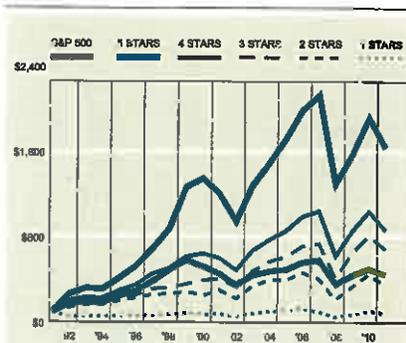
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### U.S. STARS Cumulative Model Performance Hypothetical Growth Due to Price Appreciation of \$100 For the Period 12/31/1986 through 08/31/2012



The performance above represents only the results of Standard & Poor's model portfolios. Model performance has inherent limitations. Standard & Poor's maintains the models and calculates the model performance shown, but does not manage actual assets. The U.S. STARS model performance chart is only an illustration of Standard & Poor's (S&P) research; it shows how U.S. common stocks, ADRs (American Depositary Receipts) and ADSs (American Depositary Shares), collectively "equities", that received particular STARS rankings performed. STARS categories are models only; they are not collective investment funds. The STARS performance does not show how any actual portfolio has performed. STARS model performance does not represent the results of actual trading of investor assets. Thus, the model performance shown does not reflect the impact that material economic and market factors might have had on decision-making if actual investor money had been managed. Performance is calculated using a time-weighted rate of return. While model performance for some or all STARS categories performed better than the S&P 500 for the period shown, the performance during any shorter period may not have, and there is no assurance that they will perform better than the S&P 500 in the future. STARS does not take into account any particular investment objective, financial situation or need and is not intended as an investment recommendation or strategy. Investments based on the STARS methodology may lose money. High returns are

not necessarily the norm and there is no assurance that they can be sustained. Past model performance of STARS is no guarantee of future performance.

For model performance calculation purposes, the equities within each STARS category at December 31, 1986 were equally weighted. Thereafter, additions to the composition of the equities in each STARS category are made at the average value of the STARS category at the preceding month end with no rebalancing. Deletions are made at the closing price of the day that the deletion is made. Performance was calculated from inception through March 31, 2003 on a monthly basis. Thereafter, performance is calculated daily. Equities in each STARS category will change over time, and some or all of the equities that received STARS rankings during the time period shown may not have maintained their STARS ranking during the entire period.

The model performance does not consider taxes and brokerage commissions, nor does it reflect the deduction of any advisory or other fees charged by advisors or other parties that investors will incur when their accounts are managed in accordance with the models. The imposition of these fees and charges would cause actual performance to be lower than the performance shown. For example, if a model returned 10 percent on a \$100,000 investment for a 12-month period (or \$10,000) and an annual asset-based fee of 1.5 percent were imposed at the end of the period (or \$1,650), the net return would be 8.35 percent (or \$8,350) for the year. Over 3 years, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.1%, a total fee of \$5,375 and a cumulative net return of 27.2% (or \$27,200). Fees deducted on a frequency other than annual would result in a different cumulative net return in the preceding example.

The Standard & Poor's 500 index is the benchmark for U.S. STARS. The S&P 500 index is calculated in U.S. dollars and does not take into account the reinvestment of dividends. Indexes are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. The S&P 500 index includes a different number of constituents and has different risk characteristics than the STARS equities. Some of the STARS equities may have been included in the S&P 500 index for some (but not necessarily all) of the period covered in the chart, and some such equities may not have been included at all. The S&P 500 excludes ADRs and ADSs. The methodology for calculating the return of the S&P 500 index differs from the methodology of calculating the return for STARS. Past performance of the S&P 500 index is no guarantee of future performance.

An investment based upon the models should only be made after consulting with a financial advisor and with an understanding of the risks associated with any investment in securities, including, but not limited to, market risk, currency risk, political and credit risks, the risk of economic recession and the risk that issuers of securities or general stock market conditions may worsen, over time. Foreign investing involves certain risks, including currency fluctuations and controls, restrictions on foreign investments, less governmental supervision and regulation, less liquidity and the potential for market volatility and political instability. As with any investment, investment returns and principal value will fluctuate, so that when redeemed, an investor's shares may be worth more or less than their original cost.

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## Noble Energy Inc

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October 3, 2012

## Investment Recommendation

### Purchase

Westlake Chemical Corp (WLK)

Price \$73.74

Annual Dividend \$.75

Yield 1.00%

Westlake Chemical Corporation is a vertically integrated manufacturer and marketer of basic chemicals, vinyls, polymers and fabricated building products. The Company's products include chemicals which are fundamental to many diverse consumer and industrial markets, including flexible and rigid packaging, automotive products, coatings, residential and commercial construction as well as other durable and non-durable goods. The Company operates in two segments: Olefins and Vinyls. Westlake is an integrated producer of vinyls with substantial downstream integration into polyvinyl chloride (PVC), building products. Based in Houston TX, the company has 13 manufacturing sites in North America and also has a 59% interest in a joint venture in China that operates a vinyls facility.

We are encouraged by many of the recent developments at Westlake Corp. Margins have increased largely due to low natural gas prices and improved operational efficiencies. The company is seeing consistent growth from the joint venture in China. Recently longtime C.E.O. Albert Chao reported that the company's debt rating has been upgraded by both S&P and Moodys to investment grade.

Westlake reported 2<sup>nd</sup> quarter earnings of \$1.72 per share, a 41% increase over the same period last year. The consensus earnings estimate 2012 is \$5.12 per share, a 32% increase over 2011. The consensus revenue estimate for 2012 and 2013 are \$3.7 billion and \$3.82 billion respectively. Currently the stock is trading at just over 14 times earnings.

We believe that Westlake Chemical Corp. will benefit from an overall increase in economic activity especially in the building sector. The company has a very experienced management team that has proven track record of strategic acquisitions and production efficiency. We feel that the company's competitive production advantage, using natural gas opposed to oil, is under appreciated and will continue to drive margin gains. We believe the shares will move higher.

# Westlake Chemical Corp

**S&P Recommendation** BUY ★ ★ ★ ★

**Price**  
\$73.06 (as of Sep 28, 2012)

**12-Mo. Target Price**  
\$79.00

**Investment Style**  
Mid-Cap Blend

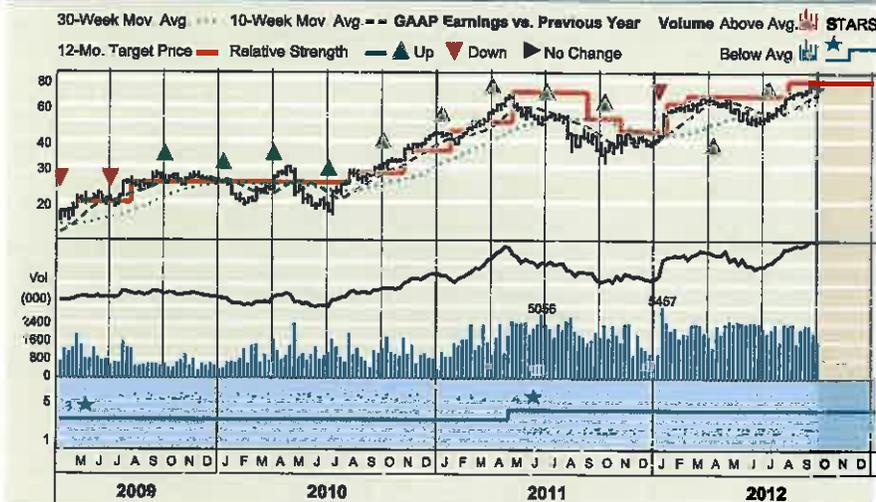
**GICS Sector** Materials  
**Sub-Industry** Commodity Chemicals

**Summary** This company is an integrated manufacturer of petrochemicals, polymers, and fabricated vinyl products.

**Key Stock Statistics** (Source: S&P, Yahoo!, company reports)

52-Wk Range	<b>\$76.46 - 31.26</b>	S&P Oper. EPS 2012E	<b>5.12</b>	Market Capitalization(B)	<b>\$4.867</b>	Beta	<b>1.95</b>
Trailing 12-Month EPS	<b>\$4.44</b>	S&P Oper. EPS 2013E	<b>5.53</b>	Yield (%)	<b>1.03</b>	S&P 3-Yr. Proj. EPS CAGR(%)	<b>19</b>
Trailing 12-Month P/E	<b>16.5</b>	P/E on S&P Oper. EPS 2012E	<b>14.3</b>	Dividend Rate/Share	<b>\$0.75</b>	S&P Credit Rating	<b>BBB-</b>
\$10K Invested 5 Yrs Ago	<b>\$30,237</b>	Common Shares Outstg. (M)	<b>66.6</b>	Institutional Ownership (%)	<b>37</b>		

**Price Performance**



**Qualitative Risk Assessment**

**LOW** **MEDIUM** **HIGH**

Our risk assessment reflects the cyclical nature of the company's commodity chemical products, offset by its highly integrated business mix and our view of its strong balance sheet.

**Quantitative Evaluations**

**S&P Quality Ranking** **B**

**D** **C** **B-** **B** **B+** **A-** **A** **A+**

**Relative Strength Rank** **STRONG**

LOWEST = 1 HIGHEST = 99

**Revenue/Earnings Data**

Revenue (Million \$)	1Q	2Q	3Q	4Q	Year
2012	1,035	914.0	--	--	--
2011	867.3	925.1	968.4	859.2	3,620
2010	778.3	818.4	779.7	795.4	3,172
2009	488.3	574.9	632.6	630.0	2,326
2008	915.1	1,106	1,074	597.1	3,692
2007	718.8	782.7	840.2	850.6	3,192

Earnings Per Share (\$)	1Q	2Q	3Q	4Q	Year
2012	1.31	1.72	E1.26	E0.86	E5.12
2011	1.25	1.21	1.01	0.39	3.87
2010	0.27	0.86	0.95	1.26	3.34
2009	-0.09	0.26	0.45	0.19	0.80
2008	0.08	0.72	0.42	-1.68	-0.45
2007	0.30	0.58	0.59	0.29	1.76

Fiscal year ended Dec. 31. Next earnings report expected: Early November. EPS Estimates based on S&P Operating Earnings; historical GAAP earnings are as reported.

**Dividend Data** (Source: Annual Payment Date: mm/yyyy)

Amount (\$)	Date Decl.	Ex-Div. Date	Stk. of Record	Payment Date
0.074	11/21	11/29	12/01	12/12/11
0.074	02/17	03/05	03/07	03/21/12
0.074	05/23	05/31	06/04	06/18/12
0.188	08/20	08/28	08/30	09/12/12

Dividends have been paid since 2004. Source: Company reports.

Analysis prepared by Equity Analyst **S. Benway, CFA** on Aug 10, 2012, when the stock traded at **\$66.58**. Options: P, Ph

**Highlights**

- Sales are expected to rise about 2% in 2012 and 5% in 2013, according to consensus forecasts from Capital IQ. We believe WLK will benefit in 2012 from higher volume related to capacity expansion, and some recovery in the housing market should also help the top line. Increased prices are also expected to add to revenue gains both this year and next.
- Consensus estimates indicate EBIT margins will widen to 15.2% in 2012 from 12.3% in 2011. In 2011, prices rose faster than feedstock costs, and this price/cost relationship is expected to continue to widen in 2012 as ethane prices are falling due to increased domestic production of shale gas. Margin gains could be constrained somewhat in 2012 by disruptions caused by capacity expansion. For 2013, margins are expected to widen to 16.1%, according to consensus.
- For 2012, earnings are expected to rise to \$5.12 per share, according to the Capital IQ consensus, from \$3.87 in 2011. Further growth is forecast in 2013 to \$5.53 per share.

**Investment Rationale/Risk**

- We have a buy opinion on WLK shares, based on our belief that natural gas-based ethylene producers will benefit from a feedstock cost advantage over oil-based producers. The company also plans to expand its ethylene capacity to capitalize on new U.S. natural gas supplies. We view the balance sheet as strong, allowing WLK to consider possible acquisitions and investments that will enhance its long-term growth.
- Risks to our recommendation and target price include volatility in selling prices and raw material costs; material changes in industry production capacity; and unplanned production outages and interruptions by the company and/or its suppliers.
- Applying a multiple of 14.3X to the Capital IQ consensus EPS forecast for 2013 of \$5.53, we derive our 12-month target price of \$79. A peer group of chemical makers recently traded at a forward P/E of 12.4X consensus 2013 EPS estimates. We believe WLK merits a premium to this valuation based on its historical growth performance and relative financial strength.

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**Westlake Chemical Corp**

Business Summary August 10, 2012

**CORPORATE OVERVIEW.** Westlake Chemical is a vertically integrated manufacturer and marketer of basic chemicals, vinyls, polymers and fabricated building products. Its products include some of the most widely used chemicals in the world, which are fundamental to many diverse consumer and industrial markets, including flexible and rigid packaging, automotive products, coatings, residential and commercial construction as well as other durable and non-durable goods. The company operates in two principal business segments, Olefins and Vinyls, and it is an integrated producer of vinyls with substantial downstream integration into polyvinyl chloride, or PVC, building products. Westlake benefits from highly integrated production facilities that allow it to process raw materials into higher value-added chemicals and building products. WLK has grown through a series of acquisitions and new capacity additions. As of February 17, 2012, it had 11.8 billion pounds per year of aggregate production capacity at 13 manufacturing sites in North America. Westlake also has a 59% interest in a joint venture in China that operates a vinyls facility. About 11% of sales in 2011 were outside the U.S., largely to Canada (7%). The Chao family controls 69.8% of outstanding common shares.

The olefins segment (71% of total sales in 2011 and operating profit of \$459 million) consists of ethylene and styrene monomers (22% of sales in 2011) and polyethylene resins (49%) produced at two manufacturing complexes. Polyethylene is the world's most widely consumed plastic used in packaging, films, coatings, and molded products. WLK consumes the majority of the ethylene to produce polyethylene and styrene, as well as vinyl chloride monomer in its vinyls business. Ethylene co-products are sold to others. The company is one of the few North American integrated producers of vinyls (29% of total sales and operating profit of \$4 million), consisting of vinyl resins, intermediates, and fabricated vinyl products. PVC is the world's third most widely used plastic, and it is used in various forms to make wire and cable insulation, automotive trim, packaging, window frames, pipe, and siding.

**COMPETITIVE LANDSCAPE.** Olefins and vinyls products are some of the most widely used chemicals in the world and are upgraded into a wide variety of higher value-added chemical products used in many end-markets. Petrochemicals are typically manufactured in large volume by a number of different producers using widely available technologies. The petrochemical industry exhibits cyclical commodity characteristics and margins are influenced by changes in the balance between supply and demand and the resulting operating rates, the level of general economic activity, and the price of raw materials. The cycle is characterized by periods of tight supply, leading to high operating margins, followed by a decline in operating rates and margins primarily as a result of significant capacity additions. Due to the significant size of new plants, capacity additions are built in large increments and typically require several years of demand growth to be absorbed.

The company is a medium-sized manufacturer of most of its commodity products, which are made at four major facilities. We believe that it competes against larger companies in virtually all of its chemicals businesses. WLK is the largest North American producer of low-density polyethylene with annual capacity of 1.5 billion lbs. and the fifth largest domestic producer of vinyl resin. Low-density polyethylene has the smallest volume and the lowest historical growth rate of the three types of polyethylene. The company believes it is the second biggest producer of PVC pipe by volume in the United States, and it is also one of the largest producers of vinyl fence components. Competitors in the ethylene, polyethylene and styrene markets are typically some of the world's largest chemical companies, including Chevron Phillips Chemical Company LP, The Dow Chemical Company, ExxonMobil Chemical Company, INEOS (successor to BP Chemicals Ltd.), LyondellBasell Industries and NOVA Chemicals Corporation, a subsidiary of The International Petroleum Investment Company of the Emirate of Abu Dhabi. Competitors in the vinyls market include Formosa Plastics Corporation, Georgia Gulf Corp., Oxy Che, LP, and Shintech, Inc.

**FINANCIAL TRENDS.** In looking at WLK's historical performance, we can see a general pattern of growth that was interrupted in 2008-2009 by a severe economic downturn. Over the past decade, sales have grown at a compound annual growth rate (CAGR) of 14.5%, although revenues in 2011 were still slightly below the peak in 2008. Acquisitions have been a significant component of the top-line growth. Since 2002, the company's net operating profit after tax (NOPAT) has grown significantly, from \$6 million in 2002 to \$285 million in 2011, although WLK had negative NOPAT of \$17 million in 2008. WLK's NOPAT margin has shown significant variability over the past ten years, from a high of 9.7% in 2005 to a negative margin of 0.5% in 2008. Westlake's profitability has been about in line with its peers in recent years. The company's return on invested capital (ROIC) over the past 10 years has averaged 8.0%. This compares to an average of 8.3% for its chemical industry peers.

