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

FORM 10-Q

☑ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the quarterly period ended: June 30, 2021
or
☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _______ to _______
Commission file number 1-1687

PPG INDUSTRIES INC.
(Exact name of registrant as specified in its charter)

25-0730780
(I.R.S. Employer Identification No.)
Pennsylvania
(State or Other Jurisdiction of Incorporation or Organization)
One PPG Place, Pittsburgh, Pennsylvania
(Address of Principal Executive Offices)
15272
(Zip Code)
(412) 434-3131
(Registrant's Telephone Number, Including Area Code)
Not Applicable
(Former Name, Former Address and Former Fiscal Year, if Changed Since Last Report)
Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $1.66 ^{2/3}$	PPG	New York Stock Exchange
0.875% Notes due 2022	PPG 22	New York Stock Exchange
0.875% Notes due 2025	PPG 25	New York Stock Exchange
1.400% Notes due 2027	PPG 27	New York Stock Exchange

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 (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted 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 such files). Yes ☑ No ☐

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

Large Accelerated Filer	☑	Accelerated Filer	☐
Non-accelerated Filer	☐	Smaller Reporting Company	☐
		Emerging Growth Company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

As of June 30, 2021, 237,356,580 shares of the Registrant's common stock, par value $1.66 2/3 per share, were outstanding.

PPG INDUSTRIES, INC. AND SUBSIDIARIES

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

PPG INDUSTRIES, INC. AND SUBSIDIARIES

Condensed Consolidated Statement of Income (Unaudited)
($ in millions, except per share amounts)

	Three Months Ended June 30		Six Months Ended June 30	
	2021	2020	2021	2020
Net sales	$4,359	$3,015	$8,240	$6,392
Cost of sales, exclusive of depreciation and amortization	2,629	1,703	4,861	3,611
Selling, general and administrative	955	766	1,846	1,671
Depreciation	96	91	186	184
Amortization	41	32	80	68
Research and development, net	107	86	209	187
Interest expense	31	41	61	73
Interest income	(6)	(5)	(12)	(14)
Business restructuring, net	(21)	165	(21)	172
Other charges	11	21	28	24
Other income	(77)	(11)	(90)	(29)
Income before income taxes	$593	$126	$1,092	$445
Income tax expense	160	29	274	100
Income from continuing operations	$433	$97	$818	$345
Income from discontinued operations, net of tax	—	3	—	3
Net income attributable to controlling and noncontrolling interests	$433	$100	$818	$348
Net (income)/loss attributable to noncontrolling interests	(2)	2	(9)	(3)
Net income (attributable to PPG)	$431	$102	$809	$345
Amounts attributable to PPG:				
Income from continuing operations, net of tax	$431	$99	$809	$342
Income from discontinued operations, net of tax	—	3	—	3
Net income (attributable to PPG)	$431	$102	$809	$345
Earnings per common share:				
Income from continuing operations, net of tax	$1.81	$0.42	$3.40	$1.45
Income from discontinued operations, net of tax	—	0.01	—	0.01
Earnings per common share (attributable to PPG)	$1.81	$0.43	$3.40	$1.46
Earnings per common share – assuming dilution:				
Income from continuing operations, net of tax	$1.80	$0.42	$3.38	$1.44
Income from discontinued operations, net of tax	—	0.01	—	0.01
Earnings per common share (attributable to PPG) - assuming dilution	$1.80	$0.43	$3.38	$1.45

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

Condensed Consolidated Statement of Comprehensive Income/(Loss) (Unaudited)
($ in millions)

	Three Months Ended June 30		Six Months Ended June 30	
	2021	2020	2021	2020
Net income attributable to the controlling and noncontrolling interests	$433	$100	$818	$348
Other comprehensive income/(loss), net of tax:				
Defined benefit pension and other postretirement benefits	(2)	5	(7)	6
Unrealized foreign currency translation adjustments	67	117	(61)	(589)
Derivative financial instruments	—	(3)	—	—
Other comprehensive income/(loss), net of tax	$65	$119	($68)	($583)
Total comprehensive income/(loss)	$498	$219	$750	($235)
Less: amounts attributable to noncontrolling interests:				
Net income	(2)	2	(9)	(3)
Unrealized foreign currency translation adjustments	1	(2)	3	8
Comprehensive income/(loss) attributable to PPG	$497	$219	$744	($230)

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

PPG INDUSTRIES, INC. AND SUBSIDIARIES

Condensed Consolidated Balance Sheet (Unaudited)

($ in millions)

	June 30, 2021	December 31, 2020
Assets		
Current assets:		
Cash and cash equivalents	$1,195	$1,826
Short-term investments	110	96
Receivables, net	3,498	2,726
Inventories	2,226	1,735
Other current assets	417	415
Total current assets	$7,446	$6,798
Property, plant and equipment (net of accumulated depreciation of $4,484 and $4,349)	3,424	3,127
Goodwill	6,233	5,102
Identifiable intangible assets, net	3,024	2,351
Deferred income taxes	338	379
Investments	269	267
Operating lease right-of-use assets	934	847
Other assets	685	685
Total	$22,353	$19,556
Liabilities and Shareholders' Equity		
Current liabilities:		
Accounts payable and accrued liabilities	$4,318	$3,792
Restructuring reserves	206	281
Short-term debt and current portion of long-term debt	770	578
Current portion of operating lease liabilities	194	180
Total current liabilities	$5,488	$4,831
Long-term debt	6,387	5,171
Operating lease liabilities	736	677
Accrued pensions	951	945
Other postretirement benefits	720	733
Deferred income taxes	683	435
Other liabilities	977	949
Total liabilities	$15,942	$13,741
Commitments and contingent liabilities (Note 14)		
Shareholders' equity:		
Common stock	$969	$969
Additional paid-in capital	1,053	1,008
Retained earnings	20,022	19,469
Treasury stock, at cost	(13,138)	(13,158)
Accumulated other comprehensive loss	(2,664)	(2,599)
Total PPG shareholders' equity	$6,242	$5,689
Noncontrolling interests	169	126
Total shareholders' equity	$6,411	$5,815
Total	$22,353	$19,556

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

PPG INDUSTRIES, INC. AND SUBSIDIARIES

Condensed Consolidated Statement of Shareholders' Equity (Unaudited)

($ in millions)

	Common Stock	Additional Paid-In Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive (Loss)/Income	Total PPG	Non-controlling Interests	Total
January 1, 2021	$969	$1,008	$19,469	($13,158)	($2,599)	$5,689	$126	$5,815
Net income attributable to the controlling and noncontrolling interests	—	—	378	—	—	$378	7	$385
Other comprehensive loss, net of tax	—	—	—	—	(131)	($131)	(2)	($133)
Cash dividends	—	—	(128)	—	—	($128)	—	($128)
Issuance of treasury stock	—	25	—	10	—	$35	—	$35
Stock-based compensation activity	—	(4)	—	—	—	($4)	—	($4)
Reductions in noncontrolling interests	—	—	—	—	—	—	(1)	(1)
March 31, 2021	$969	$1,029	$19,719	($13,148)	($2,730)	$5,839	$130	$5,969
Net income attributable to the controlling and noncontrolling interests	—	—	431	—	—	$431	2	$433
Other comprehensive income/(loss), net of tax	—	—	—	—	66	$66	(1)	$65
Cash dividends	—	—	(128)	—	—	($128)	—	($128)
Issuance of treasury stock	—	17	—	10	—	$27	—	$27
Stock-based compensation activity	—	7	—	—	—	$7	—	$7
Dividends paid on subsidiary common stock to noncontrolling interests	—	—	—	—	—	—	(4)	($4)
Acquisition of noncontrolling interests (Note 3)	—	—	—	—	—	—	50	$50
Reductions in noncontrolling interests	—	—	—	—	—	—	(8)	($8)
June 30, 2021	$969	$1,053	$20,022	($13,138)	($2,664)	$6,242	$169	$6,411

	Common Stock	Additional Paid-In Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss	Total PPG	Non-controlling Interests	Total
January 1, 2020	$969	$950	$18,906	($13,191)	($2,350)	$5,284	$119	$5,403
Net income attributable to the controlling and noncontrolling interests	—	—	243	—	—	$243	5	$248
Other comprehensive loss, net of tax	—	—	—	—	(692)	($692)	(10)	($702)
Cash dividends	—	—	(120)	—	—	($120)	—	($120)
Issuance of treasury stock	—	12	—	4	—	$16	—	$16
Stock-based compensation activity	—	(8)	—	—	—	($8)	—	($8)
March 31, 2020	$969	$954	$19,029	($13,187)	($3,042)	$4,723	$114	$4,837
Net income attributable to the controlling and noncontrolling interests	—	—	102	—	—	$102	(2)	$100
Other comprehensive income, net of tax	—	—	—	—	117	$117	2	$119
Cash dividends	—	—	(121)	—	—	($121)	—	($121)
Issuance of treasury stock	—	2	—	3	—	$5	—	$5
Stock-based compensation activity	—	6	—	—	—	$6	—	$6
Dividends paid on subsidiary common stock to noncontrolling interests	—	—	—	—	—	—	(3)	($3)
Reductions in noncontrolling interests	—	—	—	—	—	—	(5)	($5)
June 30, 2020	$969	$962	$19,010	($13,184)	($2,925)	$4,832	$106	$4,938

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

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PPG INDUSTRIES, INC. AND SUBSIDIARIES
Condensed Consolidated Statement of Cash Flows (Unaudited)

($ in millions)	Six Months Ended June 30 2021	2020
Operating activities:		
Net income attributable to controlling and noncontrolling interests	$818	$348
Less: Income from discontinued operations	—	(3)
Income from continuing operations	818	345
Adjustments to reconcile net income to cash from operations:		
Depreciation and amortization	266	252
Pension (income) expense	(19)	20
Environmental remediation charges	26	12
Business restructuring, net	(21)	172
Stock-based compensation expense	35	15
Equity affiliate income, net of dividends	(2)	4
Deferred income taxes	61	(8)
Cash contributions to pension plans	(2)	(5)
Cash used for restructuring actions	(48)	(34)
Change in certain asset and liability accounts (net of acquisitions):		
Receivables	(480)	92
Inventories	(280)	(29)
Other current assets	8	18
Accounts payable and accrued liabilities	392	(347)
Taxes and interest payable	(60)	(58)
Noncurrent assets and liabilities, net	(53)	5
Other	(60)	(133)
Cash from operating activities - continuing operations	$581	$321
Cash from operating activities - discontinued operations	—	1
Cash from for operating activities	$581	$322
Investing activities:		
Capital expenditures	(142)	(92)
Business acquisitions, net of cash balances acquired	(2,126)	(45)
Payments for the settlement of cross currency swap contracts	(3)	(3)
Proceeds from the settlement of cross currency swap contracts	10	12
Other	19	17
Cash used for investing activities	($2,242)	($111)
Financing activities:		
Net change in borrowing with maturities of three months or less	—	(7)
Proceeds from Term Loan Credit Agreement, net of fees	699	—
Proceeds on commercial paper and short-term debt, net of payments	561	1,434
Repayment of term loan	(400)	—
Proceeds from revolving credit facility	—	800
Repayment of revolving credit facility	—	(800)
Proceeds from the issuance of debt, net of discounts and fees	692	296
Repayment of long-term debt	(172)	(506)
Repayment of acquired debt	(86)	(9)
Issuance of treasury stock	44	6
Dividends paid on PPG common stock	(256)	(241)
Payments related to tax withholding on stock-based compensation awards	(17)	(8)
Other	(11)	(38)
Cash from financing activities	$1,054	$927
Effect of currency exchange rate changes on cash and cash equivalents	(24)	(102)
Net (decrease)/increase in cash and cash equivalents	($631)	$1,036
Cash and cash equivalents, beginning of period	1,826	1,216
Cash and cash equivalents, end of period	$1,195	$2,252
Supplemental disclosures of cash flow information:		
Interest paid, net of amount capitalized	$69	$82
Taxes paid, net of refunds	$276	$187

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

PPG INDUSTRIES, INC. AND SUBSIDIARIES

Notes to Condensed Consolidated Financial Statements (Unaudited)

1. Basis of Presentation

The condensed consolidated financial statements included herein are unaudited and have been prepared following the requirements of the Securities and Exchange Commission (the "SEC") and accounting principles generally accepted in the United States of America ("U.S. GAAP") for interim reporting. Under these rules, certain footnotes and other financial information that are normally required for annual financial statements can be condensed or omitted. These statements include all adjustments, consisting only of normal, recurring adjustments, necessary for a fair presentation of the financial position and shareholders' equity of PPG as of June 30, 2021 and the results of its operations and cash flows for the three and six months ended June 30, 2021 and 2020. All intercompany balances and transactions have been eliminated. Material subsequent events are evaluated through the report issuance date and disclosed where applicable. These condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes included in PPG's 2020 Annual Report on Form 10-K (the "2020 Form 10-K").

