

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

SCHEDULE 13G

UNDER THE SECURITIES EXCHANGE ACT OF 1934
ANNUAL FILING

CABOT CORPORATION
(NAME OF ISSUER)
COMMON STOCK
(TITLE CLASS OF SECURITIES)
127055101
(CUSIP NUMBER)
12/31/2010
(DATE OF EVENT WHICH REQUIRES FILING OF THIS STATEMENT)

CHECK THE APPROPRIATE BOX TO DESIGNATE THE RULE PURSUANT TO WHICH THIS
SCHEDULE IS FILED:

- RULE 13D-1(B)
 RULE 13D-1(C)
 RULE 13D-1(D)

*THE REMAINDER OF THIS COVER PAGE SHALL BE FILLED OUT FOR A
REPORTING PERSON'S INITIAL FILING ON THIS FORM WITH RESPECT TO THE
SUBJECT CLASS OF SECURITIES, AND FOR ANY SUBSEQUENT AMENDMENT
CONTAINING INFORMATION WHICH WOULD ALTER THE DISCLOSURES PROVIDED
IN A PRIOR COVER PAGE.

THE INFORMATION REQUIRED IN THE REMAINDER OF THIS COVER PAGE SHALL
NOT BE DEEMED TO BE "FILED" FOR THE PURPOSE OF SECTION 18 OF THE
SECURITIES EXCHANGE ACT OF 1934 ("ACT") OR OTHERWISE SUBJECT TO THE
LIABILITIES OF THAT SECTION OF THE ACT BUT SHALL BE SUBJECT TO ALL
OTHER PROVISIONS OF THE ACT (HOWEVER, SEE THE NOTES).

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1. NAME OF REPORTING PERSON: STATE STREET CORPORATION
I.R.S. IDENTIFICATION NO. OF ABOVE PERSON: 04-2456637

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

NOT APPLICABLE A

B

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

BOSTON, MASSACHUSETTS

5. SOLE VOTING POWER

0 SHARES

6. SHARED VOTING POWER

4,622,997 SHARES

7. SOLE DISPOSITIVE POWER

0 SHARES

8. SHARED DISPOSITIVE POWER

4,622,997 SHARES

9. AGGREGATED AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

4,622,997 SHARES

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN
SHARES

NOT APPLICABLE

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

7.1%

12. TYPE OF REPORTING PERSON

HC

1. NAME OF REPORTING PERSON
STATE STREET BANK AND TRUST COMPANY, ACTING IN VARIOUS CAPACITIES*
I.R.S. IDENTIFICATION NO. OF ABOVE PERSON 04-1867445

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

NOT APPLICABLE

A

B

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

MASSACHUSETTS

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

5. SOLE VOTING POWER

0 SHARES

6. SHARED VOTING POWER

4,496,570 SHARES

7. SOLE DISPOSITIVE POWER

0 SHARES

8. SHARED DISPOSITIVE POWER

4,496,570 SHARES

9. AGGREGATED AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

4,496,570 SHARES*

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN
SHARES

NOT APPLICABLE

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

6.9%

12. TYPE OF REPORTING PERSON BK

* 1,197,830 SHARES IN VARIOUS CAPACITIES
3,298,740 SHARES AS INVESTMENT MANAGER FOR THE CABOT EMPLOYEE
STOCK OWNERSHIP PLAN

ITEM 1.

(A) NAME OF ISSUER

CABOT CORPORATION

(B) ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES

TWO SEAPORT LANE SUITE 1300

BOSTON MA 02109-1806

ITEM 2.

(A) NAME OF PERSON FILING

STATE STREET CORPORATION AND ANY OTHER REPORTING PERSON
IDENTIFIED ON THE SECOND PART OF THE COVER PAGES HERETO

(B) ADDRESS OF PRINCIPAL BUSINESS OFFICE OR, IF NONE,

RESIDENCE

STATE STREET FINANCIAL CENTER
ONE LINCOLN STREET
BOSTON, MA 02111

(FOR ALL REPORTING PERSONS)

(C) CITIZENSHIP: SEE ITEM 4 ("CITIZENSSHIP OR PLACE OF ORGANIZATION") OF COVER PAGES

(D) TITLE OF CLASS OF SECURITIES

COMMON STOCK

(E) CUSIP NUMBER:

127055101

ITEM 3. IF THIS STATEMENT IS FILED PURSUANT TO RULE 13D-1(B), OR 13D-2(B), OR (C), CHECK WHETHER THE PERSON FILING IS A:

SEE ITEM 12("TYPE OF REPORTING PERSON") OF THE COVER PAGE FOR EACH REPORTING PERSON AND THE TABLE BELOW, WHICH EXPLAINS THE MEANING OF THE TWO LETTER SYMBOLS APPEARING IN ITEM 12 OF THE COVER PAGES.

