

PPG INDUSTRIES INC  
 Form 10-K  
 February 20, 2014  
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UNITED STATES  
 SECURITIES AND EXCHANGE COMMISSION  
 WASHINGTON, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF  
 THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2013 Commission File Number 1-1687  
 PPG INDUSTRIES, INC.

(Exact name of registrant as specified in its charter)

Pennsylvania 25-0730780  
 (State or other jurisdiction of (I.R.S. Employer  
 incorporation or organization) Identification No.)

One PPG Place, Pittsburgh, Pennsylvania 15272  
 (Address of principal executive offices) (Zip code)

Registrant's telephone number, including area code: 412-434-3131  
 Securities Registered Pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock – Par Value \$1.66 <sup>2</sup> / <sub>3</sub>	New York Stock Exchange
Securities Registered Pursuant to Section 12(g) of the Act: None	

Indicate by check mark if the Registrant is a well-known seasoned issuer as defined in Rule 405 of the Securities Act. YES  NO

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. YES  NO

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months, and (2) has been subject to such filing requirements for the past 90 days. YES  NO

Indicate by checkmark whether the registrant has submitted electronically and posted on its corporate web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). YES  NO

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer <input checked="" type="checkbox"/>	Accelerated filer <input type="checkbox"/>
Non-accelerated filer <input type="checkbox"/>	Smaller reporting company <input type="checkbox"/>

(Do not check if a smaller

reporting company)

Indicate by check mark whether the Registrant is a shell company (as defined by Rule 12b-2 of the Act). YES  NO

The aggregate market value of common stock held by non-affiliates as of June 30, 2013, was \$20,847 million. As of January 31, 2014, 138,511,337 shares of the Registrant's common stock, with a par value of \$1.66<sup>2</sup>/<sub>3</sub> per share, were outstanding. As of that date, the aggregate market value of common stock held by non-affiliates was \$25,169 million.

DOCUMENTS INCORPORATED BY REFERENCE

Document	Incorporated By Reference In Part No.
Portions of PPG Industries, Inc. Proxy Statement for its 2014 Annual Meeting of Shareholders	III

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AND CONSOLIDATED SUBSIDIARIES

As used in this report, the terms “PPG,” “Company,” “Registrant,” “we,” “us” and “our” refer to PPG Industries, Inc., and its subsidiaries, taken as a whole, unless the context indicates otherwise.

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## Note on Incorporation by Reference

Throughout this report, various information and data are incorporated by reference from the Company’s 2013 Annual Report (hereinafter referred to as “the Annual Report”). Any reference in this report to disclosures in the Annual Report shall constitute incorporation by reference only of that specific information and data into this Form 10-K.



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Part I

Item 1. Business

PPG Industries, Inc., manufactures and distributes a broad range of coatings, optical and specialty materials and glass products. The Company, incorporated in Pennsylvania in 1883, is comprised of five reportable business segments: Performance Coatings, Industrial Coatings, Architectural Coatings – EMEA (Europe, Middle East and Africa), Optical and Specialty Materials and Glass. Each of the business segments in which PPG operates is highly competitive. The Company's diversification of product lines and worldwide markets served tends to minimize the impact on PPG's total net sales and income from continuing operations from changes in demand either for a particular product line or in a particular geographic area. Refer to Note 21, "Reportable Business Segment Information" under Item 8 of this Form 10-K for financial information relating to our reportable business segments.

On January 28, 2013, PPG completed the separation of its commodity chemicals business and the merger of the subsidiary holding the PPG commodity chemicals business with a subsidiary of the Georgia Gulf Corporation ("Georgia Gulf"). Refer to Note 22, "Separation and Merger Transaction" under Item 8 of this Form 10-K for financial information relating to this transaction.

On April 1, 2013, PPG finalized the acquisition of the North American architectural coatings business of Akzo Nobel N.V., Amsterdam, the Netherlands ("North American architectural coatings acquisition"). The acquisition further extends PPG's architectural coatings business in the United States, Canada and the Caribbean. With this acquisition, PPG has expanded its reach in all three major North American architectural coatings distribution channels, including home centers, independent paint dealers and company-owned paint stores. Refer to Note 2, "Acquisitions and Divestitures" under Item 8 of this Form 10-K for further information regarding this acquisition.

Performance Coatings, Industrial Coatings and Architectural Coatings – EMEA

PPG is a major global supplier of coatings. The Performance Coatings, Industrial Coatings and Architectural Coatings – EMEA reportable segments supply coatings for customers in a wide array of end-use markets, including industrial equipment, appliances and packaging; factory-finished aluminum extrusions and steel and aluminum coils; marine and aircraft equipment; automotive original equipment; and other industrial and consumer products. In addition to supplying coatings to the automotive original equipment market ("OEM"), PPG supplies refinishes to the automotive aftermarket. PPG also serves commercial and residential new build and maintenance markets by supplying coatings to painting and maintenance contractors and directly to consumers for decoration and maintenance. The coatings industry is highly competitive and consists of a few large firms with global presence and many smaller firms serving local or regional markets. PPG competes in its primary markets with the world's largest coatings companies, most of which have global operations, and many smaller regional coatings companies. Product development, innovation, distribution,

quality and technical and customer service have been stressed by PPG and have been significant factors in developing an important supplier position by PPG's coatings businesses comprising the Performance Coatings, Industrial Coatings and Architectural Coatings – EMEA reportable segments.

The Performance Coatings reportable segment is comprised of the refinish, aerospace, protective and marine and architectural – Americas and Asia Pacific coatings businesses.

Price, product performance, technology, quality, distribution and technical and customer service are major competitive factors in the following three coatings businesses.

The refinish coatings business supplies coatings products for automotive and commercial transport/fleet repair and refurbishing, light industrial coatings for a wide array of markets and specialty coatings for signs. These products are sold primarily through independent distributors.

The aerospace coatings business supplies sealants, coatings, maintenance cleaners and transparencies for commercial, military, regional jet and general aviation aircraft and transparent armor for specialty applications and also provides chemical management for the aerospace industry. PPG supplies products to aircraft manufacturers and maintenance

and aftermarket customers around the world both on a direct basis and through a company-owned distribution network.

The protective and marine coatings business supplies coatings and finishes for the protection of metals and structures to metal fabricators, heavy duty maintenance contractors and manufacturers of ships, bridges and rail cars. These products are sold through company-owned architectural coatings stores, independent distributors and directly to customers.

The architectural coatings-Americas and Asia Pacific business primarily produces coatings used by painting and maintenance contractors and by consumers for decoration and maintenance of residential and commercial building structures. These coatings are sold under a number of brands, including PPG<sup>®</sup>, GLIDDEN<sup>®</sup>, OLYMPIC<sup>®</sup>, DULUX<sup>®</sup> (in Canada), SIKKENS<sup>®</sup>, PPG PITTSBURGH PAINTS<sup>®</sup>, MULCO<sup>®</sup>, FLOOD<sup>®</sup>, LIQUID NAILS<sup>®</sup>, SICO<sup>®</sup>, CIL<sup>®</sup>, RENNER<sup>®</sup>, TAUBMANS<sup>®</sup>, WHITE KNIGHT<sup>®</sup>, and BRISTOL<sup>®</sup>. Architectural coatings – Americas and Asia Pacific products are also sold through a combination of company-owned stores, home centers and other regional or national consumer retail outlets, paint dealers, and independent distributors and directly to customers. Price, product performance, quality, distribution and brand recognition are key competitive factors for these architectural coatings businesses. At the end of 2013, the architectural coatings-Americas and Asia Pacific business operated about 870 company-owned stores in North America, of which 526 stores, net of redundant store closures, were added as a result of the North American architectural coatings acquisition. This business also operates about 40 company-owned stores in Australia.

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The major global competitors of the Performance Coatings reportable segment are Akzo Nobel N.V., Axalta Coating Systems, BASF Corporation, Hempel A/S, the Jotun Group, Masco Corporation, the Sherwin-Williams Company, Valspar Corporation and RPM International Inc. The average number of persons employed by the Performance Coatings reportable segment during 2013 was about 14,300.

The Industrial Coatings reportable segment is comprised of the automotive OEM, industrial and packaging coatings businesses. Industrial, automotive OEM and packaging coatings are formulated specifically for the customers' needs and application methods.

The industrial and automotive OEM coatings businesses sell directly to a variety of manufacturing companies. PPG also supplies adhesives and sealants for the automotive industry and metal pretreatments and related chemicals for industrial and automotive applications. PPG has established alliances with Kansai Paints and Helios Group to serve certain automotive original equipment manufacturers in various regions of the world. PPG owns a 60% interest in PPG Kansai Finishes to serve Japanese-based automotive OEM customers in North America and Europe and PPG owns a 60% interest in PPG Helios Ltd. to serve Russian-based automotive OEM customers in Russia and the Ukraine. The packaging coatings business supplies coatings to the manufacturers of aerosol, food, and beverage containers.

Price, product performance, technology, cost effectiveness, quality and technical and customer service are major competitive factors in the industrial coatings businesses. The major global competitors of the Industrial Coatings reportable segment are Akzo Nobel N.V., Axalta Coating Systems, BASF Corporation, Valspar Corporation and Nippon Paint. The average number of persons employed by the Industrial Coatings reportable segment during 2013 was about 9,500.

The Architectural Coatings – EMEA business supplies a variety of coatings and purchased sundries to painting contractors and consumers in Europe, the Middle East and Africa. The coatings are sold under a number of brands, including SIGMA<sup>®</sup>, HISTOR<sup>®</sup>, SEIGNEURIE<sup>®</sup>, GUITTET<sup>®</sup>, PEINTURES GAUTHIER<sup>®</sup>, RIPOLIN<sup>®</sup>, JOHNSTONE'S<sup>®</sup>, LEYLAND<sup>®</sup>, PRIMALEX<sup>®</sup>, DEKORAL<sup>®</sup>, TRILAK<sup>®</sup>, PROMINENT PAINTS<sup>®</sup>, GORI<sup>®</sup>, and BONDEX<sup>®</sup>. Architectural Coatings – EMEA products are sold through a combination of about 660 company-owned stores, regional home centers, paint dealers, and independent distributors and directly to customers. Price, product performance, quality, distribution and brand recognition are key competitive factors for this business. The major competitors of the Architectural Coatings – EMEA reportable segment are Akzo Nobel N.V., Materis Paints and a variety of regional and national competitors in each country in Europe, the Middle East and Africa. The average number of persons employed by the Architectural Coatings – EMEA reportable segment during 2013 was about 7,900.

## Optical and Specialty Materials

PPG's Optical and Specialty Materials reportable segment is comprised of the optical products and silicas businesses. The primary Optical and Specialty Materials products are TRANSITIONS<sup>®</sup> lenses, optical lens materials and high performance sunlenses; amorphous precipitated silicas for tire, battery separator and other end-use markets; and TESLIN<sup>®</sup> substrate used in such applications as radio frequency identification (RFID) tags and labels, e-passports, drivers' licenses and identification cards. Transitions lenses are processed and distributed by Transitions Optical, PPG's 51% owned joint venture with Essilor International ("Essilor"). In the Optical and Specialty Materials businesses, product quality and performance, branding, distribution and technical service are the most critical competitive factors. On July 29, 2013, PPG entered into an agreement to divest its 51% ownership interest in the Transitions Optical joint venture and 100% of PPG's optical sunlens business to Essilor. Transitions Optical is a global supplier of photochromic lenses and a consolidated subsidiary of PPG. The transaction reflects an enterprise value of approximately \$3.4 billion, with PPG receiving cash at closing of \$1.73 billion pretax or approximately \$1.5 billion after-tax. Essilor will also enter into multi-year agreements with PPG for continuing supply of photochromic materials and research and development services. The transaction is expected to close in the first half of 2014, subject to satisfaction of customary closing conditions, including receipt of regulatory approvals. Upon receipt of all required regulatory approvals, PPG expects to report Transitions Optical as discontinued operations.

The major global competitors of the Optical and Specialty Materials reportable segment are Vision-Ease Lens, Carl Zeiss AG, Corning, Inc., Hoya Corporation, Mitsui Chemicals, Inc., Solvay Group, J.M. Huber and Evonik Industries, A.G. The average number of persons employed by the Optical and Specialty Materials reportable segment during 2013 was about 2,900.

#### Glass

The Glass reportable business segment is comprised of the flat glass and fiber glass businesses. PPG is a producer of flat glass in North America and a global producer of continuous-strand fiber glass. PPG's major markets are commercial and residential construction and the wind energy, energy infrastructure, transportation and electronics industries. Most glass products are sold directly to manufacturing companies. PPG manufactures flat glass by the float process and fiber glass by the continuous-strand process.

Price, quality, technology and customer service are the key competitive factors in the glass businesses. The Company competes with several major producers of flat glass, including Asahi Glass Company, Cardinal Glass Industries, Guardian Industries and NSG Pilkington, and many major producers of fiber glass throughout the world, including Owens Corning, Jushi Group, Johns Manville Corporation, CPIC Fiberglass, AGY, NEG, 3B and Taishan Fiberglass. The average number of persons employed by the Glass reportable segment during 2013 was about 3,100.



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### Raw Materials and Energy

The effective management of raw materials and energy is important to PPG's continued success. The Company's most significant raw materials are epoxy and other resins, titanium dioxide and other pigments, and solvents in the coatings businesses; lenses, sand and soda ash in the Optical and Specialty Materials segment; and sand, clay and soda ash in the Glass segment. Coatings raw materials, which include both organic, primarily petroleum based, materials and inorganic materials, including titanium dioxide, generally comprise between 70% and 80% of cost of goods sold in most coatings formulations and represent PPG's single largest production cost component.

Energy is a significant production cost in the Glass segment, and our primary energy source is natural gas. With the separation of the commodity chemicals business, PPG's consumption of natural gas decreased significantly. Natural gas is expected to remain a competitive fuel source when compared to alternatives, especially on a global basis. We will continue to use competitive sourcing and consumption reduction initiatives to manage natural gas costs.

Most of the raw materials and energy used in production are purchased from outside sources, and the Company has made, and plans to continue to make, supply arrangements to meet the planned operating requirements for the future. Supply of critical raw materials and energy is managed by establishing contracts, multiple sources, and identifying alternative materials or technology whenever possible. The Company is continuing its aggressive sourcing initiatives to effectively broaden our supply of high quality raw materials. These initiatives include qualifying multiple and local sources of supply, including suppliers from Asia and other lower cost regions of the world and a reduction in the amount of titanium dioxide used in our product formulations. Our products use both petroleum-derived and bio-based materials as part of a product renewal strategy. Our global efforts to reduce titanium dioxide consumption resulted in a 4% reduction and an additional 2% reduction in 2012 and 2013, respectively.

The Company also has undertaken a strategic initiative to secure and enhance PPG's supply of titanium dioxide, as well as to add to the global supply of this raw material. PPG possesses intellectual property and expertise in the production and finishing of titanium dioxide pigment and has and intends to continue to leverage this and engage potential parties to develop innovative supply solutions through technical collaborations, joint ventures, licensing or other commercial initiatives.

In 2012, PPG signed a license agreement with Henan Billions Chemicals Co., Ltd. ("Billions"), by which PPG will license certain chloride-based titanium dioxide technologies to Billions for use at Billions' titanium dioxide refinement facilities in China. In addition, PPG has signed a long-term purchase agreement for titanium dioxide with Billions. PPG intends to use the chloride-based titanium dioxide manufactured by Billions for various end-use paint and coatings applications. Billions is also able to sell its chloride-based titanium dioxide to third parties.

In 2013, PPG signed a purchase and supply agreement as well as a research services agreement with Argex Titanium Inc. ("Argex") whereby PPG is providing technical support to Argex in connection with their efforts to develop a unique and low cost process to manufacture pigment grade titanium dioxide.

We are subject to existing and evolving standards relating to the registration of chemicals which could potentially impact the availability and viability of some of the raw materials we use in our production processes. Our ongoing global product stewardship efforts are directed at maintaining our compliance with these standards. Changes to chemical registration regulations have been proposed or implemented in the EU and many other countries, including China, Canada, the United States, and Korea. Because implementation of many of these programs has not been finalized, the financial impact cannot be estimated at this time. We anticipate that the number of chemical registration regulations will continue to increase globally, and we have implemented programs to track and comply with these regulations.

For 2014, the Company currently expects overall coatings raw material prices to increase modestly, with varied results by region and commodity type. Natural gas pricing remains volatile, although increased output and infrastructure development from shale gas should continue to play a role in muting long-term changes in natural gas pricing.

### Research and Development

Technology innovation has been a hallmark of PPG's success throughout its history. Research and development costs, including depreciation of research facilities, were \$505 million, \$468 million and \$443 million during 2013, 2012 and

2011, respectively. These costs totaled approximately 3% of annual sales in 2013, 2012 and 2011, respectively. We have obtained government funding of a small portion of the Company's research efforts, and we will continue to pursue government funding.

PPG owns and operates several facilities to conduct research and development relating to new and improved products and processes. In addition to the Company's centralized principal research and development centers (See Item 2 of this Form 10-K), our operating segments manage their development regionally through centers of excellence. As part of our ongoing efforts to manage our formulations and raw material costs effectively, we operate a global competitive sourcing laboratory in China. Because of the Company's broad array of products and customers, PPG is not materially dependent upon any single technology platform.

The Company seeks to optimize its investment in research and development to create new products to drive profitable growth. We align our product development with the macro trends in the end-use markets we serve and leverage core technology platforms to develop products for unmet market needs. Our history of successful technology introductions is based on a commitment to an efficient and effective innovation process and disciplined portfolio management.

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## Patents

PPG considers patent protection to be important; however, the Company's reportable business segments are not materially dependent upon any single patent or group of related patents. PPG earned \$48 million in 2013, \$51 million in 2012 and \$55 million in 2011 from royalties and the sale of technical know-how.

## Backlog

In general, PPG does not manufacture its products against a backlog of orders. Production and inventory levels are geared primarily to projections of future demand and the level of incoming orders.

## Global Operations

PPG has a significant investment in non-U.S. operations. This broad geographic footprint serves to lessen the significance of economic impacts occurring in any one region. As a result of our expansion outside the U.S., we are subject to certain inherent risks, including economic and political conditions in international markets and fluctuations in foreign currency exchange rates.

Our net sales in the developed and emerging regions of the world for the years ended December 31<sup>st</sup> are summarized below:

(millions)	Net Sales		
	2013	2012	2011
United States, Canada, Western Europe	\$ 10,977	\$ 9,437	\$ 9,213
Latin America, Eastern Europe, Middle East, Africa, Asia Pacific	4,131	4,075	3,940
Total	\$ 15,108	\$ 13,512	\$ 13,153

Refer to Note 21 "Reportable Business Segment Information" under Item 8 of this Form 10-K for geographic information related to PPG's property, plant and equipment, and for additional geographic information pertaining to sales.

## Seasonality

PPG's income from continuing operations have typically been greater in the second and third quarters and cash flow from operations has been greatest in the fourth quarter due to end-use market seasonality, primarily in PPG's architectural coatings businesses, the magnitude of which increased in 2013 due to the size of the acquired North American architectural coatings business. Demand for PPG's architectural coatings products is typically strongest in the second and third quarters due to higher home improvement, maintenance and construction activity during the spring and summer months in North America and Europe. This higher activity level results in higher outstanding receivables that are collected in the fourth quarter generating higher fourth quarter cash flow.

## Employee Relations

The average number of persons employed worldwide by PPG during 2013 was about 41,400. The Company has numerous collective bargaining agreements throughout the world. We observe local customs, legislation and practice in labor relations when negotiating collective bargaining agreements. There were no significant work stoppages in 2013. While we have experienced occasional work stoppages as a result of the collective bargaining process and may experience some work stoppages in the future, we believe we will be able to negotiate all labor agreements on satisfactory terms. To date, these work stoppages have not had a significant impact on PPG's operating results. Overall, the Company believes it has good relationships with its employees.

## Environmental Matters

PPG is subject to existing and evolving standards relating to protection of the environment. PPG is negotiating with various government agencies concerning 132 current and former manufacturing sites and offsite waste disposal locations, including 24 sites on the National Priority List. While PPG is not generally a major contributor of wastes to these offsite waste disposal locations, each potentially responsible party may face governmental agency assertions of joint and several liability. Generally, however, a final allocation of costs is made based on relative contributions of wastes to the site. There is a wide range of cost estimates for cleanup of these sites, due largely to uncertainties as to the nature and extent of their condition and the methods that may have to be employed for their remediation. The Company has established reserves for onsite and offsite remediation of those sites where it is probable that a liability has been incurred and the amount can be reasonably estimated.

The Company's experience to date regarding environmental matters leads it to believe that it will have continuing expenditures for compliance with provisions regulating the protection of the environment and for present and future remediation efforts at waste and plant sites. Management anticipates that such expenditures will occur over an extended period of time.

In addition to the \$310 million currently reserved for environmental remediation efforts, we may be subject to loss contingencies related to environmental matters estimated to be approximately \$100 million to \$200 million. These reasonably possible unreserved losses relate to environmental matters at a number of sites, including about one third each related to: i) additional costs at a former chromium manufacturing plant site and associated sites in Jersey City, N.J. ("New Jersey Chrome") ii) legacy glass sites and iii) a number of other sites, including legacy chemical manufacturing sites. The loss contingencies related to these sites include significant unresolved issues such as the nature and extent of contamination at these sites and the methods that may have to be employed to remediate them. Capital expenditures for environmental control projects were \$22 million, \$12 million and \$15 million in 2013, 2012 and 2011, respectively. It is expected that expenditures for such projects in 2014 will be in the range of \$15 million to

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\$20 million. Although future capital expenditures are difficult to estimate accurately because of constantly changing regulatory standards and policies, it can be anticipated that environmental control standards will become increasingly stringent and the cost of compliance will increase.

In management's opinion, the Company operates in an environmentally sound manner, is well positioned, relative to environmental matters, within the industries in which it operates and the outcome of these environmental contingencies will not have a material adverse effect on PPG's financial position or liquidity; however, any such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized. See Note 14, "Commitments and Contingent Liabilities," under Item 8 of this Form 10-K for additional information related to environmental matters and our accrued liability for estimated environmental remediation costs.

Public and governmental concerns related to climate change continue to grow, leading to efforts to limit the greenhouse gas ("GHG") emissions believed to be responsible. While PPG has operations in many countries, a substantial portion of PPG's GHG emissions are generated by locations in the U.S., where considerable legislative and regulatory activity has been taking place. PPG has, and will continue to, annually report our global GHG emissions to the voluntary Carbon Disclosure project.

Energy prices and availability of supply continue to be a concern for major energy users. Since PPG's GHG emissions arise principally from combustion of fossil fuels, PPG has for some time recognized the desirability of reducing energy consumption and GHG generation. Effective energy management practices implemented over the 2006 to 2011 time period led to a 10% reduction in PPG's GHG emissions at the end of 2011. PPG's total annual energy consumption and GHG emissions was significantly reduced as a result of the separation of its commodity chemicals business in January 2013.

PPG participates in the U.S. Department of Energy ("DOE") SAVE ENERGY NOW, BETTER BUILDINGS®, BETTER PLANTS® Program reinforcing the company's voluntary efforts to significantly reduce its industrial energy intensity. In September 2011, the DOE changed its approach to energy efficiency in the industrial sector and initiated the Better Buildings, Better Plants program. PPG is currently participating in this new program, which sets energy savings targets and provides a suite of educational, training, and technical resources to help meet those targets. Recognizing the continuing importance of this matter, PPG has a senior management group with a mandate to guide the Company's progress in this area.

In December 2012, the USEPA issued its final Clean Air Act emissions standards for large and small boilers and incinerators that burn fossil fuels known as the Boiler Maximum Achievable Control Technology ("Boiler MACT") regulations. These regulations are aimed at controlling emissions of air toxics requiring that covered facilities achieve compliance within three years. At the time the rules were issued, the principal financial impact to PPG was related to

operations within its former commodity chemicals business which was separated in January 2013. The remaining 12 PPG facilities that are subject to these regulations have natural gas-fired boilers, which are subject to minimal regulatory oversight requiring only changes to workplace practices and no capital expenditures for pollution control equipment. The cost impact for PPG's remaining affected facilities is expected to be minimal.

PPG's public disclosure on energy security and climate change can be viewed in our Sustainability Report at [www.ppg.com/sustainability](http://www.ppg.com/sustainability) or at the Carbon Disclosure Project [www.cdproject.net](http://www.cdproject.net).

Available Information

The Company's website address is [www.ppg.com](http://www.ppg.com). The Company posts, and shareholders may access without charge, the Company's recent filings and any amendments thereto of its annual reports on Form 10-K, quarterly reports on Form 10-Q and its proxy statements as soon as reasonably practicable after such reports are filed with the Securities and Exchange Commission ("SEC"). The Company also posts all financial press releases, including earnings releases, to its website. All other reports filed or furnished to the SEC, including reports on Form 8-K, are available via direct link on PPG's website to the SEC's website, [www.sec.gov](http://www.sec.gov). Reference to the Company's and SEC's websites herein does not incorporate by reference any information contained on those websites and such information should not be considered part of this Form 10-K.



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Item 1A. Risk Factors

As a global manufacturer of coatings, optical and specialty materials and glass products, we operate in a business environment that includes risks. These risks are not unlike the risks we have faced in the recent past nor are they unlike risks faced by our competitors. Each of the risks described in this section could adversely affect our operating results, financial position and liquidity. While the factors listed here are considered to be the more significant factors, no such list should be considered to be a complete statement of all potential risks and uncertainties. Unlisted factors may present significant additional obstacles which may adversely affect our businesses and our results of operations.

Increases in prices and declines in the availability of raw materials could negatively impact our financial results.

Our financial results are significantly affected by the cost of raw materials. Coatings raw materials, which include both organic, primarily petroleum based, materials and inorganic materials, including titanium dioxide, generally comprise between 70% and 80% of cost of goods sold in most coatings formulations and represent PPG's single largest production cost component.

We also import raw materials and intermediates, particularly for use at our manufacturing facilities in the emerging regions of the world. In most cases, those imports are priced in the currency of the supplier and, therefore, if that currency strengthens against the currency of our manufacturing facility, our margins are at risk of being lowered.

Most of the raw materials used in production are purchased from outside sources, and the Company has made, and plans to continue to make, supply arrangements to meet the planned operating requirements for the future. Supply of critical raw materials is managed by establishing contracts, procuring from multiple sources, and identifying alternative materials or technology whenever possible. The Company is continuing its aggressive sourcing initiatives to effectively broaden our supply of high quality raw materials. These initiatives include qualifying multiple and local sources of supply, including suppliers from Asia and other lower cost regions of the world and a reduction in the amount of titanium dioxide used in our product formulations. Our products use both petroleum-derived and bio-based materials as part of a product renewal strategy.

An inability to obtain critical raw materials would adversely impact our ability to produce products. Increases in the cost of raw materials may have an adverse effect on our income from continuing operations or cash flow in the event we are unable to offset these higher costs in a timely manner.

The pace of economic growth and level of uncertainty could have a negative impact on our results of operations and cash flows.

During 2012 and 2013, overall economic trends remained mixed among the major global economies, with major coatings end-use markets also experiencing similar variations. Given these economic conditions, overall aggregate PPG

global sales volume for 2013 was flat with the prior year. Entering 2014, we expect modest global growth. We anticipate growth will be the broadest in the U.S. economy, spanning across several coatings end-use markets as favorable market conditions continue in automotive OEM, architectural coatings and aerospace. We expect emerging regions growth to remain mixed, but we expect PPG to post solid growth based on the end-markets the Company supplies. In Europe, economies appear to be improving but remain fragile.

PPG provides products and services to a variety of end-use markets and in many geographies. This broad end-use market exposure and expanded geographic presence lessens the significance of any significant or rapid decrease in activity levels; nonetheless, lower demand levels may result in lower sales, which would result in reduced income from continuing operations and cash flows.

We are subject to existing and evolving standards relating to the protection of the environment.

Environmental laws and regulations control, among other things, the discharge of pollutants into the air and water, the handling, use, treatment, storage and clean-up of hazardous and non-hazardous wastes, the investigation and remediation of soil and groundwater affected by hazardous substances, and regulate various health and safety matters. The environmental laws and regulations we are subject to, including those in the U.S. as well as in other countries in which we operate, impose liability for the costs of, and damages resulting from, cleaning up current sites, past spills, disposals and other releases of hazardous substances. Violations of these laws and regulations can also result in fines

and penalties. Future environmental laws and regulations may require substantial capital expenditures or may require or cause us to modify or curtail our operations, which may have a material adverse impact on our business, financial condition and results of operations.

As described in Note 14, "Commitments and Contingent Liabilities," under Item 8 of this Form 10-K, we are currently undertaking environmental remediation activities at a number of our facilities and properties, the cost of which is substantial. In addition to the amounts currently reserved, we may be subject to loss contingencies related to environmental matters estimated to be as much as \$100 million to \$200 million. Such unreserved losses are reasonably possible but are not currently considered to be probable of occurrence.

We are involved in a number of lawsuits and claims, and we may be involved in future lawsuits and claims, in which substantial monetary damages are sought.

PPG is involved in a number of lawsuits and claims, both actual and potential in which substantial monetary damages are sought. Those lawsuits and claims relate to contract, patent, environmental, product liability, antitrust and other matters arising out of the conduct of PPG's current and past business activities. Any such claims, whether with or without merit, could be time consuming, expensive to defend and could divert management's attention and resources. We maintain insurance against some, but not all, of these potential claims, and the levels of insurance we do maintain may not be adequate to fully cover any and all losses. We believe that, in the aggregate, the outcome of all current lawsuits and claims



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involving PPG, including asbestos-related claims in the event the settlement described in Note 14, “Commitments and Contingent Liabilities” under Item 8 of this Form 10-K does not become effective, will not have a material effect on PPG’s consolidated financial position or liquidity; however, such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized. Nonetheless, the results of any future litigation or claims are inherently unpredictable, but such outcomes could have a material adverse effect on our results of operations, cash flow or financial condition.

For over 30 years, we have been a defendant in lawsuits involving claims alleging personal injury from exposure to asbestos.

Most of our potential exposure relates to allegations by plaintiffs that PPG should be liable for injuries involving asbestos containing thermal insulation products manufactured by Pittsburgh Corning Corporation (“PC”). PPG is a 50% shareholder of PC. Although we have entered into a settlement arrangement with several parties concerning these asbestos claims as discussed in Note 14, “Commitments and Contingent Liabilities,” under Item 8 of this Form 10-K, the arrangement remains subject to court proceedings and, if not approved, the outcome could be material to the results of operations of any particular period.

We are subject to a variety of complex U.S. and non-U.S. laws and regulations which could increase our compliance costs.

We are subject to a wide variety of complex U.S. and non-U.S. laws and regulations, and legal compliance risks, including securities laws, tax laws, environmental laws, employment and pension-related laws, competition laws, U.S. and foreign export and trading laws, and laws governing improper business practices, including bribery. We are affected by new laws and regulations and changes to existing laws and regulations, including interpretations by courts and regulators. These laws and regulations effectively expand our compliance obligations and potential enforcement actions by governmental authorities or litigation related to them.

New laws and regulations or changes in existing laws or regulations or their interpretation could increase our compliance costs. For example, regulations concerning the composition, use and transport of chemical products continue to evolve. Developments concerning these regulations could potentially impact (i) the availability or viability of some of the raw materials we use in our product formulations and/or (ii) our ability to supply certain products to some customers or markets. Import/export regulations also continue to evolve and could result in increased compliance costs, slower product movements or additional complexity in our supply chains.

Our international operations expose us to additional risks and uncertainties that could affect our financial results. PPG has a significant investment in global operations. This broad geographic footprint serves to lessen the significance of economic impacts occurring in any one region. Notwithstanding the benefits of geographic diversification, our ability to achieve and maintain profitable growth in international markets is subject to risks related to the differing legal, political, social and regulatory requirements and

economic conditions of many countries. As a result of our expansion outside the U.S., we are subject to certain inherent risks, including political and economic uncertainty, inflation rates, exchange rates, trade protection measures, local labor conditions and laws, restrictions on foreign investments and repatriation of earnings, and weak intellectual property protection. Our percentage of sales generated in 2013 by products sold outside the U.S. was approximately 59%.

Fluctuations in foreign currency exchange rates could affect our financial results.

We earn revenues, pay expenses, own assets and incur liabilities in countries using currencies other than the U.S. dollar. Because our consolidated financial statements are presented in U.S. dollars, we must translate revenues and expenses into U.S. dollars at the average exchange rate during each reporting period, as well as assets and liabilities into U.S. dollars at exchange rates in effect at the end of each reporting period. Therefore, increases or decreases in the value of the U.S. dollar against other major currencies will affect our net revenues, operating income and the value of balance sheet items denominated in foreign currencies. We use derivative financial instruments to reduce our net exposure to currency exchange rate fluctuations related to foreign currency transactions. However, fluctuations in foreign currency exchange rates, particularly the strengthening of the U.S. dollar against major currencies, could materially affect our financial results.

Business disruptions could have a negative impact on our results of operations and financial condition.

Unexpected events, including supply disruptions, temporary plant and/or power outages, work stoppages, natural disasters and severe weather events, computer system disruptions, fires, war or terrorist activities, could increase the cost of doing business or otherwise harm the operations of PPG, our customers and our suppliers. It is not possible for us to predict the occurrence or consequence of any such events. However, such events could reduce demand for our products or make it difficult or impossible for us to receive raw materials from suppliers or to deliver products to customers.

Failure to successfully integrate acquired businesses into our existing operations could adversely affect our financial results.

Part of the Company's strategy is growth through acquisitions, and we will likely acquire additional businesses and enter into additional joint ventures in the future. Growth through acquisitions and the formation of joint ventures involve risks, including:

- difficulties in assimilating acquired companies and products into our existing business;
- delays in realizing the benefits from the acquired companies or products;
- diversion of our management's time and attention from other business concerns;
- difficulties due to lack of or limited prior experience in any new markets we may enter;
- unforeseen claims and liabilities, including unexpected environmental exposures or product liability;
- unexpected losses of customers or suppliers of the acquired or existing business;

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difficulty in conforming the acquired business' standards, processes, procedures and controls to those of our operations; and

difficulties in retaining key employees of the acquired businesses.

Our failure to address these risks or other problems encountered in connection with our past or future acquisitions and joint ventures could cause us to fail to realize the anticipated benefits of such acquisitions or joint ventures and could adversely affect our results of operations, cash flow or financial condition.

Our ability to understand our customers' specific preferences and requirements, and to innovate, develop, produce and market products that meet customer demand is critical to our business results.

Our business relies on continued global demand for our brands and products. To achieve business goals, we must develop and sell products that appeal to customers. This is dependent on a number of factors, including our ability to produce products that meet the quality, performance and price expectations of our customers and our ability to develop effective sales, advertising and marketing programs. Future growth will depend on our ability to continue to innovate our existing products and to develop and introduce new products. If we fail to keep pace with product innovation on a competitive basis or to predict market demands for our products, our business, financial condition and results of operations could be adversely affected.

The industries in which we operate are highly competitive.

With each of our businesses, an increase in competition may cause us to lose market share, lose a large regional or global customer, or compel us to reduce prices to remain competitive, which could result in reduced margins for our products. Competitive pressures may not only impair our margins but may also impact our revenues and our growth which could adversely affect our results of operations.

The security of our information technology systems could be compromised, which could adversely affect our ability to operate.

Increased global information technology security requirements, threats and sophisticated and targeted computer crime pose a risk to the security of our systems, networks and the confidentiality, availability and integrity of our data. Despite our efforts to protect sensitive information and confidential and personal data, our facilities and systems may be vulnerable to security breaches. This could lead to negative publicity, theft, modification or destruction of proprietary information or key information, manufacture of defective products, production downtimes and operational disruptions, which could adversely affect our reputation, competitiveness and results of operations.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

The Company's corporate headquarters is located in Pittsburgh, Pa. The Company's manufacturing facilities, sales offices, research and development centers and distribution centers are located throughout the world. As of February 20, 2014, the Company operated 139 manufacturing facilities in 47 countries, and the principal manufacturing and distribution facilities were as follows:

Performance Coatings:	Carrollton, Texas; Clayton, Australia; Delaware, Ohio; Dover, Del.; Huntsville, Ala.; Huron, Ohio; Irvine, Calif.; Kunshan, China; Little Rock, Ark.; Milan, Italy; Mojave, Calif.; Oakwood, Georgia; Stowmarket, United Kingdom; Sylmar, Calif.; about 870 company-owned stores in North America and about 40 company-owned stores in Australia
Industrial Coatings:	Cieszyn, Poland; Cleveland, Ohio; Oak Creek, Wis.; Sumaré, Brazil; Tianjin, China; Zhangjiagang, China; Quattordio, Italy; San Juan del Rio, Mexico; and Busan, South Korea
Architectural Coatings—EMEA:	

Soborg, Denmark; Moreuil, France; Budapest, Hungary; Amsterdam, Netherlands; Wroclaw, Poland; Birstall, United Kingdom and nearly 660 company-owned stores, including 211 stores in France and 188 stores in the United Kingdom

Optical and Specialty Materials:

Barberton, Ohio; Bangkok, Thailand; Lake Charles, La. and Manila, Philippines

Glass:

Carlisle, Pa.; Hoogezaand, Netherlands; Lexington, N.C.; Shelby, N.C. and Wichita Falls, Texas

Including the principal manufacturing facilities noted above, the Company has manufacturing facilities in the following geographic areas:

United States:	38 manufacturing facilities in 20 states.
Other Americas:	14 manufacturing facilities in 5 countries.
EMEA:	58 manufacturing facilities in 29 countries.
Asia:	29 manufacturing facilities in 12 countries.