Net sales, expenses, assets and liabilities can vary during each quarter of the year. Accordingly, the results of operations for the three and six months ended June 30, 2021 and the trends in these unaudited condensed consolidated financial statements may not necessarily be indicative of the results to be expected for the full year.

2. New Accounting Standards

Accounting Standards Adopted in 2021

Effective January 1, 2021, PPG adopted Accounting Standards Update ("ASU") No. 2019-12, "Income Taxes - Simplifying the Accounting for Income Taxes." This ASU is intended to simplify various aspects of accounting for income taxes by eliminating certain exceptions within Accounting Standards Codification Topic 740, "Income Taxes" and to clarify certain aspects of the current accounting guidance. Adoption of this standard did not materially impact PPG's consolidated financial position, results of operations or cash flows.

Accounting Standards to be Adopted in Future Years

In August 2020, the Financial Accounting Standards Board ("FASB") issued ASU No. 2020-06, "Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815-40)." This ASU simplifies the accounting for convertible debt instruments by removing certain accounting separation models as well as the accounting for debt instruments with embedded conversion features that are not required to be accounted for as derivative instruments. The ASU also updates and improves the consistency of earnings per share calculations for convertible instruments. The amendments in this ASU are effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. PPG is currently assessing the potential impacts this ASU may have on its consolidated financial position, results of operations and cash flows.

In March 2020, the FASB issued ASU No. 2020-04, "Reference Rate Reform." This ASU provides optional guidance for a limited period of time to ease potential accounting impacts associated with transitioning away from reference rates that are expected to be discontinued, such as the London Interbank Offered Rate ("LIBOR"). The amendments in this ASU apply only to contracts, hedging relationships, and other transactions that reference LIBOR or another reference rate expected to be discontinued. The amendments in this ASU are effective through December 31, 2022. PPG is currently assessing the potential impacts this ASU may have on its consolidated financial position, results of operations and cash flows.

3. Acquisitions and Divestitures

Acquisitions

The pro-forma impact on PPG's sales and results of operations, including the pro-forma effect of events that are directly attributable to the following acquisitions, was not significant.

Tikkurila

On June 10, 2021, PPG completed its tender offer for all of the outstanding shares of Tikkurila Ojy ("Tikkurila"). Tikkurila is a leading Nordic producer and distributor of decorative paint and coatings. Tikkurila's industrial paint business produces paints and coatings for the wood and metal industries, among others.

As of June 30, 2021, PPG had purchased approximately 97.3% of Tikkurila's issued and outstanding shares. As of March 31, 2021, PPG owned 9.32% of the outstanding shares. All remaining outstanding shares will be acquired through a squeeze out process. As of June 30, 2021, the minority interest is classified as Noncontrolling interests on the condensed consolidated balance sheet. The company paid an aggregate purchase price of $1.7 billion, net of cash acquired. The preliminary determination of fair value of acquired assets and liabilities included goodwill and identifiable intangible assets of $1.0 billion and $672 million, respectively. The fair values assigned to assets acquired and liabilities assumed are based on management's best estimates and assumptions as of the reporting date and are considered preliminary pending finalization of the valuation of deferred tax assets, tax liabilities, and payroll tax liabilities. The acquired identifiable intangible assets consist of indefinite-lived trademarks of approximately $455 million and other intangible assets with finite lives of approximately $215 million, which consist primarily of customer relationships, trade names, and acquired technology, subject to amortization over a weighted average period of 15 years. See Note 5 “Goodwill and Other Identifiable Intangible Assets” for additional information.

The results of this business since the date of acquisition have been reported within two operating segments: the architectural coatings – EMEA business within the Performance Coatings reportable business segment and within the industrial coatings business within the Industrial Coatings reportable business segment.

Other Acquisitions

On May 14, 2021, PPG completed the acquisition of Wörwag, a global manufacturer of coatings for industrial and automotive applications. The company specializes in developing sustainable liquid, powder and film coatings. The results of this business since the date of acquisition have been reported within the automotive original equipment manufacturer ("OEM") coatings business within the Industrial Coatings reportable business segment.

On April 19, 2021, PPG announced that it had acquired Cetelon Lackfabrik GmbH, a manufacturer of coatings for automotive and light truck wheel applications. The results of this business since the date of acquisition have been reported within the automotive OEM coatings business within the Industrial Coatings reportable business segment.

On February 22, 2021, PPG completed the acquisition of VersaFlex, a manufacturer specializing in polyurea, epoxy and polyurethane coatings for water and waste water infrastructure, flooring, transportation infrastructure, and industrial applications. The results of this business since the date of acquisition have been reported within the protective and marine coatings business within the Performance Coatings reportable business segment.

Divestitures

In December 2020, PPG committed to a plan to sell certain entities in smaller, non-strategic countries. The planned sale is expected to occur in 2021. The assets and liabilities of these entities are reported as held for sale in Other current assets and Accounts payable and accrued liabilities, respectively, on the accompanying consolidated balance sheet as of June 30, 2021 and December 31, 2020. The results of these entities are reported within the Performance Coatings reportable business segment.

The major classes of assets and liabilities of these entities included in the PPG consolidated balance sheet are as as follows:

($ in millions)	June 30, 2021	December 31, 2020
Cash and cash equivalents	$22	$20
Receivables	8	5
Inventories	5	5
Assets held for sale	$35	$30
Accounts payable and accrued liabilities	$15	$14
Operating lease liabilities	7	6
Deferred income taxes	3	3
Other liabilities	1	1
Liabilities held for sale	$26	$24

4. Inventories

($ in millions)	June 30, 2021	December 31, 2020
Finished products	$1,237	$1,021
Work in process	254	187
Raw materials	697	490
Supplies	38	37
Total Inventories	$2,226	$1,735

Most U.S. inventories are valued using the last-in, first-out method. These inventories represented approximately 27% and 33% of total inventories at June 30, 2021 and December 31, 2020, respectively. If the first-in, first-out method of inventory valuation had been used, inventories would have been $124 million and $110 million higher as of June 30, 2021 and December 31, 2020, respectively.

5. Goodwill and Other Identifiable Intangible Assets

The Company tests indefinite-lived intangible assets and goodwill for impairment by either performing a qualitative evaluation or a quantitative test at least annually, or more frequently if an indication of impairment arises. The qualitative evaluation is an assessment of factors to determine whether it is more likely than not that the fair value of a reporting unit or asset is less than its carrying amount.

Although it was determined that a triggering event had not occurred as of June 30, 2021, the Company will continue to monitor the impacts of the COVID-19 pandemic on the Company and significant changes in key assumptions that could result in future period impairment charges. The Company did not identify an indication of impairment for each of its reporting units and indefinite-lived intangible assets as of June 30, 2021.

The change in the carrying amount of goodwill attributable to each reportable segment for the six months ended June 30, 2021 was as follows:

($ in millions)	Performance Coatings	Industrial Coatings	Total
January 1, 2021	$4,023	$1,079	$5,102
Acquisitions, including purchase accounting adjustments	1,089	111	1,200
Foreign currency impact	(54)	(15)	(69)
June 30, 2021	$5,058	$1,175	$6,233

A summary of the carrying value of the Company's identifiable intangible assets is as follows:

	June 30, 2021			December 31, 2020		
($ in millions)	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Indefinite-Lived Identifiable Intangible Assets						
Trademarks	$1,543	N/A	$1,543	$1,101	N/A	$1,101
Definite-Lived Identifiable Intangible Assets						
Acquired technology	$871	($600)	$271	$813	($585)	$228
Customer-related	2,025	(1,036)	989	1,849	(994)	855
Trade names	349	(136)	213	277	(129)	148
Other	54	(46)	8	64	(45)	19
Total Definite Lived Intangible Assets	$3,299	($1,818)	$1,481	$3,003	($1,753)	$1,250
Total Identifiable Intangible Assets	$4,842	($1,818)	$3,024	$4,104	($1,753)	$2,351

The Company’s identifiable intangible assets with definite lives are being amortized over their estimated useful lives.

As of June 30, 2021, estimated future amortization expense of identifiable intangible assets is as follows:

($ in millions)	Future Amortization Expense
Remaining six months of 2021	$90
2022	$180
2023	$170
2024	$155
2025	$145
2026	$130
Thereafter	$611

6. Business Restructuring

The Company records restructuring liabilities that represent charges incurred in connection with consolidations of certain operations, including operations from acquisitions, as well as headcount reduction programs. These charges consist primarily of severance costs and certain other cash costs. As a result of these programs, the Company will also incur incremental non-cash accelerated depreciation expense for certain assets due to their reduced expected asset life. These charges are not allocated to the Company's reportable business segments. Refer to Note 16, "Reportable Business Segment Information" for additional information.

2020 Restructuring Program

In June 2020, the Company approved a business restructuring plan which included actions to reduce its global cost structure. The program addresses weakened global economic conditions stemming from the COVID-19 pandemic and related pace of recovery in a few end-use markets along with further opportunities to optimize supply chain and functional costs. The plan included a voluntary separation program that was offered in the U.S. and Canada. The majority of these restructuring actions are expected to be completed by the end of 2021.

2019 and 2018 Restructuring Programs

In June 2019, the Company approved a business restructuring plan which included actions to reduce its global cost structure. The program is the result of a comprehensive internal operational assessment to identify further opportunities to improve the profitability of the overall business portfolio. This program includes further manufacturing optimization; targeted pruning of low-profit business in certain regions; exiting certain smaller product lines that are not meeting profitability objectives; reorganization of certain business unit cost structures based on the current economic climate; and certain redundancy actions related to recent acquisitions. The majority of these restructuring actions are expected to completed by the end of the third quarter 2021 with the remainder of the actions expected to be completed in 2022.

In April 2018, the Company approved a business restructuring plan which included actions to reduce its global cost structure. The program was in response to the impacts of customer assortment changes in our U.S. architectural coatings business during the first quarter 2018 and sustained, elevated raw material inflation. The program aims to further right-size employee headcount and production capacity in certain businesses based on product demand, as well as reductions in various global functional and administrative costs. The majority of these restructuring actions are complete with the remainder of the actions expected to be completed in 2021.