SYMBOL CATEGORY

BK	BANK AS DEFINED IN SECTION 3(A)(6) OF THE ACT.
IC	INSURANCE COMPANY AS DEFINED IN SECTION 3 (A)(19) OF THE ACT.

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IC	INVESTMENT COMPANY REGISTERED UNDER SECTION 8 OF THE INVESTMENT COMPANY ACT OF 1940.
IA	AN INVESTMENT ADVISER IN ACCORDANCE WITH RULE 13D-1(B)(1)(II)(E).
EP	AN EMPLOYEE BENEFIT PLAN OR ENDOWMENT FUND IN ACCORDANCE WITH RULE 13D-1(B)(1)(II)(F).
HC	A PARENT HOLDING COMPANY OR CONTROL PERSON IN ACCORDANCE WITH RULE 13D-1(B)(1)(II)(G).
SA	A SAVINGS ASSOCIATIONS AS DEFINED IN SECTION 3(B) OF THE FEDERAL DEPOSIT INSURANCE ACT (12 U.S.C. 1813).
CP	A CHURCH PLAN THAT IS EXCLUDED FROM THE DEFINITION OF AN INVESTMENT COMPANY UNDER SECTION 3(C)(14)OF THE INVESTMENT COMPANY ACT OF 1940.

ITEM 4. OWNERSHIP

THE INFORMATION SET FORTH IN ROWS 5 THROUGH 11 OF THE COVER PAGE HERETO FOR EACH OF THE REPORTING PERSONS IS INCORPORATED HEREIN BY REFERENCE. THE PERCENTAGE AMOUNT SET FORTH IN ROW 11 FOR ALL COVER PAGES FILED HERewith IS CALCULATED BASED UPON THE 65,388,164 SHARES OF COMMON STOCK ISSUED AND OUTSTANDING AS REPORTED BY CABOT CORPORATION IN ITS FORM 10-Q FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2010.

THIS REPORT IS NOT AN ADMISSION THAT ANY OF THE REPORTING PERSONS IS THE BENEFICIAL OWNER OF ANY SECURITIES COVERED BY THIS REPORT, AND THE REPORTING PERSONS EXPRESSLY DISCLAIM BENEFICIAL OWNERSHIP OF ALL SHARES PURSUANT TO RULE 13D-4, EXCEPT IN THEIR FIDUCIARY CAPACITY UNDER ERISA.

ITEM 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS

NOT APPLICABLE

ITEM 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON.

ALL OF THE SECURITIES ARE BENEFICIALLY OWNED BY STATE STREET CORPORATION AND ITS DIRECT OR INDIRECT SUBSIDIARIES IN THEIR VARIOUS FIDUCIARY AND OTHER CAPACITIES. AS A RESULT, ANOTHER ENTITY IN EVERY INSTANCE IS ENTITLED TO DIVIDENDS OR PROCEEDS OF SALE. STATE STREET BANK AND TRUST COMPANY IS THE INVESTMENT MANAGER FOR CABOT COMMON STOCK IN THE CABOT INC.

EMPLOYEE STOCK OWNERSHIP PLAN WHICH BENEFICIALLY OWNS 5.0% OF THE COMMON STOCK OF CABOT CORP. IN THIS CAPACITY, STATE STREET BANK AND TRUST COMPANY HAS DISPOSITIVE POWER OVER THE SHARES IN CERTAIN CIRCUMSTANCES.

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ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY OR CONTROL PERSON

SEE EXHIBIT 1 ATTACHED HERETO

ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP

NOT APPLICABLE

ITEM 9. NOTICE OF DISSOLUTION OF GROUP

NOT APPLICABLE

ITEM 10. CERTIFICATION

BY SIGNING BELOW I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE SECURITIES REFERRED TO ABOVE WERE ACQUIRED AND ARE HELD IN THE ORDINARY COURSE OF BUSINESS AND WERE NOT ACQUIRED AND ARE NOT HELD FOR THE PURPOSE OR WITH THE EFFECT OF CHANGING OR INFLUENCING THE CONTROL OF THE ISSUER OF THE SECURITIES AND WERE NOT ACQUIRED AND ARE NOT HELD IN CONNECTION WITH OR AS A PARTICIPANT IN ANY TRANSACTION HAVING THAT PURPOSE OR EFFECT.