**Corporate Information**

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**Officers**

**Chrmn** **Chief Admin Officer**  
J.Y. Chao D.R. Hansen

**Pres & CEO** **Chief Acctg Officer**  
A.Y. Chao G.J. Mangieri

**SVP, CFO & Treas**  
M.S. Bender

**Board Members**

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A. Y. Chao J. Y. Chao  
D. C. Jenkins M. L. Lukens  
H. J. Riley, Jr.

**Domicile**  
Delaware

**Founded**  
1986

**Employees**  
1,811

**Stockholders**  
60

# Westlake Chemical Corp



## Sub-Industry Outlook

Our fundamental outlook for the commodity chemicals sub-industry for the next 12 months is positive. We project that the business environment for the chemical industry as a whole will remain healthy, assuming the global economy continues to expand. We believe that the manufacturing sector will continue to show sequential expansion, and the housing market is showing signs of a sustainable if gradual recovery. Importantly, the decline in U.S. natural gas prices relative to global crude oil prices has improved the feedstock cost competitiveness of the U.S. petrochemical industry versus other global regions, thus helping boost U.S. industry exports. We think a trend of chemical industry consolidation will likely continue longer term as part of an effort to reduce costs.

The Chlorine Institute reported that chlorine production rose from 31,122 tons per day in June to 32,834 tons per day in July. On a year-over-year basis, chlorine production was up 5.5%. Chlorine is widely used to manufacture polyvinyl chloride (PVC) resins and organic chemicals, as well as for water treatment, disinfection and other applications.

The output of co-produced caustic soda also rose from 32,370 tons per day in June to 34,222 tons per day in July, and production was up 4.6% from a year earlier. Caustic soda is used in the bleaching of wood pulp and in water treatment, oil refining, alumina production and textiles.

According to data from the American Chemistry Council (ACC), total production of all chemicals in the United States was up 0.6%, year to year, on the basis of a three-month moving average through July.

S&P forecasts that U.S. real GDP will increase in

2012, although at a modest rate of 2.1%. Slower growth of 1.8% is projected for 2013. We think this, coupled with growth in export markets due to cost advantages, will allow for at least modest gains in commodity chemical production in coming quarters.

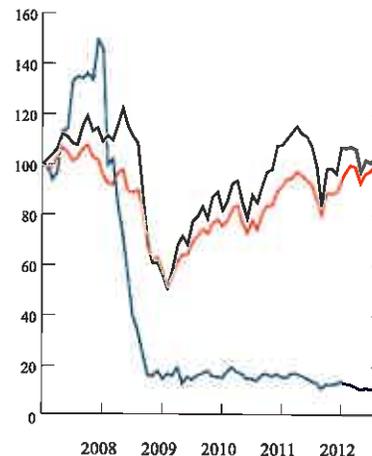
Year to date through August 31, the S&P Commodity Chemicals Index fell 11.5%, compared to an 11.7% gain in the S&P 1500 Composite Index. For all of 2011, the Commodity Chemicals Index declined 23.2%, versus a 0.3% drop for the S&P 1500 Index.

--Stuart J. Benway, CFA

## Stock Performance

**GICS Sector: Materials**  
**Sub-Industry: Commodity Chemicals**

Based on S&P 1500 Indexes  
Month-end Price Performance as of 09/28/12



Sub-Industry      Sector      S&P 1500

NOTE: All Sector & Sub-Industry information is based on the Global Industry Classification Standard (GICS)

## Sub-Industry : Commodity Chemicals Peer Group\*: Major Commodity Chemicals

Peer Group	Stock Symbol	Stk.Mkt. Cap. (Mil. \$)	Recent Stock Price(\$)	52 Week High/Low(\$)	Beta	Yield (%)	P/E Ratio	Fair Value Calc.(\$)	Quality Ranking	S&P IQ %ile	Return on Revenue (%)	LTD to Cap (%)
Westlake Chemical	WLK	4,867	73.06	76.46/31.26	1.85	1.0	16	61.50	B	91	7.2	30.3
Georgia Gulf Corp	GGC	1,240	36.22	40.88/12.19	2.38	0.9	16	NA	B-	83	1.8	50.5
Kronos Worldwide	KRO	1,732	14.94	25.55/13.25	1.72	4.0	5	18.90	B-	81	16.5	28.1
Methanex Corp	MEOH	2,647	28.54	35.52/19.50	1.67	2.6	24	NA	B-	27	8.7	25.3

NA-Not Available NM-Not Meaningful NR-Not Rated. \*For Peer Groups with more than 15 companies or stocks, selection of issues is based on market capitalization.

**Westlake Chemical Corp****S&P Analyst Research Notes and other Company News****August 6, 2012**

12:22 pm ET ... S&P KEEPS BUY RECOMMENDATION ON SHARES OF WESTLAKE CHEMICAL (WLK 87.98\*\*\*\*): We raise our 12-month target price to \$79 from \$67 based on a higher valuation in our peer P/E metric. After WLK posted Q2 EPS that were ahead of expectations, the consensus estimate from Capital IQ for 2012 has been raised to \$5.12 from our last published estimate of \$4.85 and the 2013 forecast has been increased to \$5.53 from \$5.44. WLK is expanding its capacity to capitalize on plentiful supplies and low costs for natural gas-based feedstocks. We expect this to lead higher margins and earnings, on average, over the next two to three years. /Stuart J. Benway, CFA

**July 6, 2012**

Westlake Chemical Corp. announced that it has named Don Condon as senior vice president of corporate business development and Skip Teel as vice president of olefins.

**May 14, 2012**

04:04 pm ET ... S&P RETAINS BUY OPINION ON SHARES OF WESTLAKE CHEMICAL (WLK 56.45\*\*\*\*): After WLK reported Q1 EPS ahead of expectations, the Capital IQ consensus estimate for 2012 has increased to \$4.85 from our last published consensus estimate of \$4.63, and 2013's forecast has risen to \$5.44 from \$5.29. We expect WLK to continue to benefit from a natural gas cost advantage versus competitors that use petroleum-based feedstocks. WLK recently withdrew its offer to buy competitor Georgia Gulf (GGC 32, Hold) for \$35 in cash. However, we believe it has significant internal investment opportunities. We maintain our 12-month target price of \$67. /Stuart J. Benway, CFA

**May 7, 2012**

WLK says following acquisition discussions with GEORGIA GULF's management under the terms of a confidentiality agreement, it notified GGC that WLK has withdrawn its proposal to acquire all of the outstanding shares of common stock of GGC and does not intend to continue to pursue a transaction with GGC. WLK also stated that it plans to liquidate its holdings of GGC stock as market conditions permit.

**May 7, 2012**

01:29 pm ET ... S&P KEEPS HOLD RECOMMENDATION ON SHARES OF GEORGIA GULF (GGC 31.62\*\*\*\*): Westlake Chemical (WLK 57, Buy) has withdrawn its \$35 all cash offer for the outstanding shares of GGC. WLK initially made a hostile offer in January after friendly negotiations failed. GGC had rejected all offers from WLK as inadequate. Also, following Q1 earnings, the consensus estimate from Capital IQ for 2012 was raised to \$2.79 from our last published estimate of \$2.39, and the 2013 forecast increased to \$3.46 from \$3.06. We lower our 12-month target price to \$34 from \$35 based on the adoption of a peer P/E metric. /Stuart J. Benway, CFA

**May 3, 2012**

11:19 am ET ... S&P MAINTAINS HOLD RECOMMENDATION ON SHARES OF GEORGIA GULF (GGC 35.25\*\*\*\*): GGC reports Q1 operating EPS of \$0.79, vs. \$0.37, ahead of our last published consensus forecast from Capital IQ of \$0.45. Sales increased 9%, due mostly to higher volume in the Aromatics business. We expect GGC to continue to benefit from a stronger competitive cost position due to very low natural gas feedstock prices. Volume should also be helped by a recovery in the housing market, which would likely increase demand for vinyl building products. We maintain our 12-month target price of \$35, based on Westlake Chemicals (WLK 60, Buy) cash offer of \$35. /Stuart J. Benway, CFA

**May 1, 2012**

04:26 pm ET ... S&P MAINTAINS BUY RECOMMENDATION ON SHARES OF WESTLAKE CHEMICAL (WLK 61.93\*\*\*\*): WLK reports Q1 EPS of \$1.31, versus \$1.25, ahead of our last-published consensus estimate from Capital IQ of \$1.21. Sales increased 19% due mostly to higher prices for its olefins and vinyl products. We believe that WLK will continue to benefit from a significant cost advantage due to low natural gas feedstock costs. We also expect that additional ethylene capacity will lead to reduced volatility in raw material costs. WLK continues to pursue an acquisition of Georgia Gulf (GGC 36, Hold). We believe WLK shares are attractively valued. /Stuart J. Benway, CFA

**February 27, 2012**

UP 3.40 to 61.04... Goldman adds WLK to conviction buy list. WLK unavailable. ...

**February 27, 2012**

03:34 pm ET ... WESTLAKE CHEMICAL CORP. (WLK 61.17) UP 3.53, GOLDMAN ADDS WESTLAKE CHEMICAL (WLK) TO CONVICTION BUY LIST... Analyst Brian Maguire tells salesforce the oil-to-ethane ratio widened to a record high 3.4X this month, which significantly benefits WLK's US ethane-based crackers. Also, US Gulf Coast ethane prices hit a multi-year low on Valentine's Day, averaging \$0.50/gal in Q1 2012 vs. \$0.76 and \$0.83 in FY 2011 and Q4 2011. Says, based on his estimates, WLK has 5x more EPS leverage to gulf coast ethane costs than LYB or DOW, with a \$0.10 price change moving EPS by 22%. Raises price target by \$7 to \$74. S.Trombino

**February 22, 2012**

12:48 pm ET ... S&P REITERATES BUY OPINION ON SHARES OF WESTLAKE CHEMICAL (WLK 57.97\*\*\*\*): Q4 EPS of \$0.40 was below both the \$1.26 of a year ago and our last published consensus forecast from Capital IQ of \$0.58, due primarily to high ethane feedstock costs. However, we expect higher prices and lower costs in coming quarters, and WLK should benefit from additional capacity to supply its internal feedstock needs. The Capital IQ consensus estimate for 2012 has risen to \$4.67 from \$3.58 and the '13 forecast has increased to \$5.44 from \$4.61. We raise our 12-month target price to \$67 from \$62 based on these higher estimates and our peer P/E metric. /Stuart J. Benway, CFA

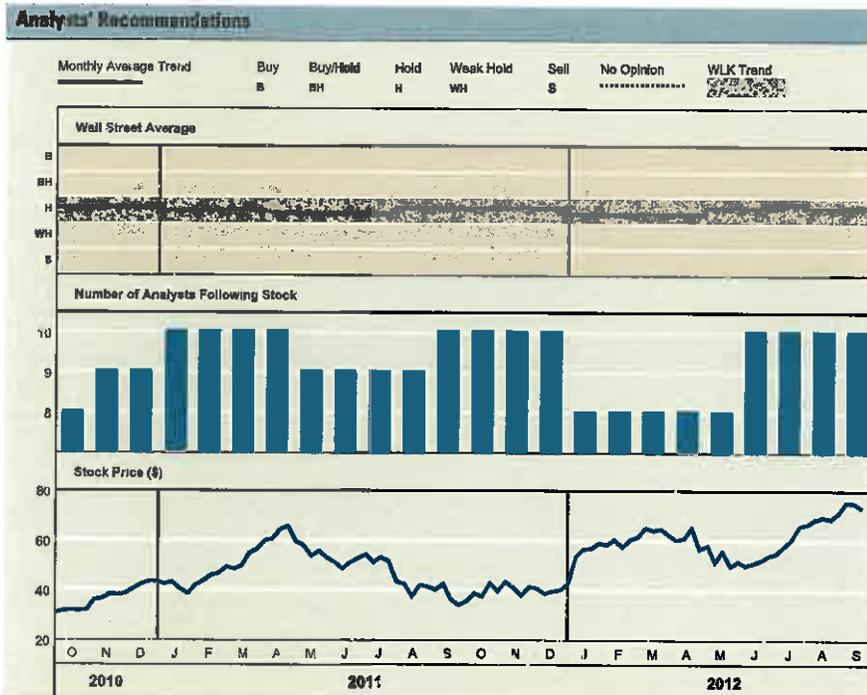
**February 17, 2012**

12:24 pm ET ... S&P RETAINS HOLD OPINION ON SHARES OF GEORGIA GULF (GGC 34.47\*\*\*\*): GGC posts Q4 operating loss of \$0.02, vs. \$0.44 EPS, below our last reported consensus forecast from Capital IQ of \$0.11. Results were hurt by lower volume and prices for PVC and propylene. Higher operating rates and a favorable input cost environment should lead to higher earnings in 2012. The consensus earnings forecast from Capital IQ for 2012 has been raised to \$2.53 from our last published estimate of \$2.37. Our 12-month target price remains \$35 based on what we expect will be an increase in Westlake Chemical's (WLK 60, Buy) current cash offer of \$30 per share. /Stuart J. Benway, CFA

**January 18, 2012**

04:28 pm ET ... S&P KEEPS BUY OPINION ON SHARES OF WESTLAKE CHEMICAL (WLK 56.01\*\*\*\*): Georgia Gulf (GGC 34, Hold) has rejected WLK's unsolicited takeover offer of \$30 per share calling the offer inadequate. GGC also adopted a shareholder rights plan aimed at preventing purchase of more than 10% of its shares by an outsider. Nevertheless, we expect the parties to agree on a purchase price for the stock at a somewhat higher level than the current offer. We believe the acquisition would provide good growth opportunities for WLK. Our 12-month target price rises by \$2, to \$62, based on a higher premium in our peer P/E metric. /Stuart J. Benway, CFA

# Westlake Chemical Corp



### Wall Street Consensus Opinion

**HOLD**

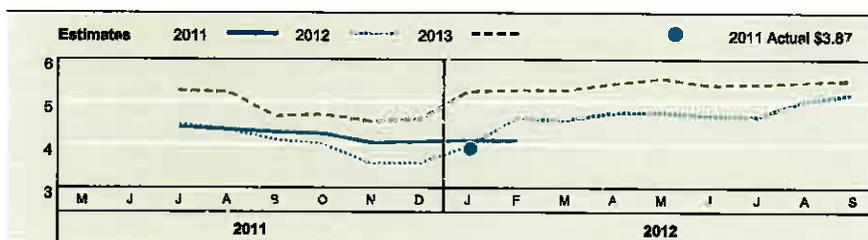
### Companies Offering Coverage

- BB&T Capital Markets
- Barclays
- BofA Merrill Lynch
- Dahlman Rose & Company, LLC
- Deutsche Bank
- Goldman Sachs
- JP Morgan
- Macquarie Research
- S&P Equity Research
- Susquehanna Financial Group, LLLP
- UBS Investment Bank
- Wells Fargo Securities, LLC

Of the total 12 companies following WLK, 10 analysts currently publish recommendations.

	No. of Ratings	% of Total	1 Mo. Prior	3 Mos. Prior
Buy	0	0	1	0
Buy/Hold	2	20	2	2
Hold	6	60	5	7
Weak Hold	1	10	1	1
Sell	1	10	1	0
No Opinion	0	0	0	0
<b>Total</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>10</b>

### Wall Street Consensus Estimates



### Wall Street Consensus vs. Performance

For fiscal year 2012, analysts estimate that WLK will earn \$5.21. For the 2nd quarter of fiscal year 2012, WLK announced earnings per share of \$1.72, representing 33% of the total annual estimate. For fiscal year 2013, analysts estimate that WLK's earnings per share will grow by 6% to \$5.53.

Fiscal Years	Avg Est.	High Est.	Low Est.	# of Est.	Est. P/E
2013	5.53	6.40	4.90	9	13.2
2012	5.21	5.89	4.95	7	14.0
<b>2013 vs. 2012</b>	<b>▲ 6%</b>	<b>▲ 9%</b>	<b>▼ -1%</b>	<b>▲ 29%</b>	<b>▼ -5%</b>
Q3'13	1.53	1.60	1.46	2	47.8
Q3'12	1.27	1.40	1.15	7	57.5
<b>Q3'13 vs. Q3'12</b>	<b>▲ 20%</b>	<b>▲ 14%</b>	<b>▲ 27%</b>	<b>▼ -71%</b>	<b>▼ -17%</b>

A company's earnings outlook plays a major part in any investment decision. Standard & Poor's organizes the earnings estimates of over 2,300 Wall Street analysts, and provides their consensus of earnings over the next two years. This graph shows the trend in analyst estimates over the past 15 months.