The following table summarizes the reserve activity for the six months ended June 30, 2021 and 2020:

	Total Reserve	
($ in millions)	2021	2020
January 1	$293	$224
Approved restructuring actions	2	198
Release of prior reserves and other adjustments [(a)]	(23)	(26)
Cash payments	(48)	(34)
Foreign currency impact	(8)	(2)
June 30	$216	$360

(a) Releases of approximately $23 million and $26 million were recorded in the six months ended June 30, 2021 and 2020, respectively, to reflect the current estimate of the costs to complete these actions.

7. Borrowings

In June 2021, PPG borrowed $700 million under the $2.0 billion Term Loan Credit Agreement (the "Term Loan Credit Agreement") entered into in February 2021 to finance the Company's acquisition of Tikkurila, and to pay fees, costs and expenses related thereto. The Term Loan Credit Agreement provides the Company with the ability to borrow up to an aggregate principal amount of $2.0 billion on an unsecured basis. Prior to December 31, 2021, the Company may make up to eleven additional borrowings of term loans under the Term Loan Credit Agreement, which may be used for working capital and general corporate purposes. The Term Loan Credit Agreement contains covenants that are 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 Term Loan Credit Agreement matures and all outstanding borrowings are due and payable on the third anniversary of the date of the initial borrowing under the Agreement.

Also in the second quarter of 2021, two of PPG's long-term debt obligations matured; $134 million 9% non-callable debentures and non-U.S. debt of €30 million. The Company paid $170 million to settle these obligations using cash on hand.

In March 2021, PPG completed a public offering of $700 million aggregate principal amount of 1.200% notes due 2026. These notes were issued pursuant to PPG's existing shelf registration statement and pursuant to the Indenture between the Company and the Bank of New York Mellon Trust Company, N.A., as trustee, as supplemented (the "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 Indenture) at a price equal to 101% of their principal amount plus accrued and unpaid interest. The Company may issue additional debt from time to time pursuant to the Indenture. The aggregate cash proceeds from the notes, net of discounts and fees, was $692 million.

In June 2020, PPG completed an early redemption of the $500 million 3.6% notes due November 2020 using proceeds from the May 2020 public offering and cash on hand. The Company recorded a charge of $7 million in the second quarter 2020 for the debt redemption which consists of the aggregate make-whole cash premium of $6 million and a balance of unamortized fees and discounts of $1 million related to the debt redeemed.

In May 2020, PPG completed a public offering of $300 million aggregate principal amount of 2.55% notes due 2030. These notes were issued pursuant to PPG's existing shelf registration statement and pursuant to an indenture between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee, as supplemented (the "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 Indenture) at a price equal to 101% of their principal amount plus accrued and unpaid interest. The Company may issue additional debt from time to time pursuant to the Indenture. The aggregate cash proceeds from the notes, net of discounts and fees, was $296 million.

In April 2020, PPG entered into a $1.5 billion 364-Day Term Loan Credit Agreement (the "Term Loan"). The Term Loan contains covenants that are consistent with those in the Credit Agreement discussed below and that are 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. In 2020, PPG repaid $1.1 billion of the Term Loan using cash on hand. In the first quarter 2021, PPG repaid the remaining $400 million of the Term Loan using cash on hand.

In August 2019, PPG amended and restated its five-year credit agreement (the "Credit Agreement") with several banks and financial institutions. The Credit Agreement provides for a $2.2 billion unsecured revolving credit facility. The Company has the ability to increase the size of the Credit Agreement by up to an additional $750 million, subject to the receipt of lender commitments and other conditions precedent. The Credit Agreement will terminate on August 30, 2024. 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. In March 2020, PPG borrowed $800 million under the Credit Agreement and repaid that amount in full in April 2020. There were no amounts outstanding under the credit agreement as of June 30, 2021 and December 31, 2020.

The Term Loan Credit Agreement and Credit Agreement require the Company to maintain a ratio of Total Indebtedness to Total Capitalization, as defined in the Term Loan Credit Agreement and Credit Agreement, of 60% or less; provided, that for any fiscal quarter in which the Company has made an acquisition for consideration in excess of $1 billion and for the next five fiscal quarters thereafter, the ratio of Total Indebtedness to Total Capitalization may not exceed 65% at any time. As of June 30, 2021, Total Indebtedness to Total Capitalization as defined under the Credit Agreement and Term Loan Credit Agreement was 50%.

The Credit Agreement also supports the Company's commercial paper borrowings which are classified as long-term based on PPG's intent and ability to refinance these borrowings on a long-term basis. Commercial paper borrowings of $800 million and $250 million were outstanding as of June 30, 2021 and December 31, 2020, respectively.

8. Earnings Per Common Share

The effect of dilutive securities on the weighted average common shares outstanding included in the calculation of earnings per diluted common share for the three and six months ended June 30, 2021 and 2020 were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
(number of shares in millions)	2021	2020	2021	2020
Weighted average common shares outstanding	237.8	236.6	237.6	236.6
Effect of dilutive securities:				
Stock options	1.2	0.3	1.0	0.4
Other stock compensation plans	0.8	0.7	0.8	0.6
Potentially dilutive common shares	2.0	1.0	1.8	1.0
Adjusted weighted average common shares outstanding	239.8	237.6	239.4	237.6
Dividends per common share	$0.54	$0.51	$1.08	$1.02

Excluded from the computation of earnings per diluted share due to their antidilutive effect were zero outstanding stock options for the three and six months ended June 30, 2021, and 2.7 million and 2.1 million of outstanding stock options for the three and six months ended June 30, 2020, respectively.

9. Income Taxes

	Six Months Ended June 30	
	2021	2020
Effective tax rate on pretax income	25.1 %	22.5 %

The effective tax rate of 25.1% for the six months ended June 30, 2021 reflects an expense of $15 million of discrete items associated with PPG's U.S. and foreign jurisdictions. In the second quarter 2021, PPG recorded a net tax charge of $22 million as a result of new legislation enacted in June 2021 that increased the United Kingdom's corporation tax rate. Income tax expense for the first six months of 2021 is based on an estimated annual effective rate, which requires management to make its best estimate of annual pretax income or loss. Income tax expense for the six months ended June 30, 2020 reflects a benefit $14 million of discrete items associated with PPG's U.S. and foreign jurisdictions.

During the year, PPG management regularly updates forecasted annual pretax results for the various countries in which PPG operates based on changes in factors such as prices, shipments, product mix, raw material inflation and manufacturing operations. To the extent that actual 2021 pretax results for U.S. and foreign income or loss vary from estimates, the actual Income tax expense recognized in 2021 could be different from the forecasted amount used to estimate the Income tax expense for the six months ended June 30, 2021.

10. Pensions and Other Postretirement Benefits

Service cost for net periodic pension and other postretirement benefit costs is included in Cost of sales, exclusive of depreciation and amortization, Selling, general and administrative, and Research and development, net in the accompanying condensed consolidated statements of income. All other components of net periodic benefit cost are recorded in Other charges in the accompanying condensed consolidated statements of income.

The net periodic pension and other postretirement benefit costs for the three and six months ended June 30, 2021 and 2020 were as follows:

	Pension			
	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2021	2020	2021	2020
Service cost	$2	$6	$5	$12
Interest cost	16	21	32	43
Expected return on plan assets	(38)	(36)	(76)	(72)
Amortization of actuarial losses	10	18	20	36
Curtailments	—	1	—	1
Net periodic benefit cost	($10)	$10	($19)	$20

	Other Postretirement Benefits			
	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2021	2020	2021	2020
Service cost	$3	$3	$6	$5
Interest cost	4	5	7	10
Amortization of actuarial losses	4	4	10	8
Amortization of prior service credit	(13)	(15)	(27)	(30)
Net periodic benefit cost	($2)	($3)	($4)	($7)

PPG expects 2021 net periodic pension and other postretirement benefit cost to be income of approximately $45 million, with pension and other postretirement benefits representing income of approximately $40 million and $5 million, respectively. In 2020, PPG's U.S. and Canadian defined benefit plans were frozen for all participants. As of January 1, 2021, these plans are mostly inactive and as such, the amortization period of the accumulated net actuarial losses is now the average remaining life expectancy of the plan participants. This change in amortization period reduces future pension expense for PPG.

Contributions to Defined Benefit Pension Plans

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2021	2020	2021	2020
Non-U.S. defined benefit pension mandatory contributions	$1	$3	$2	$5

PPG expects to make contributions to its defined benefit pension plans in the range of $10 million to $15 million during the remaining six months of 2021. PPG may make voluntary contributions to its defined benefit pension plans in 2021 and beyond.

11. Accumulated Other Comprehensive Loss

($ in millions)	Unrealized Foreign Currency Translation Adjustments	Pension and Other Postretirement Benefit Adjustments, net of tax [(c)]	Unrealized Gain on Derivatives, net of tax	Accumulated Other Comprehensive Loss
January 1, 2021	($1,663)	($937)	$1	($2,599)
Current year deferrals to AOCI [(a)]	58	—	—	58
Current year deferrals to AOCI, net of tax [(b)]	(116)	(9)	—	(125)
Reclassifications from AOCI to net income	—	2	—	2
Period change	($58)	($7)	$—	($65)
June 30, 2021	($1,721)	($944)	$1	($2,664)
January 1, 2020	($1,627)	($724)	$1	($2,350)
Current year deferrals to AOCI [(a)]	(600)	—	—	(600)
Current year deferrals to AOCI, net of tax [(b)]	19	(5)	—	14
Reclassifications from AOCI to net income	—	11	—	11
Period change	($581)	$6	$—	($575)
June 30, 2020	($2,208)	($718)	$1	($2,925)

(a) Except for income taxes, of $1 million as of June 30, 2021 and $8 million as of June 30, 2020, related to foreign currency impacts of certain unasserted earnings, 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 as of June 30, 2021 and 2020 was $22 million and $5 million, respectively.

(c) The tax cost related to the adjustment for pension and other postretirement benefits as of June 30, 2021 and 2020 was $1 million and $3 million, respectively. Reclassifications from AOCI are included in the computation of net periodic benefit costs (See Note 10, "Pensions and Other Postretirement Benefits").

12. Financial Instruments, Hedging Activities and Fair Value Measurements

Financial instruments include cash and cash equivalents, short-term investments, cash held in escrow, marketable equity securities, accounts receivable, company-owned life insurance, accounts payable, short-term and long-term debt instruments, and derivatives. The fair values of these financial instruments approximated their carrying values at June 30, 2021 and December 31, 2020, in the aggregate, except for long-term debt instruments.

Hedging Activities

The Company has exposure to market risk from changes in foreign currency exchange rates and interest rates. As a result, financial instruments, including derivatives, have been used to hedge a portion of these underlying economic exposures. Certain of these instruments may qualify as fair value, cash flow, and net investment hedges upon meeting the requisite criteria, including effectiveness of offsetting hedged or underlying exposures. Changes in the fair value of derivatives that do not qualify for hedge accounting are recognized in Income before income taxes 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 and six month periods ended June 30, 2021 and 2020.

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

There were no derivative instruments de-designated or discontinued as hedging instruments during the three and six month periods ended June 30, 2021 and 2020 and there were no gains or losses deferred in Accumulated other comprehensive loss on the condensed consolidated balance sheet that were reclassified to Income before income taxes in the condensed consolidated statement of income in the six month periods ended June 30, 2021 and 2020 related to hedges of anticipated transactions that were no longer expected to occur.

Fair Value Hedges

The Company uses interest rate swaps from time to time to manage its exposure to changing interest rates. When outstanding, the interest rate swaps are typically designated as fair value hedges of certain outstanding debt obligations of the Company and are recorded at fair value.