SIGNATURES

AFTER REASONABLE INQUIRY AND TO THE BEST OF HIS KNOWLEDGE AND BELIEF, EACH OF THE UNDERSIGNED CERTIFIES THAT THE INFORMATION SET FORTH IN THIS STATEMENT IS TRUE, COMPLETE AND CORRECT.

10 FEBRUARY 2011
STATE STREET CORPORATION

/s/ JAMES J. MALERBA
EXECUTIVE VICE PRESIDENT,
CORPORATE CONTROLLER

10 FEBRUARY 2011
STATE STREET BANK AND TRUST COMPANY

/s/ CUAN COULTER
SENIOR VICE PRESIDENT,
CHIEF COMPLIANCE OFFICER

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EXHIBIT 1

THE FOLLOWING TABLE LISTS THE IDENTITY AND ITEM 3 CLASSIFICATION OF EACH SUBSIDIARY OF STATE STREET CORPORATION, THE PARENT HOLDING COMPANY, THAT BENEFICIALLY OWNS THE ISSUER'S COMMON STOCK. PLEASE REFER TO ITEM 3 OF THE ATTACHED SCHEDULE 13G FOR A DESCRIPTION OF EACH OF THE TWO-LETTER SYMBOLS REPRESENTING THE ITEM 3 CLASSIFICATION BELOW.

SUBSIDIARY	ITEM 3 CLASSIFICATION
STATE STREET BANK AND TRUST COMPANY	BK
SSGA FUNDS MANAGEMENT, INC	IA
STATE STREET GLOBAL ADVISORS LIMITED	IA
STATE STREET GLOBAL ADVISORS LTD.	IA
STATE STREET GLOBAL ADVISORS AUSTRALIA LIMITED	IA

NOTE: ALL OF THE LEGAL ENTITIES ABOVE ARE DIRECT OR INDIRECT SUBSIDIARIES OF STATE STREET CORPORATION. BENEFICIAL OWNERSHIP FOR STATE STREET BANK AND TRUST COMPANY IS REPORTED ON ITS OWN REPORTING PERSON COVER PAGE BECAUSE IT BENEFICIALLY OWNS MORE THAN FIVE PERCENT OF THE ISSUER'S COMMON STOCK. DO NOT ADD THE SHARES OR PERCENT OF CLASS REPORTED ON EACH REPORTING PERSON'S COVER PAGE OF THE ATTACHED SCHEDULE 13G TO DETERMINE THE TOTAL PERCENT OF CLASS BENEFICIALLY OWNED BY STATE STREET CORPORATION, AS THAT WILL RESULT IN DOUBLE COUNTING OF CERTAIN SHARES.

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JOINT FILING AGREEMENT

IN ACCORDANCE WITH RULE 13D-1(K)(1) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED (THE 'EXCHANGE ACT'), EACH UNDERSIGNED ENTITY (EACH A "COMPANY") HEREBY AGREES TO ANY AND ALL JOINT FILINGS REQUIRED TO BE MADE ON THE COMPANY'S BEHALF ON SCHEDULE 13G (INCLUDING AMENDMENTS THERETO) UNDER THE EXCHANGE ACT, WITH RESPECT TO SECURITIES WHICH MAY BE DEEMED TO BE BENEFICIALLY OWNED BY THE COMPANY UNDER THE EXCHANGE ACT, AND THAT THIS AGREEMENT BE INCLUDED AS AN EXHIBIT TO ANY SUCH JOINT FILING. THIS AGREEMENT MAY BE EXECUTED IN ANY NUMBER OF COUNTERPARTS ALL OF WHICH TAKEN TOGETHER SHALL CONSTITUTE ONE AND THE SAME INSTRUMENT.

IN WITNESS WHEREOF, EACH COMPANY HEREBY EXECUTES THIS AGREEMENT EFFECTIVE AS OF THE DATE SET FORTH BELOW.

10 FEBRUARY 2011
STATE STREET CORPORATION

/s/ JAMES J. MALERBA
EXECUTIVE VICE PRESIDENT,
CORPORATE CONTROLLER

10 FEBRUARY 2011
STATE STREET BANK AND TRUST COMPANY

/s/ CUAN COULTER
SENIOR VICE PRESIDENT,
CHIEF COMPLIANCE OFFICER