The Company's principal research and development centers are located in Allison Park, Pa.; Harmarville, Pa.; Monroeville, Pa.; Shelby, NC; and Burbank, Ca.

The Company's headquarters, certain distribution centers and substantially all company-owned paint stores are located in facilities that are leased while the Company's other facilities are generally owned. Our facilities are considered to be suitable and adequate for the purposes for which they are intended and overall have sufficient capacity to conduct business in the upcoming year.

### Item 3. Legal Proceedings

PPG is involved in a number of lawsuits and claims, both actual and potential, including some that it has asserted against others, in which substantial monetary damages are sought. These lawsuits and claims, the most significant of which are described below, relate to contract, patent, environmental, product liability, antitrust and other matters arising out of the conduct of PPG's current and past business activities. To the extent that these lawsuits and claims involve personal injury and property damage, PPG believes it has adequate insurance; however, certain of PPG's insurers are contesting coverage with respect to some of these claims, and other insurers, as they had prior to the asbestos settlement described below, may contest coverage with respect to some of the asbestos claims if the settlement is not implemented. PPG's lawsuits and claims

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against others include claims against insurers and other third parties with respect to actual and contingent losses related to environmental, asbestos and other matters.

The results of any future litigation and claims are inherently unpredictable. However, management believes that, in the aggregate, the outcome of all lawsuits and claims involving PPG, including asbestos-related claims in the event the settlement does not become effective, will not have a material effect on PPG's consolidated financial position or liquidity; however, such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized.

For over 30 years, PPG has been a defendant in lawsuits involving claims alleging personal injury from exposure to asbestos. For a description of asbestos litigation affecting the Company and the terms and status of the proposed asbestos settlement arrangement, see Note 14, "Commitments and Contingent Liabilities" under Item 8 of this Form 10-K.

In the past, the Company and others have been named as defendants in several cases in various jurisdictions claiming damages related to exposure to lead and remediation of lead-based coatings applications. PPG has been dismissed as a defendant from most of these lawsuits and has never been found liable in any of these cases.

## Executive Officers of the Company

Set forth below is information related to the Company's executive officers as of February 20, 2014.

Name	Age	Title
Charles E. Bunch	64	Chairman and Chief Executive Officer since July 2005
Michael H. McGarry <sup>(a)</sup>	55	Executive Vice President since September 2012
Viktoras R. Sekmakas <sup>(b)</sup>	53	Executive Vice President since September 2012
Frank S. Sklarsky <sup>(c)</sup>	57	Executive Vice President and Chief Financial Officer since August 2013
Glenn E. Bost II <sup>(d)</sup>	62	Senior Vice President and General Counsel since July 2010
David B. Navikas <sup>(e)</sup>	63	Senior Vice President, Strategic Planning and Corporate Development since August 2013
Richard C. Elias <sup>(f)</sup>	60	Senior Vice President, Optical and Specialty Materials since July 2008
Cynthia A. Niekamp <sup>(g)</sup>	54	Senior Vice President, Automotive Coatings since August 2010

Mr. McGarry is responsible for leading the Architectural Coatings EMEA (Europe, Middle East and Africa) segment, the architectural coatings Americas and Asia Pacific businesses, the flat glass business and the Europe, Middle East and Africa (EMEA) region. His responsibilities continue to include the global Information Technology, Environmental Health and Safety and Corporate Quality functions. From September 2012 until (a) February 2013, he was responsible for the global aerospace and automotive refinish businesses. Mr. McGarry led the Commodity Chemicals segment from July 2008 until the separation of that business on January 28, 2013. He was appointed Executive Vice President in September 2012 and held the position of Senior Vice President, Commodity Chemicals from July 2008 until August 2012. Mr. McGarry previously served as Vice President, coatings, Europe and Managing Director, PPG Europe from July 2006 through June 2008.

Mr. Sekmakas is responsible for leading the industrial coatings, packaging coatings and protective and marine coatings businesses. In February 2013, he became responsible for the fiber glass business, the Asia Pacific region and the Purchasing and Logistics function. From September 2012 until February 2013, he was responsible for the EMEA region. He was appointed Executive Vice President in September 2012. Previously, he held the following (b) leadership positions: Senior Vice President, industrial coatings and President, Europe from September 2011 until August 2012; Senior Vice President, industrial coatings and President, Asia Pacific coatings from August 2010 until September 2011; Vice President industrial coatings and President, Asia Pacific coatings from March 2010 until August 2010; President PPG Asia Pacific from July 2008 until March 2010; and Vice President and Managing Director Asia Pacific from July 2006 until July 2008.

- Mr. Sklarsky was appointed Executive Vice President, Finance, in April 2013 when he joined PPG. Prior to joining PPG, Mr. Sklarsky was Executive Vice President and Chief Financial Officer of Tyco International, Ltd. from
- (c) December 2010 until September 2012 and was Executive Vice President and Chief Financial Officer of Eastman Kodak Company from November 2006 until December 2010.
  - (d) Mr. Bost held the position of Vice President and Associate General Counsel from July 2006 through June 2010.
  - (e) Mr. Navikas held the position of Senior Vice President, Finance and Chief Financial Officer from June 2011 until August 2013. From March 2000 until June 2011, he held the position of Vice President and Controller.
  - (f) Mr. Elias held the position of Vice President, Optical Products from April 2000 until June 2008.
- Ms. Niekamp is responsible for the automotive OEM coatings business and the Latin America regions. Ms. Niekamp was appointed Vice President, Automotive Coatings in January 2009 when she joined PPG from
- (g) BorgWarner, Inc. She previously served as President of BorgWarner's TorqTransfer Systems business from 2004 until 2008.

Item 4. Mine Safety Disclosures

Not Applicable.

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## Part II

## Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The information required by Item 5 regarding market information, including stock exchange listings and quarterly stock market prices, dividends and holders of common stock is included in Exhibit 13.1 filed with this Form 10-K and is incorporated herein by reference. This information is also included in the PPG Shareholder Information on page 5 of the Annual Report to shareholders.

Directors who are not also officers of the Company receive common stock equivalents pursuant to the PPG Industries, Inc., Deferred Compensation Plan for Directors ("PPG Deferred Compensation Plan for Directors"). Common stock equivalents are hypothetical shares of common stock having a value on any given date equal to the value of a share of common stock. Common stock equivalents earn dividend equivalents that are converted into additional common stock equivalents but carry no voting rights or other rights afforded to a holder of common stock. The common stock equivalents credited to directors under this plan are exempt from registration under Section 4(2) of the Securities Act of 1933 as private offerings made only to directors of the Company in accordance with the provisions of the plan. Under the PPG Deferred Compensation Plan for Directors, each director may elect to defer the receipt of all or any portion of the compensation paid to such director for serving as a PPG director. All deferred payments are held in the form of common stock equivalents. Payments out of the deferred accounts are made in the form of common stock of the Company (and cash as to any fractional common stock equivalent). The directors, as a group, were credited with 16,770; 30,491; and 20,575 common stock equivalents in 2013, 2012 and 2011, respectively, under this plan. The values of the common stock equivalents, when credited, ranged from \$138.55 to \$183.92 in 2013, \$85.12 to \$124.55 in 2012 and \$68.68 to \$94.64 in 2011.

## Issuer Purchases of Equity Securities

Month	Total Number of Shares Purchased	Avg. Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Programs <sup>(1)</sup>	Max. Number of Shares That May Yet Be Purchased Under the Programs
October 2013 Repurchase program	626,438	\$176.18	626,438	5,229,404
November 2013 Repurchase program	2,986,238	\$190.55	2,986,238	2,243,166
December 2013 Repurchase program	—	\$—	—	2,243,166
Total quarter ended December 31, 2013 Repurchase program	3,612,676	\$188.06	3,612,676	2,243,166

<sup>(1)</sup> These shares were repurchased under a 10 million share repurchase program approved in October 2011. This repurchase program has no expiration date.

No shares were withheld or certified in satisfaction of the exercise price and/or tax withholding obligation by holders of employee stock options who exercised options granted under the Company's equity compensation plans in the fourth quarter of 2013.

#### Item 6. Selected Financial Data

The information required by Item 6 regarding the selected financial data for the five years ended December 31, 2013 is included in Exhibit 13.2 filed with this Form 10-K and is incorporated herein by reference. This information is also reported in the Five-Year Digest on page 86 of the Annual Report to shareholders.

#### Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Separation of PPG's commodity chemicals business and acquisition of the North American architectural coatings business of Akzo Nobel N.V.

In 2013, PPG completed two additional steps in its strategic transformation into a more focused coatings and specialty materials company.

PPG completed the first step on January 28, 2013 with the separation of its commodity chemicals business and the merger of the subsidiary holding the PPG commodity chemicals business with a subsidiary of the Georgia Gulf Corporation ("Georgia Gulf"). Refer to Note 22, "Separation and Merger Transaction" under Item 8 of this Form 10-K for financial information relating to this transaction.

The second step was completed on April 1, 2013 with the completion of the acquisition of the North American architectural coatings business of Akzo Nobel N.V.. The acquisition included the purchase of a number of leading brands and 526 paint stores, net of redundant store closures, in the U.S., Canada and the Caribbean. Refer to Note 2, "Acquisitions and Divestitures" under Item 8 of this Form 10-K for financial information relating to this transaction.

#### Performance in 2013 compared with 2012

##### Performance Overview

Net sales increased \$1,596 million, or 12% from the prior year, to \$15,108 million primarily due to sales of acquired businesses, which increased net sales by approximately 10%. The AkzoNobel North American architectural coatings business acquired in April 2013 contributed approximately \$1,165 million in net sales while the acquisitions of Deft, an aerospace coatings business acquired in May 2013, and the Spraylat coatings business acquired in December 2012, contributed approximately \$166 million combined.

Overall sales volumes, excluding acquisitions, were level with the prior year as sales volume growth in the Industrial Coatings, Optical and Specialty Materials and Glass segments as well as the aerospace business was offset by volume declines in the remaining segments and other businesses. Sales volumes were inconsistent by region. The U.S. and Canada and the Latin America regions' sales volumes were up nearly 3% year over



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year. Growth occurred in many end-use markets in Asia Pacific, although total sales volumes for the region were nearly level year over year due to declines stemming from lower marine new-build end-use market demand. Sales volumes in Europe were down 4% year over year due to weak demand that occurred in the first half of the year. The 2013 volume decline in Europe continued the trend experienced since the recession began in 2009. Aggregate PPG coatings volumes in that region have declined over 20% versus year 2008 pre-recession levels. Whereas combined PPG coatings volumes in the remaining regions are higher in comparison to year 2008 pre-recession levels, as growth in emerging regions of nearly 20% has been partially offset by a 5% decline in the U.S. and Canada. Higher selling prices added just over 1% to net sales which included the carryover impact from 2012 price increases to offset current year inflation in certain cost components, including increases in transportation, energy and labor costs. The impact of foreign currency translation on net sales was flat for the year, although results were mixed by currency.

Cost of sales, exclusive of depreciation and amortization, increased \$731 million, or 9% from the prior year, to \$8,636 million primarily due to the inclusion of cost of sales from acquired businesses partially offset by lower manufacturing costs. Cost of sales as a percentage of sales in 2013 was 57.2% compared to 58.5% in 2012. This decrease is largely due to shifts in sales margin mix related to the businesses acquired.

Selling, general and administrative expenses increased by \$499 million, or 16% from the prior year, to \$3,699 million principally related to the inclusion of acquired businesses and overhead cost inflation partly offset by the impact of our continued focus on cost management, including savings from restructuring actions initiated in 2012. As a percent of sales, selling, general and administrative expenses increased slightly to 24.5% in 2013 from 23.7% in 2012 primarily due to the addition of acquired businesses which have higher distribution related costs.

Depreciation expense increased \$44 million, or 14% from the prior year, to \$356 million primarily due to the depreciation of the acquired businesses.

The restructuring charge of \$98 million relates to a restructuring plan approved in the third quarter of 2013 focused on achieving cost synergies, through improved productivity and efficiency, related to the acquired North American architectural coatings business, but also includes smaller targeted actions for PPG's legacy architectural business, as well as other businesses where market conditions remain very challenging, most notably protective and marine coatings and certain European businesses such as architectural coatings and fiber glass.

Other charges decreased \$34 million, or 15% from the prior year, to \$190 million primarily due to lower legacy environmental remediation charges in 2013. In 2013, the largest charge included in other charges relates to a pretax charge of \$89 million for the environmental remediation at a former chromium manufacturing plant and associated sites in New Jersey and a pretax charge of \$12 million related to environmental remediation at a legacy chemical manufacturing site. The 2012 other charges included a pretax charge of \$159 million, related primarily to the environmental remediation at the former

chromium manufacturing plant and associated sites in New Jersey.

Other income decreased \$8 million, or 6% from the prior year, to \$131 million primarily due to lower equity earnings, primarily from our Asian fiber glass joint ventures as a result of a decline in demand in the personal computer market and lower licensing earnings in the Glass segment.

The effective tax rate on income before income taxes was 22% and 21% in 2013 and 2012, respectively. See the Regulation G reconciliation below for details of PPG's adjusted effective tax rate from continuing operations.

Diluted earnings-per-share for 2013 were \$22.27 per-share, comprised of net income from continuing operations of \$7.13 per-share and discontinued operations, net of tax of \$15.14 per-share. The increase in diluted earnings-per-share resulted from higher net income and a reduction in the number of shares outstanding as a result of the 10.8 million PPG shares tendered to the Company in the exchange offer in connection with the separation and merger of the Company's former commodity chemicals business as well as the approximately 5.7 million shares repurchased during 2013. For more information about the separation and merger of the Company's former commodity chemicals business, see Note 22, "Separation and Merger Transaction," under Item 8 of this Form 10-K.

#### Regulation G Reconciliation - Results from Operations

PPG Industries believes investors' understanding of the Company's operating performance is enhanced by the disclosure of income before income taxes, PPG's effective tax rate, tax expense, net income from continuing

operations and earnings per diluted share adjusted for nonrecurring charges. PPG's management considers this information useful in providing insight into the company's ongoing operating performance because it excludes the impact of items that cannot reasonably be expected to recur on an ongoing basis. Income before income taxes, the effective tax rate, tax expense, net income from continuing operations and earnings per diluted share adjusted for these items are not recognized financial measures determined in accordance with U.S. generally accepted accounting principles ("GAAP") and should not be considered a substitute for income before income taxes, the effective tax rate, tax expense, net income from continuing operations or earnings per diluted share or other financial measures as computed in accordance with U.S. GAAP. In addition, adjusted income before income taxes, adjusted effective tax rate, adjusted tax expense, adjusted net income from continuing operations and adjusted earnings per diluted share from continuing operations may not be comparable to similarly titled measures as reported by other companies.

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Income before income taxes is reconciled to adjusted income before income taxes below:

Years-ended December 31 (Millions, except per share amounts)	2013	2012
Income before income taxes	\$1,489	\$1,057
Income before income taxes includes:		
Charges related to business restructuring	98	208
Charges related to environmental remediation	101	159
Charges related to business acquisitions	42	11
Legacy pension settlement costs	18	
Adjusted income before income taxes	\$1,748	\$1,435

The effective tax rate from continuing operations is reconciled to the adjusted effective tax rate from continuing operations below:

Year-ended December 31, 2013

(Millions, except per share amounts)	Income Before Income Taxes	Tax Expense	Effective Tax Rate	
Effective tax rate, continuing operations	\$1,489	\$333	22.4	%
Includes:				
Charges related to environmental remediation	101	37	36.6	%
Charges related to business restructuring	98	25	25.5	%
Charges related to business acquisitions	42	14	33.3	%
Legacy pension settlement costs	18	5	27.8	%
U.S. tax law changed enacted in 2013		10		
Adjusted effective tax rate, continuing operations, excluding certain charges	\$1,748	\$424	24.3	%

Year-ended December 31, 2012

(Millions, except per share amounts)	Income Before Income Taxes	Tax Expense	Effective Tax Rate	
Effective tax rate, continuing operations	\$1,057	\$221	20.9	%
Includes:				
Charges related to business restructuring	208	45	21.6	%
Charges related to environmental remediation	159	60	37.7	%
Charges related to business acquisitions	11	4	36.4	%
Adjusted effective tax rate, continuing operations, excluding certain charges	\$1,435	\$330	23.0	%

Net income (attributable to PPG) and earnings per share – assuming dilution (attributable to PPG) are reconciled to adjusted net income (attributable to PPG) and adjusted earnings per share – assuming dilution below:

Year-ended December 31, 2013

(Millions, except per share amounts)	\$	EPS
Net income from continuing operations (attributable to PPG)	\$1,034	\$7.13
Net income from continuing operations (attributable to PPG) includes:		
Charges related to business restructuring	73	0.50
Charges related to environmental remediation	64	0.44
Charges related to business acquisitions	28	0.19
Legacy pension settlement costs	13	0.09
U.S. tax law change enacted in 2013	(10)	(0.07)
Adjusted net income from continuing operations (attributable to PPG)	\$1,202	\$8.28

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Year-ended December 31, 2012

(Millions, except per share amounts)	\$	EPS
Net income from continuing operations (attributable to PPG)	\$726	\$4.69
Net income from continuing operations (attributable to PPG) includes:		
Charges related to business restructuring	163	1.06
Charges related to environmental remediation	99	0.64
Charges related to business acquisitions	7	0.05
Adjusted net income from continuing operations (attributable to PPG)	\$995	\$6.44

Results of Reportable Business Segments

(Millions)	Net sales		Segment income	
	2013	2012	2013	2012
Performance Coatings	\$5,872	\$4,752	\$858	\$744
Industrial Coatings	4,845	4,379	724	590
Architectural Coatings –EMEA	2,062	2,147	184	145
Optical and Specialty Materials	1,262	1,202	368	348
Glass	1,067	1,032	56	63

Performance of Reportable Business Segments

Performance Coatings net sales increased \$1,120 million, or 24% from the prior year, to \$5,872 million primarily due to net sales from businesses acquired (25%) and modestly higher pricing partially offset by lower sales volumes (4%). Sales volumes remained varied by region and business. Volume growth continued in the aerospace coatings business where industry demand remains strong. Automotive refinish volumes were level with the prior year as growth in the Asia Pacific and Latin American regions offset volume declines in Europe, while the North American refinish volumes were consistent with 2012. Offsetting the segment sales volume gains was a decline in volume in the protective and marine coatings business due to further, notable weakness in the Asian marine new-build market reflecting lower global demand. U.S. and Canada architectural coatings sales volume declined by low-single-digit percentages with mid-to-high single digit percentage same store growth in company-owned stores, lower sales in national retail accounts

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and lower sales in the independent dealer channel. The lower sales volume in the national account channel was due to a previously disclosed change in products sold to a large retail customer. Segment income was \$858 million for 2013, an increase of \$114 million, or 15%, compared to the prior year primarily due to the income from acquired businesses, lower overhead and manufacturing costs stemming from prior restructuring actions and ongoing cost management, offset partially by the negative impact on segment income from the lower sales volumes.

Looking ahead to the first quarter of 2014, we expect aerospace growth to continue, despite more difficult comparisons following several consecutive years of solid growth. We also anticipate global refinish continued growth, as initial European demand recovery supplements growth in emerging regions. We expect marine new-build demand to remain weak, but less negative year-over-year than in 2013 as marine new-build demand levels off.

North American architectural coatings industry market conditions are expected to remain solid, and we expect growth to occur in all three distribution channels. At the beginning of 2014, PPG implemented mid-single-digit percentage price increases in company-owned stores. We anticipate normal architectural coatings seasonality to result in higher first quarter sales versus the recently completed fourth quarter. We expect first quarter 2014 segment results to benefit from the acquired-business sales and income from continuing operations, including a higher level of cost synergies.

Industrial Coatings net sales increased \$466 million, or 11% from the prior year, to \$4,845 million primarily due to volume growth (6%) and net sales from acquired businesses (4%). In 2013, PPG's global automotive OEM coatings sales volumes grew 10%, outpacing global industry auto production growth of about 3% year-over-year. The industrial coatings business experienced varied sales volume results by region compared with the prior year, as strong improvements across emerging regions and modestly higher volumes in North America were offset by weak demand in Europe. Packaging coatings sales volumes grew modestly in Asia Pacific and Latin America, were down low-single-digits year-over-year in Europe and essentially flat in North America. Segment income increased \$134 million, or 23% from the prior year, to \$724 million primarily due to the impact from the higher sales coupled with ongoing cost management initiatives and the benefits from the Company's restructuring actions initiated in 2012.

Looking ahead to the first quarter of 2014, we expect global growth in general industrial activity to continue, including solid North American growth, continuing growth in emerging regions and improved European demand.

Similarly, we expect growth in global automotive OEM production to be consistent with recent quarters, with forecasted growth in all major regions. We expect our automotive OEM business to deliver above-market growth.

Architectural Coatings – EMEA net sales decreased \$85 million, or 4% from the prior year, to \$2,062 million primarily due to lower sales volumes (7%) as economic conditions worsened in most European countries. However, market demand improved somewhat in the second half of the year but remained negative overall and mixed across the region.

Poor

weather conditions in the first half of 2013 were also a contributor to the decline in sales volumes. The decline in sales volumes was partially offset by the impacts of favorable pricing and foreign currency translation (2%). Despite the year-over-year volume decline, segment income was \$184 million in 2013, an increase of \$39 million, or 27% from the prior year, primarily due to lower costs, including discretionary cost management coupled with the structural cost improvements stemming from the restructuring actions initiated in 2012, partially offset by the impact of lower net sales on income from continuing operations.

Looking ahead, year-over-year segment income for 2013 was greatly aided by cost savings stemming from restructuring actions that are substantially completed. Accordingly, 2014 results will be more dependent on the pace of regional volume demand. We anticipate normal seasonal architectural coatings sales growth in the first quarter of 2014. We expect demand in the region to continue to stabilize in comparison to negative year-over-year market results in 2013, and results will likely remain mixed by end-use market. Based on current exchange rates, currency translation will aid first quarter net sales but remain inconsequential to segment income.

Optical and Specialty Materials net sales increased \$60 million, or 5% from the prior year, to \$1,262 million primarily due to an increase in sales volumes (3%) and higher pricing (2%). The increase in sales was driven by strong demand at the end of 2013 as volumes were aided by initial customer inventory stocking ahead of the January 2014 North American introduction of Transitions Generation VII. This brought year-to-date sales above prior year levels as sales in this segment had been lower versus a strong first half of 2012 that was aided by the optical industry recovery from

the fourth quarter 2011 Thailand flooding and related inventory restocking. The silicas business achieved higher year over year volumes in both the U.S. and Europe as a result of solid demand growth. Segment income was \$368 million, an increase of \$20 million, or 6% from the prior year, primarily due to an increase in sales and lower full-year selling and marketing costs.

Looking ahead, optical demand is typically higher seasonally during the first quarter versus the fourth quarter. The Transitions new product was launched last year in Europe, and the launch is now underway in North America. The first quarter of 2014 will likely include modestly higher selling costs, including support for the product launch. We expect silica demand growth to continue.

Glass segment net sales increased \$35 million, or 3% from the prior year, to \$1,067 million primarily due to higher fiber glass sales volumes. Sales volumes in fiber glass increased modestly, reflecting higher global demand in various end-use markets. Segment income was \$56 million, a decrease of \$7 million, or 11% from the prior year, primarily due to input cost inflation, including higher natural gas costs, lower licensing income and lower fiber glass equity earnings stemming from weaker personal computer production activity in Asia. These negative factors more than offset reductions in manufacturing costs.

Looking ahead to the first quarter of 2014, market demand for the fiber glass and flat glass businesses is expected to improve versus weak prior year results. Increased flat glass

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pricing has been announced and varies based on product, geography and end-use market. A significant, scheduled flat glass tank maintenance project is underway, with an anticipated first quarter negative impact on segment income of about \$10 million and a modest impact to the second quarter of 2014. Also, we expect natural gas unit costs and transportation costs to be higher year-over-year, based on current market pricing.

Review and Outlook

During 2013, overall economic conditions remained mixed among the main global economies, with major coatings end-use markets also experiencing similar variations. These economic trends were an important factor in PPG's aggregate sales volume being flat compared to the previous year.

PPG increased volumes in North America in 2013, with volume growth adding to strong prior year gains and broad-based improvements across most end-use markets. North America remains PPG's largest region representing 46% of sales. Regional industrial activity continued to improve aided by low energy costs stemming from shale energy production, and due to continued demand and production increases in several industries, including automotive OEM and aerospace. Regional recovery continued in construction spending, aided by higher U.S. housing starts and initial improvement in the residential remodeling market, while non-residential construction demand remained suppressed. Although smaller in size, demand in the Canadian construction market was also subdued. Growth in the region and various end-use markets was also somewhat tempered by reduced U.S. federal and state government spending. Throughout the year, U.S. unemployment rates improved and consumer spending expanded, supporting expectations for additional regional growth prospects for PPG entering 2014.

The pace of European economic activity remained challenging during 2013, with the region continuing to face high unemployment and weak growth in industrial production and gross domestic product. Regional demand was extremely weak early in the year, with PPG year-over-year volumes declining by about 10% in comparison with a weak first quarter of 2012. During the remainder of 2013, the pace of decline in PPG's aggregate year-over-year coatings volumes lessened with each successive quarter, ending with fourth quarter volume flat with the prior year. Although the level of demand improvement was not consistent across the various countries in the region, overall regional economic activity continued to stabilize throughout the year. Europe remains a very large region for PPG, representing about one-third of PPG's sales. Overall Company volumes in the region are down about 20% in comparison to 2008 pre-recession levels, reflecting the multi-year weakness experienced throughout most of the region. While most of the regional economies remain fragile, we see prospects for initial demand recovery in certain markets as we head into 2014.

In the aggregate, emerging region economies continued to expand during 2013; however, growth rates were more modest versus prior years. Growth also varied considerably by individual country, and by industry within countries. The emerging markets regions of Asia and Latin America represent 22% of PPG's sales, with Asia the largest emerging region representing sales of \$2.6 billion. China is now PPG's second

largest individual country from a sales perspective, and demand in China and overall Asia expanded for PPG products in most industrial markets, including higher automotive production. Offsetting these improvements was decreased global demand in a few end-use markets, including personal computers and marine new-build, as the majority of the global production in these markets occurs in Asia. Demand in the Latin American economies remained erratic due to a variety of factors, including high inflation rates. PPG's Latin American volumes were slightly favorable for the year, with differences by end-use market. Heading into 2014, PPG anticipates overall Company volume growth in emerging regions, supported by continued economic growth in China and the absence of large volume declines in certain end-use markets like marine new-build.

Looking ahead to 2014, we expect modest global growth to continue. We anticipate growth will remain the broadest in the U.S. economy, spanning across several coatings end-use markets as favorable market conditions continue in automotive OEM, architectural coatings and aerospace. We expect emerging regions growth to remain mixed, but we expect PPG to post solid aggregate growth based on the various end-markets the Company supplies. In Europe, economies appear to be improving but remain fragile. We anticipate modest growth in that region in 2014, and we expect solid segment income accretion benefits from the higher sales, due to the actions taken the past two years to significantly reduce PPG's cost structure in that region.

In 2012, PPG initiated a restructuring program to improve its productivity and efficiency, primarily focused on Europe, with targeted annual savings of \$140 million. Throughout 2012 and 2013, PPG continued to execute actions relating to this program and substantially completed all the actions by the end of 2013 achieving the targeted annual savings level of about \$140 million on a run-rate basis. Incremental annual savings of about \$80 million annually were realized in 2013, in addition to the savings achieved during 2012.

PPG intends to remain proactive in managing our costs. PPG's Board of Directors approved a separate restructuring program resulting in a pretax charge of \$98 million in the third quarter of 2013. The restructuring program targets an additional \$100 million in annual cost savings. The primary focus of this program is to capture cost synergies, through improved productivity and efficiency, related to PPG's North American architectural coatings acquisition along with separate, targeted actions relating to several other PPG businesses where business conditions remain challenging, including protective and marine coatings, fiber glass and architectural coatings EMEA. Actions related to this program began in late 2013 and are expected to be substantially complete by the end of 2014, with cost savings of between \$75 million and \$90 million in 2014.

Raw materials are a significant input cost in the manufacture of coatings, and PPG typically experiences fluctuating prices for energy and raw materials driven by factors, including supply/demand imbalances, global industrial activity levels and changes in supplier feedstock costs and inventories. For 2014, the Company currently expects overall coatings raw material prices



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to increase modestly, with results varied by region and commodity type.

In an effort to offset the adverse impact of cost inflation on income from continuing operations, the Company implemented higher coatings selling prices in 2011 and 2012. In 2013, additional targeted pricing was implemented in several businesses. Selling prices in Glass improved modestly during 2013, reflecting efforts to offset higher input, energy and logistics costs. Selective pricing actions are planned in 2014, with actions expected to differ by business and region.

Pension and postretirement benefit costs, excluding curtailments and special termination benefits, were \$177 million in 2013, down \$56 million from \$233 million in 2012. This decline was due, in part, to a reorganization of certain Company pension plans, which occurred as a part of separation activities of the former commodity chemicals business. In 2014, we expect pension and other postretirement benefit costs to decline roughly \$15 million due to strong pension asset performance and a higher discount rate as measured at year-end 2013. During 2013, PPG's cash contributions to defined benefit pension plans totaled \$174 million, including voluntary contributions to the U.S. pension plans of \$50 million. Cash contributions in 2012 and 2011 were \$80 million and \$113 million, respectively. We anticipate 2014 contributions will be in the range of \$10 million to \$25 million.

We expect our ongoing tax rate in 2014 to be in the range of 24.5% to 25.5%. Because of the differences in the tax rates in the countries in which we operate, a shift in the geographic mix of earnings will impact our overall ongoing tax rate.

Over the past four years, the Company used \$2.5 billion of cash to repurchase about 25 million shares of stock, and the Company ended the year with approximately 2.2 million shares available for repurchase under the current authorization from the Board of Directors. In January 2014, the Company announced that it expects PPG's strong balance sheet and cash position to be supplemented by continued strong free cash flow in 2014, along with the receipt of about \$1.5 billion in after-tax proceeds from the pending sale of its ownership interest in the Transitions Optical joint venture. PPG also announced its intention to deploy between \$3.0 billion and \$4.0 billion of incremental cash over an 18 to 24 month period beginning in January 2014. The focus of this cash deployment is related to incremental earnings accretion initiatives, including return of cash to shareholders.

### Accounting Standards Adopted in 2013

Note 1, "Summary of Significant Accounting Policies," under Item 8 describes the Company's recently adopted accounting pronouncements.

### Accounting Standards to be Adopted in Future Years

Note 1, "Summary of Significant Accounting Policies," under Item 8 describes accounting pronouncements that have been promulgated prior to December 31, 2013 but are not effective until a future date.

## Performance in 2012 compared with 2011

### Performance Overview

Net sales in 2012 increased \$359 million, or 3% from the prior year, to \$13,512 million primarily due to higher selling prices (3%), higher sales volumes (1%) and sales from acquired businesses (2%) partially offset by unfavorable foreign currency impact (3%). Sales volumes varied significantly by region, with volume growth in North America of nearly 6% and modest growth in emerging regions. European volumes declined 4% versus the prior year period with every coatings business except aerospace experiencing sluggish end-use market conditions. Improved selling prices were achieved in each of the three coatings segments and Optical and Specialty Materials. In our coatings segments, higher selling prices were in response to persistent raw material and other cost inflation. The unfavorable currency impact was primarily driven by the U.S. dollar strengthening against the Euro and Latin American currencies. Increased demand was driven by stronger industrial production activity, which aided many of our businesses. The global industrial recovery varied by region and end-use market in 2012. North American growth was led by strength in the automotive OEM, aerospace and architectural coatings businesses. Automotive OEM coatings volumes were up year over year outpacing growth in industry demand. Aerospace coatings end-use market growth has remained strong. U.S. architectural coatings growth has been supported by improvement in construction spending, as U.S. residential construction improved throughout the year following several anemic years. Mild weather early in 2012 also aided U.S. architectural coatings volumes. Sluggish end-use market conditions in Europe were largely offset by incremental sales

from acquired businesses in the region. Growth rates in Asia in 2012 were reduced by the low level of marine original-equipment new ship builds; however, aiding growth in Asia was strength in China auto production and the packaging business as well as the absence of the Thailand floods, which particularly impacted optical products in late 2011. Higher selling prices in every coatings reportable segment and the Optical and Specialty Materials segment in 2012 were somewhat offset by pricing declines in the Glass reportable segment. In our coatings segments, prices were increased in response to persistent raw material cost inflation. The Glass segment's pricing was down, reflecting weaker global fiber glass demand.

Cost of sales, exclusive of depreciation and amortization, increased by \$40 million, or 0.5% from the prior year, to \$7,905 million primarily due to the cost of sales of acquired businesses, the cost of sales associated with the sales volume growth and the negative impact of inflation. These increases were largely offset by the impact of currency translation and lower manufacturing costs. Cost of sales as a percentage of sales for 2012 was 58.5% down from 59.8% in 2011.

Selling, general and administrative expenses increased by \$78 million, or 2.5% from the prior year, to \$3,200 million primarily due to increases from acquired businesses, overhead inflation partially offset by the reduction in costs due to the favorable impact of currency translation and the benefit of our restructuring actions. These expenses remained flat as a percent of sales at 23.7% in both 2012 and 2011, reflecting the benefits

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of our continuing effort to aggressively manage our costs even as our sales volume increases.

The 2012 business restructuring charge of \$208 million represents the costs associated with a restructuring plan focused on further reducing PPG's global cost structure. The actions included in the restructuring plan delivered pretax cost savings in the second half of 2012 of approximately \$50 million.

Other charges increased by \$161 million from the prior year to \$224 million largely due to the \$159 million environmental remediation charge recorded in the first quarter of 2012 related primarily to costs at a former chromium manufacturing plant and associated sites in Jersey City, New Jersey.

Other income decreased by \$13 million, or 9% from the prior year, to \$139 million primarily due to \$27 million of lower equity earnings, primarily from our Asian fiber glass joint ventures, reflecting demand decline in the consumer electronics market.

The effective tax rate on income before income taxes was approximately 21% in 2012 and 2011. See the Regulation G reconciliation below for details of PPG's adjusted effective tax rate from continuing operations.

Diluted earnings-per-share for 2012 were \$6.06, comprised of net income from continuing operations of \$4.69 per diluted share, and net income from discontinued operations of \$1.37 per diluted share. The 2011 diluted earnings-per-share of \$6.87 was comprised of net income from continuing operations of \$5.40 per diluted share and net income from discontinued operations of \$1.47 per diluted share. The increase in diluted earnings-per-share from continuing operations resulted primarily from higher adjusted income before income taxes and a reduction in the shares outstanding as a result of share repurchases in the second half of 2011 and first quarter of 2012.

#### Regulation G Reconciliation - Results from Operations

PPG Industries believes investors' understanding of the Company's operating performance is enhanced by the disclosure of income before income taxes, PPG's effective tax rate, tax expense, net income from continuing operations and earnings per diluted share adjusted for nonrecurring charges. PPG's management considers this information useful in providing insight into the company's ongoing operating performance because it excludes the impact of items that cannot reasonably be expected to recur on an ongoing basis. Income before income taxes, the effective tax rate, tax expense, net income from continuing operations and earnings per diluted share adjusted for these items are not recognized financial measures determined in accordance with U.S. generally accepted accounting principles ("GAAP") and should not be considered a substitute for income before income taxes, the effective tax rate, tax expense, net income from continuing operations or earnings per diluted share or other financial measures as computed in accordance with U.S. GAAP. In addition, adjusted income before income taxes, adjusted effective tax rate, adjusted tax expense, adjusted net income from continuing operations and adjusted earnings per diluted share from continuing operations may not be comparable to similarly titled measures as reported by other companies.