PPG has interest rate swaps which converted $525 million of fixed rate debt to variable rate debt. These swaps are designated as fair value hedges and are carried at fair value. Changes in the fair value of these swaps and changes in the fair value of the related debt are recorded in interest expense in the accompanying condensed consolidated statement of income. The fair value of these interest rate swaps was $48 million and $67 million at June 30, 2021 and December 31, 2020, respectively.

Cash Flow Hedges

At times, PPG designates certain foreign currency forward contracts as cash flow hedges of the Company's exposure to variability in exchange rates on third party transactions denominated in foreign currencies. There were no outstanding cash flow hedges at June 30, 2021 and December 31, 2020.

Net Investment Hedges

PPG uses cross currency swaps and foreign currency euro-denominated debt to hedge a significant portion of its net investment in its European operations, as follows:

As of June 30, 2021 and December 31, 2020, PPG had U.S. dollar to euro cross currency swap contracts with a total notional amount of $875 million and designated these contracts as hedges of the Company's net investment in its European operations. During the term of these contracts, PPG will receive payment in U.S. dollars and make payments in euros to the counterparties. As of June 30, 2021 and December 31, 2020, the fair value of the U.S. dollar to euro cross currency swap contracts was a net asset of $15 million and a net liability of $8 million, respectively.

As of June 30, 2021 and December 31, 2020, PPG had designated €2.0 billion of euro-denominated borrowings as hedges of a portion of its net investment in the Company's European operations. The carrying value of these instruments as of June 30, 2021 and December 31, 2020 was $2.4 billion for both periods.

Other Financial Instruments

PPG uses foreign currency forward contracts to manage net transaction exposures that do not qualify for hedge accounting; therefore, the change in the fair value of these instruments is recorded in Other charges in the condensed consolidated statement of income in the period of change. Underlying notional amounts related to these foreign currency forward contracts were $1.8 billion and $1.4 billion at June 30, 2021 and December 31, 2020, respectively. As of June 30, 2021 and December 31, 2020, the fair value of these contracts were net assets of $6 million and $2 million, respectively.

Gains/Losses Deferred in Accumulated Other Comprehensive Loss

As of June 30, 2021, the Company had accumulated pretax unrealized translation gains in Accumulated other comprehensive loss on the condensed consolidated balance sheet related to euro-denominated borrowings, and cross currency swaps of $71 million. As of December 31, 2020, the Company had accumulated pretax unrealized translation losses of $22 million.

The following table summarizes the location within the condensed consolidated financial statements and amount of gains/(losses) related to derivative and debt financial instruments for the six months ended June 30, 2021 and 2020. All dollar amounts are shown on a pretax basis.

($ in millions)	June 30, 2021 Gain Deferred in OCI	June 30, 2021 Gain Recognized	June 30, 2020 (Loss)/Gain Deferred in OCI	June 30, 2020 Gain Recognized	Caption In Condensed Consolidated Statement of Income
Economic					
Foreign currency forward contracts	$—	$8	$—	$26	Other charges
Fair Value					
Interest rate swaps	—	7	—	5	Interest expense
Total forward contracts and interest rate swaps	$—	$15	$—	$31	
Net Investment					
Cross currency swaps	$23	$7	($4)	$9	Interest expense
Foreign denominated debt	70	—	25	—	
Total Net Investment	$93	$7	$21	$9	

Fair Value Measurements

The Company follows a fair value measurement hierarchy to measure its assets and liabilities. As of June 30, 2021 and December 31, 2020, the assets and liabilities measured at fair value on a recurring basis were cash equivalents, equity securities and derivatives. In addition, the Company measures its pension plan assets at fair value (see Note 14, "Employee Benefit Plans" under Item 8 in the 2020 Form 10-K for further details). The Company's financial assets and liabilities are measured using inputs from the following three levels:

Level 1 inputs are quoted prices 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 the derivative instruments reflect the instruments' contractual terms, 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 condensed consolidated balance sheets as of June 30, 2021 and December 31, 2020 that are classified as Level 3 inputs.

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

	June 30, 2021			December 31, 2020		
($ in millions)	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
Assets:						
Other current assets:						
Marketable equity securities	$6	$—	$—	$6	$—	$—
Foreign currency forward contracts [(a)]	—	12	—	—	8	—
Investments:						
Marketable equity securities	$97	$—	$—	$97	$—	$—
Other assets:						
Cross currency swaps [(b)]	$—	$29	$—	$—	$13	$—
Interest rate swaps [(c)]	—	48	—	—	67	—
Liabilities:						
Accounts payable and accrued liabilities:						
Foreign currency forward contracts [(a)]	$—	$6	$—	$—	$6	$—
Cross currency swaps [(b)]	—	6	—	—	8	—
Other liabilities:						
Cross currency swap [(b)]	$—	$8	$—	$—	$13	$—

(a) Derivatives not designated as hedging instruments

(b) Net investment hedges

(c) Fair value hedges

Long-Term Debt

($ in millions)	June 30, 2021 [(a)]	December 31, 2020 [(b)]
Long-term debt - carrying value	$7,091	$5,334
Long-term debt - fair value	$7,567	$5,913

(a) Excluding finance lease obligations of $11 million and short-term borrowings of $55 million as of June 30, 2021.

(b) Excluding finance lease obligations of $12 million and short-term borrowings of $403 million as of December 31, 2020.

The fair values of the debt instruments were based on discounted cash flows and interest rates then currently available to the Company for instruments of the same remaining maturities and were measured using level 2 inputs.

13. 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, 2016. Shares available for future grants under the PPG Amended Omnibus Plan were 5.1 million as of June 30, 2021.

Stock-based compensation and the income tax benefit recognized during the three and six months ended June 30, 2021 and 2020 were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2021	2020	2021	2020
Stock-based compensation	$18	$8	$35	$15
Income tax benefit recognized	$4	$2	$8	$4

Grants of stock-based compensation during the six months ended June 30, 2021 and 2020 were as follows:

	Six Months Ended June 30			
	2021		2020	
Grant Details	**Shares**	**Fair Value**	**Shares**	**Fair Value**
Stock options	527,464	$29.27	663,485	$21.93
Restricted stock units	185,084	$132.63	203,239	$110.00
Contingent shares [(a)]	55,540	$136.60	55,319	$119.52

(a) The number of contingent shares represents the target value of the award.

Stock options are generally exercisable 36 months after being granted and have a maximum term of 10 years. Compensation expense for stock options is recorded over the vesting period based on the fair value on the date of grant. The fair value of the stock option grants issued during the six months ended June 30, 2021 was calculated with the following weighted average assumptions:

Weighted average exercise price	$136.60
Risk free interest rate	1.0 %
Expected life of option in years	6.5
Expected dividend yield	1.6 %
Expected volatility	25.3 %

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. 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.

Time-based RSUs generally 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 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.

For awards granted in 2021 and 2020, the amount paid upon vesting of performance-based RSUs may range from 0% to 200% of the original grant, based upon the level of earnings per share growth achieved and frequency with which the annual cash flow return on capital performance target is met over the three calendar year periods comprising the vesting period. For awards granted in 2019, the amount paid upon vesting of performance-based RSUs may range from 0% to 180% of the original grant.

Contingent share grants (referred to as “TSR awards”) are made annually and are paid out at the end of each three-year period following the date of grant based on PPG'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 as it existed at the beginning of the three-year performance period excluding any companies that have been removed from the index because they ceased to be publicly traded during the performance period. For awards granted in 2021 and 2020, 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 200% of the initial grant. For awards granted in 2019, the amount paid following the three-year award period may range from 0% to 220% of the initial grant. Any payments made at the end of the award period may be in the form of stock, cash or a combination of both at the Company's discretion. 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.

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 may relate to contract, patent, environmental, product liability, asbestos exposure, antitrust, employment, securities 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, property damage, and certain other claims, 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. 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 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.

Asbestos Matters

Prior to 2000, the Company had been named as a defendant in numerous claims alleging bodily injury from (i) exposure to asbestos-containing products allegedly manufactured, sold or distributed by the Company, its subsidiaries, or for which they are otherwise alleged to be liable; (ii) exposure to asbestos allegedly present at a facility owned or leased by the Company; or (iii) exposure to asbestos-containing products of Pittsburgh Corning Corporation (“PC”) for which the Company was alleged to be liable under a variety of legal theories (the Company and Corning Incorporated were each 50% shareholders in PC prior to April 27, 2016).

Pittsburgh Corning Corporation asbestos bankruptcy

In 2000, PC filed for Chapter 11 in the U.S. Bankruptcy Court for the Western District of Pennsylvania in an effort to permanently and comprehensively resolve all of its pending and future asbestos-related liability claims. The Bankruptcy Court subsequently entered a series of orders preliminarily enjoining the prosecution of asbestos litigation against PPG until after the effective date of a confirmed PC plan of reorganization. During the pendency of this preliminary injunction staying asbestos litigation against PPG, PPG and certain of its historical liability insurers negotiated a settlement with representatives of present and future asbestos claimants. That settlement was incorporated into a PC plan of reorganization that was confirmed by the Bankruptcy Court on May 24, 2013 and ultimately became effective on April 27, 2016. With the effectiveness of the plan, the preliminary injunction staying the prosecution of asbestos litigation against PPG expired by its own terms on May 27, 2016. In accordance with the settlement, the Bankruptcy Court issued a permanent channeling injunction under Section 524(g) of the Bankruptcy Code that prohibits present and future claimants from asserting claims against PPG that arise, in whole or in part, out of exposure to asbestos or asbestos-containing products manufactured, sold and/or distributed by PC or asbestos on or emanating from any PC premises. The channeling injunction, by its terms, also prohibits codefendants in cases that are subject to the channeling injunction from asserting claims against PPG for contribution, indemnification or other recovery. The channeling injunction also precludes 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 prior: (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.”

The Bankruptcy Court's channeling injunction channels the Company’s liability for PC Relationship Claims to a trust funded in part by PPG and its participating insurers for the benefit of current and future PC asbestos claimants (the “Trust”). The Trust is the sole recourse for holders of PC Relationship Claims. PPG and its affiliates have no further liability or responsibility for, and are permanently protected from, pending and future PC Relationship Claims. The channeling injunction does not extend to present and future claims against PPG that arise out of alleged exposure to asbestos or asbestos-containing products historically manufactured, sold and/or distributed by PPG or its subsidiaries or for which they are alleged to be liable that are not PC Relationship Claims, and does not extend to claims against PPG alleging personal injury allegedly caused by asbestos on premises presently or formerly owned, leased or occupied by PPG. These claims are referred to as "non-PC Relationship Claims".

Non-PC relationship claims

With respect to the asbestos-related claims pending against the Company at the time PC filed for bankruptcy, the Company considers such claims to fall within one or more of the following categories: (1) claims that have been closed or dismissed as a result of processes undertaken during the bankruptcy; (2) claims that may have been previously filed on the dockets of state and federal courts in various jurisdictions, but are inactive as to the Company; and (3) claims that are subject, in whole or in part, to the channeling injunction and thus will be resolved, in whole or in part, in accordance with the Trust procedures established under the PC bankruptcy reorganization plan. As a result of the foregoing, the Company does not consider these three categories of claims to be open or active litigation against it, although the Company cannot now determine whether, or the extent to which, any of these claims may in the future be reinstituted, reinstated, or revived such that they may become open and active non-PC Relationship Claims against it.

Current open and active claims post-Pittsburgh Corning bankruptcy

As of June 30, 2021, the Company was aware of approximately 810 open and active asbestos-related claims pending against the Company and certain of its subsidiaries. These claims consist of non-PC Relationship Claims against PPG and claims against a PPG subsidiary the Company acquired on April 1, 2013. The Company is defending these open and active claims vigorously.