## Westlake Chemical Corp

## Glossary

## S&amp;P STARS

Since January 1, 1987, Standard and Poor's Equity Research Services has ranked a universe of common stocks based on a given stock's potential for future performance. Under proprietary STARS (Stock Appreciation Ranking System), S&P equity analysts rank stocks according to their individual forecast of a stock's future total return potential versus the expected total return of a relevant benchmark (e.g., a regional index (S&P Asia 50 Index, S&P Europe 350 Index or S&P 500 Index)), based on a 12-month time horizon. STARS was designed to meet the needs of investors looking to put their investment decisions in perspective. Data used to assist in determining the STARS ranking may be the result of the analyst's own models as well as internal proprietary models resulting from dynamic data inputs.

## S&amp;P 12-Month Target Price

The S&P equity analyst's projection of the market price a given security will command 12 months hence, based on a combination of intrinsic, relative, and private market valuation metrics, including S&P Fair Value.

## Investment Style Classification

Characterizes the stock as Growth or Value, and indicates its capitalization level. Growth is evaluated along three dimensions (earnings, sales and internal growth), while Value is evaluated along four dimensions (book-to-price, cash flow-to-price, dividend yield and sale-to-price). Growth stocks score higher than the market average on growth dimensions and lower on value dimensions. The reverse is true for Value stocks. Certain stocks are classified as Blend, indicating a mixture of growth and value characteristics and cannot be classified as purely growth or value.

## S&amp;P EPS Estimates

Standard & Poor's earnings per share (EPS) estimates reflect analyst projections of future EPS from continuing operations, and generally exclude various items that are viewed as special, non-recurring, or extraordinary. Also, S&P EPS estimates reflect either forecasts of S&P equity analysts; or, the consensus (average) EPS estimate, which are independently compiled by Capital IQ, a data provider to Standard & Poor's Equity Research. Among the items typically excluded from EPS estimates are asset sale gains; impairment, restructuring or merger-related charges; legal and insurance settlements; in process research and development expenses; gains or losses on the extinguishment of debt; the cumulative effect of accounting changes; and earnings related to operations that have been classified by the company as discontinued. The inclusion of some items, such as stock option expense and recurring types of other charges, may vary, and depend on such factors as industry practice, analyst judgment, and the extent to which some types of data is disclosed by companies.

## S&amp;P Core Earnings

Standard & Poor's Core Earnings is a uniform methodology for adjusting operating earnings by focusing on a company's after-tax earnings generated from its principal businesses. Included in the Standard & Poor's definition are employee stock option grant expenses, pension costs, restructuring charges from ongoing operations, write-downs of depreciable or amortizable operating assets, purchased research and development, M&A related expenses and unrealized gains/losses from hedging activities. Excluded from the definition are pension gains, impairment of goodwill charges, gains or losses from asset sales, reversal of prior-year charges and provision from litigation or insurance settlements.

## Qualitative Risk Assessment

The S&P equity analyst's view of a given company's operational risk, or the risk of a firm's ability to continue as an ongoing concern. The Qualitative Risk Assessment

is a relative ranking to the S&P U.S. STARS universe, and should be reflective of risk factors related to a company's operations, as opposed to risk and volatility measures associated with share prices.

## Quantitative Evaluations

In contrast to our qualitative STARS recommendations, which are assigned by S&P analysts, the quantitative evaluations described below are derived from proprietary arithmetic models. These computer-driven evaluations may at times contradict an analyst's qualitative assessment of a stock. One primary reason for this is that different measures are used to determine each. For instance, when designating STARS, S&P analysts assess many factors that cannot be reflected in a model, such as risks and opportunities, management changes, recent competitive shifts, patent expiration, litigation risk, etc.

## S&amp;P Quality Ranking

Growth and stability of earnings and dividends are deemed key elements in establishing S&P's Quality Rankings for common stocks, which are designed to encapsulate the nature of this record in a single symbol. It should be noted, however, that the process also takes into consideration certain adjustments and modifications deemed desirable in establishing such rankings. The final score for each stock is measured against a scoring matrix determined by analysis of the scores of a large and representative sample of stocks. The range of scores in the array of this sample has been aligned with the following ladder of rankings:

A+ Highest	B Below Average
A High	B- Lower
A- Above Average	C Lowest
B+ Average	D In Reorganization
NR Not Ranked	

## S&amp;P Fair Value Rank

Using S&P's exclusive proprietary quantitative model, stocks are ranked in one of five groups, ranging from Group 5, listing the most undervalued stocks, to Group 1, the most overvalued issues. Group 5 stocks are expected to generally outperform all others. A positive (+) or negative (-) Timing Index is placed next to the Fair Value ranking to further aid the selection process. A stock with a (+) added to the Fair Value Rank simply means that this stock has a somewhat better chance to outperform other stocks with the same Fair Value Rank. A stock with a (-) has a somewhat lesser chance to outperform other stocks with the same Fair Value Rank. The Fair Value rankings imply the following: 5-Stock is significantly undervalued; 4-Stock is moderately undervalued; 3-Stock is fairly valued; 2-Stock is modestly overvalued; 1-Stock is significantly overvalued.

## S&amp;P Fair Value Calculation

The price at which a stock should trade at, according to S&P's proprietary quantitative model that incorporates both actual and estimated variables (as opposed to only actual variables in the case of S&P Quality Ranking). Relying heavily on a company's actual return on equity, the S&P Fair Value model places a value on a security based on placing a formula-derived price-to-book multiple on a company's consensus earnings per share estimate.

## Insider Activity

Gives an insight as to insider sentiment by showing whether directors, officers and key employees who have proprietary information not available to the general public, are buying or selling the company's stock during the most recent six months.

## Funds From Operations FFO

FFO is Funds from Operations and equal to a REIT's net income, excluding gains or losses from sales of property, plus real estate depreciation.

## Investability Quotient (IQ)

The IQ is a measure of investment desirability. It serves

as an indicator of potential medium-to-long term return and as a caution against downside risk. The measure takes into account variables such as technical indicators, earnings estimates, liquidity, financial ratios and selected S&P proprietary measures.

## S&amp;P's IQ Rationale:

Westlake Chemical		
	Raw Score	Max Value
Proprietary S&P Measures	23	115
Technical Indicators	14	40
Liquidity/Volatility Measures	19	20
Quantitative Measures	64	75
<b>IQ Total</b>	<b>120</b>	<b>250</b>

## Volatility

Rates the volatility of the stock's price over the past year.

## Technical Evaluation

In researching the past market history of prices and trading volume for each company, S&P's computer models apply special technical methods and formulas to identify and project price trends for the stock.

## Relative Strength Rank

Shows, on a scale of 1 to 99, how the stock has performed versus all other companies in S&P's universe on a rolling 13-week basis.

## Global Industry Classification Standard (GICS)

An industry classification standard, developed by Standard & Poor's in collaboration with Morgan Stanley Capital International (MSCI). GICS is currently comprised of 10 Sectors, 24 Industry Groups, 68 Industries, and 154 Sub-Industries.

## S&amp;P Issuer Credit Rating

A Standard & Poor's Issuer Credit Rating is a current opinion of an obligor's overall financial capacity (its creditworthiness) to pay its financial obligations. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due. It does not apply to any specific financial obligation, as it does not take into account the nature of and provisions of the obligation, its standing in bankruptcy or liquidation, statutory preferences, or the legality and enforceability of the obligation. In addition, it does not take into account the creditworthiness of the guarantors, insurers, or other forms of credit enhancement on the obligation. The Issuer Credit Rating is not a recommendation to purchase, sell, or hold a financial obligation issued by an obligor, as it does not comment on market price or suitability for a particular investor. Issuer Credit Ratings are based on current information furnished by obligors or obtained by Standard & Poor's from other sources it considers reliable. Standard & Poor's does not perform an audit in connection with any Issuer Credit Rating and may, on occasion, rely on unaudited financial information. Issuer Credit Ratings may be changed, suspended, or withdrawn as a result of changes in, or unavailability of, such information, or based on other circumstances.

## Exchange Type

ASE - American Stock Exchange; AU - Australia Stock Exchange; BB - Bulletin Board; NGM - Nasdaq Global Market; NNM - Nasdaq Global Select Market; NSC - Nasdaq Capital Market; NYS - New York Stock Exchange; OTN - Other OTC (Over the Counter); OTC - Over the Counter; QB - OTCQB; QX - OTCQX; TS - Toronto Stock Exchange; TXV - TSX Venture Exchange; NEX - NEX Exchange.

## S&amp;P Equity Research Services

Standard & Poor's Equity Research Services U.S. includes Standard & Poor's Investment Advisory Services LLC; Standard & Poor's Equity Research Services Europe includes McGraw-Hill Financial Research Europe Limited trading as Standard & Poor's; Standard & Poor's Equity Research Services Asia includes McGraw-Hill Financial Singapore Pte. Limited's

## Westlake Chemical Corp

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**Abbreviations Used in S&P Equity Research Reports**  
**CAGR**- Compound Annual Growth Rate; **CAPEX**- Capital Expenditures; **CY**- Calendar Year; **DCF**- Discounted Cash Flow; **EBIT**- Earnings Before Interest and Taxes; **EBITDA**- Earnings Before Interest, Taxes, Depreciation and Amortization; **EPS**- Earnings Per Share; **EV**- Enterprise Value; **FCF**- Free Cash Flow; **FFO**- Funds From Operations; **FY**- Fiscal Year; **P/E**- Price/Earnings; **PEG Ratio**- P/E-to-Growth Ratio; **PV**- Present Value; **R&D**- Research & Development; **ROE**- Return on Equity; **ROI**- Return on Investment; **ROIC**- Return on Invested Capital; **ROA**- Return on Assets; **SG&A**- Selling, General & Administrative Expenses; **WACC**- Weighted Average Cost of Capital

**Dividends on American Depository Receipts (ADRs) and American Depository Shares (ADSs) are not of taxes (paid in the country of origin).**

### Required Disclosures

In contrast to the qualitative STARS recommendations covered in this report, which are determined and assigned by S&P equity analysts, S&P's quantitative evaluations are derived from S&P's proprietary Fair Value quantitative model. In particular, the Fair Value Ranking methodology is a relative ranking methodology, whereas the STARS methodology is not. Because the Fair Value model and the STARS methodology reflect different criteria, assumptions and analytical methods, quantitative evaluations may at times differ from (or even contradict) an equity analyst's STARS recommendations. As a quantitative model, Fair Value relies on history and consensus estimates and does not introduce an element of subjectivity as can be the case with equity analysts in assigning STARS recommendations.

### S&P Global STARS Distribution

**In North America:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services North America recommended 37.5% of issuers with buy recommendations, 57.5% with hold recommendations and 5.0% with sell recommendations.

**In Europe:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services Europe recommended 32.5% of issuers with buy recommendations, 50.8% with hold recommendations and 16.7% with sell recommendations.

**In Asia:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services Asia recommended 34.7% of issuers with buy recommendations, 57.8% with hold recommendations and 7.5% with sell recommendations.

**Globally:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services globally recommended 36.5% of issuers with buy recommendations, 56.4% with hold recommendations and 7.1% with sell recommendations.

★★★★★ **5-STARS (Strong Buy):** Total return is expected to outperform the total return of a relevant benchmark, by a wide margin over the coming 12 months, with shares rising in price on an absolute basis.

★★★★ **4-STARS (Buy):** Total return is expected to outperform the total return of a relevant benchmark over the coming 12 months, with shares rising in price on an absolute basis.

★★★ **3-STARS (Hold):** Total return is expected to closely approximate the total return of a relevant benchmark over the coming 12 months, with shares generally rising in price on an absolute basis.

★★ **2-STARS (Sell):** Total return is expected to

underperform the total return of a relevant benchmark over the coming 12 months, and the share price not anticipated to show a gain.

★ **1-STARS (Strong Sell):** Total return is expected to underperform the total return of a relevant benchmark by a wide margin over the coming 12 months, with shares falling in price on an absolute basis.

**Relevant benchmarks:** In North America the relevant benchmark is the S&P 500 Index, in Europe and in Asia, the relevant benchmarks are generally the S&P Europe 350 Index and the S&P Asia 50 Index.

**For All Regions:** All of the views expressed in this research report accurately reflect the research analyst's personal views regarding any and all of the subject securities or issuers. No part of analyst compensation was, is, or will be directly or indirectly, related to the specific recommendations or views expressed in this research report.

### S&P Global Quantitative Recommendations Distribution

**In North America:** As of June 29, 2012, Standard & Poor's Quantitative Services North America recommended 40.0% of issuers with buy recommendations, 20.1% with hold recommendations and 39.9% with sell recommendations.

**In Europe:** As of June 29, 2012, Standard & Poor's Quantitative Services Europe recommended 45.6% of issuers with buy recommendations, 21.0% with hold recommendations and 33.4% with sell recommendations.

**In Asia:** As of June 29, 2012, Standard & Poor's Quantitative Services Asia recommended 52.7% of issuers with buy recommendations, 18.4% with hold recommendations and 28.9% with sell recommendations.

**Globally:** As of June 29, 2012, Standard & Poor's Quantitative Services globally recommended 46.9% of issuers with buy recommendations, 19.6% with hold recommendations and 33.5% with sell recommendations.

**Additional information is available upon request.**

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# Westlake Chemical Corp



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(a) to (d) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, respectively.

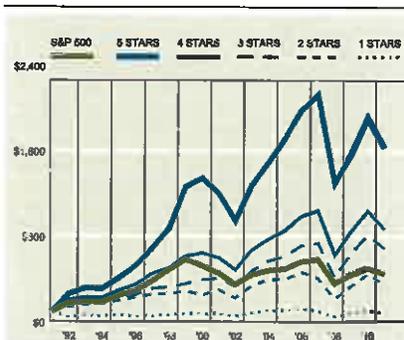
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### U.S. STARS Cumulative Model Performance Hypothetical Growth Due to Price Appreciation of \$100 For the Period 12/31/1986 through 08/31/2012



The performance above represents only the results of Standard & Poor's model portfolios. Model performance has inherent limitations. Standard & Poor's maintains the models and calculates the model performance shown, but does not manage actual assets. The U.S. STARS model performance chart is only an illustration of Standard & Poor's (S&P) research; it shows how U.S. common stocks, ADRs (American Depositary Receipts) and ADSs (American Depositary Shares), collectively "equities", that received particular STARS rankings performed. STARS categories are models only; they are not collective investment funds. The STARS performance does not show how any actual portfolio has performed. STARS model performance does not represent the results of actual trading of investor assets. Thus, the model performance shown does not reflect the impact that material economic and market factors might have had on decision-making if actual investor money had been managed. Performance is calculated using a time-weighted rate of return. While model performance for some or all STARS categories performed better than the S&P 500 for the period shown, the performance during any shorter period may not have, and there is no assurance that they will perform better than the S&P 500 in the future. STARS does not take into account any particular investment objective, financial situation or need and is not intended as an investment recommendation or strategy. Investments based on the STARS methodology may lose money. High returns are

not necessarily the norm and there is no assurance that they can be sustained. Past model performance of STARS is no guarantee of future performance.

For model performance calculation purposes, the equities within each STARS category at December 31, 1986 were equally weighted. Thereafter, additions to the composition of the equities in each STARS category are made at the average value of the STARS category at the preceding month end with no rebalancing. Deletions are made at the closing price of the day that the deletion is made. Performance was calculated from inception through March 31, 2003 on a monthly basis. Thereafter, performance is calculated daily. Equities in each STARS category will change over time, and some or all of the equities that received STARS rankings during the time period shown may not have maintained their STARS ranking during the entire period.

The model performance does not consider taxes and brokerage commissions, nor does it reflect the deduction of any advisory or other fees charged by advisors or other parties that investors will incur when their accounts are managed in accordance with the models. The imposition of these fees and charges would cause actual performance to be lower than the performance shown. For example, if a model returned 10 percent on a \$100,000 investment for a 12-month period (or \$10,000) and an annual asset-based fee of 1.5 percent were imposed at the end of the period (or \$1,650), the net return would be 8.35 percent (or \$8,350) for the year. Over 3 years, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.1%, a total fee of \$5,375 and a cumulative net return of 27.2% (or \$27,200). Fees deducted on a frequency other than annual would result in a different cumulative net return in the preceding example.

