UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 11-K

FOR ANNUAL REPORTS OF EMPLOYEE STOCK PURCHASE, SAVINGS AND SIMILAR PLANS PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

(mark one)

- [X] Annual Report Pursuant to Section 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2008
- [] Transition Report Pursuant to Section 15(d) of the Securities Exchange Act of 1934

Commission File Number 1-8002

THERMO FISHER SCIENTIFIC INC. 401(K) RETIREMENT PLAN

A. Full title of the plan and address of the plan, if different from that of the issuer named below:

Thermo Fisher Scientific Inc. 401(k) Retirement Plan

B. Name of issuer of the securities held pursuant to the plan and the address of the principal executive office:

Thermo Fisher Scientific Inc. 81 Wyman Street

Waltham, Massachusetts 02451

Pursuant to the requirements of the Securities Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this annual report to be signed by the undersigned hereunto duly authorized.

THERMO FISHER SCIENTIFIC INC. 401(k) RETIREMENT PLAN

By: Thermo Fisher Scientific Inc., Pension Committee

By: /s/ Peter M. Wilver

Peter M. Wilver Senior Vice President, Chief Financial Officer and Member of the Pension Committee

Date: June 24, 2009

Thermo Fisher Scientific Inc. 401(k) Retirement Plan Financial Statements and Supplemental Schedules December 31, 2008 and 2007

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^{*}Other supplemental schedules required by Section 2520.103.10 of the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974 have been omitted because they are not applicable.

Report of Independent Registered Public Accounting Firm

To the Participants and Administrator of Thermo Fisher Scientific Inc. 401(k) Retirement Plan and the Pension Committee of Thermo Fisher Scientific Inc.

In our opinion, the accompanying statements of net assets available for benefits and the related statement of changes in net assets available for benefits present fairly, in all material respects, the net assets available for benefits of Thermo Fisher Scientific Inc. 401(k) Retirement Plan (the "Plan") at December 31, 2008 and 2007, and the changes in net assets available for benefits for the year ended December 31, 2008 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedules of Schedule H, Line 4i – Schedule of Assets (Held at End of Year) and Schedule H, Line 4a – Schedule of Delinquent Participant Contributions are presented for the purpose of additional analysis and are not a required part of the basic financial statements but are supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. These supplemental schedules are the responsibility of the Plan's management. The supplemental schedules have been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, are fairly stated in all material respects in relation to the basic financial statements taken as a whole.

PricewaterhouseCoopers LLP

Boston, Massachusetts June 23, 2009

Thermo Fisher Scientific Inc. 401(k) Retirement Plan Statements of Net Assets Available for Benefits December 31, 2008 and 2007

(In thousands)	2008	2007
Assets Investments, at fair value Loans to participants, at fair value	\$ 811,647 	\$1,103,554 16,520
	831,136	1,120,074
Receivables Due from Lancaster Laboratories 401(k) Incentive Savings Plan Employer contributions Participant contributions	1,647 117 1,764	39,878 698 310 40,886
Liabilities Corrective distributions payable	191	
Corrective distributions payable Net assets available for benefits at fair value	832,709	1,160,960
Adjustment from fair value to contract value for collective trust investments in fully benefit-responsive investment contracts	<u>765</u>	(242)
Net assets available for benefits	\$ 833,474	\$1,160,718

Thermo Fisher Scientific Inc. 401(k) Retirement Plan Statement of Changes in Net Assets Available for Benefits For the Year Ended December 31, 2008

(In thousands)	2008
Additions	
Investment income (loss)	
Dividends and interest income	\$ 45,949
Net depreciation in fair value of investments	(425,103)
Total investment loss, net	(379,154)
Contributions	
Employer	53,584
Participants	76,642
Participant rollover	9,600
Total contributions	139,826
Total reductions, net	(239,328)
Deductions	
Benefits paid to participants	87,797
Administrative expenses	119
Total deductions	<u>87,916</u>
Net decrease in net assets available for benefits	(327,244)
Net Assets Available for Benefits	
Beginning of year	_1,160,718
End of year	<u>\$ 833,474</u>

Note 1. Plan Description

The following description of the Thermo Fisher Scientific Inc. 401(k) Retirement Plan (the "Plan") provides only general information. Participants should refer to the Plan document for a more complete description of the Plan's provisions.

General and Plan Mergers

The Plan is a defined contribution plan. In November 2006, Thermo Electron Corporation (the "Original Plan Sponsor") and Fisher Scientific International Inc. merged creating a new combined entity, Thermo Fisher Scientific Inc. (the "Plan Sponsor", the "Company"). The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 ("ERISA").