PPG has established reserves totaling approximately $190 million for asbestos-related claims that would not be channeled to the Trust which, based on presently available information, we believe will be sufficient to encompass all of PPG’s current and estimable potential future asbestos liabilities. These reserves, which are included within Other liabilities on the accompanying condensed consolidated balance sheets, represent PPG’s best estimate of its liability for these claims.

These reserves include a $162 million reserve established in 2009 in connection with an amendment to the PC plan of reorganization for non-PC Relationship Claims other than claims arising from premises-related exposures. 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 injunction staying most asbestos claims against the Company was in effect from April 2000 through May 2016.

PPG monitors the activity associated with its asbestos claims and evaluates, on a periodic basis, its estimated liability for such claims, its insurance assets then available, and all underlying assumptions to determine whether any adjustment to the reserves for these claims is required.

The amount reserved for asbestos-related claims by its nature is subject to many uncertainties that may change over time, including (i) the ultimate number of claims filed; (ii) the amounts required to resolve both currently known and future unknown claims; (iii) the amount of insurance, if any, available to cover such claims; (iv) the unpredictable aspects of the litigation process, including a changing trial docket and the jurisdictions in which trials are scheduled; (v) the outcome of any trials, including potential judgments or jury verdicts; (vi) the lack of specific information in many cases concerning exposure for which PPG is allegedly responsible, and the claimants’ alleged diseases resulting from such exposure; and (vii) potential changes in applicable federal and/or state tort liability law. All of these factors may have a material effect upon future asbestos-related liability estimates. As a potential offset to any future asbestos financial exposure, under the PC plan of reorganization PPG retained, for its own account, the right to pursue insurance coverage from certain of its historical insurers that did not participate in the PC plan of reorganization. While the ultimate outcome of PPG’s asbestos litigation cannot be predicted with certainty, PPG believes that any financial exposure resulting from its asbestos-related claims will not have a material adverse effect on PPG’s consolidated financial position, liquidity or results of operations.

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. See Note 15, "Commitments and Contingent Liabilities," under Item 8 of the 2020 Form 10-K for additional descriptions of the following environmental matters.

As remediation at certain legacy environmental sites progresses, PPG continues to refine its assumptions underlying the estimates of the expected future costs of its remediation programs. PPG’s ongoing evaluation may result in additional charges against income to increase the reserves for these sites. Remediation activities at our legacy sites are not related to the ongoing operations of PPG. In 2021 and 2020, certain charges have been recorded based on updated estimates to increase existing reserves for these sites. Certain other charges related to environmental remediation actions are also expensed as incurred.

As of June 30, 2021 and December 31, 2020, PPG had reserves for environmental contingencies associated with PPG’s former chromium manufacturing plant in Jersey City, New Jersey (“New Jersey Chrome”), glass and chemical manufacturing sites, and for other environmental contingencies, including current manufacturing locations and National Priority List sites. These reserves are reported as Accounts payable and accrued liabilities and Other liabilities in the accompanying condensed consolidated balance sheet.

Environmental Reserves

($ in millions)	June 30, 2021	December 31, 2020
New Jersey Chrome	$107	$102
Glass and chemical	115	106
Other	92	92
Total	$314	$300
Current portion	*$92*	*$99*

Pretax charges against income for environmental remediation costs are included in Other charges in the accompanying condensed consolidated statement of income. The pretax charges and cash outlays related to such environmental remediation for the three and six months ended June 30, 2021 and 2020 were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2021	2020	2021	2020
Environmental remediation pretax charges	$12	$4	$31	$15
Cash outlays for environmental remediation activities	$8	$12	$17	$37

In the first quarter 2021, PPG recognized a $16 million pretax charge to increase the existing reserve for New Jersey Chrome based on updated estimates of the underlying factors as described below largely related to groundwater remediation. In the second quarter 2021, PPG recognized a $10 million pretax charge to increase existing reserves for a legacy Glass and chemicals environmental site based upon updated remediation estimates.

Remediation: New Jersey Chrome

In June 2009, PPG entered into a settlement agreement with the New Jersey Department of Environmental Protection (“NJDEP”) and Jersey City, New Jersey (which had asserted claims against PPG for lost tax revenue) which was in the form of a Judicial Consent Order (the "JCO"). Under the JCO, PPG accepted sole responsibility for the remediation activities at its former chromium manufacturing location in Jersey City and 19 additional sites. The principal contaminant of concern is hexavalent chromium. The JCO also provided for the appointment of a court-approved Site Administrator who is responsible for establishing a master schedule for the remediation of the 20 PPG sites which existed at that time. One site was subsequently removed from the JCO process during 2014 and will be remediated separately at a future date. A total of 6 soil sites and 11 groundwater sites remain subject to the JCO process.

The most significant assumptions underlying the estimate of remediation costs for all New Jersey Chrome sites 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. Remediation of chromium contaminated soils at the location of the former manufacturing site has been completed pursuant to approved remedial action work plans. Remediation of chromium contaminated soils at certain other smaller sites is ongoing and is expected to continue until 2022. PPG regularly evaluates the assessments of costs incurred to date versus current progress and the potential cost impacts of the most recent information, including 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 these assessments, the reserve is adjusted accordingly. Principal factors affecting costs include refinements 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, initial estimates for remedial actions related to groundwater, and oversight and management costs.

Groundwater remediation at the former Garfield Avenue chromium manufacturing site and five adjacent sites is expected to occur over several years. A groundwater remedial action work plan was submitted to NJDEP in the first quarter of 2021.

PPG’s financial reserve for remediation of all New Jersey Chrome sites was $107 million at June 30, 2021. The major cost components of this liability continue to be related to excavation, transportation and disposal of impacted soil, as well as construction services. These components each account for approximately 17%, 11% and 28% of the accrued amount, respectively.

There are multiple, future events yet to occur, including further remedy selection and design, remedy implementation and execution and applicable governmental agency or community organization approvals. Considerable uncertainty exists regarding the timing of these future events for the New Jersey Chrome sites. Further resolution of these events is expected to occur over the next several 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 matter will continue to be adjusted.

Remediation: Glass, Chemicals and Other Sites

Among other sites at which PPG is managing environmental liabilities, remedial actions are occurring at a chemical manufacturing site in Barberton, Ohio, where PPG has completed a Facility Investigation and Corrective Measure Study under the United States Environmental Protection Agency's Resource Conservation and Recovery Act Corrective Action Program. PPG has also been addressing the impacts from a legacy plate glass manufacturing site in Kokomo, Indiana under the Voluntary Remediation Program of the Indiana Department of Environmental Management and a site associated with a legacy plate glass manufacturing site near Ford City, Pennsylvania under the Pennsylvania Land Recycling Program under the oversight of the Pennsylvania Department of Environmental Protection. PPG is currently performing additional investigation and remedial activities at these locations.

With respect to certain other waste sites, the financial condition of 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.

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. 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, none of which are individually significant. 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 impact of evolving programs, such as natural resource damage claims, industrial site re-use initiatives and domestic and international 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.

Other Matters

The Company had outstanding letters of credit and surety bonds of $129 million and guarantees of $4 million as of June 30, 2021. The Company does not believe any loss related to such guarantees is likely.

15. Revenue Recognition

The Company recognizes revenue when control of the promised goods or services is transferred to the customer and in amounts that the Company expects to collect. The timing of revenue recognition takes into consideration the various shipping terms applicable to the Company’s sales. For most transactions, control passes in accordance with agreed upon delivery terms.

The Company delivers products to company-owned stores, home centers and other regional or national consumer retail outlets, paint dealers, concessionaires and independent distributors, company-owned distribution networks, and directly to manufacturing companies and retail customers. Each product delivered to a third party customer is considered to satisfy a performance obligation. Performance obligations generally occur at a point in time and are satisfied when control of the goods passes to the customer. The Company is entitled to collection of the sales price under normal credit terms in the regions in which it operates. Accounts receivable are recognized when there is an unconditional right to consideration. Payment terms vary from customer to customer, depending on creditworthiness, prior payment history and other considerations.

The Company also provides services by applying coatings to customers' manufactured parts and assembled products and by providing technical support to certain customers. Performance obligations are satisfied over time as critical milestones are met and as services are provided. PPG is entitled to payment as the services are rendered. For the three and six months ended June 30, 2021 and 2020, service revenue constituted approximately 5% of total revenue.

Net sales by segment and region for the three and six months ended June 30, 2021 and 2020 were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2021	2020	2021	2020
Performance Coatings				
United States and Canada	$1,199	$940	$2,197	$1,867
Europe, Middle East and Africa ("EMEA")	970	686	1,781	1,351
Asia Pacific	312	255	588	454
Latin America	268	188	502	405
Total	$2,749	$2,069	$5,068	$4,077
Industrial Coatings				
United States and Canada	$564	$336	$1,135	$918
EMEA	482	240	927	636
Asia Pacific	418	311	824	571
Latin America	146	59	286	190
Total	$1,610	$946	$3,172	$2,315
Total Net Sales				
United States and Canada	$1,763	$1,276	$3,332	$2,785
EMEA	1,452	926	2,708	1,987
Asia Pacific	730	566	1,412	1,025
Latin America	414	247	788	595
Total PPG	$4,359	$3,015	$8,240	$6,392

Allowance for Credit Losses

All trade receivables are reported on the condensed consolidated balance sheet at the outstanding principal amount adjusted for any allowance for credit losses and any charge offs. PPG provides an allowance for credit losses to reduce trade receivables to their estimated net realizable value equal to the amount that is expected to be collected. This allowance is estimated based on historical collection experience, current regional economic and market conditions, the aging of accounts receivable, assessments of current creditworthiness of customers, and forward-looking information. The use of forward-looking information is based on certain macroeconomic and microeconomic indicators including, but not limited to, regional business environment risk, political risk, and commercial and financing risks.

PPG reviews its reserves for credit losses on a quarterly basis to ensure its reserves for credit losses reflect regional risk trends as well as current and future global operating conditions.

The following table summarizes the activity for the allowance for credit losses for the six months ended June 30, 2021 and 2020:

	Trade Receivables Allowance for Credit Losses	
($ in millions)	2021	2020
January 1	$44	$22
Current-period provision for credit losses	(11)	39
Trade receivables written off as uncollectible, net of recoveries	(8)	(8)
Foreign currency impact	—	(1)
June 30	$25	$52

In March 2020, PPG recorded estimated future credit losses for trade receivables of $30 million related to the potential financial impacts of the COVID-19 pandemic. These amounts were estimated based on regional business information, including certain forward-looking information and other considerations. During the second quarter 2021, PPG released $14 million of the previously established reserve due to improvement in economic conditions in certain countries and a slower pattern of bankruptcies than expected.

16. Reportable Business Segment Information

PPG is a multinational manufacturer with 10 operating segments (which the Company refers to as “strategic business units”) that are organized based on the Company’s major products lines. The Company’s reportable business segments include the following two segments: Performance Coatings and Industrial Coatings. The operating segments have been aggregated based on economic similarities, the nature of their products, production processes, end-use markets and methods of distribution.

The Performance Coatings reportable business segment is comprised of the automotive refinish coatings, aerospace coatings, architectural coatings – Americas and Asia Pacific, architectural coatings – EMEA, protective and marine coatings and traffic solutions operating segments. This reportable business segment primarily supplies a variety of protective and decorative coatings, sealants and finishes along with paint strippers, stains and related chemicals, pavement marking products as well as transparencies and transparent armor.