The Standard & Poor's 500 index is the benchmark for U.S. STARS. The S&P 500 index is calculated in U.S. dollars and does not take into account the reinvestment of dividends. Indexes are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. The S&P 500 index includes a different number of constituents and has different risk characteristics than the STARS equities. Some of the STARS equities may have been included in the S&P 500 index for some (but not necessarily all) of the period covered in the chart, and some such equities may not have been included at all. The S&P 500 excludes ADRs and ADSs. The methodology for calculating the return of the S&P 500 index differs from the methodology of calculating the return for STARS. Past performance of the S&P 500 index is no guarantee of future performance.

An investment based upon the models should only be made after consulting with a financial advisor and with an understanding of the risks associated with any investment in securities, including, but not limited to, market risk, currency risk, political and credit risks, the risk of economic recession and the risk that issuers of securities or general stock market conditions may worsen, over time. Foreign investing involves certain risks, including currency fluctuations and controls, restrictions on foreign investments, less governmental supervision and regulation, less liquidity and the potential for market volatility and political instability. As with any investment, investment returns and principal value will fluctuate, so that when redeemed, an investor's shares may be worth more or less than their original cost.

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## Westlake Chemical Corp

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The Zatkín Financial Group  
of Wells Fargo Advisors

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Member FINRA/SIPC

## CITY OF TROY MEMBERS OF THE BOARD

OCTOBER 2012

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We recommend **adding** the following position to our equity portfolio:

<b><u>Gilead Sciences Inc</u></b>	<b>(GILD...\$67.44)*</b>
<b>Industry:</b>	<b><i>Biotechnology</i></b>
<b>Economic Sector:</b>	<b><i>Health Care</i></b>
<b>Exchange:</b>	<b><i>NASDAQ</i></b>
<b>P/E = 20.44*</b>	<b>Yield = n/a*</b>
<b><u>Ratings:</u></b>	
<b>WF Securities</b>	<b>Outperform</b>
<b>Sanford Bernstein</b>	<b>Outperform</b>

We appreciate your continued support and consideration.

Sincerely,

Doug Wegner  
Financial Consultant

Enclosures

\* as of October 1, 2012

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October 2, 2012

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<http://www.wellsfargoadvisors.com/researchdisclosures>

Sincerely,

A handwritten signature in black ink that reads "Doug Wegner".

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## 2012 AALSD Abstracts Set Stage For Key Event

New Data For GILD, VRTX, ABT, MRK, And Others In All-Oral HCV Race; Still Await Key ABT/AVIATOR, '7977/'5885, '7977/Daclatasvir, And BMY Triple-Combo Data

### Sector Rating: Biotechnology, Market Weight

Company Name	Rating	Price 10/01/12	FY EPS		FY P/E	
			2012E	2013E	2012	2013
<b>Biotechnology</b>						
Achillion Pharmaceuticals, Inc. (ACHN)	1 V	\$10.61	(\$0.58)	(\$0.53)	NM	NM
Gilead Sciences, Inc. (GILD)	1	67.30	3.63	4.15	18.5x	16.2x
Vertex Pharmaceuticals Inc. (VRTX)	1 V	55.92	1.75	1.95	32.0x	28.7x

Source: Company data and Wells Fargo Securities, LLC estimates 1= Outperform, 2 = Market Perform, 3 = Underperform, V = Volatile, \* = Company is on the Priority Stock List NA = Not Available, NC = No Change, NE = No Estimate, NM = Not Meaningful

- **Summary:** Abstracts for the upcoming AALSD Meeting to be held in Boston from 11/9 to 11/13 are available online. We provide our thoughts on various key presentations for GILD, VRTX, ABT, and MRK. Abstracts for late-breaking posters and oral presentations are not currently available, but will be on 10/15.
- **'7977/'5885 in GT-1:** Key data from the 12-week '7977/'5885 arm of ELECTRON was not in the abstracts but will be presented at the meeting. Updated data from the ATOMIC study testing '7997+IFN/RBV in GT-1--and mirroring GILD's recently initiated NEUTRINO study--continued to show high SVR24 for the 12-week total regimen (85%), though a few additional patients relapsed or were lost to follow up. '5885's safety looks clean in 1,039 patients and 300 years cumulative exposure; pancreatitis (which resolved), hypersensitivity, and hallucination were the only three SAE's observed absent IFN/RBV, and these could also be related to '9451 or '9190 also used in those patients.
- **'7977 in GT-2/3:** New data from ELECTRON shows modest erosion of cure rates for '7977/RBV in treatment-experienced GT-2/3 patients, with SVR8 now 67% (vs. 73% prior interim), in part due to an additional relapse post-SVR4. An abstract on comprehensive '7977 resistance testing reveals only one occurrence of an S282T mutation, in a GT-2b patient on monotherapy; while this is the first such report of this emerging clinically, its rarity continues to demonstrate '7977's extremely high resistance barrier.
- **Daclatasvir/'7977:** There were limited data in the abstracts for the daclatasvir/'7977 combo study, although one abstract provides an anecdotal report of a post-transplant patient successfully treated with the combo--indicating activity in tougher to treat patients. We expect SVR12 data from the 24-week daclatasvir/'7977 study (focus on any post-treatment relapses) and possibly initial SVR4 data from the 12-week daclatasvir/'7977 arms (read-through to GILD's '7977/'5885 regimen) as late breakers.
- **ABT's regimens:** Key data from ABT's AVIATOR study will be available 10/15 when late-breakers are released. We continue to expect it to show high SVRs for the PI+NS5A arms (positive read-through for ACHN, potentially more competitive with GILD). Though we do not expect a PI+non-nuc to be ABT's go-forward regimen, new resistance data from the prior non-responders in CO-PILOT show--as we suspected--resistance to both classes. *(Continued next page.)*

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Please see page 3 for rating definitions, important disclosures and required analyst certifications  
All estimates/forecasts are as of 10/01/12 unless otherwise stated.

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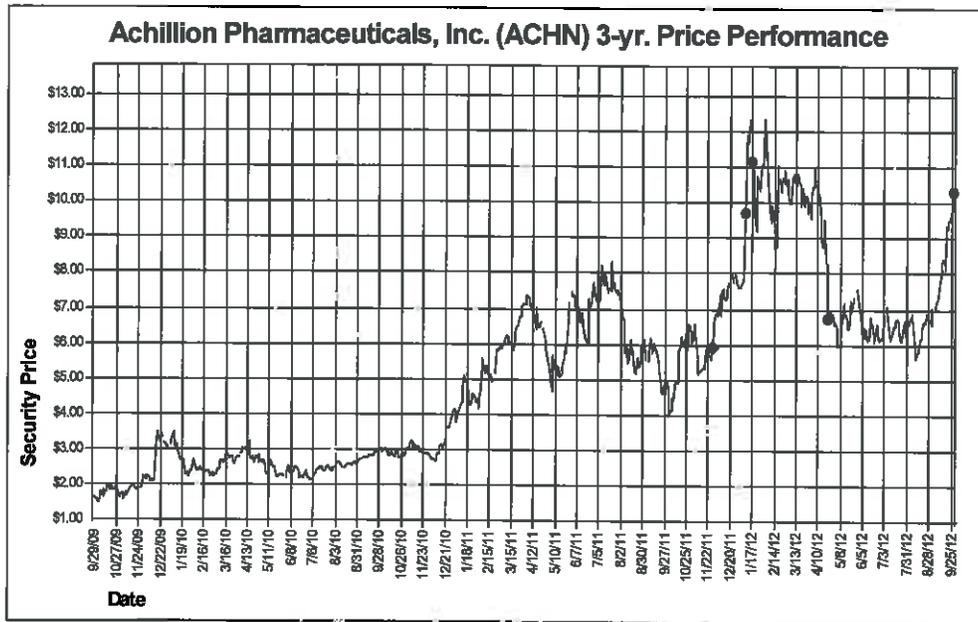
Together we'll go far



**Continued from Front Page**

- **ALS 2200:** The abstracts for VRTX's nuc describe clinical data that is less up to date than what VRTX has announced, however they do confirm reasonable numbers of more difficult-to-treat non-CC patients in the earlier monotherapy cohorts and clean safety -- normal ECGs, 2 cases of headache and diarrhea each, and no SAEs. Though it is effectively trumped by known clinical data, of note abstracts report a replicon EC50 of 150nm for the drug in GT-1, in line with our view that it is less potent than GS-7977 and INX-189, but more potent than IDX-184 and orders of magnitude greater than early nucleosides.
- **Telaprevir BID/TID:** Though this is not the ph.III data from the OPTIMIZE study (data expected later this year) that we thought was hinted at by the abstract title, this study of real-world use of BID (twice-daily) telaprevir at one center does indicate BID is similar to historical TID results in a tough-to-treat patient population.
- **MRK mirroring ACHN's strategy?** Though in a dated regimen +IFN/RBV, relative to other PIs tested in such a regimen MRK's 2<sup>nd</sup>-generation PI MK-5172 appeared to show good potency in GT-1 even at the lower, better-tolerated doses (interim SVR 80%+) -- though a small % still experienced transaminase elevations, and safety could still be a question. MRK also has an early NS5A inhibitor MK-8742, which like ACHN's '3102 appears potent against common NS5A resistance mutations, and based on the abstract exploring preclinical additivity between '5172 and '8742 we expect Merck to pursue a PI+NS5A all-oral strategy.
- **Epidemiology/warehousing:** An abstract from two large urban academic hepatology practices (Miami and Dallas) assessing use of telaprevir and boceprevir in the first year after approval suggests that use was primarily in the sickest to treat patients -- 44% of relapsers to IFN/RBV and 41% compensated cirrhotic patients. Only 19% of eligible patients initiated therapy at these clinics and 21% discontinued before 12 weeks of therapy, indicating a large warehousing effect of naïve, less advanced patients still exists for oral direct-acting antiviral combos.
- **GS-6624:** Early safety data from GILD's anti-fibrotic agent in ten patients with liver fibrosis showed acceptable tolerability; four patients with baseline transaminase elevations showed declines mid-way through dosing, perhaps suggestive of some activity.
- **Other studies:** Other data to be presented at the conference include updates from Boehringer Ingelheim's combos, detailed data for Idenix's NS5A inhibitor IDX-719 and nuc IDX-184, preclinical data for ACHN's '2684 and '3102, updated ZENITH combo study with VRTX's VX-222 (non-nuc) + telaprevir, and details from Roche's MATTERHORN trial.

### Required Disclosures



	Date	Publication Price (\$)	Rating Code	Val. Rng. Low	Val. Rng. High	Close Price (\$)
	11/28/2011		Abrahams, M.D.			
◆	11/28/2011	5.95	1	8.00	10.00	5.95
●	1/9/2012	9.17	1	12.00	14.00	9.72
●	1/17/2012	12.37	1	14.00	16.00	11.18
●	4/23/2012	8.28	1	11.00	13.00	6.75
●	9/27/2012	10.29	1	14.00	16.00	10.30

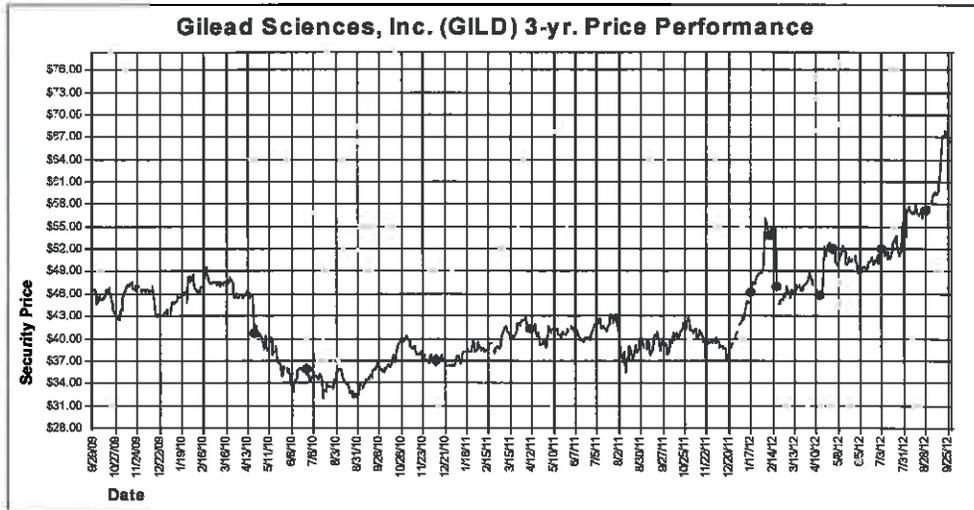
Source: Wells Fargo Securities, LLC estimates and Reuters data

**Symbol Key**

- ▼ Rating Downgrade
- ▲ Rating Upgrade
- Valuation Range Change
- ◆ Initiation, Resumption, Drop or Suspend
- Analyst Change
- Split Adjustment

**Rating Code Key**

- 1 Outperform/Buy
- 2 Market Perform/Hold
- 3 Underperform/Sell
- SR Suspended
- NR Not Rated
- NE No Estimate



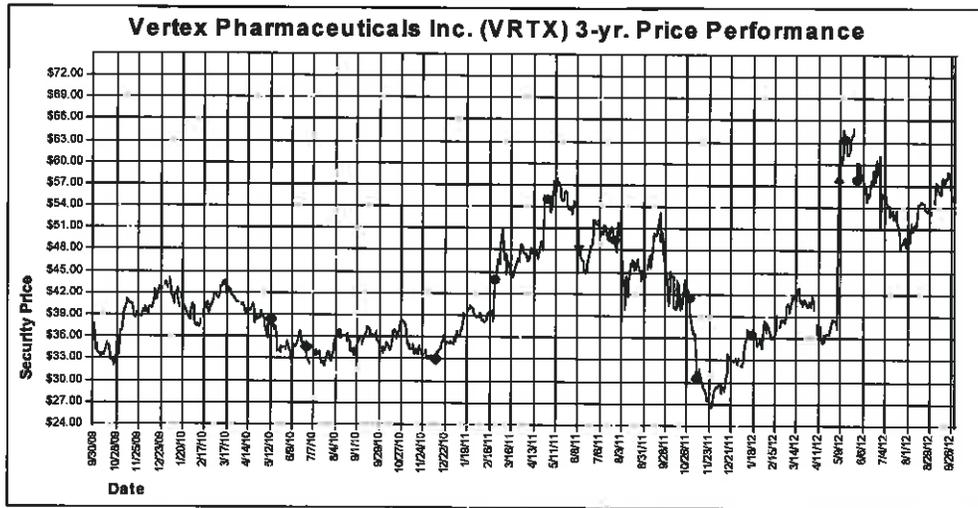
	Date	Publication Price (\$)	Rating Code	Val. Rng. Low	Val. Rng. High	Close Price (\$)
	9/29/2009		Reames			
	9/29/2009	NA	1	82.00	65.00	46.48
●	4/21/2010	45.07	1	60.00	64.00	40.78
	6/28/2010		Hausner			
◆	6/28/2010	36.00	SR	NE	NE	35.77
	12/9/2010		Abrahams			
◆	12/9/2010	36.99	1	48.00	52.00	38.99
●	4/8/2011	41.80	1	50.00	54.00	41.25
●	1/17/2012	44.89	1	55.00	59.00	46.26
●	2/9/2012	53.73	1	60.00	64.00	53.73
●	2/17/2012	46.70	1	58.00	62.00	47.00
●	4/12/2012	45.42	1	60.00	64.00	45.72
●	4/30/2012	51.91	1	69.00	83.00	52.02
●	7/3/2012	51.63	1	60.00	64.00	52.08
●	8/27/2012	57.19	1	63.00	67.00	57.19

Source: Wells Fargo Securities, LLC estimates and Reuters data

**Symbol Key**  
 ▼ Rating Downgrade  
 ▲ Rating Upgrade  
 ● Valuation Range Change

◆ Initiation, Resumption, Drop or Suspend  
 ■ Analyst Change  
 □ Split Adjustment

**Rating Code Key**  
 1 Outperform/Buy  
 2 Market Perform/Hold  
 3 Underperform/Sell  
 SR Suspended  
 NR Not Rated  
 NE No Estimate



Date	Publication Price (\$)	Rating Code	Val. Rng. Low	Val. Rng. High	Close Price (\$)
5/13/2010		Reames			
5/13/2010	38.45	2	38.00	43.00	38.48
6/28/2010		Hausner			
6/28/2010	34.80	SR	NE	NE	34.71
12/9/2010		Abrahams			
12/9/2010	33.17	1	44.00	48.00	33.17
2/23/2011	43.83	1	50.00	54.00	43.97
4/29/2011	55.54	1	60.00	64.00	55.05
6/9/2011	48.80	2	50.00	54.00	48.07
7/26/2011	48.35	2	52.00	56.00	49.55
10/28/2011	42.58	2	48.00	52.00	41.58
11/8/2011	33.22	2	36.00	40.00	30.45
1/17/2012	36.81	2	40.00	44.00	36.51
5/7/2012	58.12	1	68.00	72.00	58.12
5/15/2012	64.70	1	71.00	75.00	63.38
5/29/2012	58.09	1	65.00	69.00	57.80

Source: Wells Fargo Securities, LLC estimates and Reuters data

<b>Symbol Key</b>		<b>Rating Code Key</b>	
▼ Rating Downgrade	◆ Initiation, Resumption, Drop or Suspend	1 Outperform/Buy	SR Suspended
▲ Rating Upgrade	■ Analyst Change	2 Market Perform/Hold	NR Not Rated
● Valuation Range Change	□ Split Adjustment	3 Underperform/Sell	NE No Estimate

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- 2) No part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by me in this research report.