The following defined contribution plans of the Company were merged into the Thermo Fisher Scientific Inc. Choice Plan effective on December 31, 2007: the Fisher Scientific International Inc. Savings and Profit Sharing Plan (the "Fisher plan"), the Athena Diagnostics, Inc. Employees Savings Trust (the "Athena plan") and the Lancaster Laboratories 401(k) Incentive Savings Plan (the "Lancaster plan"). As of December 31, 2007, the net assets of the Athena Plan were held by MG Trust Company and the net assets of the Lancaster plan were held by The Vanguard Group, Inc., which were the respective trustees. The transfers of those assets to T. Rowe Price Trust Company, the trustee as defined by the Plan at December 31, 2007, occurred in January 2008. T. Rowe Price Trust Company replaced Fidelity Management Trust Company ("Fidelity"), as trustee of the Plan effective December 28, 2007. Effective January 1, 2008, in a Plan amendment, the merged plan was renamed the Thermo Fisher Scientific Inc. 401(k) Retirement Plan.

Eligibility

Before the merger, participation in the Plan was limited to eligible full-time and part-time employees of the Original Plan Sponsor who had completed two months of service. Each eligible employee who was a participant in the Thermo Fisher Scientific Inc. Choice Plan or the Fisher plan, Athena plan, or Lancaster plan on the day before the Plan amendment dated January 1, 2008, continues as a participant in the merged plan as amended. Any other eligible employee who is employed by the Company on and after January 1, 2008, becomes a participant on their date of hire.

Contributions

Each year participants may contribute on a pre-tax basis up to 50% of their eligible compensation, not to exceed the limits of the Internal Revenue Code. Participants may also contribute amounts representing distributions from other qualified defined benefit or defined contribution plans. Effective January 1, 2008, the Company's non-discretionary matching contribution is equal to 100% of the first 6% of eligible compensation that a participant contributes to the Plan. Participants direct the investment of their contributions and the Company match into various investment options offered by the Plan. The Plan offers the Company's common stock and twenty investment funds. Contributions are subject to certain limitations. Employee contributions and Company match are recorded on a bi-weekly basis or weekly for those employees on a weekly payroll.

Participant Accounts

Each participant's account is credited with the participant's contributions, the Company match, income or losses on those balances, as well as withdrawals, loan fees and loan repayments, as applicable.

Thermo Fisher Scientific Inc. 401(k) Retirement Plan Notes to Financial Statements For the Year Ended December 31, 2008

Administrative Expenses

The Company pays certain administrative expenses associated with the management of and professional services provided to the Plan. Administrative fees for hardship withdrawals and loan transactions are paid by the participants, and are included in the Statement of Changes in Net Assets Available for Benefits.

Vesting

Participants are immediately vested in both their voluntary contributions and the Company contributions plus actual income or losses on those balances.

Participant Loans

Beginning January 1, 2008, participants may borrow from both the employee and employer portions of their accounts. Loans must be for a minimum of \$1,000 and have a maximum equal to \$50,000 or 50% of the vested account balance, whichever is less. The term of the loan is generally five years except when use of the proceeds is for the purchase of a primary residence, for which the term can be up to 30 years. The loans are secured by the balance in the participant's account and bear interest set at the prime rate as established in the Wall Street Journal, plus 1%. The prime rate and rate of interest on new Plan loans are determined as of the beginning of each calendar month. The interest rates on existing loans range from 4% to 11.5% at December 31, 2008 and 2007. Principal and interest are repaid through payroll deductions.

Benefit Payments and Plan Withdrawals

Upon termination of service due to death, disability or retirement, a participant (or beneficiary) may elect to receive either a lump-sum amount equal to the value of the participant's vested interest in his or her account or periodic installments. For termination of service due to other reasons, a participant may receive the value of the vested interest in his or her account as a lump-sum distribution. Withdrawals may be made under certain other circumstances in accordance with the Plan document.

Forfeitures

Forfeitures that exist in the Plan were either introduced into the Plan as a result of the mergers described above or were created in previous years before vesting in Company contributions was immediate. All participant accounts in the Plan were 100% vested as of January 1, 2008.

Previously, forfeitures were used to reduce the Company's future funding requirements. Effective January 1, 2008, forfeitures are used to pay Plan expenses. In 2008, expenses of \$58,000 were paid from forfeited nonvested accounts. At December 31, 2008 and 2007, there was \$774,000 and \$795,000, respectively, in accumulated forfeitures available to pay Plan expenses in the future.