Income before income taxes is reconciled to adjusted income before income taxes below:

Year-ended December 31, 2012	Income Before
(Millions, except per share amounts)	Income Taxes
Income before income taxes	\$1,057
Income before income taxes includes:	
Charges related to business restructuring	208
Charges related to environmental remediation	159
Charges related to business acquisitions	11
Adjusted income before income taxes	\$1,435

The effective tax rate from continuing operations is reconciled to the adjusted effective tax rate from continuing operations below:

Year-ended December 31, 2012				
(Millions, except per share amounts)	Income Before	Tax Expense	Effective Tax	
	Income Taxes		Rate	
Effective tax rate, continuing operations	\$1,057	\$221	20.9	%
Includes:				
Charges related to business restructuring	208	45	21.6	%

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Charges related to environmental remediation	159	60	37.7	%
Charges related to business acquisition costs	11	4	36.4	%
Adjusted effective tax rate, continuing operations, excluding certain charges	\$ 1,435	\$ 330	23.0	%

Year-ended December 31, 2011

(Millions, except per share amounts)	Income Before Income Taxes	Tax Expense	Effective Tax Rate	
Effective tax rate, continuing operations	\$ 1,222	\$ 260	21.3	%
Includes:				
Benefit from favorable tax audit settlement		12		
Adjusted effective tax rate, continuing operations, excluding certain charges	\$ 1,222	\$ 272	22.3	%

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Net income from continuing operations (attributable to PPG) and earnings per share from continuing operations – assuming dilution (attributable to PPG) are reconciled to adjusted net income from continuing operations (attributable to PPG) and adjusted earnings per share from continuing operations – assuming dilution below:

Year-ended December 31, 2012	Net Income	
(Millions, except per share amounts)	\$	EPS
Net income from continuing operations (attributable to PPG)	\$726	\$4.69
Net income from continuing operations (attributable to PPG) includes:		
Charges related to business restructuring	163	1.06
Charges related to environmental remediation	99	0.64
Charges related to acquisition-related costs	7	0.05
Adjusted net income from continuing operations (attributable to PPG)	\$995	\$6.44

## Results of Reportable Business Segments

(Millions)	Net sales		Segment income	
	2012	2011	2012	2011
Performance Coatings	\$4,752	\$4,626	\$744	\$673
Industrial Coatings	4,379	4,158	590	438
Architectural Coatings –EMEA	2,147	2,104	145	123
Optical and Specialty Materials	1,202	1,204	348	326
Glass	1,032	1,061	63	97

For Performance Coatings, 2012 net sales increased \$126 million, or 3% from the prior year, to \$4,752 million primarily due to higher pricing (4%) and sales from acquired businesses (1%), partially offset by unfavorable foreign currency translation (2%). Higher pricing was achieved by all the businesses in the segment reflecting continuing efforts to offset significant inflationary impacts over the past two years. Year-over-year segment sales volumes were nearly flat in 2012 with aerospace and architectural coatings business volume growth being offset by automotive refinish and protective and marine coatings business volume declines. Sales volume in the aerospace business continued to benefit from excellent end-use market growth despite increasingly difficult prior year comparable periods. U.S. architectural coatings were aided by early signs of a construction market recovery in the U.S. and mild weather early in 2012, offset by the absence of elevated sales in the prior year from the introduction of a new product in the national account channel. Volumes declined in the automotive refinish coatings business, particularly in Europe, and in the protective and marine coatings business as lower marine new build volume was somewhat offset by higher volume in protective coatings. Segment income was \$744 million, an increase of \$71 million, or 11%, from the prior year. Segment income improved as lower costs, relating to benefits from PPG's restructuring and other cost management actions, coupled with the effect from the higher net sales were partly offset by inflation, higher selling costs and the negative impact of foreign currency translation.

The Industrial Coatings segment's net sales increased \$221 million, or 5% from the prior year, to \$4,379 million primarily due to higher pricing (3%), higher sales volumes (4%) and net sales from acquired businesses (1%) partially offset by

unfavorable foreign currency translation (3%). The segment sales volume growth of 4% was driven by automotive OEM coatings growth especially in North America, due in part to the recovery from the 2011 Japanese tsunami as well as continued strength in China, offset by European economic weakness. The current year volume gains by our automotive OEM coatings business outpaced industry growth. Industrial and packaging coatings volumes were mixed by region. Europe was weaker in both businesses. U.S. industrial coatings improved while emerging region demand varied by end-use with markets aligned with construction activity being down in Asia and Argentina being impacted by import restrictions. The consumer electronics market in Asia was slower, but packaging volumes in Asia improved. Emerging region sales were supplemented by sales from acquired businesses and the reorganization of our joint venture in India. Segment income of \$590 million increased \$152 million, or 35% from the prior year, as the impact of higher pricing, sales volume growth and manufacturing cost savings overcame the adverse impact of inflation and

higher overhead costs incurred to support growth. Restructuring related cost savings also aided segment income in 2012.

Architectural Coatings – EMEA segment net sales increased \$43 million, or 2% from the prior year, to \$2,147 million primarily due to the acquisition of Dyrup in January 2012 (8%) partially offset by the unfavorable impact of foreign currency translation (7%). Pricing increased net sales mid-single digit percents which was substantially offset by volume declines due to market weakness throughout the region. Segment income increased \$22 million, or 18% from the prior year, to \$145 million primarily due to lower costs stemming from aggressive ongoing cost management and supplemented by the cost benefits from PPG's restructuring actions and higher pricing. These income improvements were reduced by the impact of lower sales volumes and cost inflation. In addition, an unfavorable currency translation impact of \$13 million was largely offset by the absence of a \$9 million charge in the prior year related to a customer bankruptcy.

Optical and Specialty Materials segment net sales were \$1,202 million, essentially flat with the prior year. An unfavorable impact of foreign currency translation (3%) was offset by a price increase (1%) and sales volume growth (2%). Optical products achieved sales volume growth with the majority due to higher Transitions lens market penetration. Volumes were also aided by the absence of the prior year negative impacts from extensive Thailand flooding that disrupted optical customers and supply chains in the fourth quarter 2011. Silicas volumes were down modestly year over year. Segment income increased by \$22 million, or 7% from the prior year, to \$348 million as income improved in both businesses primarily due to higher sales volumes, overhead and manufacturing cost improvements, including restructuring cost savings, and higher pricing. Segment income was reduced by unfavorable foreign currency translation and inflation.

Glass segment 2012 net sales decreased \$29 million, or 3% from the prior year, to \$1,032 million primarily due to lower price (3%) and unfavorable currency translation (1%), partially offset by higher sales volumes (1%). Improved flat glass volumes as a result of increased demand in the commercial and solar markets were substantially offset by lower fiber glass

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volume. Fiber glass volumes have declined due to weak demand in Europe versus a strong prior year comparable period. Lower pricing in both businesses and the unfavorable impact of currency translation drove the net sales decline. Segment income declined \$34 million, or 35% from the prior year, to \$63 million. Lower pricing, cost inflation, as well as lower equity earnings, primarily related to our fiber glass joint venture selling to the consumer electronics industry, contributed to the income decline. These factors were only partially offset with improved flat glass volumes and improved manufacturing cost performance in fiber glass.

See Note 21, "Reportable Business Segment Information," under Item 8 of this Form 10-K for further information related to the Company's operating segments and reportable business segments.

Commitments and Contingent Liabilities, including Environmental Matters

PPG is involved in a number of lawsuits and claims, both actual and potential, including some that it has asserted against others, in which substantial monetary damages are sought. See Item 3, "Legal Proceedings" and Note 14, "Commitments and Contingent Liabilities," under Item 8 of this Form 10-K for a description of certain of these lawsuits, including a description of the proposed asbestos settlement.

As discussed in Item 3 and Note 14, although the result of any future litigation of such lawsuits and claims is inherently unpredictable, management believes that, in the aggregate, the outcome of all lawsuits and claims involving PPG, including asbestos-related claims in the event the proposed asbestos settlement described in Note 14 does not become effective, will not have a material effect on PPG's consolidated financial position or liquidity; however, any such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized.

It is PPG's policy to accrue expenses for environmental contingencies when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. Reserves for environmental contingencies are exclusive of claims against third parties and are generally not discounted. In management's opinion, the Company operates in an environmentally sound manner and the outcome of the Company's environmental contingencies will not have a material effect on PPG's financial position or liquidity; however, any such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized. Management anticipates that the resolution of the Company's environmental contingencies will occur over an extended period of time.

As of December 31, 2013 and 2012, PPG had reserves for environmental contingencies totaling \$310 million and \$332 million, respectively, of which \$105 million and \$101 million, respectively, were classified as current liabilities. Pretax charges against income for environmental remediation costs in 2013, 2012 and 2011 totaled \$108 million, \$166 million and \$9 million, respectively, and are included in "Other charges" in the accompanying consolidated statement of income. Cash outlays related to environmental remediation retained by PPG were \$120

million, \$62 million, and \$48 million in 2013, 2012 and 2011, respectively.

In addition to the amounts currently reserved for environmental remediation, the Company may be subject to loss contingencies related to environmental matters now estimated to be approximately \$100 million to \$200 million which is lower than the estimate of \$100 million to \$275 million as of December 31, 2012 as a result of the additional environmental remediation charge recorded in the third quarter of 2013 explained below and the separation of the commodity chemicals business. Such unreserved losses are reasonably possible but are not currently considered to be probable of occurrence. These reasonably possible unreserved losses relate to environmental matters at a number of sites, including about one third each related to the following: i) additional costs at New Jersey Chrome ii) legacy glass sites and iii) a number of other sites, including legacy chemical manufacturing sites. The loss contingencies related to these sites include significant unresolved issues such as the nature and extent of contamination at these sites and the methods that may have to be employed to remediate them.

The Company continues to analyze, assess and remediate the environmental issues associated with New Jersey Chrome. During the third quarter of 2013, PPG completed an assessment of costs incurred to date versus current progress, and the potential cost impacts of recently acquired information, including but not limited to the extent of impacted soils, percentage of hazardous versus non-hazardous soils, daily soil excavation rates, and engineering, administrative and other associated costs. Based on this assessment, a reserve adjustment of \$89 million was recorded in the third quarter of 2013.

A charge of \$145 million was recorded in the first quarter of 2012 as a result of updated information the Company compiled about the sites that was used to develop a new estimate of the cost to remediate these sites. The updated information was compiled in connection with the preparation of a final draft soil remedial action work plan and cost estimate.

The charges for estimated environmental remediation costs in 2013 and 2012 were significantly higher than PPG's historical range. Excluding the charges related to the New Jersey Chrome sites, pretax charges against income for environmental remediation have ranged between \$10 million and \$30 million per year for the past 10 years.

There are currently no amounts for groundwater remediation in our environmental reserves as of December 31, 2013. Information will continue to be generated from the ongoing groundwater remedial investigation activities related to New Jersey Chrome and will be incorporated into a final draft remedial action work plan for groundwater expected to be submitted to NJDEP in 2014.

#### Liquidity and Capital Resources

During the past three years, we have had sufficient financial resources to meet our operating requirements, to fund our capital spending, share repurchases and pension plans and to pay increasing dividends to our shareholders.



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Cash from continuing operating activities was \$1,809 million, \$1,576 million, and \$1,176 million in 2013, 2012, and 2011, respectively. Cash from operations in 2013 compared to 2012 was aided by higher income from continuing operations which was driven by income from acquired businesses. Cash from operations in 2012 compared to 2011 was aided by cash received from a decrease in working capital.

Operating Working Capital is a subset of total working capital and represents (1) trade receivables-net of the allowance for doubtful accounts, plus (2) inventories on a first-in, first-out (“FIFO”) basis, less (3) trade creditors’ liabilities. See Note 3, “Working Capital Detail” under Item 8 of this Form 10-K for further information related to the components of the Company’s Operating Working Capital. We believe Operating Working Capital represents the key components of working capital under the operating control of our businesses. Operating Working Capital at December 31, 2013 and 2012 was \$2.7 billion and \$2.9 billion, respectively. A key metric we use to measure our working capital management is Operating Working Capital as a percentage of sales (fourth quarter sales annualized).

(Millions, except percentages)	2013		2012	
Trade Receivables, net	\$2,449		\$2,568	
Inventories, FIFO	2,019		1,930	
Trade Creditor's Liabilities	1,790		1,620	
Operating Working Capital	\$2,678		\$2,878	(a)
Operating Working Capital as % of Sales	18.1	%	19.7	%

(a) Inclusive of amounts related to PPG’s commodity chemicals business that was separated in January 2013.

Excluding the commodity chemicals business, operating working capital was \$2,634 or 20.3% at December 31, 2012. Operating working capital at December 31, 2013 decreased \$200 million compared with the prior year end level.

Trade receivables from customers, net, as a percentage of fourth quarter sales, annualized, for 2013 was 16.5%, down slightly from 17.6% for 2012. Days sales outstanding was 57 days in 2013, a 4 day improvement from 2012.

Inventories on a FIFO basis as a percentage of fourth quarter sales, annualized, for 2013 was 13.6% up slightly from 13.2% in 2012. Inventory turnover was 4.5 times in 2013 and 4.8 times in 2012. Excluding the impact of currency, acquisitions, and divestitures, there was a reduction in all components of working capital, including inventory, resulting in a decrease of \$297 million from the prior year.

Total capital spending, including acquisitions, was \$1,498 million, \$485 million and \$357 million in 2013, 2012, and 2011, respectively. Spending related to modernization and productivity improvements, expansion of existing businesses and environmental control projects was \$515 million, \$363 million and \$326 million in 2013, 2012, and 2011, respectively, and is expected to be in the range of \$500 million to \$600 million during 2014. Capital spending, excluding acquisitions, as a percentage of sales was 3.4%, 2.7% and 2.5% in 2013, 2012 and 2011, respectively. Capital spending related to business acquisitions amounted to \$983 million, \$122 million, and \$31 million in 2013, 2012 and 2011, respectively. A

primary focus for the Company in 2014 will continue to be prudent cash deployment focused on profitable income growth, including pursuing opportunities for additional strategic acquisitions.

In April 2013, the Company acquired the North American architectural coatings business of Akzo Nobel, N.V., Amsterdam. In May 2013, the Company completed the acquisition of certain assets of Deft Incorporated, a privately-owned U.S. based specialty coatings company. The total cost of 2013 acquisitions was \$983 million.

In December 2012, the Company acquired Spraylat Corp., a privately-owned U.S. based industrial coatings company based in Pelham, N.Y. In January 2012, the Company completed the previously announced acquisitions of Colpisa, a Colombian producer of automotive OEM and refinish coatings, and Dyrup, a European architectural coatings company. The total cost of 2012 acquisitions, including assumed debt, was \$288 million.

In January 2013, PPG received \$900 million in cash proceeds in connection with the closing of the separation of its commodity chemicals business and subsequent merger of the subsidiary holding the PPG commodity chemicals business with a subsidiary of Georgia Gulf. Refer to Note 22, “Separation and Merger Transaction” for financial information regarding the separation of the commodity chemicals business.

In March 2013, PPG repaid its \$600 million 5.75% notes due March 15, 2013.

The Company's share repurchase activity in 2013, 2012 and 2011 was 5.7 million shares at a cost of \$1 billion, 1 million shares at a cost of \$92 million and 10.2 million shares at a cost of \$858 million, respectively. We anticipate completing additional share repurchases during 2014. The Company has approximately 2.2 million shares remaining under the current authorization from the Board of Directors, which was approved in 2011.

In addition, about 10.8 million shares were added to treasury stock as a result of the January 2013 exchange transaction that was part of the separation of the commodity chemicals business.

Dividends paid to shareholders totaled \$345 million, \$358 million and \$355 million in 2013, 2012 and 2011, respectively. PPG has paid uninterrupted annual dividends since 1899, and 2013 marked the 42nd consecutive year of increased annual per-share dividend payments to shareholders.

We did not have a mandatory contribution to our U.S. defined benefit pension plans in 2013. We made a voluntary contribution of \$50 million to these plans in 2013 and 2011, of which \$7 million of the 2011 voluntary contribution related to the commodity chemicals business. We did not make a voluntary contribution to these plans in 2012. We do not expect to have a mandatory contribution to our U.S. defined benefit pension plans in 2014. We made contributions to our non-U.S. defined benefit pension plans of \$124 million, \$80 million and \$70 million for 2013, 2012 and 2011, respectively, some of which were required by local funding requirements. We expect

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to make mandatory contributions to our non-U.S. plans in 2014 in the range of approximately \$10 million to \$25 million.

In September 2012, PPG entered into a five-year credit agreement (the "Credit Agreement") with several banks and financial institutions as further discussed in Note 8, "Debt and Bank Credit Agreements and Leases". The Credit Agreement provides for a \$1.2 billion unsecured revolving credit facility. In connection with entering into this Credit Agreement, the Company terminated its \$1.2 billion credit facility that was scheduled to expire in August 2013. There was no outstanding amount due under the revolving facility at the time of its termination. The Company has the ability to increase the size of the Credit Agreement by up to an additional \$300 million, subject to the receipt of lender commitments and other conditions. The Credit Agreement will terminate and all amounts outstanding thereunder will be due and payable on September 12, 2017.

On July 31, 2012, PPG completed a public offering of \$400 million in aggregate principal amount of its 2.70% Notes due 2022 (the "2022 Notes"). The 2022 Notes were offered by the Company pursuant to its existing shelf registration statement. The proceeds of this offering of \$397 million, net of discount and issuance costs, were used to repay a portion of the \$600 million of 5.75% notes in March 2013 (the "2013 Notes"). The discount and issuance costs related to the 2022 Notes, which totaled \$3 million, are being amortized to interest expense over the life of the 2022 Notes.

Also during the year ended December 31, 2012 the Company assumed \$120 million of debt in the Dyrup acquisition; repaid \$119 million of that debt, and repaid the \$71 million of 6.875% notes upon their maturity.

In June 2011, the Company repaid a \$400 million three year unsecured term loan, which had a scheduled maturity date of June 2012. There was no prepayment penalty.

The ratio of total debt, including capital leases, to total debt and equity was 41% at December 31, 2013 down from 50% in 2012.

The Company has \$3,900 million and \$3,476 million of undistributed earnings of non-U.S. subsidiaries as of December 31, 2013 and December 31, 2012, respectively. These amounts relate to approximately 200 subsidiaries in more than 60 taxable jurisdictions. Substantially no deferred U.S. income taxes have been provided on these earnings as they are considered to be reinvested for an indefinite period of time or will be repatriated when it is tax effective to do so. The Company estimates repatriation of undistributed earnings of non-U.S. subsidiaries as of December 31, 2013 and December 31, 2012 would have resulted in a U.S. tax cost of approximately \$250 million and \$110 million, respectively.

We continue to believe that our cash and short term investments on hand, cash from operations and the Company's available debt capacity will continue to be sufficient to fund our operating activities, capital spending, including acquisitions, dividend payments, debt service, amounts due under the proposed asbestos settlement, share repurchases,

contributions to pension plans, and PPG's significant contractual obligations. These significant contractual obligations, along with amounts due under the proposed asbestos settlement are presented in the following table.

(Millions)	Total	Obligations Due In:			
		2014	2015- 2016	2017- 2018	Thereafter
<b>Contractual Obligations</b>					
Long-term debt	\$3,346	\$1	\$816	\$774	\$1,755
Short-term debt	30	30	—	—	—
Capital lease obligations	30	2	5	5	18
Operating leases	910	216	314	203	177
Interest payments <sup>(1)</sup>	1,432	166	294	222	750
Pension contributions <sup>(2)</sup>	25	25	—	—	—
Unconditional purchase commitments	325	163	93	26	43
<b>Total</b>	<b>\$6,098</b>	<b>\$603</b>	<b>\$1,522</b>	<b>\$1,230</b>	<b>\$2,743</b>
<b>Asbestos Settlement<sup>(3)</sup></b>					
Aggregate cash payments	\$825	\$485	\$21	\$91	\$228

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PPG stock and other	278	278	—	—	—
Total	\$1,103	\$763	\$21	\$91	\$228

(1) Includes interest on all outstanding debt.

(2) Includes the high end of the range of the expected pension contributions for 2014 only, as PPG is unable to estimate the pension contributions beyond 2014.

(3) We have recorded an obligation equal to the net present value of the aggregate cash payments, along with the PPG stock and other assets to be contributed to a trust under the proposed asbestos settlement. However, PPG has no obligation to pay any amounts under this settlement until the Funding Effective Date, as more fully discussed in Note 14, “Commitments and Contingent Liabilities,” under Item 8 of this Form 10-K.

At December 31, 2013, the total amount of unrecognized tax benefits for uncertain tax positions, including an accrual of related interest and penalties along with positions only impacting the timing of tax benefits, was approximately \$94 million. The timing of payments will depend on the progress of examinations with tax authorities. PPG does not expect a significant tax payment related to these obligations within the next year. The Company is unable to make a reasonably reliable estimate as to when any significant cash settlements with taxing authorities may occur.

The unconditional purchase commitments are principally take-or-pay obligations related to the purchase of certain materials, including industrial gases, natural gas, coal and electricity, consistent with customary industry practice. See Note 8, “Debt and Bank Credit Agreements and Leases,” under Item 8 of this Form 10-K for details regarding the use and availability of committed and uncommitted lines of credit, letters of credit, guarantees and debt covenants. In addition to the amounts available under the lines of credit, the Company has an automatic shelf registration statement on file with the SEC pursuant to which it may issue, offer and sell from time to time on a continuous or delayed basis any combination of securities in one or more offerings.

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### Off-Balance Sheet Arrangements

The Company's off-balance sheet arrangements include the operating leases and unconditional purchase commitments disclosed in the "Liquidity and Capital Resources" section in the contractual obligations table as well as letters of credit and guarantees as discussed in Note 8, "Debt and Bank Credit Agreements and Leases," under Item 8 of this Form 10-K.

### Critical Accounting Estimates

Management has evaluated the accounting policies used in the preparation of the financial statements and related notes presented under Item 8 of this Form 10-K and believes those policies to be reasonable and appropriate. We believe that the most critical accounting estimates made in the preparation of our financial statements are those related to accounting for contingencies, under which we accrue a loss when it is probable that a liability has been incurred and the amount can be reasonably estimated, and to accounting for pensions, other postretirement benefits, business combinations, goodwill and other identifiable intangible assets with indefinite lives because of the importance of management judgment in making the estimates necessary to apply these policies.

### Contingencies

Contingencies, by their nature, relate to uncertainties that require management to exercise judgment both in assessing the likelihood that a liability has been incurred as well as in estimating the amount of potential loss. The most important contingencies impacting our financial statements are those related to the collectability of accounts receivable, to environmental remediation, to pending, impending or overtly threatened litigation against the Company and to the resolution of matters related to open tax years. For more information on these matters, see Note 3, "Working Capital Detail," Note 12, "Income Taxes" and Note 14, "Commitments and Contingent Liabilities" under Item 8 of this Form 10-K.

### Defined Benefit Pension and Other Postretirement Benefit Plans

Accounting for pensions and other postretirement benefits involves estimating the cost of benefits to be provided well into the future and attributing that cost over the time period each employee works. To accomplish this, extensive use is made of assumptions about inflation, investment returns, mortality, turnover, medical costs and discount rates. The Company has established a process by which management reviews and selects these assumptions annually. See Note 13, "Pensions and Other Postretirement Benefits," under Item 8 for information on these plans and the assumptions used.

The discount rate used in accounting for pensions and other postretirement benefits is determined by reference to a current yield curve and by considering the timing and amount of projected future benefit payments. The weighted average discount rate assumption at December 31, 2013 and for 2014 is 4.83% for our U.S. defined benefit pension and other postretirement benefit plans. A change in the discount rate of 100 basis points, with all other assumptions held constant, would impact 2014 net periodic benefit expense for our defined benefit pension and other postretirement benefit plans by approximately \$18 million and \$9 million, respectively.

The expected return on plan assets assumption used in accounting for our pension plans is determined by evaluating the mix of investments that comprise plan assets and external forecasts of future long-term investment returns. For 2013, the return on plan assets assumption for our U.S. defined benefit pension plans was 7.25% and will remain the same for 2014. A change in the rate of return of 100 basis points, with other assumptions held constant, would impact 2014 net periodic pension expense by approximately \$27 million.

### Business Combinations

In accordance with the accounting guidance for business combinations, the Company used the acquisition method of accounting to allocate costs of acquired businesses to the assets acquired and liabilities assumed based on their estimated fair values at the dates of acquisition. The excess costs of acquired businesses over the fair values of the assets acquired and liabilities assumed were recognized as goodwill. The valuations of the acquired assets and liabilities will impact the determination of future operating results. In addition to using management estimates and negotiated amounts, the Company used a variety of information sources to determine the estimated fair values of acquired assets and liabilities including: third-party appraisals for the estimated value and lives of identifiable intangible assets and property, plant and equipment; third-party actuaries for the estimated obligations of defined benefit pension plans and similar benefit obligations; and legal counsel or other experts to assess the obligations

associated with legal, environmental and other contingent liabilities. The business and technical judgment of management was used in determining which intangible assets have indefinite lives and in determining the useful lives of finite-lived intangible assets in accordance with the accounting guidance for goodwill and other intangible assets.

#### Goodwill and Intangible Assets

As discussed in Note 1, "Summary of Significant Accounting Policies," under Item 8 of this Form 10-K, the Company tests goodwill and identifiable intangible assets with indefinite lives for impairment at least annually. Intangibles are tested for impairment using a quantitative impairment model. The Company tests goodwill for impairment by either performing a qualitative evaluation or a two-step quantitative test. The qualitative evaluation is an assessment of factors, including reporting unit specific operating results as well as industry, market and general economic conditions, to determine whether it is more likely than not that the fair values of a reporting unit is less than its carrying amount, including goodwill. The Company may elect to bypass this qualitative assessment for some or all of its reporting units and perform a two-step quantitative test. Fair values under the quantitative test are estimated using discounted cash flow methodologies that are based on projections of the amounts and timing of future revenues and cash flows. Based on the 2013 impairment tests, none of our goodwill or identifiable intangible assets with indefinite lives was impaired.

We believe that the amounts recorded in the financial statements under Item 8 of this Form 10-K related to these contingencies, pensions, other postretirement benefits, business combinations, goodwill and other identifiable intangible assets with indefinite lives are based on the best estimates and

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judgments of the appropriate PPG management, although actual outcomes could differ from our estimates.

Currency

From December 31, 2012 to December 31, 2013, the U.S. dollar strengthened against certain currencies in the countries in which PPG operates, while weakening against others, the most notable being the Euro. As a result, consolidated net assets at December 31, 2013 decreased by \$44 million, compared to December 31, 2012. Comparing exchange rates during 2013 to those of 2012, in the countries in which PPG operates, the U.S. dollar was weaker in certain countries, which had a favorable impact on full year 2013 income before income taxes of \$11 million from the translation of these foreign earnings into U.S. dollars.

The U.S. dollar weakened from year-end December 31, 2011 to year-end December 31, 2012, against certain currencies in the countries in which PPG operates, most notably against the Euro, the British pound sterling, Polish zloty, and the South Korean won. A \$141 million increase in PPG consolidated net assets and shareholders equity resulted from translating PPG's foreign denominated net assets to U.S. dollars at December 31, 2012, compared to December 31, 2011. Comparing exchange rates during 2012 to those of 2011, in the countries in which PPG operates, the U.S. dollar was generally stronger, particularly against the Euro, which had an unfavorable impact on full year 2012 income before income taxes of approximately \$40 million from the translation of these foreign earnings into U.S. dollars.

From December 31, 2010 to December 31, 2011, the U.S. dollar strengthened against the currencies of most of the countries in which PPG operates, most notably against the Euro, the Brazilian real, and the Polish zloty. A \$188 million decrease in PPG consolidated net assets and shareholders' equity resulted from translating PPG's foreign denominated net assets to U.S. dollars at December 31, 2011, compared to December 31, 2010. However, during much of 2011, the U.S. dollar was weaker against the currencies of many countries in which PPG operates than it was in 2010, which had a favorable impact on 2011 income before income taxes of approximately \$40 million from the translation of these foreign earnings into U.S. dollars.

Forward-Looking Statements

The Private Securities Litigation Reform Act of 1995 provides a safe harbor for forward-looking statements made by or on behalf of the Company. Management's Discussion and Analysis and other sections of this Annual Report contain forward-looking statements that reflect the Company's current views with respect to future events and financial performance.

You can identify forward-looking statements by the fact that they do not relate strictly to current or historic facts.

Forward-looking statements are identified by the use of the words "aim," "believe," "expect," "anticipate," "intend," "estimate," "project," "outlook," "forecast" and other expressions that indicate future events and trends. Any forward-looking statement speaks only as of the date on which such statement is made, and the Company undertakes no obligation to update any forward looking statement, whether as a result of new information, future events or otherwise, except as otherwise required by applicable law. You are advised, however, to consult any further disclosures we

make on related subjects in our reports to the Securities and Exchange Commission. Also, note the following cautionary statements.

Many factors could cause actual results to differ materially from the Company's forward-looking statements. Such factors include global economic conditions, increasing price and product competition by foreign and domestic competitors, fluctuations in cost and availability of raw materials, the ability to maintain favorable supplier relationships and arrangements, difficulties in integrating acquired businesses and achieving expected synergies therefrom, economic and political conditions in international markets, the ability to penetrate existing, developing and emerging foreign and domestic markets, foreign exchange rates and fluctuations in such rates, fluctuations in tax rates, the impact of future legislation, the impact of environmental regulations, unexpected business disruptions, the unpredictability of existing and possible future litigation, including litigation that could result if the proposed asbestos settlement does not become effective, the realization of anticipated cost savings from restructuring initiatives, the effect of the sale of the Company's 51% ownership interest in Transitions Optical, PPG's ability to integrate the North American architectural coatings business acquisition and to achieve anticipated synergies. However, it is not possible to predict or identify all such factors. Consequently, while the list of factors presented here and under Item 1A is

considered representative, no such list should be considered to be a complete statement of all potential risks and uncertainties. Unlisted factors may present significant additional obstacles to the realization of forward-looking statements.

This Annual Report also contains statements about PPG's agreement to sell its 51% ownership interest in Transitions Optical and its sunlens business to Essilor International (the "Transaction") and the expected effects of the Transaction on PPG and Transitions Optical. Many factors could cause actual results to differ materially from the company's forward-looking statements with respect to the Transaction, including the parties' ability to satisfy the conditions to the closing of the Transaction; the parties' ability to complete the Transaction on anticipated terms and schedule; risks relating to the ability of the parties to obtain regulatory approvals for the Transaction; any unforeseen liabilities, future capital expenditures, revenues, expenses, earnings, synergies, economic performance, additional indebtedness, or losses; and the risk that disruptions from the Transaction will harm PPG's business.

Consequences of material differences in the results compared with those anticipated in the forward-looking statements could include, among other things, business disruption, operational problems, financial loss, legal liability to third parties, other factors set forth in Item 1A of this Form 10-K and similar risks, any of which could have a material adverse effect on the Company's consolidated financial condition, results of operations or liquidity.

#### Item 7A. Quantitative and Qualitative Disclosures About Market Risk

PPG is exposed to market risks related to changes in foreign currency exchange rates, interest rates, and natural gas prices and to changes in PPG's stock price. The Company may enter into derivative financial instrument transactions in order to



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manage or reduce these market risks. A detailed description of these exposures and the Company's risk management policies are provided in Note 10, "Derivative Financial Instruments and Hedging Activities," under Item 8 of this Form 10-K.

The following disclosures summarize PPG's exposure to market risks and information regarding the use of and fair value of derivatives employed to manage its exposure to such risks. Quantitative sensitivity analyses have been provided to reflect how reasonably possible, unfavorable changes in market rates can impact PPG's consolidated results of operations, cash flows and financial position.

**Foreign Currency Risk**

We conduct operations in many countries around the world. Our results of operations are subject to both currency transaction and currency translation risk. Foreign currency forward and option contracts outstanding during 2013 and 2012 were used to hedge PPG's exposure to foreign currency transaction risk. The fair value of these contracts as of December 31, 2013 and 2012 were insignificant. The potential reduction in PPG's income from continuing operations resulting from the impact of adverse changes in exchange rates on the fair value of its outstanding foreign currency hedge contracts of 10% for European currencies and 20% for Asian and South American currencies for the years ended December 31, 2013 and 2012 would have been \$9 million and \$14 million, respectively.

In 2008, PPG entered into U.S. dollar to euro cross currency swap contracts with a total notional amount of \$1.16 billion, of which \$600 million were to settle on March 15, 2013 and \$560 million were to settle on March 15, 2018. In June 2012, \$600 million of the swaps, with a settlement date of March 15, 2013, were settled with PPG receiving \$1 million in cash. On settlement of the remaining outstanding contracts, PPG will receive \$560 million U.S. dollars and pay euros to the counterparties to the contracts. During the term of these contracts, PPG will receive semiannual payments in March and September of each year based on U.S. dollar, long-term fixed interest rates, and PPG will make annual payments in March of each year to the counterparties based on euro, long-term fixed interest rates. The Company designated all of the cross currency swaps as hedges of its net investment in acquired European coatings businesses and, as a result, the mark to fair value adjustments of the swaps outstanding have been and will be recorded as a component of Accumulated Other Comprehensive Loss (Income) ("AOCI"), and the cash flow impact of these swaps has been and will be classified as investing activities in the consolidated statement of cash flows. As of December 31, 2013 and December 31, 2012, the fair value of these contracts was a net liability of \$120 million and \$95 million, respectively. A 10% increase in the value of the euro to the U.S. dollar would have had an unfavorable effect on the fair value of these swap contracts and increased the liability by \$81 million and \$84 million at December 31, 2013 and 2012, respectively.

PPG had non-U.S. dollar denominated debt outstanding of \$453 million as of December 31, 2013 and \$449 million as of December 31, 2012. A weakening of the U.S. dollar by 10% against European currencies and by 20% against Asian and South American currencies would have resulted in unrealized translation losses of approximately \$53 million and \$51 million as of December 31, 2013 and 2012, respectively.

**Interest Rate Risk**

The Company manages its interest rate risk by balancing its exposure to fixed and variable rates while attempting to minimize its interest costs. At December 31, 2011, interest rate swaps with a notional value of \$445 million converted fixed rate debt to variable rate debt. During 2012, PPG settled these swaps, receiving \$29 million from such settlements. A 10% increase in interest rates in the U.S., Canada, Mexico and Europe and a 20% increase in interest rates in Asia and South America would have affected PPG's variable rate debt obligations by increasing interest expense approximately \$0.1 million for the year ended December 31, 2012. Further, a 10% reduction in interest rates would have increased the present value of the Company's fixed rate debt by approximately \$81 million as of December 31, 2013 and 2012; however, such changes would not have had an effect on PPG's annual income from continuing operations or cash flows.

**Equity Price Risk**

An equity forward arrangement was entered into to hedge the Company's exposure to changes in fair value of its future obligation to contribute PPG stock into an asbestos settlement trust (see Note 10 "Derivative Financial Instruments and Hedging Activities" and Note 14, "Commitments and Contingent Liabilities," under Item 8 of this Form 10-K). The fair

value of this instrument as of December 31, 2013 and 2012 was an asset of \$207 million and \$130 million, respectively (see Note 9 “Fair Value Measurements”). A 10% decrease in PPG’s stock price would have had an unfavorable effect on the fair value of this instrument of \$26 million and \$19 million at December 31, 2013 and 2012, respectively.

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Item 8. Financial Statements and Supplementary Data

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of PPG Industries, Inc.

In our opinion, the accompanying consolidated balance sheet as of December 31, 2013 and the related consolidated statements of income, comprehensive income, shareholders' equity, and cash flows for the year then ended present fairly, in all material respects, the financial position of PPG Industries, Inc. and its subsidiaries at December 31, 2013, and the results of their operations and their cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under Item 15(a)(2) presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2013, based on criteria established in Internal Control - Integrated Framework (1992) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements and financial statement schedule, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the Management Report on Establishing and Maintaining Adequate Internal Control Over Financial Reporting. Our responsibility is to express opinions on these financial statements, on the financial statement schedule, and on the Company's internal control over financial reporting based on our integrated audit. We conducted our audit 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 and whether effective internal control over financial reporting was maintained in all material respects. Our audit of the financial statements included 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. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As described in the Management Report on Establishing and Maintaining Adequate Internal Control Over Financial Reporting, management has excluded the North American architectural coatings business of AkzoNobel from its assessment of internal control over financial reporting as of December 31, 2013 because it was acquired by the Company in a purchase business combination in April, 2013. We have also excluded the North American architectural coatings business of AkzoNobel from our audit of internal control over financial reporting. The North American architectural coatings business of AkzoNobel is a wholly-owned subsidiary whose total assets and total revenues excluded from management's assessment and our audit represent 5% and 8%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2013.

/s/ PricewaterhouseCoopers LLP

Pittsburgh, Pennsylvania

February 20, 2014

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Management Report

Responsibility for Preparation of the Financial Statements and Establishing and Maintaining Adequate Internal Control Over Financial Reporting

We are responsible for the preparation of the financial statements included in this Annual Report. The financial statements were prepared in accordance with accounting principles generally accepted in the United States of America and include amounts that are based on the best estimates and judgments of management.

We are also responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. Internal control over financial reporting, no matter how well designed, have inherent limitations. Therefore, a system of internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. In addition, because of changing conditions, there is risk in projecting any evaluation of internal controls to future periods.

We conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of December 31, 2013. In making this evaluation, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control - Integrated Framework (1992). Our evaluation included reviewing the documentation of our controls, evaluating the design effectiveness of our controls and testing their operating effectiveness. In April 2013, the Company acquired the North American architectural coatings business of AkzoNobel. As the acquisition occurred in April 2013, the scope of the Company's assessment of the design and effectiveness of PPG's internal control over financial reporting for the year ended December 31, 2013 excluded this acquired business. The total assets and total revenues excluded from our assessment represented approximately 5% and 8%, respectively, of PPG's consolidated total assets and total revenue as of and for the year ended December 31, 2013. This exclusion is in accordance with the SEC's general guidance that an assessment of a recently acquired business may be omitted from the scope of the Company's evaluation of the effectiveness of its internal controls in the year of acquisition. This acquired business will be included in management's assessment of the effectiveness of our internal controls over financial reporting as of December 31, 2014. Based on this evaluation we have concluded that, as of December 31, 2013, the Company's internal controls over financial reporting were effective.