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- Wells Fargo Securities, LLC received compensation for products or services other than investment banking services from Achillion Pharmaceuticals, Inc., Gilead Sciences, Inc. in the past 12 months.
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- Wells Fargo Securities, LLC or its affiliates has a significant financial interest in Gilead Sciences, Inc., Vertex Pharmaceuticals Inc.

**ACHN:** Key risks include failure of '1625/'3102 to demonstrate adequate efficacy, a safety signal, and competition.

**GILD:** Key risks include delay or no approval of the Quad in the EU, growing cost-consciousness among payers, and ph.III failure of PSI-7977.

**VRTX:** Risks include failure of ph.III '770/'809 in CF and longer-term HCV competition.

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**1=Outperform:** The stock appears attractively valued, and we believe the stock's total return will exceed that of the market over the next 12 months. BUY

**2=Market Perform:** The stock appears appropriately valued, and we believe the stock's total return will be in line with the market over the next 12 months. HOLD

**3=Underperform:** The stock appears overvalued, and we believe the stock's total return will be below the market over the next 12 months. SELL

**SECTOR RATING**

**O=Overweight:** Industry expected to outperform the relevant broad market benchmark over the next 12 months.

**M=Market Weight:** Industry expected to perform in-line with the relevant broad market benchmark over the next 12 months.

**U=Underweight:** Industry expected to underperform the relevant broad market benchmark over the next 12 months.

**VOLATILITY RATING**

**V =** A stock is defined as volatile if the stock price has fluctuated by +/-20% or greater in at least 8 of the past 24 months or if the analyst expects significant volatility. All IPO stocks are automatically rated volatile within the first 24 months of trading.

**As of: October 1, 2012**

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SECURITIES: NOT FDIC-INSURED/NOT BANK-GUARANTEED/MAY LOSE VALUE



# Gilead Sciences Inc

**S&P Recommendation** BUY ★★☆☆

**Price**  
\$66.33 (as of Sep 28, 2012)

**12-Mo. Target Price**  
\$75.00

**Investment Style**  
Large-Cap Growth

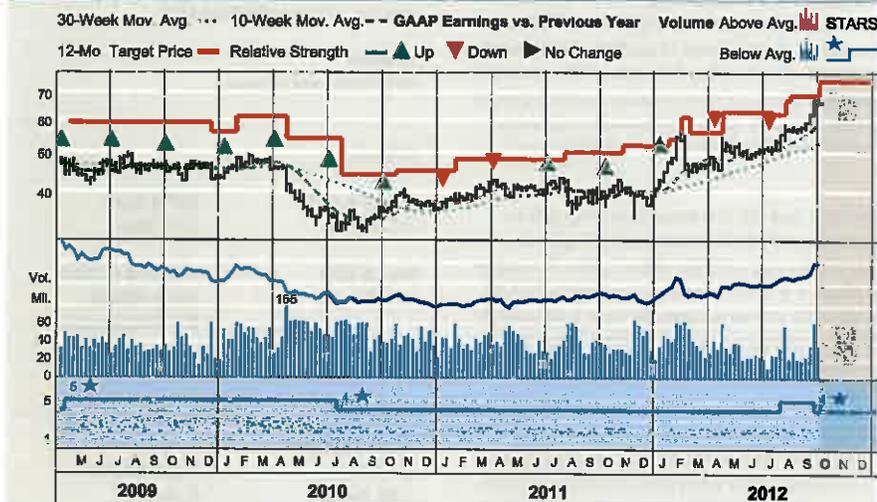
**GICS Sector** Health Care  
**Sub-Industry** Biotechnology

**Summary** This biopharmaceutical company is engaged in the discovery, development and commercialization of treatments to fight viral, bacterial and fungal infections, respiratory disorders, and cardiovascular conditions.

**Key Stock Statistics** (Source: S&P, Vickers, company reports)

52-Wk Range	\$68.08 - 34.45	S&P Oper. EPS 2012E	3.50	Market Capitalization(B)	\$50.183	Beta	0.45
Trailing 12-Month EPS	\$3.30	S&P Oper. EPS 2013E	4.15	Yield (%)	Nil	S&P 3-Yr. Proj. EPS CAGR(%)	16
Trailing 12-Month P/E	20.1	P/E on S&P Oper. EPS 2012E	19.0	Dividend Rate/Share	Nil	S&P Credit Rating	A-
\$10K Invested 5 Yrs Ago	\$16,230	Common Shares Outstg. (M)	756.6	Institutional Ownership (%)	87		

**Price Performance**



Options: ASE, CBOE, P, Ph

Analysis prepared by Equity Analyst **Steven Silver** on Sep 25, 2012, when the stock traded at \$67.78.

**Highlight:**

- We estimate 2012 revenues of \$9.34 billion, up 11% from 2011. We expect 8% growth in 2013, to \$10.1 billion. We view favorably GILD's leading U.S. HIV drug market share, and trends for earlier HIV patient diagnosis and start of anti-viral treatment, as we see the HIV franchise providing the majority of GILD's revenues over the near term. In our view, recently acquired hepatitis C drug GS-7977 could secure initial regulatory approvals by 2014.
- We see operating margins around 44% in 2012, below 2011 levels due to greater sales of lower-margin Atripla and higher R&D spending, among other factors. However, we expect GILD's margins to expand over the long term, to 47% in 2013, as the company launches wholly owned Stribild (formerly "Quad"), in the second half of 2012, following its August approval.
- We estimate adjusted EPS of \$3.50 for 2012 and \$4.15 for 2013, which includes \$0.20 in each period for stock option expense. As of June 30, 2012, GILD had \$2.3 billion in cash and \$7.4 billion in debt, after the January 2012 acquisition of Pharmasset. As such, we see higher interest expense weighing on near-term results.

**Investment Rationale/Risk**

- Our recent downgrade to buy, from strong buy, reflects an outlook for more modest share price appreciation, after a 20% advance following GILD's second-quarter earnings report in July 2012. We maintain a positive outlook for GILD's market-leading HIV franchise and emerging hepatitis C program, and think its growth profile has been enhanced by its acquisition of Pharmasset. We believe that GS-7977 is well positioned to emerge as a leader among emerging new treatments for hepatitis C, if robust data reported to date is confirmed in Phase III study. We think recent competitive newsflow where rival treatments have been discontinued or delayed has further bolstered GS-7977's competitive position.
- Risks to our recommendation and target price include a slowdown in HIV product sales from new competition, and failure to advance next-generation HIV and hepatitis C therapies.
- Our 12-month target price of \$75 is 18.1X our 2013 EPS estimate, a premium to the profitable biotech group average, given our view of a promising hepatitis C pipeline and solid HIV market trends.

**Qualitative Risk Assessment**

LOW MEDIUM HIGH

Our risk assessment reflects Gilead's dependence on its HIV drug franchise for near-term revenue growth, which we see as subject to pricing and reimbursement sensitivity, and patent expiration late in the decade. We see clinical progress on its hepatitis C program as key to long-term growth.

**Quantitative Evaluations**

**S&P Quality Ranking** B

D C B- B B+ A- A A+

**Relative Strength Rank** STRONG

LOWEST = 1 HIGHEST = 99

**Revenue/Earnings Data**

Revenue (Million U.S. \$)	1Q	2Q	3Q	4Q	Year
2012	2,282	2,405	--	--	--
2011	1,926	2,137	2,122	2,200	8,385
2010	2,086	1,927	1,938	1,999	7,949
2009	1,530	1,647	1,801	2,032	7,011
2008	1,258	1,278	1,371	1,428	5,336
2007	1,028	1,048	1,059	1,095	4,230

**Earnings Per Share (U.S. \$)**

2012	0.57	0.91	E0.84	E0.86	E3.50
2011	0.80	0.93	0.95	0.87	3.55
2010	0.92	0.79	0.83	0.76	3.32
2009	0.63	0.61	0.72	0.86	2.82
2008	0.51	0.46	0.53	0.60	2.10
2007	0.43	0.42	0.42	0.41	1.68

Fiscal year ended Dec. 31. Next earnings report expected: Late October. EPS Estimates based on S&P Operating Earnings; historical GAAP earnings are as reported.

**Dividend Data**

No cash dividends have been paid.

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# Gilead Sciences Inc



## Business Summary September 25, 2012

**CORPORATE OVERVIEW.** Gilead Sciences (GILD) focuses on the research, development and marketing of anti-infective medications, with a primary focus on treatments for HIV.

GILD has a leading market position in treating HIV virus. Its Truvada, approved in 2004, is a once-daily combination tablet formulated with previous-generation drugs Viread and Emtriva. Emtriva was the lead product of Triangle Pharmaceuticals, acquired in 2003. Viread was approved in 2001. Truvada generated 2011 sales of \$2.88 billion, 8% above 2010. Viread is also used for treating hepatitis B, and saw 1% sales growth to \$738 million in 2011. In 2006, GILD and Bristol-Myers Squibb (BMY) launched Atripla, a combination tablet with Truvada and BMY's Sustiva. GILD books Atripla sales and then pays BMY its 37% share for the Sustiva portion of the drug, which GILD counts as cost of goods on its financial statements. Atripla generated 2011 sales of \$3.2 billion, up 10% from 2010. Atripla received EU approval in December 2007.

Among newer HIV treatments, Complera (U.S.) and Eviplera (Europe), comprised of Truvada and Tibotec's Edurant (rilpivirine) were approved during 2011. In August 2012, GILD secured FDA approval for its wholly owned "Quad Pill", marketed as Stribild, which combines investigational agents elvitegravir, and HIV boosting agent cobicistat, with Truvada in patients new to HIV treatment. In two Phase III studies, "Quad" met its primary endpoint of non-inferiority to Atripla, with a favorable side effect profile. A European filing is under review as well. We think that GILD's premium pricing for Stribild could face some pushback among payers. Despite its leading market position, we see several companies as having current competitive regimens or advancing potential combinations to rival GILD's product roster, including GlaxoSmithKline, Pfizer and Merck, among others.

Hepsera, approved for treatment of chronic hepatitis B in the U.S. and EU, saw sales decline by 28% in 2011, to \$145 million. AmBisome B, an antifungal agent that is approved for life-threatening fungal infections including cryptococcal meningitis in AIDS patients, generated sales of \$330 million in 2011, 8% higher than in 2010. Tamiflu, an orally administered treatment for influenza A and B, was approved by the FDA for adults in October 1999 and for children ages 1-12 in December 2005. Roche markets the drug, paying GILD a 21%-22% royalty. During 2009, Roche increased production of Tamiflu in response to rising demand following the spring 2009 outbreak of swine flu. However, royalties have slowed significantly since 2010. Tamiflu's patents expire at the end of 2016.

In October 2006, GILD purchased Myogen for \$2.5 billion for rights to Letairis, a once-daily treatment for pulmonary arterial hypertension (PAH), which was approved in June 2007. In March 2011, the FDA revised the drug's label to no longer carry a black box warning about potential liver injury and to no longer require monthly liver testing. In 2011, Letairis generated \$293 million in sales, up 22% from 2010. In December 2010, a late-stage study of the drug in rare lung disorder idiopathic pulmonary fibrosis (IPF) was discontinued following a negative efficacy interim review. In 2009, GILD purchased CV Therapeutics for its lead drug Ranexa for chronic angina. Ranexa generated 2011 sales of \$320 million, up 33% from 2010. Cayston (aztreonam lysine), an inhaled medicine for cystic fibrosis, was approved by the FDA in February 2010 and is conditionally approved in Europe, with final approval conditional upon completion of an ongoing study.

**PIPELINE.** GILD is also advancing a pipeline for hepatitis C, with lead candidate GS-7977, acquired from Pharmasset. The drug has been widely viewed as a potential leader in next-generation all oral (interferon free) regimens for hep-C. Phase II data showed robust early cure rates in patients new to treatment, as both a single agent with ribavirin, and in combination with other agents. GILD plans to conduct late-stage studies with its internal agent, GS-5885, which GILD believes should yield similar results to a robust mid-stage study in combination with Bristol-Myers Squibb's daclatasvir. However, a study of GS-7977 and ribavirin reported in February 2012 in patients who had failed prior treatments with interferon, a key patient population, showed a high viral relapse rate. GILD plans to seek combinations for other oral anti-viral drugs with GS-7977, and we expect other drugmakers to follow suit.

In HIV, GILD is in early Phase II study on GS-9340, which it thinks could be more potent than current therapy backbone tenofovir (Viread) in smaller doses, thereby reducing toxicity. In January 2011, GILD acquired privately held Arresto Biosciences for \$225 million for its early-stage treatment for IPF and advanced solid tumors. In April 2011, GILD acquired privately held Calistoga Pharmaceuticals for \$375 million to add pipeline candidates in oncology and inflammation.

**FINANCIAL TRENDS.** In 2011, total revenues rose 5%, to \$8.4 billion. We estimate total 2012 revenues of about \$9.34 billion, an 11% increase, with an 8% increase, to \$10.1 billion, in 2013. As of June 30, 2012, GILD had \$2.27 billion of cash and securities and roughly \$7.4 billion of debt on its balance sheet. The company used cash on hand and \$6 billion of new debt to acquire Pharmasset in January 2012. Operations generated \$3.6 billion of cash in 2011, down from \$3.8 billion in 2010, due to impacts of U.S. health care reform and HIV pricing pressure in Europe. Since January 2010, GILD has repurchased roughly 164.2 million of its shares for \$6.2 billion, representing 18% of the shares outstanding. As of September 30, 2011, GILD had completed a prior \$5 billion program and commenced a new three-year, \$5 billion program. However, the company announced in November 2011 that it would suspend its share repurchase program to focus on debt reduction as a result of the Pharmasset acquisition.

## Corporate Information

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**Website**  
<http://www.gilead.com>

### Officers

<b>Chrmn &amp; CEO</b> J.C. Martin	<b>EVP &amp; Secy</b> G.H. Alton
<b>Pres &amp; COO</b> J.F. Milligan	<b>SVP, CFO &amp; Chief Acctg Officer</b> R.L. Washington
<b>EVP &amp; CSO</b> N.W. Bischofberger	

### Board Members

J. F. Cogan	V. E. Davignon
J. M. Denny	C. A. Hills
K. E. Lofton	J. W. Madigan
J. C. Martin	G. E. Moore
N. G. Moore	R. J. Whitley
G. E. Wilson	P. Wold-Olsen

<b>Domicile</b> Delaware	<b>Auditor</b> ERNST & YOUNG, New York, NY
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**Founded**  
1987

**Employees**  
4,500

**Stockholders**  
466

## Gilead Sciences Inc

## Quantitative Evaluations

<b>S&amp;P Fair Value Rank</b>	4+	1	2	3	4	5
		LOWEST				HIGHEST

Based on S&P's proprietary quantitative model, stocks are ranked from most overvalued (1) to most undervalued (5).

<b>Fair Value Calculation</b>	\$73.20	Analysis of the stock's current worth, based on S&P's proprietary quantitative model suggests that GILD is slightly undervalued by \$6.87 or 10.4%.
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<b>Investability Quotient Percentile</b>	98
	LOWEST = 1 HIGHEST = 100
	GILD scored higher than 98% of all companies for which an S&P Report is available.