Note 2. Summary of Significant Accounting Policies

Use of Estimates

The financial statements of the Plan are prepared on the accrual basis of accounting. The preparation of the financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities and changes therein, and the disclosures of contingent assets and liabilities. Actual results could differ from those estimates.

Thermo Fisher Scientific Inc. 401(k) Retirement Plan Notes to Financial Statements For the Year Ended December 31, 2008

Investment Valuation and Income Recognition

Investments are stated at fair value. Shares of mutual funds are valued at quoted market prices, which represent the net asset value at year end. The Plan's interests in collective trusts are valued based on the fair value and contract value of the underlying investments of those funds or trusts. The Company's common stock is valued based on quoted market prices. Participant loans are valued at cost plus accrued interest, which approximates fair value. Refer to Note 5 for more information on valuation of the Plan's investments.

Purchases and sales of investments are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date.

In the Statement of Changes in Net Assets Available for Benefits, the Plan presents the net depreciation in the fair value of its investments, which consists of realized gains or losses and unrealized appreciation (depreciation) on investments. The cost of investments is determined using the average-cost basis for calculating realized gains or losses.

As described in Financial Accounting Standards Board Staff Position, FSP AAG INV-1 and SOP 94-4-1, Reporting of Fully Benefit-Responsive Investment Contracts Held by Certain Investment Companies Subject to the AICPA Investment Company Guide and Defined-Contribution Health and Welfare and Pension Plans (the FSP), investment contracts held by a defined-contribution plan are required to be reported at fair value. However, contract value is the relevant measurement attribute for that portion of the net assets available for benefits of a defined-contribution plan attributable to fully benefit-responsive investment contracts because contract value is the amount participants would receive if they were to initiate permitted transactions under the terms of the Plan. The Plan invests in investment contracts through collective trusts. As required by the FSP, the Statements of Net Assets Available for Benefits presents the fair value of the investments in the collective trusts as well as the adjustments of the investments in the collective trusts from fair value to contract value relating to the investment contracts. The Statement of Changes in Net Assets Available for Benefits is prepared on a contract value basis.

Payment of Benefits

Benefits are recorded when paid.

Risks and Uncertainties

The Plan invests in various investment securities, including mutual funds and investment contracts, which are exposed to various risks, such as interest rate, credit and overall market volatility. Due to the level of risk associated with certain investment securities and the level of uncertainty related to changes in the value of investment securities, it is at least reasonably possible that changes in values of investment securities will occur in the near term and that such changes could materially affect the participants' account balances and the amounts reported in the Statement of Net Assets Available for Benefits.

Note 3. Tax Status

The Plan has received a favorable determination letter dated February 4, 2009, from the Internal Revenue Service. The Plan has been amended since applying for the determination letter; however, the Plan administrator, management and the Plan's tax counsel believe that the Plan has been designed and operated in compliance with the applicable requirements of the Internal Revenue Code.

Note 4. Investments

Investments of the Plan's net assets are as follows:

	December 31,	
(In thousands)	2008	2007
Mutual Funds		
T. Rowe Price Retirement 2020 Fund (1)(2)	\$ 115,876	\$ 156,044
T. Rowe Price Retirement 2025 Fund (1)(2)	97,103	132,301
T. Rowe Price Retirement 2015 Fund (1)(2)	95,113	120,728
T. Rowe Price Retirement 2030 Fund (1)(2)	78,286	104,554
T. Rowe Price Retirement 2010 Fund (1)(2)	59,429	74,528
T. Rowe Price Retirement 2035 Fund (1)	42,916	57,044
Dodge & Cox International Stock Fund (2)	39,544	60,395
Dodge & Cox Stock Fund	31,188	41,208
T. Rowe Price Retirement 2040 Fund	28,162	33,392
Vanguard Mid Capitalization Index Fund, Instl.	20,084	25,401
Western Asset Core Plus Bond Fund, Instl.	19,128	14,332
T. Rowe Price Retirement 2005 Fund	18,257	18,897
T. Rowe Price Retirement Income Fund	13,112	12,004
T. Rowe Price Retirement 2045 Fund	9,867	9,727
T. Rowe Price Retirement 2050 Fund	2,215	1,295
T. Rowe Price Retirement 2055 Fund	1,181	1,295
Van Kampen Fund Class A		1,565
Lord Abbett Mid-Cap Value Fund	<u>—</u>	742
Columbia Acorn Fund Class A	<u>—</u>	605
Van Kampen Growth and Income Fund		545
American Funds Ameap Fund Class A		502
Van Kampen Equity Income Fund		501
American Funds Investment Co of America		391
Munder Index 500 Fund Class A	<u> </u>	388
AIM Mid-Cap Core Equity Fund	<u> </u>	387
Munder Small-Cap Value Fund Class A	<u> </u>	364
AIM International Growth Fund		323
Eaton Vance Govt Obligations Fund		320
Munder Mid-Cap Core Growth Fund		301
Columbia Federal Securities Fund Class A	<u> </u>	282
Templeton Foreign Fund Class R		264
Pioneer High Yield Fund Class A	<u>—</u>	196
Franklin Small-Cap Value Fund	<u> </u>	154
Nationwide U.S. Growth Leaders Fund Class A	_	92
Franklin Templeton Moderate Target Fund	_	85
Franklin Templeton Conservative Target Fund	_	42
Fidelity Advisor Equity Growth Fund	_	2
* * *		