PricewaterhouseCoopers LLP, an independent registered public accounting firm, has issued their report, included on page 32 of this Form 10-K, regarding the Company's internal control over financial reporting.

/s/ Charles E. Bunch  
Charles E. Bunch  
Chairman  
and Chief Executive Officer  
February 20, 2014

/s/ Frank S. Sklarsky  
Frank S. Sklarsky  
Executive Vice President and  
Chief Financial Officer  
February 20, 2014

2012 Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of PPG Industries, Inc.

We have audited the accompanying consolidated balance sheet of PPG Industries, Inc. and subsidiaries (the "Company") as of December 31, 2012, and the related consolidated statements of income, comprehensive income, shareholders' equity, and cash flows for each of the two years in the period ended December 31, 2012. Our audits also included the financial statement schedule listed in the Index at Item 15(a)(2) for each of the two years in the period ended December 31, 2012. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on the financial statements based on our audits.

We conducted our audits 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. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of PPG Industries, Inc. and subsidiaries as of December 31, 2012, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2012, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

/s/ DELOITTE & TOUCHE LLP

Pittsburgh, Pennsylvania

February 21, 2013

(July 29, 2013 as to the effects of discontinued operations described Note 22)

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## Consolidated Statement of Income

(Millions, except per share amounts)	For the Year		
	2013	2012	2011
Net sales	\$15,108	\$13,512	\$13,153
Cost of sales, exclusive of depreciation and amortization	8,636	7,905	7,865
Selling, general and administrative	3,699	3,200	3,122
Depreciation	356	312	305
Amortization	119	109	120
Research and development, net	488	453	428
Interest expense	196	210	210
Interest income	(43 )	(39 )	(42 )
Asbestos settlement, net	11	12	12
Business restructuring	98	208	—
Other charges	190	224	63
Other income	(131 )	(139 )	(152 )
Income before income taxes	1,489	1,057	1,222
Income tax expense	333	221	260
Income from continuing operations	1,156	836	962
Income from discontinued operations, net of tax	2,197	228	250
Net income attributable to the controlling and noncontrolling interests	3,353	1,064	1,212
Less: net income attributable to noncontrolling interests	122	123	117
Net income (attributable to PPG)	\$3,231	\$941	\$1,095
Amounts Attributable to PPG			
Continuing operations	\$1,034	\$726	\$858
Discontinued operations	2,197	215	237
Net income	\$3,231	\$941	\$1,095
Earnings per common share			
Continuing operations	\$7.21	\$4.73	\$5.45
Discontinued operations	15.32	1.40	1.51
Net income (attributable to PPG)	\$22.53	\$6.13	\$6.96
Earnings per common share - assuming dilution			
Continuing operations	\$7.13	\$4.69	\$5.40
Discontinued operations	15.14	1.37	1.47
Net income (attributable to PPG)	\$22.27	\$6.06	\$6.87

## Consolidated Statement of Comprehensive Income

(Millions)	For the Year		
	2013	2012	2011
Net income attributable to the controlling and noncontrolling interests	\$3,353	\$1,064	\$1,212
Unrealized foreign currency translation adjustment	(51 )	146	(197 )
Defined benefit pension and other postretirement benefit adjustments	440	—	(169 )
Net change – derivative financial instruments	10	(7 )	(32 )
Other comprehensive income / (loss), net of tax	399	139	(398 )
Total comprehensive income	\$3,752	\$1,203	\$814
Less: amounts attributable to noncontrolling interests:			
Net income	(122 )	(123 )	(117 )
Unrealized foreign currency translation adjustment	7	(5 )	9
Comprehensive income attributable to PPG	\$3,637	\$1,075	\$706

The accompanying notes to the consolidated financial statements are an integral part of these consolidated statements.

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## Consolidated Balance Sheet

(Millions)	December 31	
	2013	2012
Assets		
Current assets		
Cash and cash equivalents	\$1,116	\$1,306
Short-term investments	629	1,087
Receivables	2,736	2,813
Inventories	1,824	1,687
Deferred income taxes	425	430
Other	484	392
Total current assets	7,214	7,715
Property, plant and equipment, net	2,876	2,888
Goodwill	3,008	2,761
Identifiable intangible assets, net	1,339	1,085
Deferred income taxes	491	669
Investments	393	422
Other assets	542	338
Total	\$15,863	\$15,878
Liabilities and Shareholders' Equity		
Current liabilities		
Accounts payable and accrued liabilities	\$3,265	\$3,061
Asbestos settlement	763	683
Restructuring reserves	73	75
Short-term debt and current portion of long-term debt	34	642
Total current liabilities	4,135	4,461
Long-term debt	3,372	3,368
Accrued pensions	728	1,057
Other postretirement benefits	1,007	1,287
Asbestos settlement	245	237
Deferred income taxes	249	231
Other liabilities	929	915
Total liabilities	10,665	11,556
Commitments and contingent liabilities (See Note 14)		
Shareholders' equity		
Common stock	484	484
Additional paid-in capital	953	870
Retained earnings	12,757	9,871
Treasury stock, at cost	(8,002)	(5,496)
Accumulated other comprehensive loss	(1,260)	(1,666)
Total PPG shareholders' equity	4,932	4,063
Noncontrolling interests	266	259
Total shareholders' equity	5,198	4,322
Total	\$15,863	\$15,878

The accompanying notes to the consolidated financial statements are an integral part of this consolidated statement.



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## Consolidated Statement of Shareholders' Equity

(Millions)	Common Stock	Additional Paid-In Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income/(Loss)	Total PPG	Non- controlling Interests	Total
Balance, January 1, 2011	\$ 484	\$ 725	\$8,548	\$(4,708)	\$ (1,411 )	\$3,638	\$ 195	\$3,833
Net income attributable to the controlling and noncontrolling interests	—	—	1,095	—	—	1,095	117	1,212
Other comprehensive loss, net of tax	—	—	—	—	(389 )	(389 )	(9 )	(398 )
Cash dividends	—	—	(355 )	—	—	(355 )	—	(355 )
Purchase of treasury stock	—	—	—	(858 )	—	(858 )	—	(858 )
Issuance of treasury stock	—	47	—	60	—	107	—	107
Stock-based compensation activity	—	11	—	—	—	11	—	11
Dividends paid on subsidiary common stock to noncontrolling interests	—	—	—	—	—	—	(106 )	(106 )
Balance, December 31, 2011	\$ 484	\$ 783	\$9,288	\$(5,506)	\$ (1,800 )	\$3,249	\$ 197	\$3,446
Net income attributable to the controlling and noncontrolling interests	—	—	941	—	—	941	123	1,064
Other comprehensive income, net of tax	—	—	—	—	134	134	5	139
Cash dividends	—	—	(358 )	—	—	(358 )	—	(358 )
Purchase of treasury stock	—	—	—	(92 )	—	(92 )	—	(92 )
Issuance of treasury stock	—	35	—	102	—	137	—	137
Stock-based compensation activity	—	55	—	—	—	55	—	55
Dividends paid on subsidiary common stock to noncontrolling interests	—	—	—	—	—	—	(111 )	(111 )
Joint venture formation and consolidation	—	(3 )	—	—	—	(3 )	45	42
Balance, December 31, 2012	\$ 484	\$ 870	\$9,871	\$(5,496)	\$ (1,666 )	\$4,063	\$ 259	\$4,322
Net income attributable to the controlling and noncontrolling interests	—	—	3,231	—	—	3,231	122	3,353
Other comprehensive income/(loss), net of tax	—	—	—	—	406	406	(7 )	399
Cash dividends	—	—	(345 )	—	—	(345 )	—	(345 )
Purchase of treasury stock	—	—	—	(1,000 )	—	(1,000 )	—	(1,000 )
Issuance of treasury stock	—	25	—	55	—	80	—	80
Stock-based compensation activity	—	58	—	—	—	58	—	58

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Separation and merger tender offer	—	—	—	(1,561 )	—	(1,561 )	—	(1,561 )
Dividends paid on subsidiary common stock to noncontrolling interests	—	—	—	—	—	—	(90 )	(90 )
Reductions in noncontrolling interests	—	—	—	—	—	—	(18 )	(18 )
Balance, December 31, 2013	\$ 484	\$ 953	\$ 12,757	\$ (8,002)	\$ (1,260 )	\$ 4,932	\$ 266	\$ 5,198

The accompanying notes to the consolidated financial statements are an integral part of this consolidated statement.

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## Consolidated Statement of Cash Flows

(Millions)	For the Year		
	2013	2012	2011
Operating activities			
Net income attributable to the controlling and noncontrolling interests	\$3,353	\$1,064	\$1,212
Less: Income from discontinued operations	2,197	228	250
Income from continuing operations	1,156	836	962
Adjustments to reconcile to cash from operations:			
Depreciation and amortization	475	421	425
Pension expense	107	143	120
Business restructuring	98	208	—
Environmental remediation charge	101	159	—
Stock-based compensation expense	81	71	34
Equity affiliate losses (earnings), net of dividends	17	3	(17 )
Deferred income taxes	(36 )	(212 )	(19 )
Cash contributions to pension plans	(174 )	(80 )	(113 )
Restructuring cash spending	(87 )	(88 )	(18 )
Change in certain asset and liability accounts (net of acquisitions):			
Receivables	44	148	(107 )
Inventories	43	48	(74 )
Other current assets	(29 )	1	(25 )
Accounts payable and accrued liabilities	(21 )	(58 )	5
Noncurrent assets	(9 )	(24 )	2
Noncurrent liabilities	(92 )	(27 )	(16 )
Taxes and interest payable	78	55	62
Other	57	(28 )	(45 )
Cash from operating activities - continuing operations	1,809	1,576	1,176
Cash (used for)/from operating activities - discontinued operations	(18 )	211	260
Cash from operating activities	1,791	1,787	1,436
Investing activities			
Capital Expenditures	(515 )	(363 )	(326 )
Business acquisitions, net of cash balances acquired	(983 )	(122 )	(31 )
Proceeds from separation and merger of commodity chemicals business, net	940	—	—
Proceeds from maturity of short-term investments	1,796	250	749
Purchase of short-term investments	(1,227 )	(1,332 )	(125 )
Payments on cross currency swap contracts	(42 )	(23 )	(10 )
Proceeds from termination of cross currency swap contracts	37	1	—
Collection of notes receivable, equity affiliate	—	—	90
Return of capital, equity affiliate	—	—	78
Proceeds from the sale of property, plant and equipment and other assets	—	40	27
Other	(2 )	(16 )	(13 )
Cash from/(used for) investing activities - continuing operations	4	(1,565 )	439
Cash (used for) investing activities - discontinued operations	(1 )	(46 )	(86 )
Cash from/(used for) investing activities	3	(1,611 )	353
Financing activities			
Net change in borrowings with maturities of three months or less	(7 )	(1 )	9
Proceeds from the issuance of long-term debt (net of discount and issuance costs)	—	397	—
Repayment of long-term debt	(605 )	(71 )	(400 )

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Repayment of acquired debt	—	(119)	) —
Settlement of forward starting swaps	—	(121)	) —
Proceeds from termination of interest rate swaps	—	29	) 19
Purchase of treasury stock	(1,000)	) (92)	) (858)
Issuance of treasury stock	68	) 122	) 81
Dividends paid on subsidiary common stock to noncontrolling interests	(90)	) (98)	) (98)
Dividends paid on PPG common stock	(345)	) (358)	) (355)
Other	—	) (26)	) (22)
Cash used for financing activities - continuing operations	(1,979)	) (338)	) (1,624)
Cash used for financing activities - discontinued operations	—	) (13)	) (8)
Cash used for financing activities	(1,979)	) (351)	) (1,632)
Effect of currency exchange rate changes on cash and cash equivalents	(5)	) 24	) (41)
Net (decrease) / increase in cash and cash equivalents	(190)	) (151)	) 116
Cash and cash equivalents, beginning of year	1,306	) 1,457	) 1,341
Cash and cash equivalents, end of year	\$1,116	) \$1,306	) \$1,457

The accompanying notes to the consolidated financial statements are an integral part of this consolidated statement.

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### Notes to the Consolidated Financial Statements

#### 1. Summary of Significant Accounting Policies

##### Principles of Consolidation

The accompanying consolidated financial statements include the accounts of PPG Industries, Inc. (“PPG” or the “Company”) and all subsidiaries, both U.S. and non-U.S., that it controls. PPG owns more than 50% of the voting stock of most of the subsidiaries that it controls. For those consolidated subsidiaries in which the Company’s ownership is less than 100%, the outside shareholders’ interests are shown as noncontrolling interests. Investments in companies in which PPG owns 20% to 50% of the voting stock and has the ability to exercise significant influence over operating and financial policies of the investee are accounted for using the equity method of accounting. As a result, PPG’s share of the earnings or losses of such equity affiliates is included in the accompanying consolidated statement of income and PPG’s share of these companies’ shareholders’ equity is included in “Investments” in the accompanying consolidated balance sheet. Transactions between PPG and its subsidiaries are eliminated in consolidation.

##### Use of Estimates in the Preparation of Financial Statements

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of income and expenses during the reporting period. Such estimates also include the fair value of assets acquired and liabilities assumed as a result of allocations of purchase price of business combinations consummated. Actual outcomes could differ from those estimates.

##### Revenue Recognition

The Company recognizes revenue when the earnings process is complete. Revenue from sales is recognized by all operating segments when goods are shipped and title to inventory and risk of loss passes to the customer or when services have been rendered.

##### Shipping and Handling Costs

Amounts billed to customers for shipping and handling are reported in “Net sales” in the accompanying consolidated statement of income. Shipping and handling costs incurred by the Company for the delivery of goods to customers are included in “Cost of sales, exclusive of depreciation and amortization” in the accompanying consolidated statement of income.

##### Selling, General and Administrative Costs

Amounts presented as “Selling, general and administrative” in the accompanying consolidated statement of income are comprised of selling, customer service, distribution and advertising costs, as well as the costs of providing corporate-wide functional support in such areas as finance, law, human resources and planning. Distribution costs pertain to the movement and storage of finished goods inventory at company-

owned and leased warehouses, terminals and other distribution facilities.

##### Advertising Costs

Advertising costs are expensed in the year incurred and totaled \$345 million, \$288 million and \$245 million in 2013, 2012 and 2011, respectively.

##### Research and Development

Research and development costs, which consist primarily of employee related costs, are charged to expense as incurred. The following are the research and development costs for the years ended December 31:

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(Millions)	2013	2012	2011
Research and development – total	\$505	\$468	\$443
Less depreciation on research facilities	17	15	15
Research and development, net	\$488	\$453	\$428

### Legal Costs

Legal costs are expensed as incurred. Legal costs incurred by PPG include legal costs associated with acquisition and divestiture transactions, general litigation, environmental regulation compliance, patent and trademark protection and other general corporate purposes.

### Foreign Currency Translation

The functional currency of most significant non-U.S. operations is their local currency. Assets and liabilities of those operations are translated into U.S. dollars using year-end exchange rates; income and expenses are translated using the average exchange rates for the reporting period. Unrealized foreign currency translation adjustments are deferred in accumulated other comprehensive loss, a separate component of shareholders' equity.

### Cash Equivalents

Cash equivalents are highly liquid investments (valued at cost, which approximates fair value) acquired with an original maturity of three months or less.

### Short-term Investments

Short-term investments are highly liquid, high credit quality investments (valued at cost plus accrued interest) that have stated maturities of greater than three months to one year. The purchases and sales of these investments are classified as investing activities in the consolidated statement of cash flows.

### Marketable Equity Securities

The Company's investment in marketable equity securities is recorded at fair market value and reported in "Other current assets" and "Investments" in the accompanying consolidated balance sheet with changes in fair market value recorded in income for those securities designated as trading securities and in other comprehensive income, net of tax, for those designated as available for sale securities.



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### Notes to the Consolidated Financial Statements

#### Inventories

Inventories are stated at the lower of cost or market. Most U.S. inventories are stated at cost, using the last-in, first-out (“LIFO”) method of accounting, which does not exceed market. All other inventories are stated at cost, using the first-in, first-out (“FIFO”) method of accounting, which does not exceed market. PPG determines cost using either average or standard factory costs, which approximate actual costs, excluding certain fixed costs such as depreciation and property taxes. See Note 3, "Working Capital Detail" for further information concerning the Company's inventory.

#### Derivative Financial Instruments

The Company recognizes all derivative financial instruments as either assets or liabilities at fair value on the balance sheet. The accounting for changes in the fair value of a derivative depends on the use of the instrument.

To the extent that a derivative is effective as a hedge of an exposure to future changes in cash flows (cash flow hedge), the change in fair value of the instrument is deferred in accumulated other comprehensive income ("AOCI") and subsequently reclassified within net income as gains and losses are recognized on the related transactions. Any portion considered to be ineffective is reported within net income, including changes in value related to credit risk.

To the extent that a derivative is effective as a hedge of an exposure to future changes in fair value (fair value hedge), the change in the derivative's fair value is offset in the consolidated statement of income by the change in fair value of the item being hedged.

To the extent that a derivative or a financial instrument is effective as a hedge of a net investment in a foreign operation, the change in the derivative's fair value or the financial instrument's carrying value is deferred as an unrealized currency translation adjustment in AOCI. Deferrals in AOCI related to hedges of the Company's net investments in foreign operations are reclassified and recognized in income from continuing operations upon a substantial liquidation, sale or partial sale of such investments or upon impairment of all or a portion of such investments. The cash flow impact of these instruments have been and will be classified as investing activities in the consolidated statement of cash flows.

Changes in the fair value of derivative instruments not designated as hedges for hedge accounting purposes are recognized in income from continuing operations in the period of change.

#### Property, Plant and Equipment

Property, plant and equipment is recorded at cost. PPG computes depreciation by the straight-line method based on the estimated useful lives of depreciable assets. Additional expense is recorded when facilities or equipment are subject to abnormal economic conditions or obsolescence.

Significant improvements that add to productive capacity or extend the lives of properties are capitalized. Costs for repairs

and maintenance are charged to expense as incurred. When property is retired or otherwise disposed of, the original cost and related accumulated depreciation balance are removed from the accounts and any related gain or loss is included in income from continuing operations. Amortization of the cost of capitalized leased assets is included in depreciation expense. Property and other long-lived assets are reviewed for impairment whenever events or circumstances indicate that their carrying amounts may not be recoverable. See Note 4, "Property, Plant and Equipment" for further details.

#### Goodwill and Identifiable Intangible Assets

Goodwill represents the excess of the cost over the fair value of acquired identifiable tangible and intangible assets less liabilities assumed from acquired businesses. Identifiable intangible assets acquired in business combinations are recorded based upon their fair value at the date of acquisition.

The Company tests goodwill of each reporting unit for impairment at least annually in connection with PPG's strategic planning process. The Company tests goodwill for impairment by either performing a qualitative evaluation or a two-step quantitative test. The qualitative evaluation is an assessment of factors, including reporting unit specific operating results as well as industry, market and general economic conditions, to determine whether it is more likely than not that the fair values of a reporting unit is less than its carrying amount, including goodwill. The Company may elect to bypass this qualitative assessment for some or all of its reporting units and perform a two-step quantitative test. The quantitative goodwill impairment test is performed during the fourth quarter by comparing the estimated fair value of the associated reporting unit as of September 30 to its carrying value. The Company's reporting units are its operating segments. (See Note 21, "Reportable Business Segment Information" for further information concerning the Company's operating segments.) Fair value is estimated using discounted cash flow methodologies.

The Company has determined that certain acquired trademarks have indefinite useful lives. The Company tests the carrying value of these trademarks for impairment at least annually. The annual assessment is completed in the fourth quarter by comparing the estimated fair value of each trademark as of September 30 to its carrying value. Fair value is estimated by using the relief from royalty method (a discounted cash flow methodology).

Identifiable intangible assets with finite lives are amortized on a straight-line basis over their estimated useful lives (2 to 25 years) and are reviewed for impairment whenever events or circumstances indicate that their carrying amount may not be recoverable.

#### Receivables and Allowances

All trade receivables are reported on the balance sheet at the outstanding principal adjusted for any allowance for credit losses and any charge offs. The Company provides an allowance for doubtful accounts to reduce receivables to their estimated net

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### Notes to the Consolidated Financial Statements

realizable value when it is probable that a loss will be incurred. Those estimates are based on historical collection experience, current economic and market conditions, a review of the aging of accounts receivable and the assessments of current creditworthiness of customers.

#### Product Warranties

The Company accrues for product warranties at the time the associated products are sold based on historical claims experience. As of December 31, 2013 and 2012, the reserve for product warranties was \$10 million and \$14 million, respectively. Pretax charges against income for product warranties in 2013, 2012 and 2011 totaled \$8 million, \$15 million and \$14 million, respectively. Cash outlays related to product warranties were \$12 million, \$12 million; \$10 million in 2013, 2012 and 2011 respectively.

#### Asset Retirement Obligations

An asset retirement obligation represents a legal obligation associated with the retirement of a tangible long-lived asset that is incurred upon the acquisition, construction, development or normal operation of that long-lived asset. PPG recognizes asset retirement obligations in the period in which they are incurred, if a reasonable estimate of fair value can be made. The asset retirement obligation is subsequently adjusted for changes in fair value. The associated estimated asset retirement costs are capitalized as part of the carrying amount of the long-lived asset and depreciated over its useful life. PPG's asset retirement obligations are primarily associated with closure of certain assets used in the chemicals manufacturing process.

The accrued asset retirement obligation was \$12 million as of December 31, 2013. This balance includes an increase in obligations related to retail stores in North America acquired in 2013. The accrued asset retirement obligation was \$13 million as of December 31, 2012, of which \$10 million was associated with the former commodity chemicals business.

PPG's only conditional asset retirement obligation relates to the possible future abatement of asbestos contained in certain PPG production facilities. The asbestos in PPG's production facilities arises from the application of normal and customary building practices in the past when the facilities were constructed. This asbestos is encapsulated in place and, as a result, there is no current legal requirement to abate it. Inasmuch as there is no requirement to abate, the Company does not have any current plans or an intention to abate and therefore the timing, method and cost of future abatement, if any, are not known. The Company has not recorded an asset retirement obligation associated with asbestos abatement, given the uncertainty concerning the timing of future abatement, if any.

#### Reclassifications

Certain reclassifications of prior years' data have been made to conform to the current year presentation.

#### Accounting Standards Adopted in 2013

On February 5, 2013, the Financial Accounting Standards Board (the "FASB") issued an amendment to the disclosure requirements for reporting reclassifications out of AOCI. The new requirements were effective for the first interim or annual period beginning after December 15, 2012. The amendment requires companies to present information about reclassification adjustments from accumulated other comprehensive income to the income statement, including the income statement line items affected by the reclassification. The information must be presented in the financial statements in a single note or on the face of the financial statements. The new accounting guidance also requires the disclosure to be cross referenced to other financial statement disclosures for reclassification items that are not reclassified directly to net income in their entirety in the same reporting period. PPG adopted the new requirements in the first quarter of 2013; however, the adoption of this guidance did not have an effect on its consolidated financial position, results of operations or cash flows (see Note 16, "Accumulated Other Comprehensive Loss").

#### Accounting Standards to be Adopted in Future Years

On July 18, 2013, the FASB issued an Accounting Standard Update ("ASU") that changes how certain unrecognized tax benefits are to be presented on the consolidated balance sheet. This ASU clarifies current guidance to require that an unrecognized tax benefit or a portion thereof be presented in the consolidated balance sheet as a reduction to a deferred tax asset for a net operating loss ("NOL") carryforward, similar tax loss, or a tax credit carryforward except when an NOL carryforward, similar tax loss, or tax credit carryforward is not available under the tax law of the applicable jurisdiction to settle any additional income taxes that would result from the disallowance of a tax position. In such a case, the unrecognized tax benefit would be presented in the consolidated balance sheet as a liability. This new standard is effective for the first interim or annual period beginning after December 15, 2013. This standard is to be applied prospectively to all unrecognized tax benefits that exist at the effective date. Early adoption and retrospective application are permitted. PPG is currently evaluating the new requirements; however, it does not expect that the adoption of this guidance will have a material effect on its consolidated financial position, results of operations or cash flows.

#### 2. Acquisitions and Divestitures

During 2013, the Company completed the acquisition of two coatings businesses for a total purchase price of \$983 million, net of cash acquired and purchase price adjustments.

##### North American Architectural Coatings Acquisition

On April 1, 2013, PPG finalized the acquisition of the North American architectural coatings business of Akzo Nobel N.V., Amsterdam, the Netherlands ("North American architectural coatings acquisition") for \$954 million, net of cash acquired of \$14 million, and a preliminary working capital adjustment. The purchase price is subject to customary post-closing adjustments. The acquisition further extends PPG's architectural coatings

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## Notes to the Consolidated Financial Statements

business in the United States, Canada and the Caribbean. With this acquisition, PPG has expanded its reach in all three major North American architectural coatings distribution channels, including home centers, independent paint dealers and company-owned paint stores. Since April 1, 2013, the results of this acquired business have been included in the results of the architectural coatings - Americas and Asia Pacific operating segment, within the Performance Coatings reportable segment. Net sales reported by PPG from the date of acquisition from this acquired business were approximately \$1.2 billion for the year ended December 31, 2013. Income from continuing operations related to this acquisition was in the mid-single digit percentage return on sales for the year.

PPG is in the process of completing valuations of assets acquired and liabilities assumed for the North American architectural coatings acquisition. As such, the allocation of the purchase price is subject to change. The following table summarizes the estimated fair value of assets acquired and liabilities assumed as reflected in the preliminary purchase price allocation for the North American architectural coatings acquisition.

	(Millions)	
Current assets	\$550	
Property, plant, and equipment	180	
Trademarks with indefinite lives	174	
Identifiable intangible assets with finite lives	196	
Goodwill	234	
Other non-current assets	61	
Total assets	\$1,395	
Current liabilities	(332)	)
Accrued pensions	(29)	)
Other post-retirement benefits	(40)	)
Other long-term liabilities	(40)	)
Total liabilities	\$(441)	)
Total purchase price, net of cash acquired	\$954	

The identifiable intangible assets with finite lives in the table above, which consist primarily of customer relationships and acquired technology, are subject to amortization over a weighted average period of 10 years. See Note 6 "Goodwill and Other Identifiable Intangible Assets" for further details regarding PPG's intangible assets.

The following information reflects the net sales of PPG for the years ended December 31, 2013 and 2012 on a pro forma basis as if the transaction for the North American architectural coatings acquisition had been completed on January 1, 2012.

## Condensed Consolidated Pro Forma information (unaudited)

	Year ended	
Millions	2013	2012
Net sales	\$15,480	\$15,049

The pro forma impact on PPG's results of operations, including the pro forma effect of events that are directly attributable to the acquisition, was not significant. While calculating this impact, no cost savings or operating synergies that may result from the acquisition were included.

## Deft Acquisition

In May 2013, the Company completed the acquisition of certain assets of Deft Incorporated, a privately-owned U.S. based specialty coatings company, for approximately \$25 million. The acquisition enhances the coatings capabilities of PPG's aerospace business. Deft products include structural primers and military topcoats for the North American aviation industry. In addition, Deft produces some architectural and general industrial coatings.

## 2012 Acquisitions

During 2012, the Company completed four acquisitions related to its coatings businesses. The total cost of the acquisitions was \$288 million, including debt assumed of \$122 million. These acquisitions also provide for contingent

payments and escrowed holdbacks of a portion of the acquisition cost. Substantially all of the acquisition activity relates to the three acquisitions described below.

In December 2012, the Company completed the acquisition of the business of Spraylat Corp., a privately-owned U.S. based industrial coatings company, for approximately \$75 million. The company operates production facilities in the U.S., Europe and China. Spraylat specializes in high-quality industrial liquid and powder coatings with excellent performance characteristics that are applied to metal, glass and plastic substrates.

In early January 2012, PPG completed the purchase of European coatings company Dyrup A/S (“Dyrup”), based in Copenhagen, Denmark, from its owner, Monberg & Thorsen, a public holding company, for \$44 million of which \$26 million is currently being held in escrow, and assumed debt of \$120 million and acquired cash of \$6 million. Dyrup, a producer of architectural coatings and woodcare products, operates six manufacturing facilities throughout Europe, and its products are sold primarily in Denmark, France, Germany, Portugal, Poland, and Spain through professional and do-it-yourself channels.

Also in early January 2012, PPG completed the purchase of the coatings businesses of Colpisa Colombiana de Pinturas and its affiliate, Colpisa Ecuador (“Colpisa”), for \$38 million. Colpisa manufactures and distributes coatings for automotive OEM, automotive refinish and industrial customers in Colombia and Ecuador.

The purchase price allocations related to the acquisitions made in 2012 resulted in an excess of purchase price over the

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## Notes to the Consolidated Financial Statements

fair value of the tangible and identifiable intangible assets acquired and liabilities assumed, which has been recorded as an addition to "Goodwill." The Dyrup and Colpisa acquisitions included an \$8 million flow-through cost of sales, primarily in the first quarter of 2012, of the step up to fair value of inventory acquired.

The following table summarizes the fair value of assets acquired and liabilities assumed as reflected in the purchase price allocations for the Dyrup, Colpisa, and Spraylat acquisitions.

	(Millions)	
Cash	\$6	
Current assets	167	
Property, plant, and equipment	91	
Goodwill	35	
Identifiable intangible assets	57	
Other non-current assets	19	
Total assets	\$375	
Short-term debt	(110)	)
Current liabilities	(71)	)
Long-term debt	(10)	)
Other long-term liabilities	(22)	)
Total liabilities	\$(213)	)
Total purchase price including cash in escrow and contingent payments	\$162	

## Divestitures

In July 2013, PPG reached an agreement to divest its 51% ownership interest in Transitions Optical to Essilor International, which currently holds a 49% interest in the venture. Transitions Optical is a global supplier of photochromic lenses and a consolidated subsidiary of PPG. The transaction reflects an enterprise value of approximately \$3.4 billion, with PPG receiving cash at closing of \$1.73 billion pretax or approximately \$1.5 billion after-tax, subject to certain post-closing working capital and net debt adjustments. In 2013, Transitions Optical had net sales of approximately \$825 million. Essilor will also enter into multi-year agreements with PPG for continuing supply of photochromic materials and research and development services and will acquire PPG's optical sunlens business. The transaction is expected to close in the first half of 2014, subject to satisfaction of customary closing conditions, including receipt of regulatory approvals.

Currently, all Transitions Optical net sales are consolidated in PPG's financial statements. Essilor's minority share of the joint venture's net earnings is reflected as a reduction to PPG's net income and presented in the financial statements as "Net income attributable to non-controlling interests". Upon receipt of regulatory approvals, PPG expects to account for Transitions Optical as discontinued operations.

## Separation and Merger Transaction

On January 28, 2013, the Company completed the previously announced separation of its commodity chemicals business and merger of its wholly-owned subsidiary, Eagle Spinco Inc., with a subsidiary of Georgia Gulf Corporation in a tax efficient Reverse Morris Trust transaction. See Note 22 "Separation and Merger Transaction" for further details.

## 3. Working Capital Detail

(Millions)	2013	2012
Receivables		
Trade - net <sup>(1)</sup>	\$2,449	\$2,568
Equity affiliates	10	22
Other - net	277	223

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Total	\$2,736	\$2,813
Inventories <sup>(2)</sup>		
Finished products	\$1,156	\$980
Work in process	160	144
Raw materials	440	443
Supplies	68	120
Total	\$1,824	\$1,687
Accounts payable and accrued liabilities		
Trade	\$1,790	\$1,620
Accrued payroll	506	459
Customer rebates	225	212
Other postretirement and pension benefits	93	103
Income taxes	80	71
Other	571	596
Total	\$3,265	\$3,061

(1) Allowance for Doubtful Accounts equaled \$74 million and \$77 million as of December 31, 2013 and 2012, respectively.

(2) Inventories valued using the LIFO method of inventory valuation comprised 38% and 36% of total gross inventory values as of December 31, 2013 and 2012, respectively. If the FIFO method of inventory valuation had been used, inventories would have been \$195 million and \$243 million higher as of December 31, 2013 and 2012, respectively. During the year ended December 31, 2013 and 2012, certain inventories accounted for on the LIFO method of accounting were reduced, which resulted in the liquidation of certain quantities carried at costs prevailing in prior years. The effect on income from continuing operations was income of \$0.7 million and \$3.0 million for the years ended December 31, 2013 and 2012, respectively.



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## Notes to the Consolidated Financial Statements

## 4. Property, Plant and Equipment

(Millions)	Useful Lives (years)	2013	2012
Land and land improvements	5-30	\$473	\$504
Buildings	20-40	1,593	1,568
Machinery and equipment	5-25	4,513	5,952
Other	3-20	743	735
Construction in progress		359	271
Total <sup>(1)</sup>		\$7,681	\$9,030
Less: accumulated depreciation		\$4,805	\$6,142
Net		\$2,876	\$2,888

(1) Interest capitalized in 2013, 2012 and 2011 was \$10 million, \$8 million and \$9 million, respectively.

## 5. Investments

(Millions)	2013	2012
Investments in equity affiliates	\$245	\$262
Marketable equity securities - Trading (See Note 13)	70	60
Other	78	100
Total	\$393	\$422

The Company's investments in equity affiliates are comprised principally of 50% ownership interests in a number of joint ventures that manufacture and sell coatings, glass and chemicals products, the most significant of which produce fiber glass products and are located in Asia. The Company's investments in and advances to equity affiliates also include its approximate 40% ownership interest in Pittsburgh Glass Works L.L.C. ("PGW"), which had a carrying value of \$30 million and \$33 million at December 31, 2013 and December 31, 2012, respectively. In April 2011, the Company received \$168 million from PGW, which was comprised of the repayment of \$90 million of notes receivable from PGW and a \$78 million return of capital.

Until January 28, 2013, PPG held a 50% ownership interest in RS Cogen, LLC, which toll produced electricity and steam primarily for PPG's former Lake Charles, La. commodity chemicals facility and its joint venture partner under take-or-pay contracts with terms that extended to 2022. On January 28, 2013, PPG's investment in R.S. Cogen and its future purchase obligations under the take-or-pay commitments were transferred with the separation of its commodity chemicals business and the merger of the subsidiary holding the PPG commodity chemicals business with a subsidiary of Georgia Gulf. Refer to Note 22, "Separation and Merger Transaction."

In July 2012, PPG and Asian Paints Ltd. ("Asian Paints") expanded their coatings operations in India through the creation of a new joint venture and the expansion of the operations of an existing joint venture. PPG gained effective management control of the existing joint venture, with Asian Paints obtaining effective management control of the newly formed joint venture. The accounting for the changes to the existing joint venture

resulted in recording assets at their fair values, including "Goodwill" of \$22 million and "Identifiable intangible assets" of \$12 million. Also, as PPG now consolidates the existing joint venture that is under its control, an amount has been recorded within "Noncontrolling interests" of \$49 million for the portion of the net assets of this entity owned by Asian Paints.

PPG's share of undistributed net earnings of equity affiliates was \$98 million and \$79 million as of December 31, 2013 and 2012, respectively. Dividends received from equity affiliates were \$9 million, \$12 million and \$19 million in 2013, 2012 and 2011, respectively.

## 6. Goodwill and Other Identifiable Intangible Assets

The change in the carrying amount of goodwill attributable to each reportable business segment for the years ended December 31, 2013 and 2012 was as follows:

(Millions)	Performance Coatings	Industrial Coatings	Architectural Coatings— EMEA	Optical and Specialty Materials	Glass	Commodity Chemicals	Total
Balance, Jan. 1, 2012	\$1,139	\$484	\$933	\$48	\$50	\$6	\$2,660
Goodwill from acquisitions	22	18	18	—	—	—	58
Foreign currency translation	12	10	19	—	2	—	43
Balance, Dec. 31, 2012	\$1,173	\$512	\$970	\$48	\$52	\$6	\$2,761
Goodwill from acquisitions	235	4	—	—	—	—	239
Goodwill reduction due to Separation (See Note 22)	—	—	—	—	—	(6)	(6)
Foreign currency translation	(25)	9	28	2	—	—	14
Balance, Dec. 31, 2013	\$1,383	\$525	\$998	\$50	\$52	\$—	\$3,008

The carrying amount of acquired trademarks with indefinite lives as of December 31, 2013 and 2012 totaled \$499 million and \$324 million, respectively.

The Company's identifiable intangible assets with finite lives are being amortized over their estimated useful lives and are detailed below.

(Millions)	Dec. 31, 2013			Dec. 31, 2012		
	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Acquired technology	\$522	\$(372)	\$150	\$516	\$(342)	\$174
Customer-related intangibles	1,177	(557)	620	1,010	(491)	519
Tradenames	127	(61)	66	120	(57)	63
Other	30	(26)	4	34	(29)	5
Balance	\$1,856	\$(1,016)	\$840	\$1,680	\$(919)	\$761

Aggregate amortization expense was \$119 million, \$109 million and \$120 million in 2013, 2012 and 2011, respectively. The estimated future amortization expense of identifiable

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## Notes to the Consolidated Financial Statements

intangible assets per year is approximately \$120 million during 2014 and 2015, approximately \$101 million during 2016, approximately \$93 million in 2017 and approximately \$91 million in 2018.