<b>Volatility</b>	LOW	AVERAGE	HIGH
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<b>Technical Evaluation</b>	<b>BULLISH</b>	Since July, 2012, the technical indicators for GILD have been BULLISH.
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<b>Insider Activity</b>	UNFAVORABLE	NEUTRAL	FAVORABLE
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## Expanded Ratio Analysis

	2011	2010	2009	2008
Price/Sales	3.86	3.98	5.76	9.19
Price/EBITDA	7.76	7.20	10.63	17.89
Price/Pretax Income	8.86	8.09	11.54	17.99
P/E Ratio	11.60	10.91	15.33	24.38
Avg. Diluted Shares Outstg (M)	790.1	873.4	934.1	958.8

Figures based on calendar year-end price

## Key Growth Rates and Averages

Past Growth Rate (%)	1 Year	3 Years	5 Years	9 Years
Sales	5.48	15.97	23.06	37.94
Net Income	-3.87	11.37	NM	NM

## Ratio Analysis (Annual Avg.)

	2011	2010	2009	2008
Net Margin (%)	33.26	35.78	36.85	23.30
% LT Debt to Capitalization	53.56	34.46	30.71	25.28
Return on Equity (%)	43.81	46.58	50.75	28.89

## Company Financials Fiscal Year Ended Dec 31

Per Share Data (U.S. \$)	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Tangible Book Value	6.20	5.53	5.38	4.56	3.71	1.97	3.30	2.09	1.17	0.72
Cash Flow	3.93	3.61	3.05	2.15	1.71	-1.24	0.90	0.51	-0.06	0.10
Earnings	3.55	3.32	2.82	2.10	1.68	-1.30	0.86	0.50	-0.09	0.09
S&P Core Earnings	3.53	3.31	2.81	2.10	1.67	-1.29	0.78	0.39	-0.17	0.01
Dividends	Nil									
Payout Ratio	Nil									
Prices:High	43.49	49.50	53.28	57.63	47.90	35.00	28.26	19.55	17.65	10.00
Prices:Low	34.45	31.73	40.62	35.60	30.96	26.24	15.20	12.88	7.81	6.52
P/E Ratio:High	12	15	19	27	29	NM	33	39	NM	NM
P/E Ratio:Low	10	10	14	17	18	NM	18	26	NM	NM

## Income Statement Analysis (Million U.S. \$)

	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Revenue	8,385	7,949	7,011	5,336	4,230	3,026	2,028	1,325	868	467
Operating Income	4,169	4,396	3,802	2,741	2,201	1,683	1,148	656	361	95.4
Depreciation	302	265	213	51.7	36.9	47.3	36.8	24.4	20.9	14.4
Interest Expense	205	109	69.7	12.1	13.5	20.4	0.44	7.35	21.9	13.9
Pretax Income	3,651	3,914	3,502	2,726	2,261	-644	1,158	656	-168	73.4
Effective Tax Rate	23.6%	26.2%	25.0%	26.5%	29.0%	NM	30.0%	31.5%	NM	1.77%
Net Income	2,789	2,901	2,636	2,011	1,615	-1,190	814	449	-72.0	72.1
S&P Core Earnings	2,784	2,895	2,630	2,008	1,610	-1,188	737	354	-133	8.55

## Balance Sheet &amp; Other Financial Data (Million U.S. \$)

	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Cash	9,964	5,318	3,905	3,240	1,172	937	2,324	1,254	707	942
Current Assets	13,305	8,144	4,813	4,300	3,028	2,429	3,092	1,850	1,266	1,184
Total Assets	17,303	11,593	9,699	7,019	5,835	4,086	3,765	2,156	1,555	1,288
Current Liabilities	2,515	2,465	1,872	1,221	736	764	455	253	186	105
Long Term Debt	7,921	3,006	1,322	1,300	1,301	1,300	241	0.23	345	595
Common Equity	6,867	6,122	6,505	4,152	3,460	1,816	3,028	1,871	1,003	571
Total Capital	14,788	9,128	7,827	5,672	4,772	3,169	3,277	1,871	1,348	1,166
Capital Expenditures	132	61.9	230	115	78.7	105	2,226	51.4	38.6	17.6
Cash Flow	3,106	3,155	2,849	2,063	1,652	-1,143	851	474	-51.1	86.5
Current Ratio	5.3	3.3	3.4	3.5	4.1	3.2	6.8	7.3	6.8	11.3
% Long Term Debt of Capitalization	53.6	32.9	16.9	22.9	27.2	41.0	7.3	NM	25.6	51.0
% Net Income of Revenue	33.3	36.5	37.6	37.7	38.2	NM	40.1	33.9	NM	15.4
% Return on Assets	19.3	27.3	31.5	31.3	32.6	NM	27.5	24.2	NM	6.9
% Return on Equity	43.8	46.5	49.5	52.8	61.2	NM	33.2	31.3	NM	14.1

Data as orig reptd.; bef. results of disc opers/spec. items. Per share data adj. for stk. divs.; EPS diluted. E-Estimated. NA-Not Available. NM-Not Meaningful. NR-Not Ranked. UR-Under Review.

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# Gilead Sciences Inc

## Sub-Industry Outlook

Our positive fundamental outlook for the biotechnology sub-industry for the next 12 months reflects favorable prospects for novel drug approvals. In 2011, the U.S. FDA approved 30 new drugs, compared to 21 in 2010, including new approaches to managing such diseases as auto-immune disorder lupus and chronic hepatitis C virus. In the first half of 2012, the FDA approved 14 such drugs, including new therapies for respiratory disease cystic fibrosis and advanced prostate cancer well ahead of planned review dates. We see improving approval trends easing an overhang stemming from FDA's inconsistency in making decisions and in a timely fashion.

We expect the favorable M&A (mergers and acquisitions) climate to continue, boosted by the closing of two deals in August 2012 involving prominent biotech names. We see large pharmaceutical firms needing to offset lost revenues from expiring drug patents and large biotechs aiming to bolster their drug pipelines amid maturing products and declining industry R&D productivity trends. We also see large cap biotechs increasingly generating cash flows to support larger acquisitions. Of note, industry bellwether Amgen in 2011 became the first biotech company to initiate a regular dividend.

In June 2012, the U.S. Supreme Court upheld the health care reform law, including establishment of an FDA infrastructure to govern "biosimilar" drug approvals and the granting of a 12-year exclusivity to branded drugmakers. Although we do not expect "biosimilars" to reach the market for several years, we see co-development partnering activity among biotech and generics companies picking up. Once they are marketed, we expect clinical and manufacturing costs for biosimilar drugs to result in more modest price discounts and higher retained

market share for branded drugs than seen in the pharmaceutical industry.

Longer term, we expect wider adoption of biomarker research and genetic-targeted clinical studies to help shorten development times, and we see intense competition in primary growth areas, led by cancer. We recommend that investors concentrate core holdings on established, profitable companies with pipeline growth prospects, as smaller biotechs tend to be more volatile. We would seek companies with at least two years of operating capital and multiple pipeline value drivers, as those relying on a single value driver typically suffer significant share price declines on an unfavorable outcome.

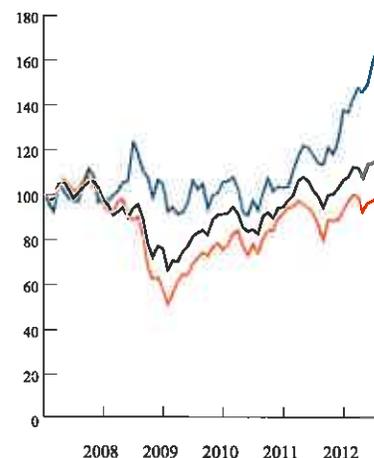
Year to date through September 7, the S&P Biotech Index rose 36.6%, versus a 14.3% gain for the S&P 1500 Composite Index. In 2011, the sub-industry index rose 20.0%, versus a 0.3% decline for the S&P 1500.

--Steven Silver

## Stock Performance

GICS Sector: Health Care  
Sub-Industry: Biotechnology

Based on S&P 1500 Indexes  
Month-end Price Performance as of 09/28/12



Sub-Industry	Sector	S&P 1500
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NOTE: All Sector & Sub-Industry information is based on the Global Industry Classification Standard (GICS)

## Sub-Industry : Biotechnology Peer Group\*: Biotech Therapeutics - Larger Capitalization

Peer Group	Stock Symbol	Stk.Mkt. Cap. (Mil. \$)	Recent Stock Price(\$)	52 Week High/Low(\$)	Beta	Yield (%)	P/E Ratio	Fair Value Calc.(\$)	Quality Ranking	S&P IQ %ile	Return on Revenue (%)	LTD to Cap (%)
Gilead Sciences	GILD	50,183	66.33	68.08/34.45	0.45	Nil	20	73.20	B	98	33.3	53.6
Amgen Inc	AMGN	64,968	84.29	85.28/52.85	0.45	1.7	18	92.50	B+	72	23.6	52.8
Biogen Idec	BIB	35,265	149.21	157.18/87.72	0.85	Nil	27	139.00	B	96	25.1	14.2
Celgene Corp	CELG	32,961	76.40	80.42/58.53	0.52	Nil	22	116.90	B	97	27.2	NA

NA-Not Available NM-Not Meaningful NR-Not Rated. \*For Peer Groups with more than 15 companies or stocks, selection of issues is based on market capitalization.

## Gilead Sciences Inc

## S&amp;P Analyst Research Notes and other Company News

## September 24, 2012

10:14 am ET ... S&P LOWERS OPINION ON SHARES OF GILEAD SCIENCES TO BUY FROM STRONG BUY (GILD 66.96\*\*\*\*): We are raising our forward P/E-based target price by \$6 to \$75 on a view of enhanced prospects for GILD's core HIV and emerging hepatitis-C franchises. However, with the shares up more than 20% since its Q2 earnings report in late July, we see more modest share price upside. We think that GILD is poised to boost margins following the August approval of wholly-owned Stribild for HIV, and see GS-7977 holding a leading position among next-generation for hepatitis-C therapies in development. However, we expect hep-C to remain competitive and for the shares to remain volatile. /S.Silver

## August 28, 2012

09:46 am ET ... S&P MAINTAINS STRONG BUY OPINION ON SHARES OF GILEAD SCIENCES (GILD 58.09\*\*\*\*): We maintain our forward P/E-based target price of \$69. Last night, the FDA approved GILD's fixed dose combination pill Stribild (formerly called "Quad") for patients with HIV that are new to anti-viral treatment. We anticipated a timely approval following a positive FDA advisory panel review of the drug earlier this year. Still, we think Stribild should garner a leading market share among new patient starts, and project peak annual sales well over \$1 billion. Also, we expect GILD to see a boost in long-term gross margin, as it wholly owns Stribild's four component compounds. /S.Silver

## August 7, 2012

05:27 am ET ... S&P MAINTAINS STRONG BUY OPINION ON SHARES OF GILEAD SCIENCES (GILD 57.64\*\*\*\*): We are raising our forward P/E-based target price by \$2 to \$69, as we see recent competitive newsflow in the Hepatitis C market boosting GILD's prospects in that area. In our view, GILD's GS-7977 remains best positioned among next-generation candidates in clinical development, as the most advanced and as having the clearest safety profile. We see sales of current Hep-C treatments waning, as prescribing physicians are deferring treating patients until new regimens reach the market. We expect initial GS-7977 approvals in 2014, with various combination regimens likely in 2015. /S.Silver

## July 27, 2012

UP 2.93 to 54.61... GILD posts \$0.99 vs. \$1.00 Q2 non-GAAP EPS as higher R&D, SG&A costs offset 13% higher total revenue. Capital IQ consensus forecast was \$0.95. S&P Capital IQ upgrades to strong buy from buy. ...

## July 27, 2012

10:41 am ET ... S&P RAISES OPINION ON SHARES OF GILEAD SCIENCES TO STRONG BUY FROM BUY (GILD 54.25\*\*\*\*): We raise our P/E-based target price by \$5 to \$67, and boost our '12 adjusted EPS estimate \$0.06 to \$3.50, and '13's by \$0.04 to \$4.04. We expect a robust Phase III program for GS-7977 for Hepatitis C to drive the shares, and view the drug as a leading candidate among new treatments. We think it will secure initial approvals in '14. We view 14% product sales growth in Q2 as solid, driving adjusted EPS of \$0.94, vs. \$0.95, \$0.09 above our estimate. We expect FDA approval of GILD's wholly-owned "Quad" combination pill in late August to bolster its market leading HIV franchise. /S.Silver

## July 11, 2012

10:12 am ET ... S&P MAINTAINS BUY OPINION ON SHARES OF GILEAD SCIENCES (GILD 50.30\*\*\*\*): We are trimming our forward P/E-based target price by \$1 to \$62, as we see a modestly higher HIV market competition outlook. We expect near-term volatility in GILD shares after a rival treatment showed superiority to GILD's Atripla in a late stage study, which we largely attribute to higher discontinuation rates seen among Atripla patients over its side effects. However, we see GILD further diversifying its HIV franchise beyond Atripla, with FDA approval of a wholly owned "Quad" pill in late August expected. As such, we see GILD maintaining its leading HIV market position. /S.Silver

## June 7, 2012

Gilead Sciences Inc. announced the appointments of Lord Paul Boateng, LLB, member of the United Kingdom House of Lords, and Hannah Kettler, PhD, senior health program officer and economist at the Bill & Melinda Gates Foundation, to the Gilead Health Policy Advisory Board. Lord Boateng was appointed to the U.K. House of Lords in 2010 after serving for four years as the British high commissioner to South Africa. Dr. Kettler is a senior economist in the Gates Foundation's Global Health Program.

## May 23, 2012

05:28 am ET ... S&P MAINTAINS BUY OPINION ON SHARES OF GILEAD SCIENCES (GILD 50.47\*\*\*\*): We remain positive on GILD shares, and see recent pipeline news flow not being fully reflected in the current valuation. We expect FDA approval for its wholly owned HIV "Quad" combination pill in late August, following a positive FDA advisory panel vote earlier this month, and see potential for the regimen to emerge as standard of care among treatment naive patients. We see GS-7977 nearing Phase III study in key genotype 1 hepatitis C patients in '12, and as a leader among next-generation agents after robust mid-stage data reported last month. We keep our target price at \$63. /S.Silver

## May 11, 2012

04:15 pm ET ... S&P MAINTAINS BUY OPINION ON SHARES OF GILEAD SCIENCES (GILD 51.84\*\*\*\*): An FDA advisory panel votes 13-1 in support of GILD's "Quad" combination pill for treating HIV infection in patients new to treatment. We view the positive vote as widely expected, given the regimen's solid Phase III results and safety profile. We expect approval at FDA action date scheduled for August 27th. We maintain a positive outlook for GILD's market leading HIV franchise, and see the "Quad" boosting GILD's gross margins, given that it owns all components, in contrast to several currently marketed regimens that have partnered components and shared economic benefits. /S.Silver

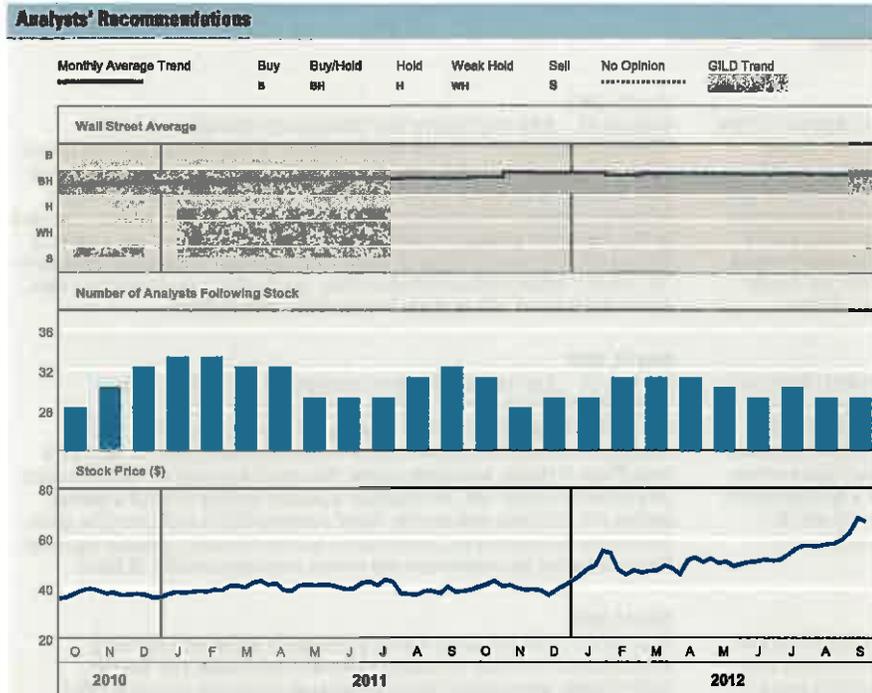
## May 11, 2012

GILD says the Antiviral Drugs Advisory Committee of the Food and Drug Administration has voted to support approval of once-daily oral Truvada (emtricitabine and tenofovir disoproxil fumarate) to reduce the risk of HIV-1 infection among uninfected adults, an HIV prevention strategy called pre-exposure prophylaxis or PrEP. If the FDA decides to approve Truvada for PrEP, it would be the first agent indicated for uninfected individuals to reduce their risk of acquiring HIV.