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

Reportable business segment net sales and segment income for the three and six months ended June 30, 2021 and 2020 were as follows:

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2021	2020	2021	2020
Net sales:				
Performance Coatings	$2,749	$2,069	$5,068	$4,077
Industrial Coatings	1,610	946	3,172	2,315
Total	$4,359	$3,015	$8,240	$6,392
Segment income:				
Performance Coatings	$454	$362	$840	$634
Industrial Coatings	190	34	435	215
Total	$644	$396	$1,275	$849
Corporate	(52)	(50)	(104)	(110)
Interest expense, net of interest income	(25)	(36)	(49)	(59)
Acquisition-related costs [a]	(14)	—	(38)	—
Environmental remediation charges	(10)	(4)	(26)	(12)
Expenses incurred due to natural disasters[b]	(5)	—	(17)	—
Business restructuring-related costs, net [c]	19	(173)	15	(186)
Debt extinguishment charge	—	(7)	—	(7)
Change in allowance for doubtful accounts related to COVID-19	14	—	14	(30)
Income from legal settlements	22	—	22	—
Income before income taxes	$593	$126	$1,092	$445

(a) Acquisition-related costs include advisory, legal, accounting, valuation, other professional or consulting fees, and certain internal costs directly incurred to effect acquisitions. These costs are included in Selling, general and administrative expense in the condensed consolidated statement of income. Acquisition-related costs also include the impact for the step up to fair value of inventory acquired in certain acquisitions which are included in Cost of Sales, exclusive of depreciation and amortization in the condensed consolidated statement of income.

(b) In the second half of 2020, Hurricanes Laura and Delta damaged a southern U.S. factory supporting the Company's specialty coatings and materials business. In the first quarter of 2021, a winter storm further damaged that factory as well as other Company factories in the southern U.S. Incremental expenses incurred in the first half of 2021 due to these storms included costs related to maintenance and repairs of damaged property, freight and utility premiums and other incremental expenses directly related to the impacted areas. These incremental expenses largely related to the Company's specialty coatings and materials business.

(c) Included in business restructuring-related costs, net are business restructuring charges, accelerated depreciation of certain assets and other related costs, offset by releases related to previously approved programs.

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our unaudited financial statements and the notes thereto included in the condensed consolidated financial statements in Part I, Item 1, “Financial Statements,” of this report and in conjunction with the 2020 Form 10-K.

Executive Overview

Below are our key financial results for the three months ended June 30, 2021:

- Net sales were approximately $4.4 billion, up 44.6% compared to the prior year.
- Cost of sales, exclusive of depreciation and amortization ("Cost of sales") was $2.6 billion, up 54.4% versus prior year primarily due to higher sales volumes. As a percentage of sales, Cost of sales increased 3.8%.
- Selling, general and administrative ("SG&A") expense was $955 million, up 24.7% year-over-year primarily due to wage and other cost inflation and SG&A expense attributable to acquired businesses. As a percentage of sales, SG&A expense decreased 3.5%.
- Income before income taxes was $593 million.
- The reported effective tax rate was 27.0%. The adjusted effective tax rate was 23.2%.
- Net income attributable to PPG was $431 million.
- Earnings per diluted share attributable to PPG was $1.80.

For the six months ended June 30, 2021:

- Cash flows from operating activities was $581 million, an increase of $260 million year-over-year.
- Capital expenditures, including business acquisitions (net of cash acquired), was $2,268 million.
- The Company paid $256 million in dividends.

Performance in the second quarter of 2021 compared to the second quarter of 2020

Performance Overview

Net Sales by Region

	Three Months Ended June 30		Percent Change
($ in millions, except percentages)	2021	2020	2021 vs. 2020
United States and Canada	$1,763	$1,276	38.2 %
Europe, Middle East and Africa ("EMEA")	1,452	926	56.8 %
Asia Pacific	730	566	29.0 %
Latin America	414	247	67.6 %
Total	$4,359	$3,015	44.6 %

Net sales increased $1,344 million due to the following:

- *Higher sales volumes (+24%)*
- *Acquisition-related sales (+11%)*
- *Favorable foreign currency translation (+6%)*
- *Higher selling prices (+4%)*

For specific business results, see the Performance of Reportable Business Segments section within Item 2 of this Form 10-Q.

Cost of Sales, exclusive of depreciation and amortization

($ in millions, except percentages)	Three Months Ended June 30		Percent Change
	2021	2020	2021 vs. 2020
Cost of sales, exclusive of depreciation and amortization	$2,629	$1,703	54.4 %
Cost of sales as a percentage of net sales	60.3 %	56.5 %	3.8 %

Cost of sales, exclusive of depreciation and amortization, increased $926 million primarily due to the following:

- *Higher sales volumes*
- *Cost of sales attributable to acquired businesses*
- *Raw material inflation*
- *Unfavorable foreign currency translation*

Selling, general and administrative expenses

($ in millions, except percentages)	Three Months Ended June 30		Percent Change
	2021	2020	2021 vs. 2020
Selling, general and administrative expenses (SG&A)	$955	$766	24.7 %
Selling, general and administrative expenses as a percentage of net sales	21.9 %	25.4 %	(3.5) %

SG&A expense increased $189 million primarily due to the following:

- *Wage and other cost inflation*
- *Unfavorable foreign currency translation*
- *Selling, general and administrative expenses from acquired businesses*
- *Return of certain expenses suspended during the second quarter 2020 due to short-term cost cutting initiatives related to COVID-19*

Other costs and other income

($ in millions, except percentages)	Three Months Ended June 30		Percent Change
	2021	2020	2021 vs. 2020
Interest expense, net of Interest income	$25	$36	(30.6)%
Other charges	$11	$21	(47.6)%
Other income	($77)	($11)	600.0 %

Interest expense, net of Interest income

Interest expense, net of Interest income was lower in the three months ended June 30, 2021 compared to 2020 due to a premium paid in the prior year for the early redemption of debt.

Other charges

Other charges were lower in the three months ended June 30, 2021 than in the prior year due to the change in fair value of certain marketable equity securities.

Other income

Other income was higher in the three months ended June 30, 2021 compared to the prior year due to favorable legal settlements.

Effective tax rate and earnings per diluted share

($ in millions, except percentages)	Three Months Ended June 30 2021	2020	Percent Change 2021 vs. 2020
Income tax expense	$160	$29	451.7 %
Effective tax rate	27.0 %	23.0 %	4.0 %
Adjusted effective tax rate, continuing operations*	23.2 %	24.9 %	(1.7)%
Earnings per diluted share, continuing operations	$1.80	$0.42	328.6 %
Adjusted earnings per diluted share*	$1.94	$1.09	78.0 %
*See Regulation G Reconciliation below			

The effective tax rate for the three months ended June 30, 2021 and 2020 reflects the impact of certain discrete tax items for the quarter. In the second quarter 2021, PPG recorded a net tax charge of $22 million triggered by new legislation that increased the United Kingdom's corporation tax rate. The Company expects that its third quarter 2021 effective tax rate will be between 21% and 23%, including potential favorable discrete tax items.

Adjusted earnings per diluted share for the three months ended June 30, 2021 increased year-over-year primarily due to higher sales volumes.

Regulation G Reconciliations - Results from Operations

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

Income before income taxes from continuing operations is reconciled to adjusted income before income taxes from continuing operations, the effective tax rate from continuing operations is reconciled to the adjusted effective tax rate and 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:

	Three Months Ended June 30, 2021				
($ in millions, except percentages and per share amounts)	Income Before Income Taxes	Tax Expense	Effective Tax Rate	Net income (attributable to PPG)	Earnings per diluted share[(a)]
As reported, continuing operations	$593	$160	27.0 %	$431	$1.80
Adjusted for:					
Acquisition-related amortization expense	41	10	25.2 %	31	0.13
Net tax charge related to UK statutory rate change	—	(22)	N/A	22	0.09
Acquisition-related costs, net	14	1	9.7 %	13	0.05
Environmental remediation charges	10	3	24.3 %	7	0.03
Expenses incurred due to natural disasters [(b)]	5	1	24.3 %	4	0.02
Decrease in allowance for doubtful accounts related to COVID-19	(14)	(3)	24.7 %	(11)	(0.05)
Business restructuring-related costs, net [(c)]	(19)	(4)	20.9 %	(15)	(0.06)
Income from legal settlements	(22)	(5)	24.3 %	(17)	(0.07)
Adjusted, continuing operations, excluding certain items	$608	$141	23.2 %	$465	$1.94

($ in millions, except percentages and per share amounts)	Three Months Ended June 30, 2020 Income Before Income Taxes	Tax Expense	Effective Tax Rate	Net income (attributable to PPG)	Earnings per diluted share[(a)]
As reported, continuing operations	$126	$29	23.0 %	$99	$0.42
Adjusted for:					
Business restructuring-related costs, net [(c)]	173	45	26.5 %	128	0.54
Acquisition-related amortization expense	31	8	26.1 %	23	0.10
Debt extinguishment charge	7	2	24.3 %	5	0.02
Environmental remediation charges	4	1	24.3 %	3	0.01
Adjusted, continuing operations, excluding certain items	$341	$85	24.9 %	$258	$1.09

(a) Earnings per diluted share is calculated based on unrounded numbers. Figures in the table may not recalculate due to rounding.

(b) In the second half of 2020, Hurricanes Laura and Delta damaged a southern U.S. factory supporting the Company's specialty coatings and materials business. In the first quarter of 2021, a winter storm further damaged that factory as well as other Company factories in the southern U.S. Incremental expenses incurred in the second quarter of 2021 due to these storms included costs related to maintenance and repairs of damaged property, freight and utility premiums and other incremental expenses directly related to the impacted areas. These incremental expenses largely related to the Company's specialty coatings and materials business.

(c) Included in business restructuring-related costs, net are business restructuring charges, accelerated depreciation of certain assets and other related costs, offset by releases related to previously approved programs.

Performance of Reportable Business Segments

Performance Coatings

($ in millions, except per share amounts)	Three Months Ended June 30 2021	2020	$ Change 2021 vs. 2020	% Change 2021 vs. 2020
Net sales	$2,749	$2,069	$680	32.9 %
Segment income	$454	$362	$92	25.4 %
Amortization expense	$30	$21	$9	42.9 %
Segment income, excluding amortization expense	$484	$383	$101	26.4 %

Performance Coatings net sales increased due to the following:

- *Acquisition-related sales (14%)*
- *Higher sales volumes (9%)*
- *Favorable foreign currency translation (7%)*
- *Higher selling prices (3%)*

Architectural coatings - Americas and Asia Pacific net sales, excluding the impact of currency and acquisitions ("organic sales") decreased by a low-single-digit percentage, with differences by channel and region. Sales were unfavorably impacted by raw material availability and softening do-it-yourself ("DIY") paint demand. In Mexico, PPG Comex architectural coatings business organic sales increased by a mid-teen percentage compared to the prior year as the concessionaire network sell-out of PPG products continued to be strong throughout the quarter.

Architectural coatings – EMEA organic sales increased by a mid-teen percentage, driven by broad sales volume growth year-over-year in most countries. This performance was led by strong demand in the trade (do-it-for-me) channel.

Sales volumes for automotive refinish coatings increased by about 45% compared to prior year, primarily due to continued demand improvement in the Asia Pacific region. In Europe, congestion and miles driven in major cities improved during the second quarter. In the U.S., body shop activity modestly improved during the second quarter, driven by higher miles driven and higher collision claims.

Aerospace coatings sales volumes increased by a low-single-digit percentage as commercial aftermarket demand improved during the quarter. Net sales benefited from continued robust demand of military applications year-over-year.