## 7. Business Restructuring

In July 2013, the Company approved a business restructuring plan that resulted in a pretax charge of \$98 million. The approved actions are focused on achieving cost synergies, through improved productivity and efficiency, related to the 2013 North American architectural coatings acquisition, including actions in the acquired business, as well as in PPG's legacy architectural coatings businesses. Additionally, smaller targeted actions were approved for businesses where market conditions remain very challenging, most notably protective and marine coatings and certain European businesses such as architectural coatings and fiber glass. The restructuring actions will impact 1,436 employees. The charge of \$98 million is comprised of employee severance and other costs of approximately \$93 million and asset write-offs of approximately \$5 million. Cash payouts for certain liabilities were \$27 million in 2013 and are expected to approximate \$60 million in 2014, with the remainder of the cash spending to occur in 2015. All actions in the restructuring plan are expected to be completed by the end of 2015.

The following table summarizes the 2013 restructuring charge and the activity during the year ended December 31, 2013:

(Millions, except no. of employees)	Severance and Other Costs	Asset Write-offs	Total Reserve	Employees Impacted
Performance Coatings	\$51	\$4	\$55	1,016
Industrial Coatings	14	—	14	165
Architectural Coatings - EMEA	23	1	24	237
Glass	4	—	4	14
Corporate	1	—	1	4
Total	\$93	\$5	\$98	1,436
2013 activity	(27	) (5	) (32	) (645
Foreign currency impact	4	—	4	—
Balance as of December 31, 2013	\$70	\$—	\$70	791

In March 2012, the Company approved a business restructuring plan that resulted in a charge of \$208 million. The approved actions were taken to reduce the Company's cost structure, primarily due to continuing weak economic conditions in Europe and in the commercial and residential construction markets in the U.S. and Europe. As part of this restructuring plan, PPG closed several laboratory, warehouse and distribution facilities and small production units and reduced staffing. The restructuring impacted a number of businesses globally, primarily the global architectural businesses and general and administrative functions in Europe.

The charge of \$208 million was comprised of employee severance and other cash costs of \$160 million, asset write-offs of \$53 million, and a net pension curtailment gain of \$5 million.

In the fourth quarter of 2012, adjustments of approximately \$12 million were recorded to reduce the restructuring reserve established in the first quarter of 2012 to reflect changes in the estimated cost to complete these actions. Also in the fourth quarter of 2012, some additional restructuring actions were approved and charges of approximately \$12 million for the cost of these actions were recorded. The additional actions increased the number of employees impacted by 273. As of December 31, 2013, actions in the restructuring plan are substantially complete and are expected to be fully completed in the first half of 2014.

The following table summarizes the 2012 restructuring charge and the activity in the restructuring reserve during the year ended December 31, 2013:

(Millions, except no. of employees)	Severance and Other	Pension Curtailment	Asset Write-offs	Total Reserve	Employees Impacted
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	Costs	(Gains)/Losses				
Performance Coatings	\$55	\$ 1	\$12	\$68		867
Industrial Coatings	38	(1 )	8	45		394
Architectural Coatings - EMEA	61	(5 )	3	59		881
Optical & Specialty Materials	2	—	30	32		50
Glass	3	—	—	3		36
Corporate	1	—	—	1		4
Total	\$160	\$ (5 )	\$53	\$208		2,232
2012 activity	(83 )	) 5	(53 )	(131 )	)	(1,631 )
Foreign currency impact	(2 )	) —	—	(2 )	)	—
Balance as of December 31, 2012	\$75	\$ —	\$—	\$75		601
2013 activity	(57 )	) —	—	(57 )	)	(584 )
Foreign currency impact	(3 )	) —	—	(3 )	)	—
Balance as of December 31, 2013	\$15	\$ —	\$—	\$15		\$17

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## Notes to the Consolidated Financial Statements

## 8. Debt and Bank Credit Agreements and Leases

(Millions)	2013	2012
5.75% notes, due 2013 <sup>(1)</sup>	\$—	\$600
3 <sup>7</sup> / <sub>8</sub> % notes, due 2015 (€300)	413	395
1.9 % notes, due 2016 <sup>(1)</sup>	249	249
7 <sup>3</sup> / <sub>8</sub> % notes, due 2016 <sup>(1)</sup>	146	146
6 <sup>7</sup> / <sub>8</sub> % notes, due 2017	74	74
6.65% notes, due 2018	700	700
7.4% notes, due 2019	198	198
3.6% notes, due 2020	495	495
9% non-callable debentures, due 2021 <sup>(1)</sup>	149	149
2.70% notes, due 2022	400	400
7.70% notes, due 2038	249	249
5.5% notes, due 2040	248	248
Impact of derivatives on debt <sup>(1)</sup>	21	31
Various other non-U.S. debt, weighted average 0.7% as of December 31, 2013 and 3.4% of December 31, 2012.	4	5
Capital lease obligations	30	32
Total	3,376	3,971
Less payments due within one year	4	603
Long-term debt	\$3,372	\$3,368

PPG entered into several interest rate swaps which had the effect of converting fixed rate notes to variable rates, based on the three-month London Interbank Offered Rate (LIBOR). There were no interest rate swaps outstanding related to these instruments as of December 31, 2013 and 2012. The impact of the derivatives on debt represents (1) the fair value adjustment of the debt while the interest rate swaps were outstanding, which is being amortized as a reduction to interest expense over the remaining term of the debt. The weighted average effective interest rate for these borrowings, including the effects of the swaps, was 4.1% and 4.6% for the years ended December 31, 2013 and 2012, respectively. Refer to Note 10 for additional information.

Aggregate maturities of long-term debt during the next five years are (in millions) \$4 in 2014, \$421 in 2015, \$400 in 2016, \$77 in 2017, and \$702 in 2018.

In March 2013, the Company repaid the \$600 million of 5.75% notes due March 15, 2013 (the "2013 Notes"). In September 2012, PPG entered into a five-year credit agreement with several banks and financial institutions (the "Credit Agreement"). The Credit Agreement provides for a \$1.2 billion unsecured revolving credit facility. In connection with entering into this Credit Agreement, the Company terminated its existing \$1.2 billion revolving credit facility that was scheduled to expire in August 2013. There was no outstanding amount due under this revolving facility at the time of its termination. The Company has the ability to increase the size of the Credit Agreement by up to an additional \$300 million, subject to the receipt of lender commitments and other conditions. The Credit Agreement will terminate and all amounts outstanding thereunder will be due and payable on September 12, 2017, although under circumstances specified in the Credit Agreement and subject to the lenders' approval, the Company may make one request to extend such termination date by one year with respect to the approving lenders. The Company has the right, subject to certain conditions set forth in the Credit Agreement, to designate

certain subsidiaries of the Company as borrowers under the Credit Agreement. In connection with any such designation, the Company is required to guarantee the obligations of any such subsidiaries under the Credit Agreement. There were no amounts outstanding under the credit agreement at December 31, 2013; however, the available borrowing rate on a one month, U.S. dollar denominated borrowing would have been 0.67%.

Borrowings under the Credit Agreement may be made in U.S. dollars or in euros. The Credit Agreement provides that loans will bear interest at rates based, at the Company's option, on one of two specified base rates plus a margin based on certain formulas defined in the Credit Agreement. Additionally, the Credit Agreement contains a Commitment Fee, as defined in the Credit Agreement, on the amount of unused commitments under the Credit Agreement ranging from 0.080% to 0.225% per annum. The applicable date and the Commitment Fee will be determined with reference to the pricing grid set forth in the Credit Agreement referencing the ratings established by Standard & Poor's Financial Services LLC and Moody's Investor Service Inc. for the Company's non-credit enhanced, long-term, senior, unsecured debt. The average Commitment Fee in 2013 was 0.125% and PPG is committed to pay 0.125% in 2014.

The Credit Agreement contains usual and customary restrictive covenants for facilities of its type, which include, with specified exceptions, limitations on the Company's ability to create liens or other encumbrances, to enter into sale and leaseback transactions and to enter into consolidations, mergers or transfers of all or substantially all of its assets. The Credit Agreement maintains the same restrictive covenant as the prior revolving credit facility whereby the Company must maintain a ratio of Total Indebtedness to Total Capitalization, as defined in the Credit Agreement, of 60% or less. As of December 31, 2013, total indebtedness was 36% of the Company's total capitalization.

As of December 31, 2013, PPG was in full compliance with the restrictive covenants under its various credit agreements, loan agreements and indentures.

The Credit Agreement also contains customary events of default, including the failure to make timely payments when due under the Credit Agreement or other material indebtedness, the failure to satisfy covenants contained in the Credit Agreement, a change in control of the Company and specified events of bankruptcy and insolvency that would permit the lenders to accelerate the repayment of any loans.

Additionally, substantially all of the Company's debt agreements contain customary cross-default provisions. Those provisions generally provide that a default on a debt service payment of \$10 million or more for longer than the grace period provided (usually 10 days) under one agreement may result in an event of default under other agreements.

None of the Company's primary debt obligations are secured or guaranteed by the Company's affiliates.

On July 31, 2012, PPG completed a public offering of \$400 million in aggregate principal amount of its 2.70% Notes due

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## Notes to the Consolidated Financial Statements

2022 (the "2022 Notes"). The 2022 Notes were offered by the Company pursuant to its existing shelf registration statement and pursuant to an indenture dated as of March 18, 2008 (the "Original Indenture") between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee (the "Trustee"), as supplemented by a first supplemental indenture dated as of March 18, 2008 between the Company and the Trustee (the "First Supplemental Indenture"), a second supplemental indenture dated as of November 12, 2010 between the Company and the Trustee (the "Second Supplemental Indenture") and a third supplemental indenture dated as of August 3, 2011 between the Company and the Trustee (the "Third Supplemental Indenture" and, together with the Original Indenture, the First Supplemental Indenture and the Second Supplemental Indenture, the "Indenture"). The Company may issue additional debt from time to time pursuant to the Original Indenture. The Indenture governing these notes contains covenants that limit the Company's ability to, among other things, incur certain liens securing indebtedness, engage in certain sale-leaseback transactions, and enter into certain consolidations, mergers, conveyances, transfers or leases of all or substantially all the Company's assets. The terms of these notes also require the Company to make an offer to repurchase the Notes upon a Change of Control Triggering Event (as defined in the Second Supplemental Indenture) at a price equal to 101% of their principal amount plus accrued and unpaid interest.

The proceeds from this offering of \$397 million, net of discount and issuance costs, were used to repay a portion of the 2013 Notes. The discount and issuance costs related to the 2022 Notes, which totaled \$3 million, is being amortized to interest expense over the life of the 2022 Notes. Concurrently with the issuance of the 2022 Notes, PPG settled forward starting swaps with a payment of \$121 million on July 30, 2012. This loss is being amortized to interest expense over the remaining term of the notes, resulting in an effective interest rate of 5.8%. (Refer to Note 10, "Derivative Financial Instruments and Hedge Activities" for additional information).

In December 2012, the Company assumed \$120 million of debt in the Dyrup acquisition and repaid \$119 million of that debt, and repaid the \$71 million of 6.875% notes upon their maturity.

In June 2011, the Company repaid a \$400 million three year, unsecured term loan, which had a scheduled maturity date of June 2012. There was no prepayment penalty. The interest rate was variable based on a spread over LIBOR. This term loan was repaid using a portion of the proceeds from our November 2010 \$1 billion debt issuance.

PPG's non-U.S. operations have uncommitted lines of credit totaling \$565 million of which \$25 million was used as of December 31, 2013. These uncommitted lines of credit are subject to cancellation at any time and are generally not subject to any commitment fees.

Short-term debt outstanding as of December 31, 2013 and 2012, was as follows:

(Millions)	2013	2012
Various, weighted average 3.55% as of Dec. 31, 2013 and 2.27% as of December 31, 2012	\$30	\$39
Total	\$30	\$39

Interest payments in 2013, 2012 and 2011 totaled \$201 million, \$219 million and \$212 million, respectively.

Rental expense for operating leases was \$264 million, \$212 million and \$211 million in 2013, 2012 and 2011, respectively. The primary leased assets include paint stores, transportation equipment, warehouses and other distribution facilities, and office space, including the Company's corporate headquarters located in Pittsburgh, Pa.

Minimum lease commitments for operating leases that have initial or remaining lease terms in excess of one year are as follows:

(Millions)	As of December 31, 2013
2014	\$216
2015	175
2016	139
2017	113
2018	90

Income from discontinued operations, net of tax includes \$1 million, \$21 million and \$38 million of rental expense for operating leases in 2013, 2012 and 2011, respectively.

The Company had outstanding letters of credit and surety bonds of \$110 million and \$119 million as of December 31, 2013 and 2012, respectively. The letters of credit secure the Company's performance to third parties under certain self-insurance programs and other commitments made in the ordinary course of business.

As of December 31, 2013 and 2012, guarantees outstanding were \$51 million and \$96 million, respectively. The guarantees relate primarily to debt of certain entities in which PPG has an ownership interest and selected customers of certain of the Company's businesses. A portion of such debt is secured by the assets of the related entities. The carrying values of these guarantees were \$1 million and \$11 million as of December 31, 2013 and 2012, respectively, and the fair values were \$3 million and \$11 million, as of December 31, 2013 and 2012, respectively. The fair value of each guarantee was estimated by comparing the net present value of two hypothetical cash flow streams, one based on PPG's incremental borrowing rate and the other based on the borrower's incremental borrowing rate, as of the effective date of the guarantee. Both streams were discounted at a risk free rate of return. The Company does not believe any loss related to these letters of credit, surety bonds or guarantees is likely.



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## 9. Fair Value Measurement

The carrying value of cash equivalents, short-term investments, cash held in escrow, marketable equity securities, company-owned life insurance and short-term debt instruments approximate their fair value at December 31, 2013 and 2012.

PPG follows a fair value measurement hierarchy to measure its assets and liabilities. The Company's financial assets and liabilities are measured using inputs from the following three levels.

Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets and liabilities that the Company has the ability to access at the measurement date. Level 1 inputs are considered to be the most reliable evidence of fair value as they are based on unadjusted quoted market prices from various financial information service providers and securities exchanges.

Level 2 inputs are directly or indirectly observable prices that are not quoted on active exchanges, which include quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the asset or liability and inputs that are derived principally from or corroborated by observable market data by correlation or other means. The fair values of these derivative instruments reflect the contractual terms of the derivatives, including the period to maturity, and uses observable market-based inputs, including forward curves.

Level 3 inputs are unobservable inputs employed for measuring the fair value of assets or liabilities. The Company does not have any recurring financial assets or liabilities that are recorded in its consolidated balance sheets as of December 31, 2013 and 2012 that are classified as Level 3 inputs.

Long-term debt (excluding capital lease obligations), had carrying and fair values totaling \$3,346 million and \$3,683 million, respectively, as of December 31, 2013. Long-term debt (excluding capital lease obligations), had carrying and fair values totaling \$3,939 million and \$4,484 million, respectively, as of December 31, 2012. The fair values of the debt instruments were determined using Level 2 inputs based on discounted cash flows and interest rates then currently available to the Company for instruments of the same remaining maturities.

Assets and liabilities reported at fair value on a recurring basis:

(Millions)	December 31, 2013		
	Level 1	Level 2	Level 3
Assets:			
Short-term investments:			
Commercial paper and certificates of deposit	\$—	\$50	\$—
Other current assets:			
Marketable equity securities	5	—	—
Foreign currency contracts	—	25	—
Equity forward arrangement	—	207	—
Investments:			
Marketable equity securities	70	—	—
Other assets:			
Foreign currency contracts	—	2	—
Liabilities:			
Accounts payable and accrued liabilities:			
Foreign currency contracts	—	7	—
Other liabilities:			
Cross currency swaps	—	120	—

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Foreign currency contracts	—	11	—
	December 31, 2012		
(Millions)	Level 1	Level 2	Level 3
Assets:			
Short-term investments:			
Commercial paper and certificates of deposit	\$—	\$455	\$—
Other current assets:			
Marketable equity securities	5	—	—
Foreign currency contracts	—	3	—
Equity forward arrangement	—	130	—
Investments:			
Marketable equity securities	60	—	—
Liabilities:			
Accounts payable and accrued liabilities:			
Foreign currency contracts	—	1	—
Other liabilities:			
Cross currency swaps	—	95	—

Assets and liabilities reported at fair value on a nonrecurring basis:

There were no significant adjustments to the fair value of nonmonetary assets or liabilities during the years ended December 31, 2013, 2012 and 2011.

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10. Derivative Financial Instruments and Hedging Activities

The Company has exposure to market risk from changes in foreign currency rates and interest rates. As a result, certain derivative financial instruments may be used when available on a cost effective basis to hedge the underlying economic exposure. Certain of these instruments qualify as cash flow, fair value and net investment hedges upon meeting the requisite criteria, including effectiveness of offsetting hedge exposures. Changes in the fair value of derivatives that do not qualify for hedge accounting are recognized in income from continuing operations in the period incurred.

PPG's policies do not permit speculative use of derivative financial instruments. PPG enters into derivative financial instruments with high credit quality counterparties and diversifies its positions among such counterparties in order to reduce its exposure to credit losses. The Company did not realize a credit loss on derivatives during the three-year period ended December 31, 2013.

All of PPG's outstanding derivative instruments are subject to accelerated settlement in the event of PPG's failure to meet its debt obligations or payment obligations under the terms of the instruments' contractual provisions. In addition, should the Company be acquired and its payment obligations under the derivative instruments' contractual arrangements not be assumed by the acquirer, or should PPG enter into bankruptcy, receivership or reorganization proceedings, the instruments would also be subject to accelerated settlement.

No derivative instrument initially designated as a hedge instrument was undesignated or discontinued as a hedging instrument during the three-year period ended December 31, 2013. Additionally, no amounts deferred in AOCI were reclassified to income from continuing operations during the three-year period ended December 31, 2013 related to hedges of anticipated transactions that were no longer expected to occur.

Refer to Note 9, "Fair Value Measurement," for additional disclosures related to the Company's derivative instruments outstanding as of December 31, 2013 and 2012.

Fair Value Hedges:

PPG designates forward currency contracts as hedges against the Company's exposure to future changes in fair value related to certain firm sales commitments denominated in foreign currencies. As of December 31, 2013, these contracts converted \$28 million to the South Korean won over the 24 month period ending December 31, 2015. As of December 31, 2012, contracts converted \$56 million to the South Korean won over the 21 month period ending September 30, 2014. As of December 31, 2013 and 2012, the fair value of the contracts was a net asset of \$1 million and \$3 million, respectively.

Interest rate swaps are used from time to time to manage the Company's exposure to changing interest rates. During the year ended December 31, 2012, PPG settled all outstanding interest rate swaps, which had converted \$445 million of fixed rate debt to variable rate debt, and received \$29 million from such settlements.

PPG has entered into renewable equity forward arrangements to hedge the impact to PPG's income from continuing operations for changes in the fair value of 1,388,889 shares of PPG stock that are to be contributed to the asbestos settlement trust as discussed in Note 14, "Commitments and Contingent Liabilities." This financial instrument is recorded at fair value as an asset or liability and changes in the fair value of this financial instrument are reflected in the "Asbestos settlement – net" caption of the accompanying consolidated statement of income. The total principal amount payable for these shares is \$62 million. PPG will pay to the counterparty interest based on the principal

amount and the counterparty will pay to PPG an amount equal to the dividends paid on these shares during the period this financial instrument is outstanding. The difference between the principal amount and any amounts related to unpaid interest or dividends and the current market price for these shares, adjusted for credit risk, represents the fair value of the financial instrument as well as the amount that PPG would pay or receive if the counterparty chose to net settle the financial instrument. Alternatively, the bank may, at its option, require PPG to purchase the shares covered by the arrangement at the principal amount adjusted for unpaid interest and dividends as of the date of settlement. As of December 31, 2013 and 2012, the fair value of this contract was an asset of \$207 million and \$130 million, respectively.

**Cash Flow Hedges:**

PPG designates certain forward currency contracts and forward starting swaps as cash flow hedges of the Company's exposure to variability in exchange rates on intercompany and third party transactions denominated in foreign currencies and interest rates. As of December 31, 2013 and 2012, the fair value of the forward currency contracts was a net asset of \$8 million and a net liability of \$1 million, respectively.

The Company entered into forward starting swaps in 2009 and 2010 to effectively lock-in a fixed interest rate for future debt refinancings with an anticipated term of ten years based on the ten year swap rate, to which was added a corporate spread. The swaps had a total notional amount of \$400 million and were settled on July 30, 2012, resulting in a cash payment of \$121 million. As of December 31, 2013, the amount of loss recorded in AOCI was \$104 million, which is being amortized to interest expense over the remaining term of the ten-year debt that was issued on July 31, 2012.

Natural gas swaps have historically been used to manage the Company's exposure to fluctuating natural gas prices. As of December 31, 2013 and 2012, there were no natural gas swap contracts outstanding because the separation and merger of the

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## Notes to the Consolidated Financial Statements

former commodity chemicals business (See Note 22, "Separation and Merger Transaction") significantly reduced PPG's annual natural gas usage.

## Net Investment Hedges:

PPG uses cross currency swap contracts to hedge certain of its net investments in European operations. In 2008, PPG entered into U.S. dollar to euro cross currency swap contracts with a total notional amount of \$1.16 billion, of which \$600 million were to settle on March 15, 2013 and \$560 million were to settle on March 15, 2018. In June 2012, \$600 million of swaps, with a settlement date of March 15, 2013, were settled with PPG receiving \$1 million in cash. On settlement of the remaining outstanding contracts, PPG will receive \$560 million U.S. dollars and pay euros to the counterparties to the contracts. During the term of these contracts, PPG will receive semiannual payments in March and September of each year based on U.S. dollar, long-term fixed interest rates, and PPG will make annual payments in March of each year to the counterparties based on euro, long-term fixed interest rates. As of December 31, 2013 and December 31, 2012, the fair value of these contracts was a net liability of \$120 million and \$95 million, respectively.

As of December 31, 2013 and 2012, PPG designated €300 million euro-denominated borrowings as a hedge of a portion of PPG's net investment in the Company's European operations.

As of December 31, 2013 and December 31, 2012, the Company had accumulated pretax unrealized translation losses in AOCI of \$35 million and accumulated pretax unrealized translation gains of \$9 million, respectively, related to both the euro-denominated borrowings and the cross currency swaps that have been designated as hedges of net investments.

The following tables provide details for the years ended December 31, 2013, 2012 and 2011 related to PPG's hedging activities. All dollar amounts are pretax.

December 31, 2013

Hedge Type (Millions)	Gain (Loss) Deferred in OCI	Gain (Loss) Recognized Amount	Caption
Fair Value			
Foreign currency contracts	Not applicable	\$1	Sales
Equity forward arrangements	Not applicable	77	Asbestos - net
Total Fair Value		\$78	
Cash Flow			
Forward starting swaps		\$(12	) Interest expense
Foreign currency contracts <sup>(a)</sup>	33	33	Other charges
Total Cash Flow	\$33	\$21	
Net Investment			
Cross currency swaps	\$(28	)	\$— Other charges
Foreign denominated debt	(16	)	Other charges
Total Net Investment	\$(44	)	\$—

(a) The ineffective portion related to this item was \$8 million of expense.

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December 31, 2012

Hedge Type (Millions)	Gain (Loss) Deferred in OCI	Gain (Loss) Recognized	
		Amount	Caption
<b>Fair Value</b>			
Foreign currency contracts	Not applicable	\$ 1	Sales
Equity forward arrangements	Not applicable	74	Asbestos - net
Total Fair Value		\$75	
<b>Cash Flow</b>			
Natural gas swaps	\$ (2)	) \$ (11)	) Cost of sales and Income from Discontinued operations, net of tax
Interest rate swaps	(1)	) (2)	) Income from Discontinued operations, net of tax
Forward starting swaps <sup>(a)</sup>	(26)	) (5)	) Interest expense
Foreign currency contracts <sup>(b)</sup>	(9)	) (9)	) Other charges
Total Cash Flow	\$ (38)	) \$ (27)	)
<b>Net Investment</b>			
Cross currency swaps	\$ 3	\$ —	Other charges
Foreign denominated debt	(7)	)	Other charges
Total Net Investment	\$ (4)	) \$ —	

(a) The ineffective portion related to this item was \$4 million of expense.

(b) The ineffective portion related to this item was \$8 million of expense.

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December 31, 2011			
Hedge Type (Millions)	Gain (Loss) Deferred in OCI	Gain (Loss) Recognized Amount	Caption
Fair Value			
Interest rate swaps	Not applicable	\$ 16	Interest expense
Foreign currency contracts	Not applicable	2	Sales
Equity forward arrangements	Not applicable	1	Asbestos - net
Total Fair Value		\$ 19	
Cash Flow			
Natural gas swaps	\$(10 )	\$(32 )	Cost of sales and Income from Discontinued operations, net of tax
Interest rate swaps	(2 )	(2 )	Income from Discontinued operations, net of tax
Forward starting swaps	(73 )	—	Interest expense
Foreign currency contracts <sup>(a)</sup>	6	6	Other charges
Total Cash Flow	\$(79 )	\$(28 )	
Net Investment			
Cross currency swaps	\$ 34	\$—	Other charges
Foreign denominated debt	13		Other charges
Total Net Investment	\$ 47	\$—	

(a) The ineffective portion related to this item was \$6 million of expense.

## 11. Earnings Per Common Share

Earnings per common share calculated for the years ended December 31, 2013, 2012 and 2011 are as follows:

(Millions, except per share amounts)	2013	2012	2011
Earnings per common share (attributable to PPG)			
Income from continuing operations, net of tax	\$ 1,034	\$ 726	\$ 858
Income from discontinued operations, net of tax	\$ 2,197	\$ 215	\$ 237
Net income (attributable to PPG)	\$ 3,231	\$ 941	\$ 1,095
Weighted average common shares outstanding	143.4	153.4	157.3
Earnings per common share (attributable to PPG):			
Income from continuing operations, net of tax	\$ 7.21	\$ 4.73	\$ 5.45
Income from discontinued operations, net of tax	\$ 15.32	\$ 1.40	\$ 1.51
Net income (attributable to PPG)	\$ 22.53	\$ 6.13	\$ 6.96
Earnings per common share - assuming dilution (attributable to PPG)			
Income from continuing operations, net of tax	\$ 1,034	\$ 726	\$ 858
Income from discontinued operations, net of tax	\$ 2,197	\$ 215	\$ 237
Net income (attributable to PPG)	\$ 3,231	\$ 941	\$ 1,095

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Weighted average common shares outstanding	143.4	153.4	157.3
Effect of dilutive securities:			
Stock options	0.8	0.8	1.1
Other stock compensation plans	0.9	0.9	0.9
Potentially dilutive common shares	1.7	1.7	2.0
Adjusted weighted average common shares outstanding	145.1	155.1	159.3
Earnings per common share - assuming dilution (attributable to PPG)			
Income from continuing operations, net of tax	\$7.13	\$4.69	\$5.40
Income from discontinued operations, net of tax	\$15.14	\$1.37	\$1.47
Net income (attributable to PPG)	\$22.27	\$6.06	\$6.87

There were no outstanding stock options excluded in 2013 or 2012 and there were 0.6 million outstanding stock options excluded in 2011 from the computation of diluted earnings per common share due to their anti-dilutive effect.

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## 12. Income Taxes

The provision for income taxes by taxing jurisdiction and by significant components consisted of the following:

(Millions)	2013	2012	2011
Current income tax expense			
U.S. federal	153	228	107
U.S. state and local	14	15	8
Foreign	202	190	164
Total current income tax	369	433	279
Deferred income tax expense			
U.S. federal	(29	) (150	) (3
U.S. state and local	(6	) (14	) 1
Foreign	(1	) (48	) (17
Total deferred income tax	(36	) (212	) (19
Total	\$333	\$221	\$260

A reconciliation of the statutory U.S. corporate federal income tax rate to the Company's effective tax rate follows:

	2013	2012	2011
U.S. federal income tax rate	35.0	% 35.0	% 35.0
Changes in rate due to:			
U.S. State and local taxes	0.8	0.6	0.7
U.S. tax benefit on foreign dividends	(2.7	) (1.5	) (1.0
Taxes on foreign earnings	(7.8	) (9.7	) (10.9
PPG dividends paid to the ESOP	(0.4	) (0.2	) (0.4
U.S. tax incentives	(2.4	) (1.9	) (1.8
Significant audit settlements	—	—	(1.4
Other	(0.1	) (1.4	) 1.1
Effective income tax rate	22.4	% 20.9	% 21.3

In 2013, U.S. tax incentives include the R&D credit and the U.S. manufacturing deduction. The increase of the impact of U.S. tax incentives in 2013 is due to an increase in the manufacturing deduction and the R&D credit, including the retroactive benefit of the reinstatement of the 2012 R&D credit in January 2013. These incentives more than offset the absence of the Medicare Part D deduction in 2013.

The 2013 and 2012 increase in the U.S. tax benefit on foreign dividends was mainly due to repatriation of high taxed foreign earnings.

Income before income taxes of the Company's U.S. operations for 2013, 2012 and 2011 was \$569 million, \$328 million and \$386 million, respectively. Income before income taxes of the Company's foreign operations for 2013, 2012 and 2011 was \$920 million, \$729 million and \$836 million, respectively.

Income tax payments in 2013, 2012 and 2011 totaled \$319 million, \$503 million and \$353 million, respectively.

Deferred income taxes are provided for the effect of temporary differences that arise because there are certain items treated differently for financial accounting than for income tax reporting purposes. The deferred tax assets and liabilities are determined by applying the enacted tax rate in the year in which the temporary difference is expected to reverse. Net deferred income tax assets and liabilities as of December 31 were as follows:

(Millions)	2013	2012
Deferred income tax assets related to		
Employee benefits	\$706	\$1,000
Contingent and accrued liabilities	613	598
Operating loss and other carry-forwards	269	223

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Inventories	31	21
Property	4	5
Derivatives	—	38
Other	47	41
Valuation allowance	(136	) (138
Total	1,534	1,788
Deferred income tax liabilities related to		
Property	310	405
Intangibles	450	452
Employee benefits	55	69
Derivatives	41	—
Other	21	3
Total	877	929
Deferred income tax assets – net	\$657	\$859

As of December 31, 2013, subsidiaries of the Company had available net operating loss carryforwards of approximately \$632 million for income tax purposes, of which approximately \$516 million has an indefinite expiration. The remaining \$116 million expires between the years 2014 and 2028. The tax effected amount of the net operating loss carryforwards is \$182 million.

As of December 31, 2012, subsidiaries of the Company had available net operating loss carryforwards of approximately \$611 million for income tax purposes, of which approximately \$529 million had an indefinite expiration. The remaining \$82 million expires between the years 2013 and 2027. The tax effected amount of the net operating loss carryforwards was \$177 million.

A valuation allowance has been established for carry-forwards at December 31, 2013 and 2012, when the ability to utilize them is not likely.

The Company has \$3,900 million and \$3,476 million of undistributed earnings of non-U.S. subsidiaries as of December 31, 2013 and December 31, 2012, respectively. These amounts relate to approximately 200 subsidiaries in more than 60 taxable jurisdictions. No significant deferred U.S. income taxes have been provided on these earnings as they are considered to be reinvested for an indefinite period of time or will be repatriated when it is tax effective to do so. The Company estimates

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repatriation of undistributed earnings of non-U.S. subsidiaries as of December 31, 2013 and December 31, 2012 would have resulted in a U.S. tax cost of approximately \$250 million and \$110 million, respectively.

The Company files federal, state and local income tax returns in numerous domestic and foreign jurisdictions. In most tax jurisdictions, returns are subject to examination by the relevant tax authorities for a number of years after the returns have been filed. The Company is no longer subject to examinations by tax authorities in any major tax jurisdiction for years before 2006. Additionally, the Internal Revenue Service has completed its examination of the Company's U.S. federal income tax returns filed for years through 2010. The examination of the Company's U.S. federal income tax return for 2011 is currently underway and is expected to be finalized during 2014.

A reconciliation of the total amounts of unrecognized tax benefits (excluding interest and penalties) as of December 31 follows:

(Millions)	2013	2012	2011
Balance at January 1	\$82	\$107	\$111
Additions based on tax positions related to the current year	12	12	15
Additions for tax positions of prior years	9	2	17
Reductions for tax positions of prior years	(10)	(12)	(19)
Pre-acquisition unrecognized tax benefits	—	2	—
Reductions for expiration of the applicable statute of limitations	(10)	(6)	(7)
Settlements	—	(23)	(8)
Foreign currency translation	2	—	(2)
Balance at December 31	\$85	\$82	\$107

The Company expects that any reasonably possible change in the amount of unrecognized tax benefits in the next 12 months would not be significant.

The total amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate was \$81 million as of December 31, 2013.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits in income tax expense. As of December 31, 2013, 2012 and 2011, the Company had liabilities for estimated interest and penalties on unrecognized tax benefits of \$9 million, \$10 million and \$15 million, respectively. The Company recognized \$2 million and \$5 million of income in 2013 and 2012, respectively, related to the reduction of estimated interest and penalties. The Company recognized no income or expense for estimated interest and penalties during the year ended December 31, 2011.

## 13. Pensions and Other Postretirement Benefits

## Defined Benefit Plans

PPG has defined benefit pension plans that cover certain employees worldwide. The principal defined benefit pension plans are those in the U.S., Canada, the Netherlands and the U.K. which, in the aggregate represent approximately 91% of the projected benefit obligation at December 31, 2013, of which the U.S. defined benefit pension plans represent the majority. PPG also sponsors welfare benefit plans that provide postretirement medical and life insurance benefits for certain U.S. and Canadian employees and their dependents. These programs require retiree contributions based on retiree-selected coverage levels for certain retirees and their dependents and provide for sharing of future benefit cost increases between PPG and participants based on management discretion. The Company has the right to modify or terminate certain of these benefit plans in the future. Salaried and certain hourly employees in the U.S. hired on or after October 1, 2004, or rehired on or after October 1, 2012 are not eligible for postretirement medical benefits. Salaried employees in the U.S. hired, rehired or transferred to salaried status on or after January 1, 2006, and certain U.S. hourly employees hired in 2006 or thereafter are eligible to participate in a defined contribution

retirement plan. These employees are not eligible for defined benefit pension plan benefits.

#### Plan Design Changes

In January 2011, the Company approved an amendment to one of its U.S. defined benefit pension plans that represented about 77% of the total U.S. projected benefit obligation at December 31, 2011. Depending upon the affected employee's combined age and years of service to PPG, this change resulted in certain employees no longer accruing benefits under this plan as of December 31, 2011, while the remaining employees will no longer accrue benefits under this plan as of December 31, 2020. The affected employees will participate in the Company's defined contribution retirement plan from the date their benefit under the defined benefit plan is frozen. The Company remeasured the projected benefit obligation of this amended plan, which lowered 2011 pension expense by approximately \$12 million. The Company made similar changes to certain other U.S. defined benefit pension plans in 2011. The Company recognized a curtailment loss and special termination benefits associated with these plan amendments of \$5 million in 2011. The Company plans to continue reviewing and potentially changing other PPG defined benefit plans in the future.

#### Separation and Merger of Commodity Chemicals Business

On January 28, 2013, PPG completed the separation of its commodity chemicals business and the merger of the subsidiary holding the PPG commodity chemicals business with a subsidiary of Georgia Gulf, as discussed in Note 22, "Separation and Merger Transaction." PPG transferred the defined benefit pension plan and other postretirement benefit liabilities for the affected employees in the U.S., Canada, and Taiwan in the separation resulting in a net partial settlement loss of \$33 million

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that was recorded in the first quarter of 2013. This transaction lowered the projected benefit obligation of PPG's defined benefit pension plans by approximately \$550 million and the accumulated benefit obligation of the other postretirement benefit plans by \$165 million. PPG has transferred to Axiall pension assets of \$421 million and expects to transfer an additional \$75 million upon the completion of the calculation of the total amount required to be transferred under ERISA. These amounts are recorded in "Income from discontinued operations, net of tax" in each of these years and have been excluded from the expense disclosures in the remainder of this footnote.

**Plan Reorganization**

As a part of recently completed separation activities related to the separation and merger transaction of the former commodity chemicals business, the Company reorganized two of its U.S. defined benefit pension plans representing 92% of the total U.S. projected benefit obligation as of January 28, 2013, the date of the separation of the former commodity chemicals business and remeasurement of these pension plans, into multiple plans. The decision to reorganize these plans was finalized in August 2013. As a result of this reorganization, certain of these newly formed plans have no active participants and as such the amortization periods of the unrecognized net actuarial losses of these plans were changed to the average remaining life expectancy of the plan participants from the average remaining service period of plan participants in accordance with the accounting guidance for retirement benefits. This change reduced the Company's 2013 annual pension expense by approximately \$18 million.

**Postretirement medical**

Beginning in 2004, PPG's other postretirement benefit plan provided a retiree prescription drug benefit which was at least actuarially equivalent to Medicare Part D. Therefore, PPG received the federal subsidy provided for under the Medicare Act of 2003. The federal subsidy is not subject to U.S. federal income tax and is recorded as a reduction in annual net periodic benefit cost of other postretirement benefits. During the period from January 1, 2010 to December 31, 2012 the Company provided a self-insured plan for certain retirees and their dependents that was at least actuarially equivalent to Medicare Part D and received the subsidy under the Medicare Act of 2003 for those retirees and their dependents.