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	December 31,	
(In thousands)	2008	2007
Common Collective Trusts		
T. Rowe Price Stable Value Fund (1)(2)	\$ 81,667	\$ 104,841
Fidelity Managed Income Portfolio II: Class II		49,836
SSGA S&P 500 Index Fund	18,174	21,821
T. Rowe Price Growth Stock Trust	12,563	17,580
Jennison Institutional U.S. Small-Cap Equity Fund	11,352	15,060
Common Stock		
Thermo Fisher Scientific Inc., 482,250 and 402,573 shares, respectively	<u>16,430</u>	23,220
Total Investments, at Fair Value	<u>\$ 811,647</u>	<u>\$1,103,554</u>

- (1) Investment represents five percent or more of the Plan's net assets at December 31, 2008.
- (2) Investment represents five percent or more of the Plan's net assets at December 31, 2007.

During 2008, the Plan's investments (including investments bought, sold and held during the year) depreciated in value by \$425,103,000, as follows:

(In thousands)	Year Ended December 31, 2008
Mutual Funds Common Collective Trusts Common Stock	\$ 389,001 25,226 10,876
Net Decrease in Fair Value	<u>\$ 425,103</u>

Dividends and interest income of \$45,949,000 consisted of the following for the year ended December 31, 2008:

(In thousands)	Year Ended December 31, 2008
Mutual Funds Common Collective Trusts Participant Loans	\$ 39,703 4,914
Dividends and Interest Income	\$ 45,949

Note 5. Fair Value Measurements

In September 2006, the FASB issued SFAS No. 157, "Fair Value Measurements." SFAS No. 157 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. This statement applies to other accounting pronouncements that require or permit fair value measurements. This statement does not require any new fair value measurements. On January 1, 2008, the Plan adopted SFAS No. 157.

SFAS No. 157 requires that assets and liabilities carried at fair value be classified and disclosed in one of the following three categories:

Level 1: Quoted market prices in active markets for identical assets or liabilities that the Company has the ability to access.

Level 2: Observable market based inputs or unobservable inputs that are corroborated by market data such as quoted prices, interest rates, and yield curves.

Level 3: Inputs are unobservable data points that are not corroborated by market data.

The asset's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

The following table presents information about the Plan's financial assets measured at fair value on a recurring basis as of December 31, 2008:

(In thousands)	December 31, 2008	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Mutual funds	\$671,461	\$671,461	\$ —	\$ —
Common collective trusts	123,756	· —	123,756	
Common stock	16,430	16,430	· 	
Participant loans	19,489			19,489
Total assets at fair value	<u>\$831,136</u>	<u>\$687,891</u>	<u>\$123,756</u>	<u>\$ 19,489</u>

The following table is a rollforward of the fair value of Level 3 assets for the year ended December 31, 2008:

(In thousands)	Participant Loans
Balance at December 31, 2007	\$ 16,520
Issuances, repayments and settlements, net	2,551
Loans transferred in from the Lancaster plan	418
Balance at December 31, 2008	<u>\$ 19,489</u>

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Note 6. Related-party Transactions

Certain Plan investments are shares of mutual funds or interests in common collective trusts that were managed by Fidelity, which was the trustee as defined by the Plan during 2007, and T. Rowe Price Retirement Services, an affiliate of T. Rowe Price Trust Company, the trustee as defined by the Plan since the end of 2007. Therefore, transactions in these investments, including dividend and interest earned of \$38,240,000, qualify as party-in-interest transactions. Fees paid by the Plan for investment management services were included as a reduction of the return earned on each fund. Participant loans also qualify as party-in-interest transactions. Interest on participant loans, which is included in interest and dividends on the Statement of Changes in Net Assets Available for Benefits, was \$1,332,000 in 2008.