Sales volumes in the protective and marine coatings business were higher by a low-teen percentage primarily due to strong demand in the Asia Pacific region.

Net sales in the traffic solutions business met expectations despite raw material shortages.

Segment income increased $92 million year-over-year due to the earnings impact of higher sales volumes, higher selling prices, the execution of cost-mitigation actions and restructuring savings, partially offset by raw material cost inflation.

Looking Ahead

Looking ahead for the Performance Coatings segment, raw material and transportation costs are expected to be higher in the third quarter compared to the second quarter. Supply disruptions, mostly impacting the U.S. architectural coatings and traffic solutions businesses, are anticipated to continue through the third quarter. Raw material inflation is expected to be sequentially higher. Further selling price increases have been secured or were initiated during the second quarter. Third quarter sales are expected to follow historical seasonality patterns experienced before the pandemic. Finally, foreign currency translation is expected to have a favorable impact on segment sales and earnings of about $60 million and approximately $10 million, respectively, based on recent exchange rates.

Industrial Coatings

	Three Months Ended June 30		$ Change	% Change
($ in millions, except per share amounts)	2021	2020	2021 vs. 2020	2021 vs. 2020
Net sales	$1,610	$946	$664	70.2 %
Segment income	$190	$34	$156	458.8 %
Amortization expense	$11	$10	$1	10.0 %
Segment income, excluding amortization expense	$201	$44	$157	356.8 %

Industrial Coatings segment net sales increased due to the following:

- *Higher sales volumes (56%)*
- *Favorable foreign currency translation (5%)*
- *Acquisition-related sales (5%)*
- *Higher selling prices (4%)*

Automotive OEM coatings sales volumes increased by about 75% year-over-year, above global industry production rates, driven by strong growth in all regions after a recovery in automotive production from the global pandemic. In the U.S., automotive retail dealer inventories decreased to historically low levels as consumer demand remained robust while production levels were constrained due to a shortage of computer chips.

For the industrial coatings business, sales volumes increased by nearly 50% year-over-year as global industrial production continued to improve compared to the start of the pandemic. Globally, the recovery was broad-based across all segments with the larger contributions coming from the appliance, heavy-duty equipment, and general finishes end uses.

Packaging coatings organic sales increased by a high-single-digit percentage year-over-year due to sales volume growth in most regions, with strong growth across the canned beverage segment, partially offset by softer demand for canned personal care items.

Segment income increased $156 million year-over-year due to the earnings impact of higher sales volumes, higher selling prices, the execution of cost-mitigation actions and restructuring savings, partially offset by raw material cost inflation.

Looking ahead

Looking ahead for the Industrial Coatings segment, sales volumes are expected to be up a low-single-digit percentage compared to the prior-year third quarter, including continuing impacts from supply disruptions. These disruptions are also expected to further elevate raw material costs in the third quarter compared to the second quarter. The company has been actively working with customers to secure selling price increases in all businesses. Due to the rapid increase in raw material costs, the second half of the year will likely have an unfavorable net impact from higher raw material and logistics costs compared to selling price increases. This is anticipated to improve in the first half of 2022. Finally, foreign currency translation is expected to have a favorable impact on segment sales and earnings of about $30 million and $4 million, respectively, based on recent exchange rates.

Performance in the first six months of 2021 compared to the first six months of 2020

Performance Overview

Net Sales by Region

($ in millions, except percentages)	Six Months Ended June 30 2021	Six Months Ended June 30 2020	Percent Change 2021 vs. 2020
United States and Canada	$3,332	$2,785	19.6 %
EMEA	2,708	1,987	36.3 %
Asia Pacific	1,412	1,025	37.8 %
Latin America	788	595	32.4 %
Total	$8,240	$6,392	28.9 %

Net sales increased $1,848 million due to the following:

- *Higher sales volumes (+15%)*
- *Acquisition-related sales (+7%)*
- *Favorable foreign currency translation (+4%)*
- *Higher selling prices (+3%)*

For specific business results, see the Performance of Reportable Business Segments section within Item 2 of this Form 10-Q.

Cost of Sales, exclusive of depreciation and amortization

($ in millions, except percentages)	Six Months Ended June 30 2021	Six Months Ended June 30 2020	Percent Change 2021 vs. 2020
Cost of sales, exclusive of depreciation and amortization	$4,861	$3,611	34.6 %
Cost of sales as a percentage of net sales	59.0 %	56.5 %	2.5 %

Cost of sales, exclusive of depreciation and amortization, increased $1,250 million primarily due to the following:

- *Higher sales volumes*
- *Cost of sales attributable to acquired businesses*
- *Raw material inflation*
- *Foreign currency translation*

Selling, general and administrative expenses

($ in millions, except percentages)	Six Months Ended June 30 2021	Six Months Ended June 30 2020	Percent Change 2021 vs. 2020
Selling, general and administrative expenses (SG&A)	$1,846	$1,671	10.5 %
Selling, general and administrative expenses as a percentage of net sales	22.4 %	26.1 %	(3.7) %

SG&A increased $175 million primarily due to the following:

- *Unfavorable foreign currency translation*
- *SG&A attributable to acquired businesses*

Partially offset by:

- *Cost savings initiatives, including restructuring actions*

Other costs and income

($ in millions, except percentages)	Six Months Ended June 30 2021	Six Months Ended June 30 2020	Percent Change 2021 vs. 2020
Interest expense, net of Interest income	$49	$59	(16.9)%
Other charges	$28	$24	16.7 %
Other income	($90)	($29)	210.3 %

Interest expense, net of Interest income

Interest expense, net of Interest income was lower in the six months ended June 30, 2021 compared to prior year due to more favorable interest rates on outstanding debt and a premium paid in the prior year for the early redemption of debt.

Other charges

Other charges were higher in the six months ended June 30, 2021 compared to prior year due to environmental remediation charges recorded to increase existing reserves based on updated estimates of remediation costs.

Other income

Other income was higher in the six months ended June 30, 2021 compared to the prior year due to favorable legal settlements in the second quarter 2021.

Effective tax rate and earnings per diluted share

($ in millions, except percentages)	Six Months Ended June 30 2021	Six Months Ended June 30 2020	Percent Change 2021 vs. 2020
Income tax expense	$274	$100	174.0 %
Effective tax rate	25.1 %	22.5 %	2.6 %
Adjusted effective tax rate, continuing operations*	23.1 %	23.6 %	(0.5)%
Earnings per diluted share, continuing operations	$3.38	$1.44	134.7 %
Adjusted earnings per diluted share*	$3.82	$2.40	59.2 %
*See Regulation G Reconciliation below			

The effective tax rate for the six months ended June 30, 2021 reflects the impact of certain discrete tax items. The Company expects that its full year 2021 effective tax rate will be between 22% and 24%, including potential favorable discrete tax items.

Adjusted earnings per diluted share for the six months ended June 30, 2021 increased year-over-year due to the global pandemic which negatively impacted sales volumes in the prior year.

Regulation G Reconciliation - Results from Operations

PPG believes investors' understanding of the Company's performance is enhanced by the disclosure of net income from continuing operations, earnings per diluted share from continuing operations and PPG's effective tax rate adjusted for certain items. PPG's management considers this information useful in providing insight into the Company's ongoing performance because it excludes the impact of items that cannot reasonably be expected to recur on a quarterly basis or that are not attributable to our primary operations. Net income from continuing operations, earnings per diluted share from continuing operations and the effective tax rate adjusted for these items are not recognized financial measures determined in accordance with U.S. GAAP and should not be considered a substitute for net income from continuing operations, earnings per diluted share from continuing operations, the effective tax rate or other financial measures as computed in accordance with U.S. GAAP. In addition, adjusted net income, adjusted earnings per diluted share and the adjusted effective tax rate may not be comparable to similarly titled measures as reported by other companies.

Income before income taxes from continuing operations is reconciled to adjusted income before income taxes from continuing operations, the effective tax rate from continuing operations is reconciled to the adjusted effective tax rate from continuing operations and net income from continuing operations (attributable to PPG) and earnings per share – assuming dilution (attributable to PPG) are reconciled to adjusted net income from continuing operations (attributable to PPG) and adjusted earnings per share – assuming dilution below:

	Six Months Ended June 30, 2021				
($ in millions, except percentages and per share amounts)	Income Before Income Taxes	Tax Expense	Effective Tax Rate	Net income from continuing operations (attributable to PPG)	Earnings per diluted share(a)
As reported, continuing operations	$1,092	$274	25.1 %	$809	$3.38
Adjusted for:					
Acquisition-related amortization expense	80	20	25.2 %	60	0.25
Acquisition-related costs, net(b)	38	6	15.8 %	32	0.13
Net tax charge related to UK statutory rate change	—	(22)	N/A	22	0.09
Environmental remediation charges	26	7	24.3 %	19	0.08
Expenses incurred due to natural disasters(c)	17	4	24.3 %	13	0.06
Decrease in allowance for doubtful accounts related to COVID-19	(14)	(3)	24.7 %	(11)	(0.05)
Business restructuring-related costs, net (d)	(15)	(3)	17.3 %	(12)	(0.05)
Income from legal settlements	(22)	(5)	24.3 %	(17)	(0.07)
Adjusted, continuing operations, excluding certain items	$1,202	$278	23.1 %	$915	$3.82

	Six Months Ended June 30, 2020				
($ in millions, except percentages and per share amounts)	Income Before Income Taxes	Tax Expense	Effective Tax Rate	Net income from continuing operations (attributable to PPG)	Earnings per diluted share(a)
As reported, continuing operations	$445	$100	22.5 %	$342	$1.44
Adjusted for:					
Business restructuring-related costs, net (d)	186	48	26.2 %	138	0.58
Acquisition-related amortization expense	67	16	23.9 %	51	0.22
Increase in allowance for doubtful accounts related to COVID-19	30	7	23.2 %	23	0.10
Environmental remediation charges	12	3	24.3 %	9	0.04
Debt extinguishment charge	7	2	24.3 %	5	0.02
Adjusted, continuing operations, excluding certain items	$747	$176	23.6 %	$568	$2.40

(a) Earnings per diluted share is calculated based on unrounded numbers. Figures in the table may not recalculate due to rounding.

(b) Acquisition-related costs include advisory, legal, accounting, valuation, other professional or consulting fees, and certain internal costs directly incurred to effect acquisitions. Acquisition-related costs also include the impact for the step up to fair value of inventory acquired in certain acquisitions.

(c) In the second half of 2020, Hurricanes Laura and Delta damaged a southern U.S. factory supporting the Company's specialty coatings and materials business. In the first quarter of 2021, a winter storm further damaged that factory as well as other Company factories in the southern U.S. Incremental expenses incurred in the first half of 2021 due to these storms included costs related to maintenance and repairs of damaged property, freight and utility premiums and other incremental expenses directly related to the impacted areas. These incremental expenses largely related to the Company's specialty coatings and materials business.

(d) Included in business restructuring-related costs, net are business restructuring charges, accelerated depreciation of certain assets and other related costs, offset by releases related to previously approved programs.

Performance of Reportable Business Segments

Performance Coatings

($ in millions, except per share amounts)	Six Months Ended June 30 2021	Six Months Ended June 30 2020	$ Change 2021 vs. 2020	% Change 2021 vs. 2020
Net sales	$5,068	$4,077	$991	24.3 %
Segment income	$840	$634	$206	32.5 %
Amortization expense	$59	$47	$12	25.5 %
Segment income, excluding amortization expense	$899	$681	$218	32.0 %

Performance Coatings net sales increased due to the following:

- *Acquisition-related sales (+9%)*
- *Higher sales volumes (+7%)*
- *Favorable foreign currency translation (+5%)*
- *Higher selling prices (+3%)*

Architectural coatings - Americas and Asia Pacific net sales increased a mid-single-digit percentage during the first six months of the year with differences by channel and region. Despite a strong first quarter, the second quarter was negatively impacted by raw material shortages. Favorable foreign currency benefited net sales due to the strengthening of the Mexican peso and certain currencies in the Asia Pacific region. In Mexico, PPG Comex architectural coatings business organic sales increased by a low-teen percentage compared to the prior year as the concessionaire network sell-out of PPG products continued to be strong.