In October 2012, the Company decided, effective January 1, 2013, to move to an Employee Group Waiver Plan ("EGWP") for certain Medicare-eligible retirees and their dependents. The EGWP includes a fully-insured Medicare Part D prescription drug plan. As such, beginning in 2013 PPG was no longer eligible to receive the federal subsidy provided under the Medicare Act of 2003 for these retirees and their dependents.

The following table sets forth the changes in projected benefit obligations ("PBO") (as calculated as of December 31), plan assets, the funded status and the amounts recognized in the accompanying consolidated balance sheet for the Company's defined benefit pension and other postretirement benefit plans:

(Millions)	Pensions		Other Postretirement Benefits	
	2013	2012	2013	2012
Projected benefit obligation, January 1	\$5,784	\$5,333	\$1,362	\$1,394
Service cost	57	54	20	19
Interest cost	218	217	49	50
Plan amendments	(25 )	(2 )	(8 )	(19 )
Actuarial losses / (gains) - net	(267 )	443	(160 )	(33 )
Benefits paid	(304 )	(347 )	(60 )	(62 )
Plan transfers	327	—	40	—
Foreign currency translation adjustments	12	59	(8 )	3
Curtailment and special termination benefits	(18 )	(6 )	—	—
Impact of commodity chemicals transaction (a)	(548 )	29	(165 )	10

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Other	4	4	—	—
Projected benefit obligation, December 31	\$5,240	\$5,784	\$1,070	\$1,362
Market value of plan assets, January 1	\$4,750	\$4,382		
Actual return on plan assets	267	571		
Company contributions	174	80		
Participant contributions	2	2		
Benefits paid	(283	) (335	)	
Plan transfers	352	—		
Plan settlements	(51	) —		
Plan expenses and other-net	(2	) (1	)	
Foreign currency translation adjustments	(11	) 50		
Impact of commodity chemicals transaction	(496	) 1		
Other	(1	) —		
Market value of plan assets, December 31	\$4,701	\$4,750		
Funded Status	\$(539	) \$(1,034	) \$(1,070	) \$(1,362
Amounts recognized in the Consolidated Balance Sheet:				
Other assets (long-term)	224	27	—	—
Accounts payable and accrued liabilities	(19	) (20	) (63	) (75
Accrued pensions	(744	) (1,041	) —	—
Other postretirement benefits	—	—	(1,007	) (1,287
Net liability recognized	\$(539	) \$(1,034	) \$(1,070	) \$(1,362

(a) Amount reported in Income from discontinued operations.

The PBO is the actuarial present value of benefits attributable to employee service rendered to date, including the effects of estimated future pay increases. The accumulated benefit obligation (“ABO”) is the actuarial present value of benefits attributable to employee service rendered to date, but

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does not include the effects of estimated future pay increases. The ABO for all defined benefit pension plans as of December 31, 2013 and 2012 was \$5,064 million and \$5,517 million, respectively.

The aggregate PBO and fair value of plan assets (in millions) for the pension plans with PBO in excess of plan assets were \$2,377 and \$1,619, respectively, as of December 31, 2013, and \$5,588 and \$4,534, respectively, as of December 31, 2012. The aggregate ABO and fair value of plan assets (in millions) for the pension plans with ABO in excess of plan assets were \$2,242 and \$1,617, respectively, as of December 31, 2013, and \$5,186 and \$4,352, respectively, as of December 31, 2012.

Amounts (pretax) not yet reflected in net periodic benefit cost and included in accumulated other comprehensive loss include the following:

(Millions)	Pensions		Other Postretirement Benefits	
	2013	2012	2013	2012
Accumulated net actuarial losses	\$1,542	\$2,097	\$254	\$505
Accumulated prior service credit	(26 )	(3 )	(45 )	(45 )
Total	\$1,516	\$2,094	\$209	\$460

The accumulated net actuarial losses for pensions relate primarily to the actual return on plan assets in prior years being less than the expected return on plan assets and due to declines in the discount rate. The accumulated net actuarial losses for other postretirement benefits relate primarily to actual healthcare costs increasing at a higher rate than assumed in prior years and due to declines in the discount rate. The accumulated net actuarial losses exceed 10% of the higher of the market value of plan assets or the PBO at the beginning of the year, therefore, amortization of such excess has been included in net periodic benefit costs for pension and other postretirement benefits in each of the last three years. The amortization period is the average remaining service period of active employees expected to receive benefits unless a plan is mostly inactive in which case the amortization period is the average remaining life expectancy of the plan participants. Accumulated prior service cost (credit) is amortized over the future service periods of those employees who are active at the dates of the plan amendments and who are expected to receive benefits.

The decrease in accumulated other comprehensive loss (pretax) in 2013 relating to defined benefit pension and other postretirement benefits consists of:

(Millions)	Pensions		Other Postretirement Benefits	
	Net actuarial gain arising during the year	\$(250 )	\$(160 )	
New prior service credit	(25 )	(9 )		
Impact of curtailments	(36 )	(61 )		
Plan spinoff	(159 )	—		
Amortization of actuarial loss	(103 )	(28 )		
Amortization of prior service cost	2	10		
Foreign currency translation adjustments and other	(7 )	(3 )		
Net change	\$(578 )	\$(251 )		

The net actuarial gain arising during 2013 related to the Company's pension plans was primarily due to an increase in the discount rate. The net actuarial gain arising during 2013 related to the Company's other postretirement benefit plans was primarily due to an increase in the discount rate, demographic changes and updated claim costs.

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The estimated amounts of accumulated net actuarial loss and prior service (credit) for the defined benefit pension plans that will be amortized from accumulated other comprehensive income into net periodic benefit cost in 2014 are \$80 million and \$(3) million, respectively. The estimated amounts of accumulated net actuarial loss and prior service (credit) for the other postretirement benefit plans that will be amortized from accumulated other comprehensive (loss) income into net periodic benefit cost in 2014 are \$15 million and \$(10) million, respectively.

Net periodic benefit cost for the three years ended December 31, 2013, included the following:

(Millions)	Pensions			Other Postretirement Benefits		
	2013	2012	2011	2013	2012	2011
Service cost	\$57	\$54	\$57	\$20	\$19	\$16
Interest cost	218	217	231	49	50	55
Expected return on plan assets	(286 )	(261 )	(280 )	—	—	—
Amortization of prior service cost (credit)	(2 )	—	1	(9 )	(10 )	(10 )
Amortization of actuarial losses	102	133	106	28	31	26
Curtailments and special termination benefits	18	—	5	—	—	—
Net periodic benefit cost	\$107	\$143	\$120	\$88	\$90	\$87

Net periodic benefit cost is included in Cost of sales, exclusive of depreciation and amortization, Selling, general and administrative and Research and development in the accompanying consolidated statement of income.



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## Assumptions

The following weighted average assumptions were used to determine the benefit obligation for the Company's defined benefit pension and other postretirement plans as of December 31, 2013 and 2012:

	2013		2012	
Discount rate	4.6	%	4.1	%
Rate of compensation increase	3.5	%	4.0	%

The following weighted average assumptions were used to determine the net periodic benefit cost for the Company's defined benefit pension and other postretirement benefit plans for the three years in the period ended December 31, 2013:

	2013		2012		2011	
Discount rate	4.1	%	4.6	%	5.3	%
Expected return on assets	6.5	%	7.0	%	7.6	%
Rate of compensation increase	4.0	%	3.9	%	3.8	%

These assumptions for each plan are reviewed on an annual basis. In determining the expected return on plan asset assumption, the Company evaluates the mix of investments that comprise each plan's assets and external forecasts of future long-term investment returns. The Company compares the expected return on plan assets assumption to actual historic returns to ensure reasonability. The expected return on plan assets assumption to be used in determining 2014 net periodic pension expense will be 6.5% (7.3% for the U.S. plans).

In 2013, the Company updated the mortality table used to calculate its U.S. defined benefit pension and other postretirement benefit liabilities. Previously, the Company had used the mortality table known as RP 2000, projected to 2006 and now uses the RP 2000 table projected to 2020. This updated table reflects improvements in mortality rates.

The weighted-average healthcare cost trend rate (inflation) used for 2013 was 6.4% declining to 4.5% in the year 2024. For 2014, the assumed weighted-average healthcare cost trend rate used will be 6.3% declining to 4.5% in the year 2024. These assumptions are reviewed on an annual basis. In selecting rates for current and long-term health care cost assumptions, the Company takes into consideration a number of factors including the Company's actual health care cost increases, the design of the Company's benefit programs, the demographics of the Company's active and retiree populations and external expectations of future medical cost inflation rates. If these 2014 health care cost trend rates were increased or decreased by one percentage point per year, such increase or decrease would have the following effects:

(Millions)	One-Percentage Point	
	Increase	Decrease
Increase (decrease) in the aggregate of service and interest cost components of annual expense	\$10	\$(7)
Increase (decrease) in the benefit obligation	\$111	\$(86)

## Contributions

On August 17, 2006, the Pension Protection Act of 2006 ("PPA") was signed into law, changing the funding requirements for the Company's U.S. defined benefit pension plans beginning in 2008. In July 2012, the Moving Ahead for Progress in the 21<sup>st</sup> Century Act ("MAP-21") was signed into law. MAP-21 included discount-rate stabilization rules that reduce the funding targets required on an ERISA basis for the U.S. defined benefit pension plans. As a result, PPG did not have to make a mandatory contribution to these plans in 2013 and does not expect to have to make a mandatory contribution in 2014. PPG made voluntary contributions to these plans of \$50 million in

2013 and 2011, of which \$7 million in 2011 relates to the former commodity chemicals business. PPG did not make any contributions to these plans in 2012. PPG made contributions to its non-U.S. defined benefit pension plans of \$124 million in 2013, \$80 million in 2012, and \$70 million in 2011. PPG expects to make mandatory contributions to its non-U.S. plans in the range of \$10 million to \$25 million in 2014.

#### Benefit Payments

The estimated pension benefits to be paid under the Company's defined benefit pension plans during the next five years are (in millions) \$361 in 2014, \$296 in 2015, \$304 in 2016, \$282 in 2017 and \$289 in 2018 and are expected to aggregate \$1,059 million for the five years thereafter. The estimated other postretirement benefits to be paid annually during the 2014 - 2018 period are \$68 million and are expected to aggregate \$339 million for the five years thereafter. Beginning in 2012, the Company initiated a lump sum payout program that gave certain terminated vested participants in certain U.S. defined benefit pension plans the option to take a one-time lump sum cash payment in lieu of receiving a future monthly annuity. PPG paid approximately \$22 million and \$70

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million in 2013 and 2012, respectively, in lump sum benefits to terminated vested participants who elected to participate in the program.

**Plan Assets**

Each PPG sponsored defined benefit pension plan is managed in accordance with the requirements of local laws and regulations governing defined benefit pension plans for the exclusive purpose of providing pension benefits to participants and their beneficiaries. Investment committees comprised of PPG managers have fiduciary responsibility to oversee the management of pension plan assets by third party asset managers. Pension plan assets are held in trust by financial institutions and managed on a day-to-day basis by the asset managers. The asset managers receive a mandate from each investment committee that is aligned with the asset allocation targets established by each investment committee to achieve the plan's investment strategies. The performance of the asset managers is monitored and evaluated by the investment committees throughout the year.

Pension plan assets are invested to generate investment earnings over an extended time horizon to help fund the cost of benefits promised under the plans while mitigating investment risk. The asset allocation targets established for each pension plan are intended to diversify the investments among a variety of asset categories and among a variety of individual securities within each asset category to mitigate investment risk and provide each plan with sufficient liquidity to fund the payment of pension benefits to retirees.

The following summarizes the weighted average target pension plan asset allocation as of December 31, 2013 and 2012 for all PPG defined benefit plans:

Asset Category	Dec. 31, 2013	Dec. 31, 2012
Equity securities	30-65%	35-70%
Debt securities	30-65%	30-65%
Real estate	0-10%	0-10%
Other	0-10%	0-10%

The fair values of the Company's pension plan assets at December 31, 2013, by asset category, are as follows:

(Millions)	Level 1 <sup>(1)</sup>	Level 2 <sup>(1)</sup>	Level 3 <sup>(1)</sup>	Total
<b>Asset Category</b>				
<b>Equity securities:</b>				
U.S.				
Large cap	\$6	\$378	\$—	\$384
Small cap	—	172	—	172
PPG common stock	85	—	—	85
Non-U.S.				
Developed and emerging markets <sup>(2)</sup>	17	795	—	812
<b>Debt securities:</b>				
Cash and cash equivalents	—	115	—	115
Corporate <sup>(3)</sup>				
U.S. <sup>(4)</sup>	—	750	131	881
Developed and emerging markets <sup>(2)</sup>	—	200	—	200
Diversified <sup>(5)</sup>	—	698	—	698
Government				
U.S. <sup>(4)</sup>	201	36	—	237
Developed markets	—	331	—	331
Other <sup>(6)</sup>	—	161	27	188
Real estate, hedge funds, and other	—	124	474	598
<b>Total</b>	<b>\$309</b>	<b>\$3,760</b>	<b>\$632</b>	<b>\$4,701</b>

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- (1) These levels refer to the accounting guidance on fair value measurement described in Note 9, "Fair Value Measurement."
- (2) These amounts represent holdings in investment grade debt or equity securities of issuers in both developed markets and emerging economies.
- (3) This category represents investment grade debt securities from a diverse set of industry issuers.
- (4) These investments are primarily long duration fixed income securities.
- (5) This category represents commingled funds invested in diverse portfolios of debt securities.
- (6) This category includes mortgage-backed and asset backed debt securities, municipal bonds and other debt securities including derivatives.

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The fair values of the Company's pension plan assets at December 31, 2012, by asset category, are as follows:

(Millions)	Level 1 <sup>(1)</sup>	Level 2 <sup>(1)</sup>	Level 3 <sup>(1)</sup>	Total
Asset Category				
Equity securities:				
U.S.				
Large cap	\$1	\$172	\$—	\$173
Small cap	—	146	—	146
PPG common stock	244	—	—	244
Non-U.S.				
Developed and emerging markets <sup>(2)</sup>	—	578	—	578
Debt securities:				
Cash and cash equivalents	—	499	—	499
Corporate <sup>(3)</sup>				
U.S. <sup>(4)</sup>	—	922	76	998
Developed and emerging markets <sup>(2)</sup>	—	185	—	185
Diversified <sup>(5)</sup>	—	635	4	639
Government				
U.S. <sup>(4)</sup>	196	69	—	265
Developed markets	—	301	—	301
Other <sup>(6)</sup>	—	155	27	182
Real estate, hedge funds, and other	—	128	412	540
Total	\$441	\$3,790	\$519	\$4,750

(1) These levels refer to the accounting guidance on fair value measurement described in Note 9, "Fair Value Measurement."

(2) These amounts represent holdings in investment grade debt or equity securities of issuers in both developed markets and emerging economies.

(3) This category represents investment grade debt securities from a diverse set of industry issuers.

(4) These investments are primarily long duration fixed income securities.

(5) This category represents commingled funds invested in diverse portfolios of debt securities.

(6) This category includes mortgage-backed and asset backed debt securities, municipal bonds and other debt securities including derivatives.

The change in the fair value of the Company's Level 3 pension assets for the years ended December 31, 2013 and 2012 was as follows:

(Millions)	Real Estate	Other Debt Securities	Hedge Funds & Other assets	Total
Balance, January 1, 2012	\$156	\$28	\$157	\$341
Realized gain	8	—	13	21
Unrealized gain/(loss) for positions still held	8	—	(1)	7
Transfers in/(out)	4	(1)	148	151
Foreign currency loss	—	—	(1)	(1)
Balance, December 31, 2012	\$176	\$27	\$316	\$519
Realized gain/(loss)	7	1	55	63

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Unrealized gain/(loss) for positions still held	18	—	14	32
Transfers in/(out)	21	(1	) (5	) 15
Foreign currency gain/(loss)	—	—	3	3
Balance, December 31, 2013	\$222	\$27	\$383	\$632

Real Estate properties are externally appraised at least annually by reputable, independent appraisal firms. Property valuations are also reviewed on a regular basis and are adjusted if there has been a significant change in circumstances related to the property since the last valuation.

Other debt securities consist of insurance contracts, which are externally valued by insurance companies based on the present value of the expected future cash flows. Hedge funds consist of a wide range of investments which target a relatively stable investment return. The underlying funds are valued at different frequencies, some monthly and some quarterly, based on the value of the underlying investments. Other assets consist primarily of small investments in private equity funds and senior secured debt obligations of non-investment grade borrowers.

#### Retained Liabilities and Legacy Settlement Charges

PPG has retained certain liabilities for pension and post-employment benefits earned for service up to the date of sale of its former automotive glass and service business, totaling approximately \$914 million and \$1,047 million at December 31, 2013 and 2012, respectively, for employees who were active as of the divestiture date and for individuals who were retirees of the business as of the divestiture date. PPG recognized expense of approximately \$30 million, \$35 million and \$35 million related to these obligations in 2013, 2012, and 2011, respectively. The acquirer of the business closed two facilities in Canada, resulting in five partial windups of Canadian defined benefit pension plans covering former employees of these plants. As such, PPG recorded a settlement charge in the first quarter of 2013 of \$2 million. The proposed effective dates of the remaining partial windups are in 2009 and 2010. Cash contributions are currently being made to the plans based on estimated cash requirements and must be completed by the end of the five year period following the proposed effective dates of

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the partial windups. The settlement charges will be recorded following the approval of the partial windups by the Canadian pension authorities and when the related cash contributions are completed. The remaining partial windups will result in additional settlement charges against PPG's income from continuing operations, which are expected to be incurred in 2014-2015, of approximately \$40 million to \$50 million and require cash contributions to the plans totaling approximately \$5 million to \$10 million.

As part of a 2008 PPG restructuring plan, a glass manufacturing facility in Canada was closed. This plant closure resulted in a full windup of the pension plan for the former hourly employees of this plant. The full windup of this plan was approved by the Canadian pension authorities and the Company made the final contributions to this plan in the first quarter of 2013. As a result, the Company recorded a settlement charge in the amount of \$16 million. There will be additional windup charges of \$15 million to \$20 million related to this plant closure as well as another Canadian location closed by PPG in 2009, which are expected to be incurred in 2015 and 2016. The expected cash contributions related to these windups total \$5 million to \$10 million from 2013 to 2016.

**Other Plans**

The Company recognized expense for defined contribution pension plans in 2013, 2012 and 2011 of \$49 million, \$41 million and \$37 million, respectively. As of December 31, 2013 and 2012, the Company's liability for contributions to be made to the defined contribution pension plans was \$17 million and \$13 million, respectively.

The Company has a deferred compensation plan for certain key managers which allows them to defer a portion of their compensation in a phantom PPG stock account or other phantom investment accounts. The amount deferred earns a return based on the investment options selected by the participant. The amount owed to participants is an unfunded and unsecured general obligation of the Company. Upon retirement, death, disability, termination of employment, scheduled payment or unforeseen emergency, the compensation deferred and related accumulated earnings are distributed in accordance with the participant's election in cash or in PPG stock, based on the accounts selected by the participant.

The plan provides participants with investment alternatives and the ability to transfer amounts between the phantom non-PPG stock investment accounts. To mitigate the impact on compensation expense of changes in the market value of the liability, the Company has purchased a portfolio of marketable securities that mirror the phantom non-PPG stock investment accounts selected by the participants, except the money market accounts. These investments are carried by PPG at fair market value, and the changes in market value of these securities are also included in income from continuing operations. Trading occurs in this portfolio to align the securities held with the participant's phantom non-PPG stock investment accounts, except the money market accounts.

The cost of the deferred compensation plan, comprised of dividend equivalents accrued on the phantom PPG stock account, investment income and the change in market value of the liability, was expense in 2013, 2012 and 2011 of \$18 million, \$10 million and \$2 million, respectively. These amounts are included in "Selling, general and administrative" in the accompanying consolidated statement of income. The change in market value of the investment portfolio was income of \$17 million, \$8 million, and \$1 million in 2013, 2012 and 2011, respectively, of which \$3.4 million, \$0.9 million and \$0.8 million was realized gains, and is also included in "Selling, general and administrative." The Company's obligations under this plan, which are included in "Accounts payable and accrued liabilities" and "Other liabilities" in the accompanying consolidated balance sheet, totaled \$114 million and \$102 million as of December 31, 2013 and 2012, respectively, and the investments in marketable securities, which are included in "Investments" and "Other current assets" in the accompanying consolidated balance sheet, were \$75 million and \$64 million as of December 31, 2013 and 2012, respectively.

**14. Commitments and Contingent Liabilities**

PPG is involved in a number of lawsuits and claims, both actual and potential, including some that it has asserted against others, in which substantial monetary damages are sought. These lawsuits and claims, the most significant of which are described below, relate to contract, patent, environmental, product liability, antitrust and other matters

arising out of the conduct of PPG's current and past business activities. To the extent that these lawsuits and claims involve personal injury and property damage, PPG believes it has adequate insurance; however, certain of PPG's insurers are contesting coverage with respect to some of these claims, and other insurers, as they had prior to the asbestos settlement described below, may contest coverage with respect to some of the asbestos claims if the settlement is not implemented. PPG's lawsuits and claims against others include claims against insurers and other third parties with respect to actual and contingent losses related to environmental, asbestos and other matters.

The results of any current or future litigation and claims are inherently unpredictable. However, management believes that, in the aggregate, the outcome of all lawsuits and claims involving PPG, including asbestos-related claims in the event the settlement described below does not become effective, will not have a material effect on PPG's consolidated financial position or liquidity; however, such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized.

#### Antitrust Matters

In 2010, Transitions Optical, Inc. ("TOI"), a consolidated subsidiary of the Company, entered into a settlement agreement, without admitting liability, with the Federal Trade Commission, which had alleged that TOI violated Section 5 of the Federal Trade Commission Act. Following the announcement of the



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settlement with the Federal Trade Commission, 30 private putative class cases were filed against TOI, alleging that it has monopolized and/or conspired to monopolize the market for photochromic lenses. All of the federal actions have been transferred and centralized in the Middle District of Florida (the “MDL Action”). Amended complaints in the MDL Action were filed in November and December 2010. In late 2011, the court ruled on TOI’s motion to dismiss and allowed the plaintiffs to file new or further amended complaints. Plaintiffs in the MDL Action include Insight Equity A.P. X, LP, d/b/a Vision-Ease Lens Worldwide, Inc., which has sued on its own behalf, and putative classes of “direct purchasers,” including laboratories and retailers (the “Lab/Retailer Plaintiffs”), and “indirect purchasers,” consisting of end-user consumers. Plaintiffs in the MDL Action generally allege that TOI’s exclusive dealing arrangements resulted in higher prices and seek lost profits and damages determined by the price premium attributable to wrongful exclusive deals. The damages sought are subject to trebling. The Lab/Retailer Plaintiffs also allege that TOI and certain affiliates of Essilor International SA conspired with respect to the wrongful exclusive dealing arrangements. In March 2013, the magistrate judge issued her report and recommendation to deny the class certification motion of the Lab/Retailer Plaintiffs. In May 2013, the magistrate judge issued her report and recommendation to deny the class certification of the end-use consumer plaintiffs. The reports and recommendations on class certification of the magistrate judge will be referred to the district court judge for a final ruling, which is expected to occur in 2014. TOI believes it has meritorious defenses and continues to defend all of the above-described actions vigorously.

Asbestos Matters

For over 30 years, PPG has been a defendant in lawsuits involving claims alleging personal injury from exposure to asbestos. Most of PPG’s potential exposure relates to allegations by plaintiffs that PPG should be liable for injuries involving asbestos-containing thermal insulation products, known as Unibestos, manufactured and distributed by Pittsburgh Corning Corporation (“PC”). PPG and Corning Incorporated are each 50% shareholders of PC. PPG has denied responsibility for, and has defended, all claims for any injuries caused by PC products. As of the April 16, 2000 order which stayed and enjoined asbestos claims against PPG (as discussed below), PPG was one of many defendants in numerous asbestos-related lawsuits involving approximately 114,000 claims served on PPG. During the period of the stay, PPG generally has not been aware of the dispositions, if any, of these asbestos claims.

Background of PC Bankruptcy Plan of Reorganization

On April 16, 2000, PC filed for Chapter 11 Bankruptcy in the U.S. Bankruptcy Court for the Western District of Pennsylvania located in Pittsburgh, Pa. Accordingly, in the first quarter of 2000, PPG recorded an after-tax charge of \$35 million for the write-off of all of its investment in PC. As a consequence of the bankruptcy filing and various motions and orders in that proceeding, the asbestos litigation against PPG (as well as

against PC) has been stayed and the filing of additional asbestos suits against them has been enjoined, until 30 days after the effective date of a confirmed plan of reorganization for PC substantially in accordance with the settlement arrangement among PPG and several other parties discussed below. By its terms, the stay may be terminated if the Bankruptcy Court determines that such a plan will not be confirmed, or the settlement arrangement set forth below is not likely to be consummated.

On May 14, 2002, PPG announced that it had agreed with several other parties, including certain of its insurance carriers, the official committee representing asbestos claimants in the PC bankruptcy, and the legal representatives of future asbestos claimants appointed in the PC bankruptcy, on the terms of a settlement arrangement relating to certain asbestos claims against PPG and PC (the “2002 PPG Settlement Arrangement”).

On March 28, 2003, Corning Incorporated announced that it had separately reached its own arrangement with the representatives of asbestos claimants for the settlement of certain asbestos claims against Corning Incorporated and PC (the “2003 Corning Settlement Arrangement”).

The terms of the 2002 PPG Settlement Arrangement and the 2003 Corning Settlement Arrangement were incorporated into a bankruptcy reorganization plan for PC along with a disclosure statement describing the plan, which PC filed with the Bankruptcy Court on April 30, 2003. Amendments to the plan and disclosure statement were subsequently

filed. On November 26, 2003, after considering objections to the second amended disclosure statement and plan of reorganization, the Bankruptcy Court entered an order approving such disclosure statement and directing that it be sent to creditors, including asbestos claimants, for voting. In March 2004, the second amended PC plan of reorganization (the "second amended PC plan of reorganization") received the required votes to approve the plan with a channeling injunction for present and future asbestos claimants under §524(g) of the Bankruptcy Code. After voting results for the second amended PC plan of reorganization were received, the Bankruptcy Court judge conducted a hearing regarding the fairness of the settlement, including whether the plan would be fair with respect to present and future claimants, whether such claimants would be treated in substantially the same manner, and whether the protection provided to PPG and its participating insurers would be fair in view of the assets they would convey to the asbestos settlement trust (the "Trust") to be established as part of the second amended PC plan of reorganization. At that hearing, creditors and other parties in interest raised objections to the second amended PC plan of reorganization. Following that hearing, the Bankruptcy Court scheduled oral arguments for the contested items. The Bankruptcy Court heard oral arguments on the contested items on November 17-18, 2004. At the conclusion of the hearing, the Bankruptcy Court agreed to consider certain post-hearing written submissions. In a further development, on February 2, 2005, the Bankruptcy Court established a briefing schedule to address whether certain aspects of a decision of the

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U.S. Third Circuit Court of Appeals in an unrelated case had any applicability to the second amended PC plan of reorganization. Oral arguments on these matters were subsequently held in March 2005. During an omnibus hearing on February 28, 2006, the Bankruptcy Court judge stated that she was prepared to rule on the PC plan of reorganization in the near future, provided certain amendments were made to the plan. Those amendments were filed, as directed, on March 17, 2006. After further conferences and supplemental briefings, in December 2006, the court denied confirmation of the second amended PC plan of reorganization, on the basis that the plan was too broad in the treatment of allegedly independent asbestos claims not associated with PC.

Terms of 2002 PPG Settlement Arrangement

PPG had no obligation to pay any amounts under the 2002 PPG Settlement Arrangement until 30 days after the second amended PC plan of reorganization was finally approved by an appropriate court order that was no longer subject to appellate review (the "Effective Date"). If the second amended PC plan of reorganization had been approved as proposed, PPG and certain of its insurers (along with PC) would have made payments on the Effective Date to the Trust, which would have provided the sole source of payment for all present and future asbestos bodily injury claims against PPG, its subsidiaries or PC alleged to be caused by the manufacture, distribution or sale of asbestos products by these companies. PPG would have conveyed the following assets to the Trust: (i) the stock it owns in PC and Pittsburgh Corning Europe, (ii) 1,388,889 shares of PPG's common stock and (iii) aggregate cash payments to the Trust of approximately \$998 million, payable according to a fixed payment schedule over 21 years, beginning on June 30, 2003, or, if later, the Effective Date. PPG would have had the right, in its sole discretion, to prepay these cash payments to the Trust at any time at a discount rate of 5.5% per annum as of the prepayment date. In addition to the conveyance of these assets, PPG would have paid \$30 million in legal fees and expenses on behalf of the Trust to recover proceeds from certain historical insurance assets, including policies issued by certain insurance carriers that were not participating in the settlement, the rights to which would have been assigned to the Trust by PPG.

Under the proposed 2002 PPG Settlement Arrangement, PPG's participating historical insurance carriers would have made cash payments to the Trust of approximately \$1.7 billion between the Effective Date and 2023. These payments could also have been prepaid to the Trust at any time at a discount rate of 5.5% per annum as of the prepayment date. In addition, as referenced above, PPG would have assigned to the Trust its rights, insofar as they related to the asbestos claims to have been resolved by the Trust, to the proceeds of policies issued by certain insurance carriers that were not participating in the 2002 PPG Settlement Arrangement and from the estates of insolvent insurers and state insurance guaranty funds.

Under the proposed 2002 PPG Settlement Arrangement, PPG would have granted asbestos releases to all participating insurers, subject to a coverage-in-place agreement with certain insurers for the continuing coverage of premises claims (discussed below). PPG would have granted certain participating insurers full policy releases on primary policies and full product liability releases on excess coverage policies. PPG would have also granted certain other participating excess insurers credit against their product liability coverage limits.

If the second amended PC plan of reorganization incorporating the terms of the 2002 PPG Settlement Arrangement and the 2003 Corning Settlement Arrangement had been approved by the Bankruptcy Court, the Court would have entered a channeling injunction under §524(g) and other provisions of the Bankruptcy Code, prohibiting present and future claimants from asserting bodily injury claims after the Effective Date against PPG or its subsidiaries or PC relating to the manufacture, distribution or sale of asbestos-containing products by PC or PPG or its subsidiaries. The injunction would have also prohibited codefendants in those cases from asserting claims against PPG for contribution, indemnification or other recovery. All such claims would have been filed with the Trust and only paid from the assets of the Trust.

Modified Third Amended PC Plan of Reorganization

To address the issues raised by the Bankruptcy Court in its December 2006 ruling, the interested parties engaged in extensive negotiations regarding the terms of a third amended PC plan of reorganization, including modifications to the 2002 PPG Settlement Arrangement. A modified third amended PC plan of reorganization (the "third amended PC

plan of reorganization”), including a modified PPG settlement arrangement (the “2009 PPG Settlement Arrangement”), was filed with the Bankruptcy Court on January 29, 2009. The parties also filed a disclosure statement describing the third amended PC plan of reorganization with the court. The third amended PC plan of reorganization also includes a modified settlement arrangement of Corning Incorporated.

Several creditors and other interested parties filed objections to the disclosure statement. Those objections were overruled by the Bankruptcy Court by order dated July 6, 2009 approving the disclosure statement. The third amended PC plan of reorganization and disclosure statement were then sent to creditors, including asbestos claimants, for voting. The report of

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the voting agent, filed on February 18, 2010, revealed that all voting classes, including asbestos claimants, voted overwhelmingly in favor of the third amended PC plan of reorganization, which included the 2009 PPG Settlement Arrangement. In light of the favorable vote on the third amended PC plan of reorganization, the Bankruptcy Court conducted a hearing regarding the fairness of the proposed plan, including whether (i) the plan would be fair with respect to present and future claimants, (ii) such claimants would be treated in substantially the same manner, and (iii) the protection provided to PPG and its participating insurers would be fair in view of the assets they would convey to the Trust to be established as part of the third amended PC plan of reorganization. The hearing was held in June of 2010. The remaining objecting parties (a number of objections were resolved through plan amendments and stipulations filed before the hearing) appeared at the hearing and presented their cases. At the conclusion of the hearing, the Bankruptcy Court established a briefing schedule for its consideration of confirmation of the plan and the objections to confirmation. That briefing was completed and final oral arguments held in October 2010. On June 16, 2011 the Bankruptcy Court issued a decision denying confirmation of the third amended PC plan of reorganization.

Following the June 16, 2011 ruling, the third amended PC plan of reorganization was the subject of negotiations among the parties in interest, amendments, proposed amendments and hearings. PC then filed an amended PC plan of reorganization on August 17, 2012. Objections to the plan, as amended, were filed by three entities. One set of objections was resolved by PC, and another set merely restated for appellate purposes objections filed by a party that the Bankruptcy Court previously overruled. The Bankruptcy Court heard oral argument on the one remaining set of objections filed by the remaining affiliated insurer objectors on October 10, 2012. At the conclusion of that argument, the Bankruptcy Court set forth a schedule for negotiating and filing language that would resolve some, but not all, of the objections to confirmation advanced by the insurer objectors. On October 25, 2012, PC filed a notice regarding proposed confirmation order language that resolved those specific objections. Following additional hearings and status conferences, technical amendments to the PC plan of reorganization were filed on May 15, 2013. On May 16, 2013, the Bankruptcy Court issued a memorandum opinion and interim order confirming the PC plan of reorganization, as amended, and setting forth a schedule for motions for reconsideration. Following the filing of motions for reconsideration, the Bankruptcy Court, on May 24, 2013, issued a revised memorandum opinion and final order confirming the modified third amended plan of reorganization and issuing the asbestos permanent channeling injunction. The remaining insurer objectors filed a motion for reconsideration on June 6, 2013. On November 12, 2013 the Bankruptcy Court issued an order granting in part (by clarifying the scope of the channeling injunction in accordance with the agreement of the parties as expressed at the time of final argument on the motion for reconsideration) and otherwise denying the motion for

reconsideration. Notices of appeal to the U. S. District Court for the Western District of Pennsylvania were filed by the remaining objecting parties.

Assuming that the District Court ultimately affirms the confirmation order, the remaining objectors could appeal the order to the U.S. Third Circuit Court of Appeals and subsequently could seek review by the U.S. Supreme Court.

The 2009 PPG Settlement Arrangement will not become effective until certain conditions precedent are satisfied or waived and the amended PC plan of reorganization is finally approved by an appropriate court order that is no longer subject to appellate review, and PPG's initial contributions will not be due until 30 business days thereafter (the "Funding Effective Date").

**Asbestos Claims Subject to Bankruptcy Court's Channeling Injunction**

The Bankruptcy Court's channeling injunction, entered under §524(g) of the Bankruptcy Code and which will become effective after the order confirming the modified third amended plan of reorganization is no longer subject to appellate review, will prohibit present and future claimants from asserting asbestos claims against PC. With regard to PPG, the channeling injunction by its terms will prohibit present and future claimants from asserting claims against PPG that arise, in whole or in part, out of exposure to Unibestos, or any other asbestos or asbestos-containing products

manufactured, sold and/or distributed by PC, or asbestos on or emanating from any PC premises. The injunction by its terms will also prohibit codefendants in these cases that are subject to the channeling injunction from asserting claims against PPG for contribution, indemnification or other recovery. Such injunction will also preclude the prosecution of claims against PPG arising from alleged exposure to asbestos or asbestos-containing products to the extent that a claimant is alleging or seeking to impose liability, directly or indirectly, for the conduct of, claims against or demands on PC by reason of PPG's: (i) ownership of a financial interest in PC; (ii) involvement in the management of PC, or service as an officer, director or employee of PC or a related party; (iii) provision of insurance to PC or a related party; or (iv) involvement in a financial transaction affecting the financial condition of PC or a related party. The foregoing PC related claims are referred to as "PC Relationship Claims" and constitute, in PPG management's opinion, the vast majority of the pending asbestos personal injury claims against PPG. All claims channeled to the Trust will be paid only from the assets of the Trust.

#### Asbestos Claims Retained by PPG

The channeling injunction will not extend to any claim against PPG that arises out of exposure to any asbestos or asbestos-containing products manufactured, sold and/or distributed by PPG or its subsidiaries, or for which they are otherwise alleged to be liable, that is not a PC Relationship Claim, and in this respect differs from the channeling injunction contemplated by the second amended PC plan of reorganization

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filed in 2003. While management believes that the vast majority of the approximately 114,000 claims against PPG alleging personal injury from exposure to asbestos relate to products manufactured, distributed or sold by PC, the potential liability for any non-PC Relationship Claims will be retained by PPG. Because a determination of whether an asbestos claim is a non-PC Relationship Claim would typically not be known until shortly before trial and because the filing and prosecution of asbestos claims (other than certain premises claims) against PPG has been enjoined since April 2000, the actual number of non-PC Relationship Claims that may be pending at the expiration of the stay or the number of additional claims that may be filed against PPG in the future cannot be determined at this time. PPG intends to defend against all such claims vigorously and their ultimate resolution in the court system is expected to occur over a period of years.