## May 11, 2012

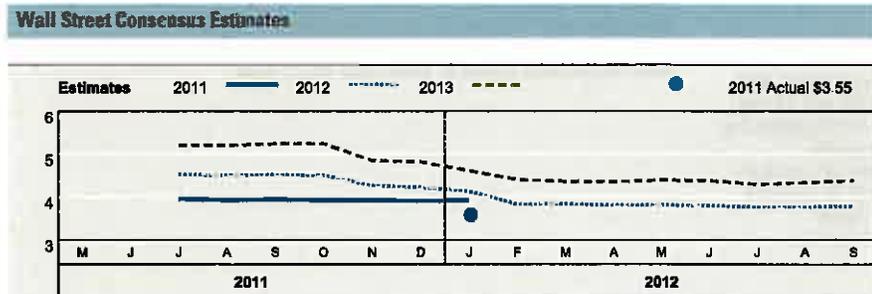
09:41 am ET ... S&P MAINTAINS BUY OPINION ON SHARES OF GILEAD SCIENCES (GILD 51.53\*\*\*\*): An FDA advisory panel favors approval of GILD's Truvada for helping to prevent HIV infection in certain at-risk patients. Truvada is currently approved for treating those already infected. Although we expect modest contribution to GILD's HIV franchise growth trajectory, we view panel's stance as positive for label expansion prospects. We see potential for approval delay from June 15 action date, as a proposed risk mitigation program is finalized. We remain positive on GILD's leading HIV franchise, as its "Quad" combination pill nears market, with August 27 action date set. /S.Silver

# Gilead Sciences Inc



Of the total 42 companies following GILD, 29 analysts currently publish recommendations.

	No. of Ratings	% of Total	1 Mo. Prior	3 Mos. Prior
Buy	15	52	16	15
Buy/Hold	8	28	6	8
Hold	6	21	7	6
Weak Hold	0	0	0	0
Sell	0	0	0	0
No Opinion	0	0	0	0
<b>Total</b>	<b>29</b>	<b>100</b>	<b>29</b>	<b>29</b>



Fiscal Years	Avg Est.	High Est.	Low Est.	# of Est.	Est. P/E
2013	4.40	6.21	3.87	27	15.1
2012	3.79	4.22	3.50	28	17.5
<b>2013 vs. 2012</b>	<b>▲ 16%</b>	<b>▲ 47%</b>	<b>▲ 11%</b>	<b>▼ -4%</b>	<b>▼ -14%</b>
Q3'13	1.09	1.24	1.00	6	60.9
Q3'12	0.94	1.15	0.83	24	70.6
<b>Q3'13 vs. Q3'12</b>	<b>▲ 16%</b>	<b>▲ 8%</b>	<b>▲ 20%</b>	<b>▼ -75%</b>	<b>▼ -14%</b>

A company's earnings outlook plays a major part in any investment decision. Standard & Poor's organizes the earnings estimates of over 2,300 Wall Street analysts, and provides their consensus of earnings over the next two years. This graph shows the trend in analyst estimates over the past 15 months.

### Wall Street Consensus Opinion

**BUY/HOLD**

### Companies Offering Coverage

Over 30 firms follow this stock; not all firms are displayed.

- Argus Research Company
- Atlantic Equities LLP
- BMO Capital Markets, U.S. Equity Research
- BWS Financial Inc.
- Barclays
- BofA Merrill Lynch
- Brean Murray, Carret & Co.
- Center for Financial Research & Analysis, Inc.
- Citigroup Inc
- Cowen and Company, LLC
- Credit Suisse
- Daiwa Capital Markets America Inc.
- Daiwa Securities Capital Markets Co. Ltd.
- Deutsche Bank
- First Global Stockbroking (P) Ltd.
- Goldman Sachs
- ISI Group Inc.
- JP Morgan
- Jefferies & Company, Inc.
- Ladenburg Thalmann & Company
- Lazard Capital Markets
- Leerink Swann LLC
- Maxim Group
- Merriman Capital, Inc
- Moody's
- Morgan Joseph TriArtisan LLC
- Morgan Stanley
- Morningstar Inc.
- Needham & Company
- Oppenheimer & Co. Inc.

### Wall Street Consensus vs. Performance

For fiscal year 2012, analysts estimate that GILD will earn \$3.79. For the 2nd quarter of fiscal year 2012, GILD announced earnings per share of \$0.91, representing 24% of the total annual estimate. For fiscal year 2013, analysts estimate that GILD's earnings per share will grow by 16% to \$4.40.

# Gilead Sciences Inc

## Glossary

### S&P STARS

Since January 1, 1987, Standard and Poor's Equity Research Services has ranked a universe of common stocks based on a given stock's potential for future performance. Under proprietary STARS (Stock Appreciation Ranking System), S&P equity analysts rank stocks according to their individual forecast of a stock's future total return potential versus the expected total return of a relevant benchmark (e.g., a regional index (S&P Asia 50 Index, S&P Europe 350 Index or S&P 500 Index)), based on a 12-month time horizon. STARS was designed to meet the needs of investors looking to put their investment decisions in perspective. Data used to assist in determining the STARS ranking may be the result of the analyst's own models as well as internal proprietary models resulting from dynamic data inputs.

### S&P 12-Month Target Price

The S&P equity analyst's projection of the market price a given security will command 12 months hence, based on a combination of intrinsic, relative, and private market valuation metrics, including S&P Fair Value.

### Investment Style Classification

Characterizes the stock as Growth or Value, and indicates its capitalization level. Growth is evaluated along three dimensions (earnings, sales and internal growth), while Value is evaluated along four dimensions (book-to-price, cash flow-to-price, dividend yield and sale-to-price). Growth stocks score higher than the market average on growth dimensions and lower on value dimensions. The reverse is true for Value stocks. Certain stocks are classified as Blend, indicating a mixture of growth and value characteristics and cannot be classified as purely growth or value.

### S&P EPS Estimates

Standard & Poor's earnings per share (EPS) estimates reflect analyst projections of future EPS from continuing operations, and generally exclude various items that are viewed as special, non-recurring, or extraordinary. Also, S&P EPS estimates reflect either forecasts of S&P equity analysts; or, the consensus (average) EPS estimate, which are independently compiled by Capital IQ, a data provider to Standard & Poor's Equity Research. Among the items typically excluded from EPS estimates are asset sale gains; impairment, restructuring or merger-related charges; legal and insurance settlements; in process research and development expenses; gains or losses on the extinguishment of debt; the cumulative effect of accounting changes; and earnings related to operations that have been classified by the company as discontinued. The inclusion of some items, such as stock option expense and recurring types of other charges, may vary, and depend on such factors as industry practice, analyst judgment, and the extent to which some types of data is disclosed by companies.

### S&P Core Earnings

Standard & Poor's Core Earnings is a uniform methodology for adjusting operating earnings by focusing on a company's after-tax earnings generated from its principal businesses. Included in the Standard & Poor's definition are employee stock option grant expenses, pension costs, restructuring charges from ongoing operations, write-downs of depreciable or amortizable operating assets, purchased research and development, M&A related expenses and unrealized gains/losses from hedging activities. Excluded from the definition are pension gains, impairment of goodwill charges, gains or losses from asset sales, reversal of prior-year charges and provision from litigation or insurance settlements.

### Qualitative Risk Assessment

The S&P equity analyst's view of a given company's operational risk, or the risk of a firm's ability to continue as an ongoing concern. The Qualitative Risk Assessment

is a relative ranking to the S&P U.S. STARS universe, and should be reflective of risk factors related to a company's operations, as opposed to risk and volatility measures associated with share prices.

### Quantitative Evaluations

In contrast to our qualitative STARS recommendations, which are assigned by S&P analysts, the quantitative evaluations described below are derived from proprietary arithmetic models. These computer-driven evaluations may at times contradict an analyst's qualitative assessment of a stock. One primary reason for this is that different measures are used to determine each. For instance, when designating STARS, S&P analysts assess many factors that cannot be reflected in a model, such as risks and opportunities, management changes, recent competitive shifts, patent expiration, litigation risk, etc.

### S&P Quality Ranking

Growth and stability of earnings and dividends are deemed key elements in establishing S&P's Quality Rankings for common stocks, which are designed to encapsulate the nature of this record in a single symbol. It should be noted, however, that the process also takes into consideration certain adjustments and modifications deemed desirable in establishing such rankings. The final score for each stock is measured against a scoring matrix determined by analysis of the scores of a large and representative sample of stocks. The range of scores in the array of this sample has been aligned with the following ladder of rankings:

A+ Highest	B Below Average
A High	B- Lower
A- Above Average	C Lowest
B+ Average	D In Reorganization
NR Not Ranked	

### S&P Fair Value Rank

Using S&P's exclusive proprietary quantitative model, stocks are ranked in one of five groups, ranging from Group 5, listing the most undervalued stocks, to Group 1, the most overvalued issues. Group 5 stocks are expected to generally outperform all others. A positive (+) or negative (-) Timing Index is placed next to the Fair Value ranking to further aid the selection process. A stock with a (+) added to the Fair Value Rank simply means that this stock has a somewhat better chance to outperform other stocks with the same Fair Value Rank. A stock with a (-) has a somewhat lesser chance to outperform other stocks with the same Fair Value Rank. The Fair Value rankings imply the following: 5-Stock is significantly undervalued; 4-Stock is moderately undervalued; 3-Stock is fairly valued; 2-Stock is modestly overvalued; 1-Stock is significantly overvalued.

### S&P Fair Value Calculation

The price at which a stock should trade at, according to S&P's proprietary quantitative model that incorporates both actual and estimated variables (as opposed to only actual variables in the case of S&P Quality Ranking). Relying heavily on a company's actual return on equity, the S&P Fair Value model places a value on a security based on placing a formula-derived price-to-book multiple on a company's consensus earnings per share estimates.

### Insider Activity

Gives an insight as to insider sentiment by showing whether directors, officers and key employees who have proprietary information not available to the general public, are buying or selling the company's stock during the most recent six months.

### Funds From Operations FFO

FFO is Funds from Operations and equal to a REIT's net income, excluding gains or losses from sales of property, plus real estate depreciation.

### Instability Quotient (IQ)

The IQ is a measure of investment desirability. It serves

as an indicator of potential medium-to-long term return and as a caution against downside risk. The measure takes into account variables such as technical indicators, earnings estimates, liquidity, financial ratios and selected S&P proprietary measures.

### S&P's IQ Rationale:

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	Raw Score	Max Value
Proprietary S&P Measures	32	115
Technical Indicators	25	40
Liquidity/Volatility Measures	18	20
Quantitative Measures	65	75
<b>IQ Total</b>	<b>140</b>	<b>250</b>

### Volatility

Rates the volatility of the stock's price over the past year.

### Technical Evaluation

In researching the past market history of prices and trading volume for each company, S&P's computer models apply special technical methods and formulas to identify and project price trends for the stock.

### Relative Strength Rank

Shows, on a scale of 1 to 99, how the stock has performed versus all other companies in S&P's universe on a rolling 13-week basis.

### Global Industry Classification Standard (GICS)

An industry classification standard, developed by Standard & Poor's in collaboration with Morgan Stanley Capital International (MSCI). GICS is currently comprised of 10 Sectors, 24 Industry Groups, 68 Industries, and 154 Sub-Industries.

### S&P Issuer Credit Rating

A Standard & Poor's Issuer Credit Rating is a current opinion of an obligor's overall financial capacity (its creditworthiness) to pay its financial obligations. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due. It does not apply to any specific financial obligation, as it does not take into account the nature of and provisions of the obligation, its standing in bankruptcy or liquidation, statutory preferences, or the legality and enforceability of the obligation. In addition, it does not take into account the creditworthiness of the guarantors, insurers, or other forms of credit enhancement on the obligation. The Issuer Credit Rating is not a recommendation to purchase, sell, or hold a financial obligation issued by an obligor, as it does not comment on market price or suitability for a particular investor. Issuer Credit Ratings are based on current information furnished by obligors or obtained by Standard & Poor's from other sources it considers reliable. Standard & Poor's does not perform an audit in connection with any Issuer Credit Rating and may, on occasion, rely on unaudited financial information. Issuer Credit Ratings may be changed, suspended, or withdrawn as a result of changes in, or unavailability of, such information, or based on other circumstances.

### Exchange Type

ASE - American Stock Exchange; AU - Australia Stock Exchange; BB - Bulletin Board; NGM - Nasdaq Global Market; NNM - Nasdaq Global Select Market; NSC - Nasdaq Capital Market; NYS - New York Stock Exchange; OTN - Other OTC (Over the Counter); OTC - Over the Counter; QB - OTCQB; QX - OTCQX; TS - Toronto Stock Exchange; TXV - TSX Venture Exchange; NEX - NEX Exchange.

### S&P Equity Research Services

Standard & Poor's Equity Research Services U.S. includes Standard & Poor's Investment Advisory Services LLC; Standard & Poor's Equity Research Services Europe includes McGraw-Hill Financial Research Europe Limited trading as Standard & Poor's; Standard & Poor's Equity Research Services Asia includes McGraw-Hill Financial Singapore Pte. Limited's

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**Abbreviations Used in S&P Equity Research Reports**  
**CAGR**- Compound Annual Growth Rate; **CAPEX**- Capital Expenditures; **CY**- Calendar Year; **DCF**- Discounted Cash Flow; **EBIT**- Earnings Before Interest and Taxes; **EBITDA**- Earnings Before Interest, Taxes, Depreciation and Amortization; **EPS**- Earnings Per Share; **EV**- Enterprise Value; **FCF**- Free Cash Flow; **FFO**- Funds From Operations; **FY**- Fiscal Year; **P/E**- Price/Earnings; **PEG Ratio**- P/E-to-Growth Ratio; **PV**- Present Value; **R&D**- Research & Development; **ROE**- Return on Equity; **ROI**- Return on Investment; **ROIC**- Return on Invested Capital; **ROA**- Return on Assets; **SG&A**- Selling, General & Administrative Expenses; **WACC**- Weighted Average Cost of Capital

**Dividends on American Depository Receipts (ADRs) and American Depository Shares (ADSs) are net of taxes (paid in the country of origin).**

## Required Disclosures

In contrast to the qualitative STARS recommendations covered in this report, which are determined and assigned by S&P equity analysts, S&P's quantitative evaluations are derived from S&P's proprietary Fair Value quantitative model. In particular, the Fair Value Ranking methodology is a relative ranking methodology, whereas the STARS methodology is not. Because the Fair Value model and the STARS methodology reflect different criteria, assumptions and analytical methods, quantitative evaluations may at times differ from (or even contradict) an equity analyst's STARS recommendations. As a quantitative model, Fair Value relies on history and consensus estimates and does not introduce an element of subjectivity as can be the case with equity analysts in assigning STARS recommendations.

## S&P Global STARS Distribution

**In North America:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services North America recommended 37.5% of issuers with buy recommendations, 57.5% with hold recommendations and 5.0% with sell recommendations.

**In Europe:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services Europe recommended 32.5% of issuers with buy recommendations, 50.8% with hold recommendations and 16.7% with sell recommendations.

**In Asia:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services Asia recommended 34.7% of issuers with buy recommendations, 57.8% with hold recommendations and 7.5% with sell recommendations.

**Globally:** As of June 29, 2012, research analysts at Standard & Poor's Equity Research Services globally recommended 36.5% of issuers with buy recommendations, 56.4% with hold recommendations and 7.1% with sell recommendations.

★★★★★ **5-STARS (Strong Buy):** Total return is expected to outperform the total return of a relevant benchmark, by a wide margin over the coming 12 months, with shares rising in price on an absolute basis.

★★★★ **4-STARS (Buy):** Total return is expected to outperform the total return of a relevant benchmark over the coming 12 months, with shares rising in price on an absolute basis.

★★★ **3-STARS (Hold):** Total return is expected to closely approximate the total return of a relevant benchmark over the coming 12 months, with shares generally rising in price on an absolute basis.

★★ **2-STARS (Sell):** Total return is expected to

underperform the total return of a relevant benchmark over the coming 12 months, and the share price not anticipated to show a gain.

★ **1-STARS (Strong Sell):** Total return is expected to underperform the total return of a relevant benchmark by a wide margin over the coming 12 months, with shares falling in price on an absolute basis.

**Relevant benchmarks:** In North America the relevant benchmark is the S&P 500 Index, in Europe and in Asia, the relevant benchmarks are generally the S&P Europe 350 Index and the S&P Asia 50 Index.

**For All Regions:** All of the views expressed in this research report accurately reflect the research analyst's personal views regarding any and all of the subject securities or issuers. No part of analyst compensation was, is, or will be directly or indirectly, related to the specific recommendations or views expressed in this research report.