The Plan invests in common stock of the Company and transactions in this common stock are related-party transactions. In 2008 and 2007, the Plan purchased shares of Company common stock on the open market having a value of \$8,207,000 and \$865,000, respectively. In 2008 and 2007, the Plan sold shares of Company common stock on the open market having values of \$4,121,000 and \$3,131,000, respectively.

Note 7. Plan Termination

Although it has not expressed an intention to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan, subject to the provisions of ERISA. In such event, the assets of the Plan would be distributed to participants in accordance with plan provisions.

Identity of Issue/Borrower, Lessor or Similar Party	Description of investments including maturity date, rate of interest, collateral, par, or maturity value	Cost	Current Value (In thousands)
Mutual Funds			
T. Rowe Price	T. Rowe Price Retirement 2020 Fund (1)	(2)	\$ 115,876
T. Rowe Price	T. Rowe Price Retirement 2025 Fund (1)	(2)	97,103
T. Rowe Price	T. Rowe Price Retirement 2015 Fund (1)	(2)	95,113
T. Rowe Price	T. Rowe Price Retirement 2030 Fund (1)	(2)	78,286
T. Rowe Price	T. Rowe Price Retirement 2010 Fund (1)	(2)	59,429
T. Rowe Price	T. Rowe Price Retirement 2035 Fund (1)	(2)	42,916
Dodge & Cox	Dodge & Cox International Stock Fund	(2)	39,544
Dodge & Cox	Dodge & Cox Stock Fund	(2)	31,188
T. Rowe Price	T. Rowe Price Retirement 2040 Fund (1)	(2)	28,162
Vanguard	Vanguard Mid Capitalization Index Fund, Instl. (1)	(2)	20,084
Western Asset Management Company	Western Asset Core Plus Bond Fund, Instl. (1)	(2)	19,128
T. Rowe Price	T. Rowe Price Retirement 2005 Fund (1)	(2)	18,257
T. Rowe Price	T. Rowe Price Retirement Income Fund (1)	(2)	13,112
T. Rowe Price	T. Rowe Price Retirement 2045 Fund (1)	(2)	9,867
T. Rowe Price	T. Rowe Price Retirement 2050 Fund (1)	(2)	2,215
T. Rowe Price	T. Rowe Price Retirement 2055 Fund (1)	(2)	1,181
1. Rowe Thee	1. Nowe Trice Retirement 2033 Fund (1)	(2)	
	Total mutual funds		671,461
Common Collective Trusts			
T. Rowe Price	T. Rowe Price Stable Value Fund (1)	(2)	82,432
State Street Global Advisors	SSGA S&P 500 Index Fund	(2)	18,174
T. Rowe Price	T. Rowe Price Growth Stock Trust (1)	(2)	12,563
Jennison Associates	Jennison Institutional U.S. Small-Cap Equity Fund	(2)	11,352
Jennison Associates	Jennison institutional O.S. Sman-Cap Equity I und	(2)	11,332
	Total common collective trusts		124,521
Common Stock			
Thermo Fisher Scientific Inc.	Common stock (1)	(2)	16,430
Thermo I isher scientific inc.	Common stock (1)	(2)	10,430
Participant Loans	Participant loans (for a term not exceeding 30 years		
1	at interest rates ranging from 4.0% to 11.5%) (1)	(2)	19,489
	Total		<u>\$ 831,901</u>

⁽¹⁾ Investments are a party-in-interest to the Plan.

⁽²⁾ Cost information is not required for participant directed investments and, therefore, is not included.

Thermo Fisher Scientific Inc. 401(k) Retirement Plan Schedule H, Line 4a – Schedule of Delinquent Participation Contributions December 31, 2008

Supplemental Schedule

Participant Contributions Transferred Late to the Plan	Amounts that Constitute Nonexempt Transactions (In thousands)
Participant contributions withheld on 1/31/2008 (Athena)*, 3/20/2008 (Matrix)*, 4/11/2008 (4640SID Commercial) and 10/12/2008 (4640SID Commercial)	\$ 53

^{*}Represents late contributions for which Form 5330 has been filed and excise taxes have been paid prior to December 31, 2008. The Plan will complete the filing and pay the excise taxes for the remaining late contributions.

Thermo Fisher Scientific Inc. 401(k) Retirement Plan Exhibit Index

Exhibit Number		
	Description of Exhibit	
23.1	Consent of PricewaterhouseCoopers LLP.	