In addition, similar to what was contemplated by the second amended PC plan of reorganization, the channeling injunction will not extend to claims against PPG alleging personal injury caused by asbestos on premises owned, leased or occupied by PPG (so called "premises claims"), which generally have been subject to the stay imposed by the Bankruptcy Court, although motions to lift the stay as to individual premises claims have been granted from time to time. Historically, a small proportion of the claims against PPG and its subsidiaries have been premises claims, and based upon review and analysis, PPG believes that the number of premises claims currently comprises less than 2% of the total asbestos related claims against PPG. Beginning in late 2006, the Bankruptcy Court lifted the stay with respect to certain premises claims against PPG. As a result, PPG and its primary insurers have settled approximately 540 premises claims. PPG's insurers agreed to provide insurance coverage for a major portion of the payments made in connection with the settled claims, and PPG accrued the portion of the settlement amounts not covered by insurance. Primarily as a result of motions practice in the Bankruptcy Court with respect to the application of the stay to premises claims, PPG faces approximately 360 active premises claims. PPG is currently engaged in the process of settling or otherwise resolving approximately 100 of these claims. Of the remaining 260 active premises claims, approximately 130 such claims have been initiated in lawsuits filed in various state courts, primarily in Louisiana, West Virginia, Ohio, Illinois, and Pennsylvania, and are the subjects of active litigation and are being defended by PPG. PPG believes that any financial exposure resulting from such premises claims, taking into account available insurance coverage, will not have a material adverse effect on PPG's consolidated financial position, liquidity or results of operations.

**PPG's Funding Obligations**

PPG has no obligation to pay any amounts under the third amended PC plan of reorganization, as amended, until the Funding Effective Date. On the Funding Effective Date, PPG will relinquish any claim to its equity interest in PC, convey the stock it owns in Pittsburgh Corning Europe and transfer 1,388,889 shares of PPG's common stock or cash equal to the

fair value of such shares as defined in the 2009 PPG Settlement Arrangement. PPG will make aggregate pretax cash payments to the Trust of approximately \$825 million, payable according to a fixed payment schedule over a period ending in 2023. The first payment is due on the Funding Effective Date. PPG would have the right, in its sole discretion, to prepay these pretax cash payments to the Trust at any time at a discount rate of 5.5% per annum as of the prepayment date. PPG's historical insurance carriers participating in the third amended PC plan of reorganization will also make cash payments to the Trust of approximately \$1.7 billion between the Funding Effective Date and 2027. These payments could also be prepaid to the Trust at any time at a discount rate of 5.5% per annum as of the prepayment date. PPG will grant asbestos releases and indemnifications to all participating insurers, subject to amended coverage-in-place arrangements with certain insurers for remaining coverage of premises claims. PPG will grant certain participating insurers full policy releases on primary policies and full product liability releases on excess coverage policies. PPG will also grant certain other participating excess insurers credit against their product liability coverage limits.

PPG's obligation under the 2009 PPG Settlement Arrangement at December 31, 2008 was \$162 million less than the amount that would have been due under the 2002 PPG Settlement Arrangement. This reduction is attributable to a number of negotiated provisions in the 2009 PPG Settlement Arrangement, including the provisions relating to the channeling injunction under which PPG retains liability for any non-PC Relationship Claims. PPG will retain such amount as a reserve for asbestos-related claims that will not be channeled to the Trust, as this amount represents PPG's best estimate of its liability for these claims. PPG does not have sufficient current claim information or settlement history on which to base a better estimate of this liability, in light of the fact that the Bankruptcy Court's stay has been in effect since 2000. As a result, PPG's reserve at December 31, 2013 and December 31, 2012 for asbestos-related claims that will not be channeled to the Trust is \$162 million. This amount is included within "Other liabilities" on the accompanying consolidated balance sheets. In addition, under the 2009 PPG Settlement Arrangement, PPG will retain for its own account rights to recover proceeds from certain historical insurance assets, including policies issued by non-participating insurers. Rights to recover these proceeds would have been assigned to the Trust by PPG under the 2002 PPG Settlement Arrangement.

Following the effective date of the third amended PC plan of reorganization, as amended, and the lifting of the Bankruptcy Court stay, PPG will monitor the activity associated with asbestos claims which are not channeled to the Trust pursuant to the third amended PC plan of reorganization, and evaluate its estimated liability for such claims and related insurance assets then available to the Company as well as underlying assumptions on a periodic basis to determine whether any adjustment to its reserve for these claims is required.



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Of the total obligation of \$1,008 million and \$920 million under the 2009 PPG Settlement Arrangement at December 31, 2013 and 2012, respectively, \$763 million and \$683 million are reported as current liabilities and \$245 million and \$237 million are reported as a non-current liabilities in the accompanying consolidated balance sheet as of December 31, 2013 and 2012. The future accretion of the non-current portion of the liability totals \$95 million at December 31, 2013, and will be reported as expense in the consolidated statement of income over the period through 2023, as follows (in millions):

2014	\$14
2015	14
2016 – 2023	67
Total	\$95

The following table summarizes the impact on PPG's financial statements for the three years ended December 31, 2013 resulting from the 2009 PPG Settlement Arrangement including the change in fair value of the stock to be transferred to the Trust and the related equity forward instrument (see Note 10, "Derivative Financial Instruments and Hedging Activities") and the increase in the net present value of the future payments to be made to the Trust.

(Millions)	Consolidated Balance Sheet		Equity Forward (Asset) Liability	Pretax Charge
	Asbestos Settlement Liability Current	Asbestos Settlement Liability Long-term		
Balance as of January 1, 2011	\$578	\$243	\$(55)	) \$12
Change in fair value:				
PPG stock	(1	) —	—	(1 )
Equity forward instrument	—	—	(1	) (1 )
Accretion of asbestos liability	—	14	—	14
Reclassification	16	(16	) —	—
Balance as of and Activity for the year ended December 31, 2011	\$593	\$241	\$(56)	) \$12
Change in fair value:				
PPG stock	72	—	—	72
Equity forward instrument	—	—	(74	) (74 )
Accretion of asbestos liability	—	14	—	14
Reclassification	18	(18	) —	—
Balance as of and Activity for the year ended December 31, 2012	\$683	\$237	\$(130)	) \$12
Change in fair value:				
PPG stock	75	—	—	75
Equity forward instrument	—	—	(77	) (77 )
Accretion of asbestos liability	—	13	—	13
Reclassification	5	(5	) —	—
Balance as of and Activity for the year ended December 31, 2013	\$763	\$245	\$(207)	) \$11

The fair value of the equity forward instrument is included as an "Other current asset" as of December 31, 2013 and 2012 in the accompanying consolidated balance sheet. Payments under the fixed payment schedule require annual payments that are due

each June. The current portion of the asbestos settlement liability included in the accompanying consolidated balance sheet as of December 31, 2013, consists of all such payments required through June 2014, the fair value of PPG's common stock and the value of PPG's investment in Pittsburgh Corning Europe. The net present value of the remaining payments is included in the long-term asbestos settlement liability in the accompanying consolidated balance sheet as of December 31, 2013.

#### Enjoined Claims

If the 2009 PPG Settlement Arrangement is not implemented, for any reason, and the Bankruptcy Court stay expires, PPG intends to defend vigorously the pending and any future asbestos claims, including PC Relationship Claims, asserted against it and its subsidiaries. PPG continues to assert that it is not responsible for any injuries caused by PC products, which it believes account for the vast majority of the pending claims against PPG. Prior to 2000, PPG had never been found liable for any PC-related claims. In numerous cases, PPG was dismissed on motions prior to trial, and in others PPG was released as part of settlements by PC. PPG was found not responsible for PC-related claims at trial in two cases. In January 2000, one jury found PPG, for the first time, partly responsible for injuries to five plaintiffs alleged to be caused by PC products. The plaintiffs holding the judgment on that verdict moved to lift the injunction as applied to their claims. Before the hearing on that motion, PPG entered into a settlement with those claimants in the second quarter of 2010 to avoid the costs and risks associated with the possible lifting of the stay and appeal of the adverse 2000 verdict. The settlement resolved both the motion to lift the injunction and the judgment against PPG. The cost of this settlement was not significant to PPG's results of operations for the second quarter of 2010 and was fully offset by prior insurance recoveries. Although PPG has successfully defended asbestos claims brought against it in the past, in view of the number of claims, and the significant verdicts that other companies have experienced in asbestos litigation, the result of any future litigation of such claims is inherently unpredictable.

#### Environmental Matters

It is PPG's policy to accrue expenses for environmental contingencies when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. Reserves for environmental contingencies are exclusive of claims against third parties and are generally not discounted. In management's opinion, the Company operates in an environmentally sound manner and the outcome of the Company's environmental contingencies will not have a material effect on PPG's financial position or liquidity; however, any such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized. Management anticipates that the resolution of the Company's environmental contingencies will occur over an extended period of time.

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As of December 31, 2013 and 2012, PPG had reserves for environmental contingencies totaling \$310 million and \$332 million, respectively, of which \$105 million and \$101 million, respectively, were classified as current liabilities. The reserve at December 31, 2013 included \$204 million for environmental contingencies associated with PPG's former chromium manufacturing plant in Jersey City, N.J. ("New Jersey Chrome") and \$106 million for other environmental contingencies, including National Priority List sites and legacy glass and chemical manufacturing sites. The reserve at December 31, 2012 included \$221 million for environmental contingencies associated with the former chromium manufacturing plant in Jersey City, \$80 million for other environmental contingencies, including National Priority List sites and legacy glass and chemical manufacturing sites, and \$31 million for environmental contingencies associated with the Calcasieu River Estuary and two operating plant sites in PPG's former commodity chemicals business.

Pretax charges against income for environmental remediation costs in 2013, 2012 and 2011 totaled \$108 million, \$166 million and \$9 million, respectively, and are included in "Other charges" in the accompanying consolidated statement of income. Cash outlays related to such environmental remediation aggregated \$120 million, \$62 million, and \$48 million in 2013, 2012 and 2011, respectively.

The Company continues to analyze, assess and remediate the environmental issues associated with New Jersey Chrome as further discussed below. During 2013 and 2012 charges for estimated environmental remediation costs were significantly higher than PPG's historical range. Excluding 2012 and 2013, pretax charges against income for environmental remediation have ranged between \$10 million and \$30 million per year for the past 10 years. Management expects cash outlays for environmental remediation costs to be approximately \$100 million annually through 2015 and to range from \$10 million to \$30 million annually from 2016 through 2018. It is possible that technological, regulatory and enforcement developments, the results of environmental studies and other factors could alter the Company's expectations with respect to future charges against income and future cash outlays. Specifically, the level of expected future remediation costs and cash outlays is highly dependent upon activity related to New Jersey Chrome as discussed below.

**Remediation: New Jersey Chrome**

Since 1990, PPG has remediated 47 of 61 residential and nonresidential sites under the 1990 Administrative Consent Order ("ACO") with the New Jersey Department of Environmental Protection ("NJDEP"). The most significant of the 14 remaining sites is the former chromium manufacturing location in Jersey City, New Jersey. The principal contaminant of concern is hexavalent chromium. The Company submitted a feasibility study work plan to the NJDEP in October 2006 that included a review of the available remediation technology alternatives for the former chromium manufacturing location. As

a result of the extensive analysis undertaken in connection with the preparation and submission of that feasibility study work plan, the Company recorded a pretax charge of \$165 million in 2006. This charge included estimated costs for remediation at the 14 remaining ACO sites, including the former manufacturing site, and for the resolution of litigation filed by NJDEP in 2005 as discussed below. The principal estimated cost elements of the 2006 charge were based on competitively derived or readily available remediation industry cost data. The major cost components of this charge were (i) transportation and disposal of excavated soil and in place soil treatment and (ii) construction services (related to soil excavation, groundwater management and site security).

In May 2005, the NJDEP filed a complaint against PPG and two other former chromium producers seeking to hold the parties responsible for a further 53 sites where the source of chromium contamination is not known and to recover costs incurred by the agency in connection with its response activities at certain of those sites. During 2008, the parties reached an agreement in principle on all claims relating to these 53 sites (the "Orphan Sites Settlement"). Under the terms of this Orphan Sites Settlement, PPG accepted responsibility for remediation of 6 of the 53 sites, one half of the cost for remediating ten sites where chrome ore processing residue was used as fill in connection with the installation or repair of sewer lines owned by Jersey City, reimburse the NJDEP for a portion of past costs in the amount of \$5 million and be responsible for the NJDEP's oversight costs associated with the sites for which PPG is wholly or

partially responsible. This settlement was finalized and issued for public comment in June 2011. After the close of the public comment period, NJDEP determined that no changes to the settlement were necessary and a motion was filed with the court to enter the settlement as a final order. In September 2011, the court entered the Orphan Sites Settlement as a final order. PPG paid its share of past costs in October 2011. This Orphan Sites Settlement did not affect PPG's responsibilities for the 14 remaining unremediated sites covered by PPG's ACO. The investigation and remediation of the soils and sources of contamination of the ten sewer sites will occur over an extended period of time to allow for investigation and determination of impacts associated with these sites, and coordination of remediation with the maintenance and repair of the sewers by Jersey City.

A settlement agreement among PPG, NJDEP and Jersey City (which had asserted claims against PPG for lost tax revenue) has been reached and memorialized in the form of a Judicial Consent Order (the "JCO") that was entered by the court on June 26, 2009. PPG's remedial obligations under the ACO with NJDEP have been incorporated into the JCO. Pursuant to the JCO, a new process was established for the review of the technical reports PPG must submit for the investigation and remedy selection for the 14 ACO sites and the six sites for which PPG has accepted sole responsibility under the terms of the Orphan Sites Settlement ("20 PPG sites"). The JCO also provided for the appointment of a court-approved Site Administrator who is responsible for establishing a master

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schedule for the remediation of the 20 PPG sites. The JCO established a goal, based on currently applicable remedial provisions, to remediate soils and sources of contamination at the 20 PPG sites as expeditiously as possible for completion at the end of 2014 in accordance with the master schedule developed by the Site Administrator. In 2013, the parties to the JCO determined that it was not feasible to complete the soil remediation by the original December 2014 cleanup goal due to the complexities associated with the remediation of the sites. Based upon current knowledge of the conditions at the sites and the experience gained over the last several years, the JCO parties established a new master schedule, which was approved by the court, and extends the goal for cleanup of soils and sources of contamination to December 1, 2015. Under the JCO, NJDEP could seek to impose stipulated civil penalties if PPG fails to complete soil and source remediation of JCO sites by the new December 2015 goal or perform certain tasks under the master schedule. The JCO also resolved the claims for reparations for lost tax revenues by Jersey City with the payment of \$1.5 million over a five year time period. The JCO did not otherwise affect PPG's responsibility for the remediation of the 14 ACO sites.

Since October 2006, activities contained in the feasibility study work plan have been undertaken and remedial alternatives were assessed which included, but were not limited to, soil excavation and offsite disposal in a licensed disposal facility, in situ chemical stabilization of soil and groundwater, and in situ solidification of soils. The feasibility study work plan for the former chromium manufacturing site previously submitted in 2006 was incorporated into a remedial action work plan. PPG submitted a preliminary draft soil remedial action work plan for the former chromium manufacturing and adjacent sites to NJDEP in June 2011. PPG received commentary from the NJDEP in connection with their review. The work plans for interim remedial measures at the chromium manufacturing site, which consisted of the removal and off-site disposal of approximately 70,000 tons of chromium impacted soil and concrete foundations, was approved by NJDEP and the associated work was completed in the third quarter 2011. The submission of a final draft soil remedial action work plan for the former chromium manufacturing and adjacent sites was initially required to be submitted to NJDEP in May 2012. However, this submission has been delayed while PPG works with NJDEP and Jersey City to address issues related to PPG's proposed approach to obtaining use limitations for the properties that will be remediated. Property owners must accept use limitations before NJDEP may approve a remedial action work plan. In the meantime, NJDEP has completed a review of the technical aspects of PPG's proposed soil remedial action work plan and has expressed their support of the remediation activities identified therein which PPG continues to perform while the issues related to use limitations for these properties are being addressed. PPG has submitted a final draft remedial action work plan for one other remaining site under the ACO which has been approved by the NJDEP. Remedial activities began at this site in early 2013. In addition, during 2012 PPG completed remedial

activities at three sites for which PPG has accepted sole responsibility under the terms of the Orphan Sites Settlement and has received "No Further Action" determination from the NJDEP for these sites. Soil investigation activities for all remaining sites covered by the ACO are also expected to be completed in 2014, and PPG believes the results of the work performed in connection with the preparation of the plan, as described above provides the Company with relevant information concerning remediation alternatives and estimated costs at these sites.

As work continued at all of the New Jersey Chrome sites and the final draft soil remedial action work plan for the former chromium manufacturing and adjacent sites was being developed, the estimated remediation costs were refined for all New Jersey Chrome sites and the updated information was used to compile a new estimate of the remediation costs, which resulted in a charge of \$145 million in 2012. The final draft soil remedial action work plan is based upon plans for PPG to obtain use limitations for the properties that will be remediated by various means including the purchase of certain sites. Based on our recently completed and ongoing investigations, approximately one million tons of soil may be potentially impacted for all New Jersey Chrome sites. The most significant assumptions underlying the current cost estimate are those related to the extent and concentration of chromium impacts in the soil, as these determine the quantity of soil that must be treated in place, the quantity that will have to be excavated and transported for offsite disposal, and the nature of disposal required. The charges taken for the estimated cost to remediate the New

Jersey Chrome sites are exclusive of any third party indemnification, as the recovery of any such amounts is uncertain. During the third quarter of 2013, PPG completed an assessment of costs incurred to date versus current progress, and the potential cost impacts of recently acquired information, including but not limited to the extent of impacted soils, percentage of hazardous versus non-hazardous soils, daily soil excavation rates, and engineering, administrative and other associated costs. Based on this assessment, a reserve adjustment of \$89 million was recorded in the third quarter of 2013. Principal factors impacting costs included a refinement in the estimate of the mix of hazardous to non-hazardous soils to be excavated, an overall increase in soil volumes to be excavated, enhanced water management requirements, decreased daily soil excavation rates due to site conditions and increased oversight and management costs.

The liability for remediation of the New Jersey Chrome sites totals \$204 million and \$221 million at December 31, 2013 and 2012, respectively. The major cost components of this liability continue to be related to transportation and disposal of impacted soil as well as construction services. These components account for approximately 64% and 28% of the accrued amount, respectively, as of December 31, 2013. The accrued liability also includes estimated costs for water treatment, engineering and project management.

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Information will continue to be generated from the ongoing groundwater remedial investigation activities related to New Jersey Chrome and will be incorporated into a final draft remedial action work plan for groundwater expected to be submitted to NJDEP in 2014.

As described above, there are multiple future events yet to occur, including further remedy selection and design, remedy implementation and execution, the obtaining of required approvals from applicable governmental agencies or community organizations and the final draft remedial action work plan for groundwater to be submitted to NJDEP in 2014. Considerable uncertainty exists regarding the timing of these future events for the New Jersey Chrome sites. Final resolution of these events is expected to occur over the next two years. As these events occur and to the extent that the cost estimates of the environmental remediation remedies change, the existing reserve for this environmental remediation will be adjusted.

Remediation: Reasonably Possible Matters

In addition to the amounts currently reserved for environmental remediation, the Company may be subject to loss contingencies related to environmental matters estimated to be as much as \$100 million to \$200 million which is lower than the estimate of \$100 million to \$275 million as of December 31, 2012 as a result of the additional environmental remediation charge recorded in the third quarter of 2013 and the separation of the commodity chemicals business. Such unreserved losses are reasonably possible but are not currently considered to be probable of occurrence. These reasonably possible unreserved losses relate to environmental matters at a number of sites, including about one third each related to; i) additional costs at New Jersey Chrome ii) legacy glass sites and iii) a number of other sites, including legacy chemical manufacturing sites. The loss contingencies related to these sites include significant unresolved issues such as the nature and extent of contamination at these sites and the methods that may have to be employed to remediate them.

The status of the remediation activity at New Jersey Chrome and the factors that could result in the need for additional environmental remediation reserves at those sites are described above. Certain remedial actions are occurring at a legacy chemical manufacturing site in Barberton, Ohio, where PPG has completed a Facility Investigation and Corrective Measure Study (“CMS”) under USEPA’s Resource Conservation and Recycling Act (“RCRA”) Corrective Action Program. PPG has been implementing the remediation alternatives recommended in the CMS using a performance-based approach with USEPA Region V oversight. However, USEPA Region V transferred its oversight authority to the Ohio Environmental Protection Agency (“OEPA”) in 2010. The Barberton Corrective Action Permit was issued by OEPA on September 24, 2010. As part of this permit, PPG is responsible for filing engineering remedies for various issues at this site. Several of these remedies have not yet been filed with the OEPA. PPG has been addressing impacts from a legacy plate glass manufacturing site in Kokomo, Indiana under the Voluntary Remediation Program of the Indiana

Department of Environmental Management. PPG is currently performing additional investigation activities.

With respect to certain waste sites, the financial condition of any other potentially responsible parties also contributes to the uncertainty of estimating PPG’s final costs. Although contributors of waste to sites involving other potentially responsible parties may face governmental agency assertions of joint and several liability, in general, final allocations of costs are made based on the relative contributions of wastes to such sites. PPG is generally not a major contributor to such sites.

The impact of evolving programs, such as natural resource damage claims, industrial site reuse initiatives and state remediation programs, also adds to the present uncertainties with regard to the ultimate resolution of this unreserved exposure to future loss. The Company’s assessment of the potential impact of these environmental contingencies is subject to considerable uncertainty due to the complex, ongoing and evolving process of investigation and remediation, if necessary, of such environmental contingencies, and the potential for technological and regulatory developments.

Separation and Merger of the Commodity Chemicals Business

As a result of the commodity chemicals business separation transaction, PPG has retained responsibility for potential environmental liabilities that may result from future Natural Resource Damage claims and any potential tort claims at the Calcasieu River Estuary associated with activities and historical operations of the Lake Charles, La. facility. PPG will additionally retain responsibility for all liabilities relating to, arising out of or resulting from sediment contamination in the Ohio River resulting from historical activities and operations at the Natrium, W.Va. facility, exclusive of remedial activities, if any, required to be performed on-site at the Natrium facility. PPG's obligations with respect to Ohio River sediment will terminate on December 30, 2017 unless within five years from December 30, 2012 PPG is required to further assess or to remediate sediment contamination caused by PPG's operation of the Natrium facility prior to the separation of the commodity chemicals business from PPG in which event PPG's obligations with respect to sediment in the Ohio River will continue for five years beyond the time that PPG is required to further assess or remediate sediment in the Ohio River.

#### 15. Shareholders' Equity

A class of 10 million shares of preferred stock, without par value, is authorized but unissued. Common stock has a par value of \$1.66 <sup>2</sup>/<sub>3</sub> per share; 600 million shares are authorized.



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The following table summarizes the shares outstanding for the three years ended December 31, 2013:

	Common Stock	Treasury Stock	Shares Outstanding
Balance, Jan. 1, 2011	290,573,068	(130,191,253 )	160,381,815
Purchases	—	(10,236,694 )	(10,236,694 )
Issuances	—	1,743,659	1,743,659
Balance, Dec. 31, 2011	290,573,068	(138,684,288 )	151,888,780
Purchases	—	(1,000,000 )	(1,000,000 )
Issuances	—	2,677,517	2,677,517
Balance, Dec. 31, 2012	290,573,068	(137,006,771 )	153,566,297
Increase in treasury stock due to separation and merger (Note 22)	—	(10,825,227 )	(10,825,227 )
Purchases	—	(5,745,529 )	(5,745,529 )
Issuances	—	1,650,841	1,650,841
Balance, Dec. 31, 2013	290,573,068	(151,926,686 )	138,646,382

Per share cash dividends paid were \$2.42 in 2013, \$2.34 in 2012 and \$2.26 in 2011.

## 16. Accumulated Other Comprehensive Loss

(Millions)	Unrealized Foreign Currency Translation Adjustments	Pension and Other Post retire- ment Benefit Adjustments, net of tax (c)	Unrealized Gain (Loss) on Derivatives, net of tax (d)	Accum- ulated Other Comp-rehensive (Loss) Income
Balance, January 1, 2011	\$53	\$(1,428 )	\$(36 )	\$(1,411 )
Period change	(188 )	(169 )	(32 )	(389 )
Balance, December 31, 2011	\$(135 )	\$(1,597 )	\$(68 )	\$(1,800 )
Period change	141	—	(7 )	134
Balance, December 31, 2012	\$6	\$(1,597 )	\$(75 )	\$(1,666 )
Current year deferrals to AOCI (a)	36	—	—	36
Current year deferrals to AOCI, tax effected (b)	(80 )	330	19	269
Separation & Merger Transaction (e)	—	33	4	37
Reclassifications from AOCI to net income	—	77	(13 )	64
Period change	(44 )	440	10	406
Balance, December 31, 2013	\$(38 )	\$(1,157 )	\$(65 )	\$(1,260 )

(a) - Unrealized foreign currency translation adjustments related to translation of foreign denominated balance sheets are not presented net of tax given that no deferred U.S. income taxes have been provided on undistributed earnings of non-U.S. subsidiaries because they are deemed to be reinvested for an indefinite period of time.

(b) - The tax cost related to unrealized foreign currency translation adjustments on tax inter-branch transactions and net investment hedges for the years ended December 31, 2013, 2012 and 2011 was \$(35) million, \$(1) million and \$(7) million, respectively.

(c) - The tax (cost) benefit related to the adjustment for pension and other postretirement benefits for the years ended December 31, 2013, 2012 and 2011 was \$(392) million, \$(30) million and \$98 million, respectively. Reclassifications from AOCI are included in the computation of net periodic benefit costs (See Note 13, "Pension and Other Postretirement Benefits"). The cumulative tax benefit related to the adjustment for pension and other postretirement benefits at December 31, 2013 and 2012 was approximately \$568 million and \$960 million, respectively.

(d) - The tax (cost) benefit related to the change in the unrealized gain (loss) on derivatives for the years ended December 31, 2013, 2012 and 2011 was \$(8) million, \$4 million and \$19 million, respectively. Reclassifications from AOCI are included in the gain or loss recognized on cash flow hedges (See Note 10 "Derivative Financial Instruments and Hedging Activities").

(e) - Amounts in AOCI related to the commodity chemicals business were removed from the balance sheet in connection with recording the gain on the separation and merger of this business (See Note 22, "Separation and Merger Transaction").

#### 17. Employee Savings Plan

PPG's Employee Savings Plan ("Savings Plan") covers substantially all employees in the U.S., Puerto Rico and Canada. The Company makes matching contributions to the Savings Plan, at management's discretion, based upon participants' savings, subject to certain limitations. For most participants not covered by a collective bargaining agreement, Company-matching contributions are established each year at the discretion of the Company and are applied to participant savings up to a maximum of 6% of eligible participant compensation. For those participants whose employment is covered by a collective bargaining agreement, the level of Company-matching contribution, if any, is determined by the relevant collective bargaining agreement.

The Company-matching contribution was 75% on the first 6% of compensation contributed by these eligible employees in 2011 and 2012. In 2013, the Company match was increased to 100% on the first 6% of compensation contributed by eligible employees.

Compensation expense and cash contributions related to the Company match of participant contributions to the Savings Plan for 2013, 2012, and 2011 totaled \$36 million, \$28 million and \$26 million, respectively. A portion of the Savings Plan qualifies under the Internal Revenue Code as an Employee Stock Ownership Plan. As a result, the dividends on PPG shares held by that portion of the Savings Plan totaling \$15 million, \$18 million and \$20 million for 2013, 2012, and 2011, respectively, were tax deductible to the Company for U.S. Federal tax purposes.

#### 18. Other Income

(Millions)	2013	2012	2011
Royalty income	\$48	\$51	\$55
Share of net (losses)/earnings of equity affiliates (See Note 5)	(8 )	9	36
Gain on sale of assets	6	3	7
Other	85	76	54
Total	\$131	\$139	\$152

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## 19. Stock-Based Compensation

The Company's stock-based compensation includes stock options, restricted stock units ("RSUs") and grants of contingent shares that are earned based on achieving targeted levels of total shareholder return. All current grants of stock options, RSUs and contingent shares are made under the PPG Industries, Inc. Amended and Restated Omnibus Incentive Plan ("PPG Amended Omnibus Plan"), which was amended and restated effective April 21, 2011. Shares available for future grants under the PPG Amended Omnibus Plan were 7.0 million as of December 31, 2013. Total stock-based compensation cost was \$81 million, \$71 million and \$34 million in 2013, 2012 and 2011, respectively. Stock-based compensation expense was higher in 2013 and 2012 in comparison to 2011 due to an increase in the expected payout percentage of the 2011 and 2012 performance-based RSU grants and PPG's total shareholder return performance in 2013 and 2012 in comparison with the Standard & Poors (S&P) 500 index, which increased the expense related to outstanding grants of contingent shares. The total income tax benefit recognized in the accompanying consolidated statement of income related to the stock-based compensation was \$28 million, \$25 million and \$13 million in 2013, 2012 and 2011, respectively.

## Stock Options

PPG has outstanding stock option awards that have been granted under two stock option plans: the PPG Industries, Inc. Stock Plan ("PPG Stock Plan") and the PPG Amended Omnibus Plan. Under the PPG Amended Omnibus Plan and the PPG Stock Plan, certain employees of the Company have been granted options to purchase shares of common stock at prices equal to the fair market value of the shares on the date the options were granted. The options are generally exercisable beginning from six to 48 months after being granted and have a maximum term of 10 years. Upon exercise of a stock option, shares of Company stock are issued from treasury stock. The PPG Stock Plan includes a restored option provision for options originally granted prior to January 1, 2003 that allows an optionee to exercise options and satisfy the option cost by certifying ownership of mature shares of PPG common stock with a market value equal to the option cost.

The fair value of stock options issued to employees is measured on the date of grant and is recognized as expense over the requisite service period. PPG estimates the fair value of stock options using the Black-Scholes option pricing model. The risk-free interest rate is determined by using the U.S. Treasury yield curve at the date of the grant and using a maturity equal to the expected life of the option. The expected life of options is calculated using the average of the vesting term and the maximum term, as prescribed by accounting guidance on the use of the simplified method for determining the expected term of an employee share option. This method is used as the vesting term of stock options was changed to three years in 2004 and, as a result, the historical exercise data does not provide a reasonable basis upon which to estimate the expected life of options. The expected dividend yield and volatility are based on historical

stock prices and dividend amounts over past time periods equal in length to the expected life of the options.

The following weighted average assumptions were used to calculate the fair values of stock option grants in each year:

	2013		2012		2011	
Risk free interest rate	1.3	%	1.3	%	2.9	%
Expected life of option in years	6.5		6.5		6.4	
Expected dividend yield	3.2	%	3.3	%	3.3	%
Expected volatility	29.9	%	29.4	%	28.0	%

The weighted average fair value of options granted was \$27.36 per share, \$17.97 per share and \$19.00 per share for the years ended December 31, 2013, 2012, and 2011, respectively.

A summary of stock options outstanding and exercisable and activity for the year ended December 31, 2013 is presented below:

Number of Shares	Weighted Average Exercise	Weighted Average Remaining	Intrinsic Value (in millions)
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		Price	Contractual Life (in years)	
Outstanding, January 1, 2013	3,408,699	\$71.34	6.6	\$218
Granted	525,299	\$131.55		
Exercised	(1,185,030)	) \$58.42		
Forfeited/Expired	(104,580)	) \$97.15		
Outstanding, December 31, 2013	2,644,388	\$88.08	6.9	\$269
Vested or expected to vest, December 31, 2013	2,595,586	\$87.76	6.8	\$265
Exercisable, December 31, 2013	862,065	\$60.49	4.3	\$111

At December 31, 2013, unrecognized compensation cost related to outstanding stock options that have not yet vested totaled \$8 million. This cost is expected to be recognized as expense over a weighted average period of 1.6 years.

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The following table presents stock option activity for the years ended December 31, 2013, 2012 and 2011:

(Millions)	2013	2012	2011
Total intrinsic value of stock options exercised	\$110	\$110	\$40
Cash received from stock option exercises	68	122	81
Income tax benefit from the exercise of stock options	36	35	9
Total fair value of stock options vested	11	6	10

## Restricted Stock Units ("RSUs")

Long-term incentive value is delivered to selected key management employees by granting RSUs, which have either time or performance-based vesting features. The fair value of an RSU is equal to the market value of a share of PPG stock on the date of grant. Time-based RSUs vest over the three-year period following the date of grant, unless forfeited, and will be paid out in the form of stock, cash or a combination of both at the Company's discretion at the end of the three year vesting period. Performance-based RSUs vest based on achieving specific annual performance targets for earnings per share growth and cash flow return on capital over the three calendar year-end periods following the date of grant. Unless forfeited, the performance-based RSUs will be paid out in the form of stock, cash or a combination of both at the Company's discretion at the end of the three-year performance period if PPG meets the performance targets. The amount paid for performance-based awards may range from 0% to 180% of the original grant, based upon the frequency with which the annual earnings per share growth and cash flow return on capital performance targets are met over the three calendar year periods comprising the vesting period. For the purposes of expense recognition, PPG has assumed that performance-based RSUs granted in 2011 will vest at the 180% level, those granted in 2012 will vest at the 150% level, and those granted in 2013 will vest at the 100% level. As of December 31, 2013, six of the six possible performance targets had been met for the 2011 grant, four of the four possible performance targets had been met for the 2012 grant, and two of two possible performance targets had been met for the 2013 grant.

The following table summarizes RSU activity for the year ended December 31, 2013:

	Number of Shares	Weighted Average Fair Value	Intrinsic Value (in millions)
Outstanding, January 1, 2013	953,936	\$67.11	\$129
Granted	190,640	\$126.55	
Additional shares vested	229,007	\$82.22	
Released from restrictions	(499,184)	) \$55.04	
Forfeited	(13,742)	) \$93.94	
Outstanding, December 31, 2013	860,657	\$90.15	\$163
Vested or expected to vest, December 31, 2013	846,190	\$90.02	\$160

There was \$15 million of total unrecognized compensation cost related to unvested RSUs outstanding as of December 31,

2013. This cost is expected to be recognized as expense over a weighted average period of 1.7 years.

## Contingent Share Grants

The Company also provides grants of contingent shares to selected key executives that may be earned based on PPG total shareholder return ("TSR") over the three-year period following the date of grant. Contingent share grants (referred to as "TSR awards") are made annually and are paid out at the end of each three-year period based on the Company's performance. Performance is measured by determining the percentile rank of the total shareholder return of PPG common stock in relation to the total shareholder return of the S&P 500 for the three-year period following the date of grant. This comparison group represents the entire S&P 500 Index as it existed at the beginning of the

performance period. The payment of awards following the three-year award period will be based on performance achieved in accordance with the scale set forth in the plan agreement and may range from 0% to 220% of the initial grant. A payout of 100% is earned if the target performance is achieved. Contingent share awards for the 2011-2013, 2012-2014, and 2013-2015 periods earn dividend equivalents for the award period, which will be paid to participants with the award payout at the end of the period based on the actual number of contingent shares that are earned. Any payments made at the end of the award period may be in the form of stock, cash or a combination of both. The TSR awards qualify as liability awards, and compensation expense is recognized over the three-year award period based on the fair value of the awards (giving consideration to the Company's percentile rank of total shareholder return) remeasured in each reporting period until settlement of the awards.

As of December 31, 2013, there was \$14 million of total unrecognized compensation cost related to outstanding TSR awards based on the current estimate of fair value. This cost is expected to be recognized as expense over a weighted average period of 1.3 years.

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## Notes to the Consolidated Financial Statements

## 20. Quarterly Financial Information (unaudited)

2013 Quarter Ended					
Millions (except per share amounts)	March 31	June 30	Sept. 30	Dec. 31	Full Year
Net sales	\$3,331	\$4,095	\$3,980	\$3,702	\$15,108
Cost of Sales <sup>(1)</sup>	1,947	2,343	2,238	2,108	8,636
Net income attributable to PPG					
Continuing Operations	219	341	220	254	1,034
Discontinued Operations	2,191	—	6	—	2,197
Net income <sup>(2)</sup>	2,410	341	226	254	3,231
Earnings per common share					
Continuing Operations	\$1.50	\$2.38	\$1.54	\$1.80	\$7.21
Discontinued Operations	\$14.99	\$—	\$0.04	\$—	\$15.32
Earnings per common share	\$16.49	\$2.38	\$1.58	\$1.80	\$22.53
Earnings per common share - assuming dilution					
Continuing Operations	\$1.48	\$2.35	\$1.52	\$1.78	\$7.13
Discontinued Operations	\$14.83	\$—	\$0.04	\$—	\$15.14
Earnings per common share – assuming dilution <sup>(2)</sup>	\$16.31	\$2.35	\$1.56	\$1.78	\$22.27
2012 Quarter Ended					
Millions (except per share amounts)	March 31	June 30	Sept. 30	Dec. 31	Full Year
Net sales	\$3,333	\$3,528	\$3,408	\$3,243	\$13,512
Cost of Sales <sup>(1)</sup>	1,946	2,066	1,983	1,910	7,905
Net income (loss) attributable to PPG					
Continuing Operations	(50	) 297	288	191	726
Discontinued Operations	63	65	51	36	215
Net income <sup>(3)</sup>	13	362	339	227	941
Earnings per common share					
Continuing Operations	\$(0.33	) \$1.94	\$1.88	\$1.24	\$4.73
Discontinued Operations	\$0.41	\$0.43	\$0.33	\$0.23	\$1.40
Earnings per common share	\$0.08	\$2.37	\$2.21	\$1.47	\$6.13
Earnings per common share - assuming dilution					
Continuing Operations	\$(0.32	) \$1.92	\$1.86	\$1.23	\$4.69
Discontinued Operations	\$0.40	\$0.42	\$0.32	\$0.23	\$1.37
Earnings per common share – assuming dilution <sup>(3)</sup>	\$0.08	\$2.34	\$2.18	\$1.46	\$6.06

(1) Exclusive of depreciation and amortization.