## S&P Global Quantitative Recommendations Distribution

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**In Asia:** As of June 29, 2012, Standard & Poor's Quantitative Services Asia recommended 52.7% of issuers with buy recommendations, 18.4% with hold recommendations and 28.9% with sell recommendations.

**Globally:** As of June 29, 2012, Standard & Poor's Quantitative Services globally recommended 46.9% of issuers with buy recommendations, 19.6% with hold recommendations and 33.5% with sell recommendations.

**Additional information is available upon request.**

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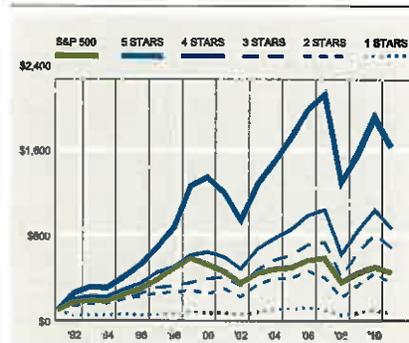
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**U.S. STARS Cumulative Model Performance**  
Hypothetical Growth Due to Price Appreciation of \$100  
For the Period 12/31/1986 through 08/31/2012



The performance above represents only the results of Standard & Poor's model portfolios. Model performance has inherent limitations. Standard & Poor's maintains the models and calculates the model performance shown, but does not manage actual assets. The U.S. STARS model performance chart is only an illustration of Standard & Poor's (S&P) research; it shows how U.S. common stocks, ADRs (American Depositary Receipts) and ADSs (American Depositary Shares), collectively "equities", that received particular STARS rankings performed. STARS categories are models only; they are not collective investment funds. The STARS performance does not show how any actual portfolio has performed. STARS model performance does not represent the results of actual trading of investor assets. Thus, the model performance shown does not reflect the impact that material economic and market factors might have had on decision-making if actual investor money had been managed. Performance is calculated using a time-weighted rate of return. While model performance for some or all STARS categories performed better than the S&P 500 for the period shown, the performance during any shorter period may not have, and there is no assurance that they will perform better than the S&P 500 in the future. STARS does not take into account any particular investment objective, financial situation or need and is not intended as an investment recommendation or strategy. Investments based on the STARS methodology may lose money. High returns are

not necessarily the norm and there is no assurance that they can be sustained. Past model performance of STARS is no guarantee of future performance.

For model performance calculation purposes, the equities within each STARS category at December 31, 1986 were equally weighted. Thereafter, additions to the composition of the equities in each STARS category are made at the average value of the STARS category at the preceding month end with no rebalancing. Deletions are made at the closing price of the day that the deletion is made. Performance was calculated from inception through March 31, 2003 on a monthly basis. Thereafter, performance is calculated daily. Equities in each STARS category will change over time, and some or all of the equities that received STARS rankings during the time period shown may not have maintained their STARS ranking during the entire period.

The model performance does not consider taxes and brokerage commissions, nor does it reflect the deduction of any advisory or other fees charged by advisors or other parties that investors will incur when their accounts are managed in accordance with the models. The imposition of these fees and charges would cause actual performance to be lower than the performance shown. For example, if a model returned 10 percent on a \$100,000 investment for a 12-month period (or \$10,000) and an annual asset-based fee of 1.5 percent were imposed at the end of the period (or \$1,500), the net return would be 8.35 percent (or \$8,350) for the year. Over 3 years, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.1%, a total fee of \$5,375 and a cumulative net return of 27.2% (or \$27,200). Fees deducted on a frequency other than annual would result in a different cumulative net return in the preceding example.

The Standard & Poor's 500 index is the benchmark for U.S. STARS. The S&P 500 index is calculated in U.S. dollars and does not take into account the reinvestment of dividends. Indexes are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. The S&P 500 index includes a different number of constituents and has different risk characteristics than the STARS equities. Some of the STARS equities may have been included in the S&P 500 index for some (but not necessarily all) of the period covered in the chart, and some such equities may not have been included at all. The S&P 500 excludes ADRs and ADSs. The methodology for calculating the return of the S&P 500 index differs from the methodology of calculating the return for STARS. Past performance of the S&P 500 index is no guarantee of future performance.

An investment based upon the models should only be made after consulting with a financial advisor and with an understanding of the risks associated with any investment in securities, including, but not limited to, market risk, currency risk, political and credit risks, the risk of economic recession and the risk that issuers of securities or general stock market conditions may worsen, over time. Foreign investing involves certain risks, including currency fluctuations and controls, restrictions on foreign investments, less governmental supervision and regulation, less liquidity and the potential for market volatility and political instability. As with any investment, investment returns and principal value will fluctuate, so that when redeemed, an investor's shares may be worth more or less than their original cost.

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WELLS  
FARGO

ADVISORS

October 02, 2012

# Portfolio Report

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Prepared for:  
**CITY OF TROY**

Prepared by:  
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This report is not complete unless all pages, as noted, are included. Please read the information in 'Disclosures' found within this report for an explanation of the terms and concepts presented in this report.

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## Table Of Contents

Cover Page	1
Accounts Included in the Report	3
Account Summary	4
Stock Ratings	5
Understanding Your Portfolio	7

### Accounts Included in the Report

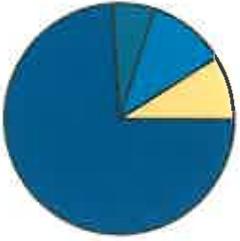
Account Number	Account Name	Account Nickname	Tax Status	Int/Ext
20364707	CITY OF TROYDARLING THOMAS	CITY OF TROY	Exempt	Internal

## Account Summary

### CITY OF TROY

20364707 (CITY OF TROYDARLING THOMAS) (INTERNAL)

#### Asset Allocation



- Large Cap Growth (74.06%)
- Large Cap Value (5.82%)
- Mid Cap Growth (11.13%)
- Cash Alternative (8.98%)

#### Security Level - Long Positions

Symbol	Amount	%
DIRECTV	\$ 108,232.80	2.56
DISCOVERY COMMUNICATIONS	\$ 29,291.60	0.69
DISCOVERY COMMUNICATN A	\$ 31,173.94	0.74
DISNEY WALT COMPANY	\$ 156,210.00	3.69
GENERAL ELECTRIC COMPANY	\$ 246,348.00	5.82
GLOBAL PAYMENTS INC	\$ 208,950.00	4.94
INTUITIVE SURGICAL INC	\$ 2,499,000.00	59.02
LIBERTY MEDIA CORP-SER A	\$ 19,172.91	0.45
PEPSICO INCORPORATED	\$ 353,250.00	8.34
RESMED INC	\$ 201,900.00	4.77

Long Mkt Value: **\$ 3,853,529.25**  
 Short Mkt Value: **\$ 0.00**  
 Cash Alternative Balance: **\$ 380,415.63**  
 Account Value: **\$ 4,233,944.88**

Security-Level Holdings: **\$4,233,944.88**  
 Asset Class-Level Holdings: **\$0.00**  
 Asset Class and Security Level Holdings: **\$0.00**  
 Total Holdings: **\$4,233,944.88**

# Stock Ratings

By: Security Type Detail

ID	Description	Market Value(\$)	RS	QG	QC	QV	CS*	S&P	SB	WFS	S&P E&D Rating	% Stock	% Port	
<b>Stock-Consumer Discretionary</b>														
DTV	DIRECTV	108,233	72	2	3	3	2	3	1	2		8.2%	7.4%	
DISCA	DISCOVERY COMMUNICATN A	31,174	88	4	4	4	2	4	1			2.8%	2.6%	
DIS	DISNEY WALT COMPANY	156,210	88	2	1	1	5	1	1			0.8%	0.7%	
LMCA	LIBERTY MEDIA CORP-SER A	19,173	67	4	4	4		1	1			4.1%	3.7%	
<b>Stock-Consumer Staples</b>														
PEP	PEPSICO INCORPORATED	353,250	60	3	4	1	4	1	2			9.2%	8.3%	
<b>Stock-Health Care</b>														
ISRG	INTUITIVE SURGICAL INC	2,499,000	52	2	3	3		3				70.1%	63.8%	
RMD	RESMED INC	201,900	95	1	2	2		3				64.8%	59.0%	
<b>Stock-Industrials</b>														
GE	GENERAL ELECTRIC COMPANY	246,348	78	4	2	1	4	4	2			6.4%	5.8%	
<b>Stock-Information Technology</b>														
GPV	GLOBAL PAYMENTS INC	208,950	20	3	2	2	1	3				5.4%	4.9%	
<b>Unassigned Stock</b>														
DISCK	DISCOVERY COMMUNICATIONS	29,292	90									0.8%	0.7%	
<b>Stock Ratings Total</b>												<b>3,853,529</b>	<b>100.0%</b>	<b>91.0%</b>

Total Portfolio Value as of 10/01/12: \$ 4,233,945

RS - Relative Strength (Price Momentum): The 9-month relative strength measures each stock's price performance over a combination of the past 3, 6, and 9 months relative to a universe of approximately 7,000 stocks. Since it is a percentile score, 1 is the worst, 99 is the best. A stock with a 70 indicates that it ranks better than 70% of the approximately 7,000 equities universe it is evaluated against with respect to its price movement.

(QV) Quantitative Value, (QG) Quantitative Growth and (QC) Quantitative Core represent Quantitative Analysis (QA) based on models from the Prudential Equity Group. The quantitative recommendations are below:

- QV1, QG1, QC1: (Positive)
- QV2, QG2, QC2: (Positive)
- QV3, QG3, QC3: (Neutral)
- QV4, QG4, QC4: (Negative)
- QV5, QG5, QC5: (Negative)

\* Investment decisions should not be completed without a thorough reading of the correspondent research report.

CS (Credit Suisse): Outperform (1), Neutral (2), Underperform (3)

S&P (Standard and Poor's): Strong Buy (5), Buy (4), Hold (3), Sell (2), Strong Sell (1)

SB (Sanford Bernstein): Outperform (1), Market Perform (2), Underperform (3)

WFS (Wells Fargo Securities, LLC): Outperform (1), Market Perform (2), Underperform (3)

Wells Fargo Securities, LLC is a separate, nonbank affiliate of Wells Fargo & Company and an affiliate of Wells Fargo Advisors.

S&P Earnings & Dividend (Quality) Rank - S&P's appraisal of the growth and stability of earnings and dividends over the past 10 years for individual companies are indicated by the following quality ranks. Quality Rankings are not intended to predict stock movements.

This report is not complete without the Understanding Your Portfolio report which contains important terms and definitions.

## Understanding Your Portfolio

### General Information

Investing involves risk, including the possible loss of principal. This report is intended to provide you with a descriptive overview of your current portfolio. The report may encompass one account or multiple accounts as specified in the report. The material has been prepared or is distributed solely for information purposes and does not supersede the proper use of your Wells Fargo Advisors client statements and/or trade confirmations, which are considered to be the official and accurate records of your account activity. Any market prices are only indications of market values, are subject to change, and may not reflect the value at which the securities could be sold. Reported prices should not be considered actual bids. For these reports, in certain groupings, Corporate Bonds Includes Certificates of Deposit. Additionally, the report is prepared as of trade date, rather than settlement date, and may be prepared on a different date than your statement. The information contained in this report may not reflect all holdings or transactions, their costs, or proceeds in your account.

The report may also include information you provided about assets held at other firms. Information on assets held away from Wells Fargo Advisors was provided by you and may not be covered by SIPC. We have relied solely on information from you regarding those assets. We do not verify or confirm those assets held with other firms or affiliates and you are responsible for notifying your Financial Advisor of any changes in your externally held investments including cost basis. Incomplete or inaccurate cost basis will affect your plan results because the tax assumptions are incorrect. Due to timing issues, if this report includes assets held at Wells Fargo Trust Company, positions and market data should be verified. Before making any decisions please validate your account information with your Financial Advisor. The financial data used to generate this report is provided to Wells Fargo Advisors by third party vendors. While this information is believed to be reliable, it has not been verified. Security ID will be ticker symbol, CUSIP number, Security Number or, if you have provided us with a market value of a generic asset classification type, we will assign a dash. This report is not complete unless all pages noted are included. For more detailed information, including current pricing, call your Financial Advisor.

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### Sector Analysis

10/02/2012

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Page 7 of 8

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The sectors in this report are based on the Global Industry Classification Standard ("GICS"). These sectors may be different than those of other institutions or sources. The sector of each security is as of the date of this report and subject to change at any time and without notice.

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S&P provides sector classification for common stocks only. The 10 sectors used in this analysis are: Energy, Materials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Telecom Services and Utilities. For sector-specific unit investment trusts, Wells Fargo Advisors, LLC has determined the sector assignment. Equity sectors are provided by Morningstar, Standard & Pools and FT Interactive. Equity positions for which sectors are unavailable through Standard & Pools and FT Interactive will be reflected in Unclassified.

### Stock Ratings Report

Analysts' stock ratings are defined as follows:

#### Credit Suisse Rating System:

- 1. Outperform:** The stock's total return is expected to exceed the industry average by at least 10-15% (or more, depending on perceived risk) over the next 12 months.
- 2. Neutral:** The stock's total return is expected to be in line with the industry average (range of plus or minus 10%) over the next 12 months.
- 3. Underperform:** The stock's total return is expected to underperform the industry average by 10-15% or more over the next 12 months.

#### Sanford Bernstein Rating System:

Bernstein rates stocks based on relative performance for the next 6-12 months versus the S&P 500.

- 1. Outperform:** Stocks should outpace the market index by more than 15% in the year ahead.
- 2. Market Perform:** Stock should perform in line with the market index to within +/-15% in the year ahead.

**3. Underperform:** Stock should trail the performance of the market index by more than 15% in the year ahead.

#### Standard & Poor's STARS(Stock Appreciation Ranking System)

**5-STARS:** STRONG BUY - Total return is expected to outperform the total return of the S&P 500 Index by a wide margin over the coming 12 months, with shares rising in price on an absolute basis.

**4-STARS:** BUY - Total return is expected to outperform the total return of the S&P 500 Index over the coming 12 months, with shares rising in price on an absolute basis.

**3-STARS:** HOLD - Total return is expected to closely approximate that of the total return of the S&P 500 Index over the coming 12 months, with shares generally rising in price on an absolute basis.

**2-STARS:** SELL - Total return is expected to underperform the total return of the S&P 500 Index over the coming 12 months, and share price is not anticipated to show a gain.

**1-STAR:** STRONG SELL - Total return is expected to underperform the total return of the S&P 500 Index by a wide margin over the coming 12 months, with shares falling in price on an absolute basis.

#### Wells Fargo Securities, LLC Rating System

**1. Outperform:** The stock appears attractively valued, and they believe the stock's total return will exceed that of the market over the next 12 months. *Buy*

**2. Market Perform:** The stock appears appropriately valued, and they believe the stock's total return will be in line with the market over the next 12 months. *Hold*

**3. Underperform:** The stock appears overvalued, and they believe the stock's total return will be below the market over the next 12 months. *Sell*

**There is no assurance that all expectations will be achieved.**

#### Asset Class Descriptions

The asset class descriptions below are included solely to provide insight into how individual securities are tied to specific asset classes. We use our best efforts to correctly classify investments. However, no warranty of accuracy is made.

**Equity Investments:** Equity investments refer to buying stocks of United States companies. The investment return to the owner of stock (shareholder) is in the form of dividends and/or capital appreciation. The market capitalization of companies is used to group large, medium (Mid), and small companies. Shareholders share in both the upside potential and the downside risk.

**Capitalization:** Market capitalization definitions differ but one example of capitalization methodology is that of Morningstar, which defines "large-capitalization" stocks as those stocks that form the top 70% of the market capitalization of the stocks eligible to be included in the Morningstar US Market Index (a diversified broad market index that represents approximately 97% of the market capitalization of publicly traded U.S. Stocks). The Morningstar index methodology defines "mid-capitalization" stocks as those stocks that form the 20% of market capitalization between the 70th and 90th percentile of the market capitalization and "small-capitalization" stocks as those

stocks that form the 7% of market capitalization between the 90th and 97th percentile of the market capitalization of the stocks eligible to be included in the Morningstar US Market Index.

**Style:** Blend (sometimes referred to as Core) investing is generally characterized as a strategy that seeks to balance the portfolio of stocks between the Growth and Value styles as market conditions fluctuate. Stocks in the underlying index are designated as "growth" as they are issued by companies that typically have higher than average historical and forecasted earnings, sales, equity and cash flow growth. Stocks in the underlying index are weighted according to the total number of shares that are publicly owned and available for trading. Stocks in the underlying index are designated as "value" as they are issued by companies that typically have relatively low valuations based on price-to-earnings, price-to-book value, price-to-sales, price-to-cash flow and dividend yields. The stocks in the underlying index are weighted according to the total number of shares that are publicly owned and available for trading.

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