Includes charges for environmental remediation of \$8 million or \$0.05 per diluted share in the first quarter 2013, and \$56 million or \$0.39 per share in the third quarter 2013 (See Note 14, "Commitments and Contingent Liabilities"). Third quarter 2013 includes charge of \$73 million or \$0.50 per diluted share related to restructuring (See Note 7, "Business Restructuring").

(3)

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First quarter 2012 includes a charge of \$163 million or \$1.06 per diluted share related to restructuring (See Note 7, "Business Restructuring") and a charge of \$99 million or \$0.64 per diluted share related to environmental remediation (See Note 14, "Commitments and Contingent Liabilities").

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Notes to the Consolidated Financial Statements

21. Reportable Business Segment Information

Segment Organization and Products

PPG is a multinational manufacturer with 12 operating segments that are organized based on the Company's major products lines. These operating segments are also the Company's reporting units for purposes of testing goodwill for impairment (see Note 1, "Summary of Significant Accounting Policies"). The operating segments have been aggregated based on economic similarities, the nature of their products, production processes, end-use markets and methods of distribution into five reportable business segments.

The Performance Coatings reportable segment is comprised of the refinish, aerospace, architectural coatings – Americas and Asia Pacific, and protective and marine coatings operating segments. This reportable segment primarily supplies a variety of decorative and functional coatings, sealants and finishes along with paint strippers, stains and related chemicals, as well as transparencies and transparent armor for specialty applications. On April 1, 2013, PPG completed the North American architectural coatings acquisition. The acquired business is included in the architectural coatings - Americas and Asia Pacific operating segment.

The Industrial Coatings reportable segment is comprised of the automotive OEM, industrial coatings and packaging coatings operating segments. This reportable segment primarily supplies a variety of protective and decorative coatings and finishes along with adhesives, sealants, and metal pretreatment products.

The Architectural Coatings – EMEA reportable segment is comprised of the architectural coatings – EMEA operating segment. This reportable segment primarily supplies a variety of coatings under a number of brands and purchased sundries to painting contractors and consumers in Europe, the Middle East and Africa.

The Optical and Specialty Materials reportable segment is comprised of the optical products and silicas businesses. The primary Optical and Specialty Materials products are Transitions lenses, optical lens materials and high performance sunlenses; amorphous precipitated silicas for tire, battery separator and other end-use markets; and Teslin substrate used in such applications as radio frequency identification (RFID) tags and labels, e-passports, drivers' licenses and identification cards. Transitions lenses are processed and distributed by PPG's 51% owned joint venture with Essilor International.

The Glass reportable segment is comprised of the flat glass and fiber glass operating segments. This reportable segment primarily supplies flat glass and continuous-strand fiber glass products.

Production facilities and markets for Performance Coatings, Industrial Coatings, Architectural Coatings – EMEA, Optical and Specialty Materials, and Glass are global. PPG's reportable segments continue to pursue opportunities to further develop their global markets, including efforts in Asia, Eastern Europe and Latin America. Each of the reportable segments in which

PPG is engaged is highly competitive. The diversification of our product lines and the worldwide markets served tend to minimize the impact on PPG's total sales and income from continuing operations of changes in demand in a particular market or in a particular geographic area.

The accounting policies of the operating segments are the same as those described in the summary of significant accounting policies (See Note 1, "Summary of Significant Accounting Policies"). The Company allocates resources to operating segments and evaluates the performance of operating segments based upon segment income, which is income before interest expense – net, income taxes, and noncontrolling interests and excludes certain charges which are considered to be unusual or non-recurring. The Company also evaluates performance of operating segments based on working capital reduction, margin growth, and sales volume growth. Legacy items include current costs related to former operations of the Company, including certain environmental remediation, pension and other postretirement benefit costs, and certain charges for legal and other matters which are considered to be unusual or non-recurring. These legacy costs are excluded from the segment income that is used to evaluate the performance of the operating segments. Legacy items also include equity earnings from PPG's approximate 40% investment in its former automotive glass and services business and \$30 million, \$35 million and \$35 million of costs in 2013, 2012 and 2011, respectively, related to the pension and other postemployment benefit liabilities of the divested business retained by

PPG. Corporate unallocated costs include the costs of corporate staff functions not directly associated with the operating segments, the cost of corporate legal cases, net of related insurance recoveries and the cost of certain insurance and stock-based compensation programs. Net periodic pension expense is allocated to the operating segments and the portion of net periodic pension expense related to the corporate staff functions is included in the Corporate unallocated costs.

For Optical and Specialty Materials, and Glass, intersegment sales and transfers are recorded at selling prices that approximate market prices. Product movement between Performance Coatings, Industrial Coatings and Architectural Coatings – EMEA is limited, is accounted for as an inventory transfer and is recorded at cost plus a mark-up, the impact of which is not significant to the segment income of the three coatings reportable segments.

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## Notes to the Consolidated Financial Statements

(Millions) Reportable Business Segments	Performance Coatings	Industrial Coatings	Architectural Coatings – EMEA	Optical and Specialty Materials	Glass	Corporate / Eliminations/ Non- Segment Items <sup>(1)</sup>	Consolidated Totals
2013							
Net sales to external customers	\$ 5,872	\$4,845	\$ 2,062	\$1,262	\$1,067	\$ —	\$ 15,108
Intersegment net sales	—	—	—	3	1	(4 )	—
Total net sales	\$ 5,872	\$4,845	\$ 2,062	\$1,265	\$1,068	\$ (4 )	\$ 15,108
Segment income	\$ 858	\$724	\$ 184	\$368	\$56	\$ —	\$ 2,190
Legacy items <sup>(2)</sup>							(165 )
Business restructuring							(98 )
Certain acquisition-related costs <sup>(5)</sup>							(42 )
Interest expense, net of interest income							(153 )
Corporate unallocated <sup>(1)</sup>							(243 )
Income before income taxes							\$ 1,489
Depreciation and amortization	\$ 164	\$98	\$ 105	\$34	\$52	\$ 22	\$ 475
Share of net earnings (loss) of equity affiliates	(1 )	(1 )	2	—	(6 )	(2 )	(8 )
Segment assets <sup>(3)</sup>	5,360	3,174	2,673	693	917	3,046	15,863
Investment in equity affiliates	9	16	23	—	149	48	245
Expenditures for property (including business acquisitions)	1,130	163	37	66	80	32	1,508
2012							
Net sales to external customers	\$4,752	\$4,379	\$2,147	\$1,202	\$1,032	\$—	\$13,512
Intersegment net sales	—	—	—	3	—	(3 )	—
Total net sales	\$4,752	\$4,379	\$2,147	\$1,205	\$1,032	\$(3 )	\$13,512
Segment income	\$744	\$590	\$145	\$348	\$63	\$—	\$1,890
Legacy items <sup>(2)</sup>							(217 )
Business restructuring							(208 )
Certain acquisition-related costs <sup>(5)</sup>							(5 )
Charges related to acquisition of Dyrup and Colpisa							(6 )
Interest expense, net of interest income							(171 )
Corporate unallocated <sup>(1)</sup>							(226 )
Income before income taxes							\$1,057
Depreciation and amortization	\$112	\$87	\$115	\$32	\$53	\$22	\$421
Share of net earnings/(loss) of equity affiliates	1	(1 )	2	—	4	3	9
Segment assets <sup>(3)</sup>	3,993	2,886	2,727	646	914	4,712	15,878
Investment in equity affiliates	10	15	19	—	166	52	262
Expenditures for property (including business acquisitions)	103	184	52	65	46	70	520



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## Notes to the Consolidated Financial Statements

(Millions) Reportable Business Segments	Performance Coatings	Industrial Coatings	Architectural Coatings – EMEA	Optical and Specialty Materials	Glass	Corporate / Eliminations / Non- Segment Items <sup>(1)</sup>	Consolidated Totals
2011							—
Net sales to external customers	\$ 4,626	\$4,158	\$ 2,104	\$1,204	\$1,061	\$ —	\$ 13,153
Intersegment net sales	—	—	—	3	—	(3 )	—
Total net sales	\$ 4,626	\$4,158	\$ 2,104	\$1,207	\$1,061	\$ (3 )	\$ 13,153
Segment income	\$ 673	\$438	\$ 123	\$326	\$97	\$ —	\$ 1,657
Legacy items <sup>(2)</sup>							(66 )
Interest expense, net of interest income							(168 )
Corporate unallocated <sup>(1)</sup>							(201 )
Income before income taxes							\$ 1,222
Depreciation and amortization (See Note 1)	\$ 115	\$90	\$ 113	\$36	\$52	\$ 19	\$ 425
Share of net earnings of equity affiliates	2	1	2	—	24	7	36
Segment assets <sup>(3)</sup>	4,017	2,614	2,626	610	919	3,596	14,382
Investment in equity affiliates	12	12	20	—	170	47	261
Expenditures for property (including business acquisitions)	79	73	48	54	56	130	440
(Millions)							
Geographic Information				2013	2012		2011
Net sales <sup>(4)</sup>							
The Americas							
United States				\$6,147	\$5,046		\$4,647
Other Americas				1,498	1,107		1,044
Europe, Middle East and Africa (“EMEA”)				4,864	4,839		5,043
Asia Pacific				2,599	2,520		2,419
Total				\$15,108	\$13,512		\$13,153
Segment income							
The Americas							
United States				\$1,173	\$976		\$807
Other Americas				136	98		73
EMEA				514	475		454
Asia Pacific				367	341		323
Total				\$2,190	\$1,890		\$1,657
Property—net							
The Americas							
United States				\$1,285	\$1,379		\$1,345
Other Americas				153	100		98
EMEA				935	903		841
Asia Pacific				503	506		437
Total				\$2,876	\$2,888		\$2,721

(1)

Corporate intersegment net sales represent intersegment net sales eliminations. Corporate unallocated costs include the costs of corporate staff functions not directly associated with the operating segments, certain legal and insurance costs and stock-based compensation expense.

Legacy items include current costs related to former operations of the Company, including certain environmental remediation, pension and other postretirement benefit costs, legal costs and certain charges which are considered to be non-recurring. The Legacy items for 2013 and 2012 include environmental remediation pretax charges of \$101 million and \$159 million, respectively. These charges relate to continued environmental remediation activities at legacy chemicals sites, primarily at PPG's former Jersey City, N.J. chromium manufacturing plant and associated sites (See Note 14). Legacy items also include equity earnings from PPG's approximate 40% investment in the former automotive glass and services business.

Segment assets are the total assets used in the operation of each segment. Corporate assets are principally cash and cash equivalents, cash held in escrow, short term investments, deferred tax assets and the approximate 40% investment in the former automotive glass and services business. Non-segment items for 2012 and 2011 also includes the assets of the former commodity chemicals business which has been recast as discontinued operations in the Consolidated Statement of Income (See Note 22).

Net sales to external customers are attributed to geographic regions based upon the location of the operating unit shipping the product.

Acquisition-related costs include advisory, legal, accounting, valuation, and other professional or consulting fees incurred to effect significant acquisitions.

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## Notes to the Consolidated Financial Statements

## 22. Separation and Merger Transaction

On January 28, 2013, the Company completed the previously announced separation of its commodity chemicals business and merger of its wholly-owned subsidiary, Eagle Spinco Inc., with a subsidiary of Georgia Gulf Corporation in a tax efficient Reverse Morris Trust transaction (the "Transaction"). Pursuant to the merger, Eagle Spinco, the entity holding PPG's former commodity chemicals business, became a wholly-owned subsidiary of Georgia Gulf. The closing of the merger followed the expiration of the related exchange offer and the satisfaction of certain other conditions. The combined company formed by uniting Georgia Gulf with PPG's former commodity chemicals business is named Axiall Corporation ("Axiall"). PPG holds no ownership interest in Axiall. PPG received the necessary ruling from the Internal Revenue Service and as a result this Transaction was generally tax free to PPG and its shareholders in the United States and Canada.

Under the terms of the exchange offer, 35,249,104 shares of Eagle Spinco common stock were available for distribution in exchange for shares of PPG common stock accepted in the offer. Following the merger, each share of Eagle Spinco common stock automatically converted into the right to receive one share of Axiall Corporation common stock. Accordingly, PPG shareholders who tendered their shares of PPG common stock as part of this offer received 3.2562 shares of Axiall common stock for each share of PPG common stock accepted for exchange. PPG was able to accept the maximum of 10,825,227 shares of PPG common stock for exchange in the offer, and thereby, reduced its outstanding shares by approximately 7%. The completion of this exchange offer was a non-cash financing transaction, which resulted in an increase in "Treasury stock" at a cost of \$1.561 billion based on the PPG closing stock price on January 25, 2013.

Under the terms of the Transaction, PPG received \$900 million of cash and 35.2 million shares of Axiall common stock (market value of \$1.8 billion on January 25, 2013) which was distributed to PPG shareholders by the exchange offer as described above. In addition, PPG received \$67 million in cash for a preliminary post-closing working capital adjustment under the terms of the Transaction agreements. The net assets transferred to Axiall included \$27 million of cash on the books of the business transferred. In the Transaction, PPG transferred environmental remediation liabilities, defined benefit pension plan assets and liabilities and other post-employment benefit liabilities related to the commodity chemicals business to Axiall.

During the first quarter of 2013, PPG recorded a gain of \$2.2 billion on the Transaction reflecting the excess of the sum of the cash proceeds received and the cost (closing stock price on January 25, 2013) of the PPG shares tendered and accepted in the exchange for the 35.2 million shares of Axiall common stock over the net book value of the net assets of PPG's former commodity chemicals business. The Transaction resulted in a net partial settlement loss of \$33 million associated with the spin

out and termination of defined benefit pension liabilities and the transfer of other post-retirement benefit liabilities under the terms of the Transaction. The Company also incurred \$14 million of pretax expense, primarily for professional services related to the Transaction in 2013 as well as approximately \$2 million of net expense related to certain retained obligations and post-closing adjustments under the terms of the Transaction agreements. The net gain on the Transaction includes these related losses and expenses.

The results of operations and cash flows of PPG's former commodity chemicals business for January 2013 and the net gain on the Transaction are reported as results from discontinued operations for the year-ended December 31, 2013. In prior periods presented, the results of operations and cash flows of PPG's former commodity chemicals business have been reclassified from continuing operations and presented as results from discontinued operations.

PPG will provide Axiall with certain transition services for up to 24 months following the closing date of the Transaction. These services include logistics, purchasing, finance, information technology, human resources, tax and payroll processing.

The net sales and income before income taxes of the commodity chemicals business that have been reclassified and reported as discontinued operations are presented in the table below:

Year-ended

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Millions	2013	2012	2011
Net sales	\$108	\$1,688	\$1,732
Income from operations, before income tax	\$—	\$345	\$376
Net gain from separation and merger of commodity chemicals business	2,192	—	—
Income tax expense	(5	) 117	126
Income from discontinued operations, net of tax	\$2,197	\$228	\$250
Less: Net income attributable to non-controlling interests, discontinued operations	\$—	\$(13	) \$(13
Net income from discontinued operations (attributable to PPG)	\$2,197	\$215	\$237

During 2012, \$21 million of business separation costs are included within "Income from discontinued operations, net."

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## Notes to the Consolidated Financial Statements

The major classes of assets and liabilities of PPG's former commodity chemicals business included in the PPG balance sheet at December 31, 2012 were as follows:

	December	
Millions	31, 2012	
Cash	\$29	
Receivables	245	
Inventory	76	
Other current assets	23	
Property, plant, and equipment	380	
Goodwill	6	
Other non-current assets	29	
Total assets of the commodity chemicals business	\$788	
Accounts payable	(100	)
Other current liabilities	(91	)
Accrued pensions and other post-retirement benefits	(233	)
Environmental contingencies	(31	)
Other long-term liabilities	(59	)
Noncontrolling interests	\$(18	)
Net assets of the commodity chemicals business	\$256	

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure  
None.

## Item 9A. Controls and Procedures

(a) Evaluation of disclosure controls and procedures.

Based on their evaluation as of the end of the period covered by this Form 10-K, the Company's principal executive officer and principal financial officer have concluded that the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) are effective to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure.

(b) Changes in internal control over financial reporting.

There were no changes in the Company's internal control over financial reporting that occurred during the Company's most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

(c) Management report on internal control over financial reporting.

See Management Report on page 33 for management's annual report on internal control over financial reporting. See Report of Independent Registered Public Accounting Firm on page 32 for PricewaterhouseCoopers LLP's audit report on the Company's internal control over financial reporting.

Item 9B. Other Information

None.

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Part III

Item 10. Directors, Executive Officers and Corporate Governance

The information about the Company's directors required by Item 10 and not otherwise set forth below is contained under the caption "Proposal 1: Election of Directors" in PPG's definitive Proxy Statement for the 2014 Annual Meeting of Shareholders (the "Proxy Statement") which the Company anticipates filing with the Securities and Exchange Commission, pursuant to Regulation 14A, not later than 120 days after the end of the Company's fiscal year, and is incorporated herein by reference.

The executive officers of the Company are elected by the Board of Directors. The information required by this item concerning the Company's executive officers is incorporated by reference herein from Part I of this report under the caption "Executive Officers of the Company."

Information regarding the Company's Audit Committee is included in the Proxy Statement under the caption "Corporate Governance – Audit Committee" and is incorporated herein by reference.

Information regarding the Company's codes of ethics is included in the Proxy Statement under the caption "Corporate Governance – Codes of Ethics" and is incorporated herein by reference.

Information about compliance with Section 16(a) of the Exchange Act is included in the Proxy Statement under the caption "Beneficial Ownership – Section 16(a) Beneficial Ownership Reporting Compliance" and is incorporated herein by reference.

Item 11. Executive Compensation

The information required by Item 11 is contained in the Proxy Statement under the captions "Compensation of Directors," "Compensation Discussion and Analysis," "Compensation of Executive Officers," "Potential Payments upon Termination or Change in Control," "Corporate Governance – Compensation Committee Interlocks and Insider Participation," and "Corporate Governance – Officers-Directors Compensation Committee Report to Shareholders" and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by Item 12 is contained in the Proxy Statement under the captions "Beneficial Ownership" and "Equity Compensation Plan Information" and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by Item 13 is contained in the Proxy Statement under the captions "Corporate Governance – Director Independence," "Corporate Governance – Review and Approval or Ratification of Transactions with Related Persons" and "Corporate Governance – Certain Relationships and Related Transactions" and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services

The information required by Item 14 is contained in the Proxy Statement under the caption "Independent Registered Public Accounting Firm" and is incorporated herein by reference.

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## Part IV

## Item 15. Exhibits, Financial Statement Schedules

(a)(1) Consolidated Financial Statements and Reports of Independent Registered Public Accounting Firm (see Part II, Item 8 of this Form 10-K).

The following information is filed as part of this Form 10-K:

	Page
<u>Report of Independent Registered Public Accounting Firm</u>	<u>32</u>
<u>Management Report</u>	<u>33</u>
<u>2012 Report of Independent Registered Public Accounting Firm</u>	<u>33</u>
<u>Consolidated Statement of Income for the Years Ended December 31, 2013, 2012 and 2011</u>	<u>34</u>
<u>Consolidated Statement of Comprehensive Income for the Years Ended December 31, 2013, 2012 and 2011</u>	<u>34</u>
<u>Consolidated Balance Sheet as of December 31, 2013 and 2012</u>	<u>35</u>
<u>Consolidated Statement of Shareholders' Equity for the Years Ended December 31, 2013, 2012 and 2011</u>	<u>36</u>
<u>Consolidated Statement of Cash Flows for the Years Ended December 31, 2013, 2012 and 2011</u>	<u>37</u>
<u>Notes to the Consolidated Financial Statements</u>	<u>38</u>

(a)(2) Consolidated Financial Statement Schedule for the years ended December 31, 2013, 2012 and 2011.

The following Consolidated Financial Statement Schedule should be read in conjunction with the previously referenced financial statements:

## Schedule II – Valuation and Qualifying Accounts

## Allowance for Doubtful Accounts for the Years Ended December 31, 2013, 2012, and 2011

(Millions)	Balance at Beginning of Year	Charged to Costs and Expenses	Deductions <sup>(1)</sup>	Balance at End of Year
2013	\$77	\$33	\$(36)	) \$74
2012	\$71	\$24	\$(18)	) \$77
2011 <sup>(2)</sup>	\$91	\$31	\$(51)	) \$71

(1) Notes and accounts receivable written off as uncollectible, net of recoveries, amounts attributable to divestitures and changes attributable to foreign currency translation.

(2) Expenses and deductions during 2011 were elevated by \$9 million due to a U.K. based retail do-it-yourself customer who filed for bankruptcy during the second quarter of 2011.

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All other schedules are omitted because they are not applicable.

(a)(3) Exhibits. The following exhibits are filed as a part of, or incorporated by reference into, this Form 10-K.

- Agreement and Plan of Merger, dated as of July 18, 2012, by and among PPG Industries, Inc., Eagle Spinco Inc., Georgia Gulf Corporation and Grizzly Acquisition Sub, Inc., was filed as Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed on July 19, 2012.

2.1
- Amendment No. 1 to the Agreement and Plan of Merger, dated as of August 31, 2012, by and PPG Industries, Inc., Eagle Spinco Inc., Georgia Gulf Corporation and Grizzly Acquisition Sub, Inc., was filed as Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed on September 5, 2012.

2.2
- Sale and Purchase Agreement, dated December 13, 2012, between Akzo Nobel N.V. and PPG Industries, Inc., was filed as Exhibit 2.3 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2012.

2.3
- Transaction Agreement by and among PPG Industries, Inc., PPG Industries Securities, LLC, PPG Luxembourg Finance S.àR.L., Group 26 Diversified Holdings Ireland, and Essilor International (Compagnie Generale D'Optique) S.A. was filed as Exhibit 2.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2013.

2.4
- PPG Industries, Inc., Restated Articles of Incorporation, as amended, were filed as Exhibit 3 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2012.

3
- PPG Industries, Inc., Bylaws, as amended and restated on April 19, 2007, were filed as Exhibit 3.2 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2007.

3.1
- Indenture, dated as of Aug. 1, 1982, was filed as Exhibit 4.1 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.

4
- First Supplemental Indenture, dated as of April 1, 1986, was filed as Exhibit 4.2 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.

4.1

4.2 Second Supplemental Indenture, dated as of October 1, 1989, was filed as Exhibit 4.3 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.

4.3 Third Supplemental Indenture, dated as of November 1, 1995, was filed as Exhibit 4.4 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.

4.4 Indenture, dated as of June 24, 2005, was filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K dated June 20, 2005.

4.5 Indenture, dated as of March 18, 2008, was filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on March 18, 2008.

4.6 Supplemental Indenture, dated as of March 18, 2008, was filed as Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on March 18, 2008.

4.7 Second Supplemental Indenture, dated as of November 12, 2010, was filed as Exhibit 4.3 to the Registrant's Current Report on Form 8-K filed on November 12, 2010.

4.8 Third Supplemental Indenture, dated as of August 3, 2012, was filed as Exhibit 4.4 to the Registrant's Current Report on Form 8-K filed on August 3, 2012.

\* 10 PPG Industries, Inc. Nonqualified Retirement Plan, as amended and restated September 24, 2008, was filed as Exhibit 10 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2011.

\* 10.1 Form of Change in Control Employment Agreement entered into with executives prior to January 1, 2008, as amended, was filed as Exhibit 10.2 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2007.

\* 10.2 Form of Change in Control Employment Agreement entered into with executives on or after January 1, 2008 through December 31, 2009, was filed as Exhibit 10.24 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2007.

\* 10.3 Form of Change in Control Employment Agreement entered into with executives on or after January 1, 2010, was filed as Exhibit 10.3 to the Registrant's Annual Report on Form 10-K for the period ended

December 31, 2009.

Form of Change in Control Employment

Agreement entered into with executives on or

- \* 10.4 after June 30, 2012 was filed as Exhibit 10.4 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2012.

PPG Industries, Inc. Deferred Compensation Plan for Directors related to compensation

- \* 10.5 deferred prior to January 1, 2005, was filed as Exhibit 10.3 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 1997.

PPG Industries, Inc. Deferred Compensation Plan for Directors related to compensation

- \* 10.6 deferred on or after January 1, 2005, as amended February 15, 2006, was filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2006.

PPG Industries, Inc. Deferred Compensation Plan related to compensation deferred prior to

- \* 10.7 January 1, 2005, as amended effective July 14, 2004, was filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2004.

PPG Industries, Inc. Deferred Compensation Plan related to compensation deferred on or

- \* 10.8 after January 1, 2005, as amended and restated September 24, 2008, was filed as Exhibit 10.6 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2008.

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- PPG Industries, Inc. Deferred Compensation Plan related to compensation deferred on or prior to January 1, 2005, as amended and restated effective January 1, 2011, was filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2012.

\* 10.9
- PPG Industries, Inc. Deferred Compensation Plan related to compensation deferred on or after to January 1, 2005, as amended and restated effective January 1, 2011, was filed as Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2012.

\* 10.10
- PPG Industries, Inc. Executive Officers' Long Term Incentive Plan was filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K dated February 16, 2005.

\* 10.11
- PPG Industries, Inc. Incentive Compensation Plan for Key Employees, as amended April 20, 2006, was filed as Exhibit 10.8 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2008.

\* 10.12
- PPG Industries, Inc. Management Award Plan, as amended April 20, 2006, was filed as Exhibit 10.9 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2008.

\* 10.13
- PPG Industries, Inc. Stock Plan, dated as of April 17, 1997, as amended July 20, 2005, was filed as Exhibit 10.13 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2005.

\* 10.14
- PPG Industries, Inc. Omnibus Incentive Plan was filed as Exhibit 10.18 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2006.

\* 10.15
- PPG Industries, Inc. Amended and Restated Omnibus Incentive Plan, was filed as Annex A to the Registrant's Definitive Proxy Statement for its 2011 Annual Meeting of Shareholders filed on March 10, 2011.

\* 10.16
- Form of Non-Qualified Option Agreement for Directors was filed as Exhibit 10.4 to the Registrant's Current Report on Form 8-K dated February 15, 2005.

\* 10.17
- Form of Time-Vested Restricted Stock Unit Award Agreement for Directors, was filed as Exhibit 10.8 to the Registrant's Quarterly

\* 10.18



- Report on Form 10-Q for the period ended June 30, 2011.
- \* 10.19 Form of Non-Qualified Stock Option Award Agreement, was filed as Exhibit 10.14 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2008.
  - \* 10.20 Form of Non-Qualified Stock Option Award Agreement, was filed as Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2009.
  - \* 10.21 Form of Non-Qualified Stock Option Award Agreement, was filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2011.
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  - \* 10.25 Form of TSR Share Award Agreement, was filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2012.
  - \* 10.26 Form of TSR Share Award Agreement, was filed as Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2013.
  - \* 10.27 Form of Performance-Based Restricted Stock Unit Award Agreement for Key Employees, was filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2009.
  - \* 10.28 Form of Performance-Based Restricted Stock Unit Award Agreement, was filed as Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2009.
  - \* 10.29 Form of Performance-Based Restricted Stock Unit Award Agreement for Key Employees, was filed as Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2011.
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- Form of Performance-Based Restricted Stock Unit Award Agreement, was filed as Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2011.
- \* 10.31 Form of Performance-Based Restricted Stock Unit Award Agreement, was filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2013.
- \* 10.32 Form of Performance-Based Restricted Stock Unit Award Agreement for Key Employees, was filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2012.
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- \* 10.35 Form of Time-Vested Restricted Stock Unit Award Agreement, was filed as Exhibit 10.7 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2011.
- \* 10.36 Form of Time-Vested Restricted Stock Unit Award Agreement, was filed as Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2013.

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* 10.37	Form of letter to certain executives regarding 2008 deferred compensation plan elections, was filed as Exhibit 10.20 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2007.
10.38	Five-Year Credit Agreement among PPG Industries, Inc.; the several banks and financial institutions party thereto; JPMorgan Chase Bank, N.A., as administrative agent; The Bank of Tokyo-Mitsubishi UFJ, Ltd., BNP Paribas, Citigroup Global Markets Inc. and PNC Bank, National Association, as co-syndication agents; and J.P. Morgan Securities LLC, The Bank of Tokyo-Mitsubishi UFJ, Ltd., BNP Paribas Securities Corp., Citigroup Global Markets Inc., and PNC Capital Markets LLC, as co-lead arrangers and co-bookrunners, was filed as Exhibit 10 to the Registrant's Current Report on Form 8-K filed on September 13, 2012.
10.39	Separation Agreement, dated as of July 18, 2012, by and between PPG Industries, Inc. and Eagle Spinco Inc., was filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on July 19, 2012.
* 10.40	Letter Agreement with Frank S. Sklarsky, was filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2013.
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† 21	Subsidiaries of the Registrant.
† 23.1	Consent of PricewaterhouseCoopers LLP
† 23.2	Consent of Deloitte & Touche LLP
† 24	Powers of Attorney.
† 31.1	Certification of Principal Executive Officer Pursuant to Rule 13a-14(a) or 15d-14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
† 31.2	Certification of Principal Financial Officer Pursuant to Rule 13a-14(a) or 15d-14(a) of the Exchange Act, as Adopted Pursuant to Section

- 302 of the Sarbanes-Oxley Act of 2002.  
 Certification of Chief Executive Officer  
 Pursuant to 18 U.S.C. Section 1350, as  
 Adopted Pursuant to Section 906 of the  
 Sarbanes-Oxley Act of 2002.
- † 32.1
- Certification of Chief Financial Officer  
 Pursuant to 18 U.S.C. Section 1350, as  
 Adopted Pursuant to Section 906 of the  
 Sarbanes-Oxley Act of 2002.
- † 32.2
- \*\* 101.INS XBRL Instance Document
- \*\* 101.SCH XBRL Taxonomy Extension Schema  
 Document
- \*\* 101.CAL XBRL Taxonomy Extension Calculation  
 Linkbase Document
- \*\* 101.DEF XBRL Taxonomy Extension Definition  
 Linkbase Document
- \*\* 101.LAB XBRL Taxonomy Extension Label Linkbase  
 Document
- \*\* 101.PRE XBRL Taxonomy Extension Presentation  
 Linkbase Document
- † Filed herewith.
- \* Management contracts, compensatory plans or arrangements required to be filed as an exhibit hereto  
 pursuant to Item 601 of Regulation S-K.
- \*\* Attached as Exhibit 101 to this report are the following documents formatted in XBRL (Extensible  
 Business Reporting Language) as of and for the year ended December 31, 2013: (i) the Consolidated  
 Statement of Income, (ii) the Consolidated Balance Sheet, (iii) the Consolidated Statement of  
 Shareholders' Equity, (iv) the Consolidated Statement of Comprehensive Income (Loss), (v) the  
 Consolidated Statement of Cash Flows, (vi) Notes to Consolidated Financial Statements and  
 (vii) Financial Schedule of Valuation and Qualifying Accounts.

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Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized on February 20, 2014.

PPG INDUSTRIES, INC.  
(Registrant)

By /s/ Frank S. Sklarsky  
Frank S. Sklarsky, Executive Vice President  
and Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the Registrant and in the capacities indicated on February 20, 2014.

Signature.	Capacity	
/s/ Charles E. Bunch Charles E. Bunch	Director, Chairman and Chief Executive Officer	
/s/ Frank S. Sklarsky Frank S. Sklarsky	Executive Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	
S. F. Angel	Director	
J. G. Berges	Director	
J. V. Faraci	Director	
H. Grant	Director	
V. F. Haynes	Director	
M. J. Hooper	Director	By /s/ Frank S. Sklarsky
R. Mehrabian	Director	Frank S.
M. H. Richenhagen	Director	Sklarsky, Attorney-in-Fact
R. Ripp	Director	
T. J. Usher	Director	
D. R. Whitwam	Director	

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PPG Industries Inc. and Consolidated Subsidiaries

Index to Exhibits

- 2.1 Agreement and Plan of Merger, dated as of July 18, 2012, by and among PPG Industries, Inc., Eagle Spinco Inc., Georgia Gulf Corporation and Grizzly Acquisition Sub, Inc., was filed as Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed on July 19, 2012.
- 2.2 Amendment No. 1 to the Agreement and Plan of Merger, dated as of August 31, 2012, by and PPG Industries, Inc., Eagle Spinco Inc., Georgia Gulf Corporation and Grizzly Acquisition Sub, Inc., was filed as Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed on September 5, 2012.
- 2.3 Sale and Purchase Agreement, dated December 13, 2012, between Akzo Nobel N.V. and PPG Industries, Inc., was filed as Exhibit 2.3 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2012.
- 2.4 Transaction Agreement by and among PPG Industries, Inc., PPG Industries Securities, LLC, PPG Luxembourg Finance S.àR.L., Group 26 Diversified Holdings Ireland, and Essilor International (Compagnie Generale D'Optique) S.A. was filed as Exhibit 2.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2013.
- 3 PPG Industries, Inc., Restated Articles of Incorporation, as amended, were filed as Exhibit 3 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2012.
- 3.1 PPG Industries, Inc., Bylaws, as amended and restated on April 19, 2007, were filed as Exhibit 3.2 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2007.
- 4 Indenture, dated as of Aug. 1, 1982, was filed as Exhibit 4.1 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.
- 4.1 First Supplemental Indenture, dated as of April 1, 1986, was filed as Exhibit 4.2 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.
- 4.2 Second Supplemental Indenture, dated as of October 1, 1989, was filed as Exhibit 4.3 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.
- 4.3 Third Supplemental Indenture, dated as of November 1, 1995, was filed as Exhibit 4.4 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.
- 4.4 Indenture, dated as of June 24, 2005, was filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K dated June 20, 2005.
- 4.5 Indenture, dated as of March 18, 2008, was filed as Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on March 18, 2008.
- 4.6 Supplemental Indenture, dated as of March 18, 2008, was filed as Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on March 18, 2008.
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- 4.8 Third Supplemental Indenture, dated as of August 3, 2012, was filed as Exhibit 4.4 to the Registrant's Current Report on Form 8-K filed on August 3, 2012.
- \* 10 PPG Industries, Inc. Nonqualified Retirement Plan, as amended and restated September 24, 2008, was filed as Exhibit 10 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2011.
- \* 10.1 Form of Change in Control Employment Agreement entered into with executives prior to January 1, 2008, as amended, was filed as Exhibit 10.2 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2007.
- \* 10.2 Form of Change in Control Employment Agreement entered into with executives on or after January 1, 2008 through December 31, 2009, was filed as Exhibit 10.24 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2007.
- \* 10.3 Form of Change in Control Employment Agreement entered into with executives on or after January 1, 2010, was filed as Exhibit 10.3 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2009.

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- \* 10.4 Form of Change in Control Employment Agreement entered into with executives on or after June 30, 2012, was filed as Exhibit 10.4 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2012.
  - \* 10.5 PPG Industries, Inc. Deferred Compensation Plan for Directors related to compensation deferred prior to January 1, 2005, was filed as Exhibit 10.3 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 1997.
  - \* 10.6 PPG Industries, Inc. Deferred Compensation Plan for Directors related to compensation deferred on or after January 1, 2005, as amended February 15, 2006, was filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2006.
  - \* 10.7 PPG Industries, Inc. Deferred Compensation Plan related to compensation deferred prior to January 1, 2005, as amended effective July 14, 2004, was filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2004.
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* 10.8	PPG Industries, Inc. Deferred Compensation Plan related to compensation deferred on or after January 1, 2005, as amended and restated September 24, 2008, was filed as Exhibit 10.6 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2008.
* 10.9	PPG Industries, Inc. Deferred Compensation Plan related to compensation deferred on or prior to January 1, 2005, as amended and restated effective January 1, 2011, was filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2012.
* 10.10	PPG Industries, Inc. Deferred Compensation Plan related to compensation deferred on or after to January 1, 2005, as amended and restated effective January 1, 2011, was filed as Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2012.
* 10.11	PPG Industries, Inc. Executive Officers' Long Term Incentive Plan was filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K dated February 16, 2005.
* 10.12	PPG Industries, Inc. Incentive Compensation Plan for Key Employees, as amended April 20, 2006, was filed as Exhibit 10.8 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2008.
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* 10.16	PPG Industries, Inc. Amended and Restated Omnibus Incentive Plan, was filed as Annex A to the Registrant's Definitive Proxy Statement for its 2011 Annual Meeting of Shareholders filed on March 10, 2011.
* 10.17	Form of Non-Qualified Option Agreement for Directors was filed as Exhibit 10.4 to the Registrant's Current Report on Form 8-K dated February 15, 2005.
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