Architectural coatings – EMEA net sales increased over 30% versus prior year driven by a strong volumes in the first half of the year and favorable foreign currency translation due to the strengthening of the euro. Acquisition-related sales from Tikkurila also benefited the business.

Net sales for automotive refinish coatings increased nearly 40%, with significant growth in each region versus prior year driven by an increase in global miles driven and traffic density in most of the world versus 2020.

Aerospace coatings sales volumes decreased a low-teen percentage year-over-year due to a decline in commercial OEM and general aviation products.

Net sales in the protective and marine coatings business increased over 30% versus prior year due to acquisition-related sales from VersaFlex and higher sales volumes in Asia Pacific.

Net sales in the traffic solutions business met expectations despite raw material shortages.

Segment income increased $206 million year-over-year due to the earnings impact of higher sales volumes, higher selling prices, and savings from previously approved restructuring actions, partially offset by raw material and logistics cost inflation.

Industrial Coatings

($ in millions, except per share amounts)	Six Months Ended June 30 2021	Six Months Ended June 30 2020	$ Change 2021 vs. 2020	% Change 2021 vs. 2020
Net sales	$3,172	$2,315	$857	37.0 %
Segment income	$435	$215	$220	102.3 %
Amortization expense	$21	$20	$1	5.0 %
Segment income, excluding amortization expense	$456	$235	$221	94.0 %

Industrial Coatings segment net sales increased due to the following:

- *Higher sales volumes (+29%)*

- *Favorable foreign currency translation (+4%)*
- *Higher selling prices (+2%)*
- *Acquisition-related sales (+2%)*

Automotive OEM coatings net sales increased over 45% year-over-year driven by strong growth in all regions after a recovery from the global pandemic in automotive production and favorable foreign currency translation in Europe and Asia. Net sales also benefited from acquisition-related sales from Wörwag and Cetelon. In the U.S., automotive retail dealer inventories decreased to historically low levels as consumer demand remained robust while production levels were constrained due to a shortage of computer chips.

For the industrial coatings business, net sales increased by nearly 35% as global industrial production continued to improve from the global pandemic in prior year, most notably in electronic materials, heavy duty equipment and cookware.

Packaging coatings net sales increased over 15% year-over-year due to sales volume growth in the Asia-Pacific region, Europe, and Latin America, with strong growth across the beverage and canned food segments. Net sales also benefited from higher selling prices and favorable foreign currency translation.

Segment income increased $220 million year-over-year driven by the earnings impact of higher sales volumes, higher selling prices, and the execution of cost-mitigation actions and restructuring savings, partially offset by raw material and logistics cost inflation.

Liquidity and Capital Resources

PPG had cash and short-term investments totaling $1.3 billion and $1.9 billion at June 30, 2021 and December 31, 2020, respectively.

Cash from operating activities from continuing operations for the six months ended June 30, 2021 and 2020 was $581 million and $321 million, respectively. Operating cash flow increased primarily due to higher net income, partially offset by unfavorable changes in working capital in the first six months of 2021 compared to the prior year.

Other uses of cash during the six months ended June 30, 2021 included:

- Capital expenditures, excluding acquisitions, of $142 million.
- Business acquisition cash spending (net of cash acquired) of $2,126 million.
- Cash dividends paid of $256 million.

In June 2021, PPG borrowed $700 million under the $2.0 billion Term Loan Credit Agreement (the "Term Loan Credit Agreement") entered into in February 2021 to finance the Company’s acquisition of Tikkurila, and to pay fees, costs and expenses related thereto. The Term Loan Credit Agreement provides the Company with the ability to borrow up to an aggregate principal amount of $2.0 billion on an unsecured basis. Prior to December 31, 2021, the Company may make up to eleven additional borrowings of term loans under the Term Loan Credit Agreement, which may be used for working capital and general corporate purposes. The Term Loan Credit Agreement contains covenants that are 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 Term Loan Credit Agreement matures and all outstanding borrowings are due and payable on the third anniversary of the date of the initial borrowing under the Agreement.

Also in the second quarter of 2021, two of PPG's long-term debt obligations matured; $134 million 9% non-callable debentures and non-U.S. debt of €30 million. The Company paid $170 million to settle these obligations using cash on hand.

In March 2021, PPG completed a public offering of $700 million aggregate principal amount of 1.200% notes due 2026. These notes were issued pursuant to PPG’s existing shelf registration statement and pursuant to the Indenture between the Company and the Bank of New York Mellon Trust Company, N.A., as trustee, as supplemented (the "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 Indenture) at a price equal to 101% of their principal amount plus accrued and unpaid interest. The Company may issue additional debt from time to time pursuant to the Indenture. The aggregate cash proceeds from the notes, net of discounts and fees, was $692 million.

In June 2020, PPG completed an early redemption of the $500 million 3.6% notes due November 2020 using proceeds from the May 2020 public offering and cash on hand. The Company recorded a charge of $7 million in the second quarter 2020 for the debt redemption which consists of the aggregate make-whole cash premium of $6 million and a balance of unamortized fees and discounts of $1 million related to the debt redeemed.

In May 2020, PPG completed a public offering of $300 million aggregate principal amount of 2.55% notes due 2030. These notes were issued pursuant to PPG's existing shelf registration statement and pursuant to an indenture between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee, as supplemented (the "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 Indenture) at a price equal to 101% of their principal amount plus accrued and unpaid interest. The Company may issue additional debt from time to time pursuant to the Indenture. The aggregate cash proceeds from the notes, net of discounts and fees, was $296 million.

In April 2020, PPG entered into a $1.5 billion 364-Day Term Loan Credit Agreement (the "Term Loan"). The Term Loan contains covenants that are consistent with those in the Credit Agreement discussed below and that are 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. In 2020, PPG repaid $1.1 billion of the Term Loan using cash on hand. In the first quarter 2021, PPG repaid the remaining $400 million of the Term Loan using cash on hand.

In August 2019, PPG amended and restated its five-year credit agreement (the "Credit Agreement") with several banks and financial institutions. The Credit Agreement provides for a $2.2 billion unsecured revolving credit facility. The Company has the ability to increase the size of the Credit Agreement by up to an additional $750 million, subject to the receipt of lender commitments and other conditions precedent. The Credit Agreement will terminate on August 30, 2024. 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. In March 2020, PPG borrowed $800 million under the Credit Agreement and repaid that amount in full in April 2020. There were no amounts outstanding under the credit agreement as of June 30, 2021 and December 31, 2020.

The Term Loan Credit Agreement and Credit Agreement require the Company to maintain a ratio of Total Indebtedness to Total Capitalization, as defined in the Term Loan Credit Agreement and Credit Agreement, of 60% or less; provided, that for any fiscal quarter in which the Company has made an acquisition for consideration in excess of $1 billion and for the next five fiscal quarters thereafter, the ratio of Total Indebtedness to Total Capitalization may not exceed 65% at any time. As of June 30, 2021, Total Indebtedness to Total Capitalization as defined under the Credit Agreement and Term Loan Credit Agreement was 50%.

The Credit Agreement also supports the Company's commercial paper borrowings which are classified as long-term based on PPG's intent and ability to refinance these borrowings on a long-term basis. Commercial paper borrowings of $800 million and $250 million were outstanding as of June 30, 2021 and December 31, 2020, respectively.

Total capital spending in 2021 is expected to be in the range of $425 to $450 million, reflecting a return to pre-pandemic levels of spending in support of future organic growth opportunities. PPG expects to make mandatory contributions to its non-U.S. pension plans in the range of $10 million to $15 million during the remaining six months of 2021. PPG may make voluntary contributions to its defined benefit pension plans in 2021 and beyond.

A primary focus for the Company in 2021 will continue to be cash deployment focused on shareholder value creation, with a preference for business acquisitions.

Operating working capital is a subset of total working capital and represents (1) trade receivables – net of the allowance for doubtful accounts (2) FIFO inventories and (3) trade liabilities. We believe operating working capital represents the key components of working capital under the operating control of our businesses. A key metric we use to measure our working capital management is operating working capital as a percentage of sales (current quarter sales annualized).

($ in millions, except percentages)	June 30, 2021	December 31, 2020	June 30, 2020
Trade receivables, net	$3,147	$2,412	$2,356
Inventories, FIFO	2,350	1,845	1,825
Trade creditors' liabilities	2,770	2,259	1,798
Operating working capital	$2,727	$1,998	$2,383
Operating working capital as a % of Sales	15.6 %	13.3 %	19.8 %
Days sales outstanding	59	54	65

Other Liquidity Information

The Company continues to believe that cash on hand and short-term investments, cash from operations and the Company's access to capital markets will continue to be sufficient to fund our operating activities, capital spending, acquisitions, dividend payments, debt service, share repurchases, contributions to pension plans and PPG's significant contractual obligations.

Environmental

	Three Months Ended June 30		Six Months Ended June 30	
($ in millions)	2021	2020	2021	2020
Cash outlays for environmental remediation activities	$8	$12	$17	$37

($ in millions)	Remainder of 2021	Annually 2022 - 2025
Projected future cash outlays for environmental remediation activities	$60 - $80	$20 - $50

Restructuring

In June 2020, PPG initiated a $176 million restructuring program. The program addresses weakened global economic conditions stemming from the COVID-19 pandemic and related pace of recovery in a few end-use markets along with further opportunities to optimize supply chain and functional costs. The plan includes a voluntary separation program that was offered in the U.S. and Canada. PPG recognized $45 million of savings from this program in 2020. We expect to achieve annualized cost savings from the 2020 program of $160 to $170 million once fully implemented in 2021.

In June 2019, PPG initiated a $184 million restructuring program. This program is a result of a comprehensive internal operational assessment to identify further opportunities to improve the profitability of the overall business portfolio. PPG recognized $60 million of savings from this program in 2020. We expect to achieve annualized cost savings from the 2019 program of $125 million once fully implemented in 2022.

In April 2018, PPG initiated an $83 million global restructuring program. The program is largely centered around the change in customer assortment related to the U.S. architectural coatings DIY business. PPG recognized $10 million of savings from this program in 2020. We expect to achieve annualized cost savings from the 2018 program of $85 million once fully implemented in 2021.

Aggregate restructuring savings related to the 2020, 2019 and 2018 programs was approximately $75 million for the six months ended 2021. Total restructuring savings are expected to be at least $135 million in 2021. Releases of approximately $23 million and $26 million were recorded in the six months ended June 30, 2021 and 2020, respectively, to reflect the current estimate of the costs to complete these actions. There are no changes to the previously estimated restructuring program savings as a result of these adjustments. In addition, the Company continues to review its cost structure to identify additional cost savings opportunities. See Note 6, "Business Restructuring," to the accompanying condensed consolidated financial statements for further details on the Company's business restructuring programs.

Currency

Comparing spot exchange rates at December 31, 2020 and at June 30, 2021, the U.S. dollar strengthened against currencies of many countries within the regions PPG operates. As a result, consolidated net assets at June 30, 2021 decreased by $58 million compared to December 31, 2020 primarily driven by the Euro.

Comparing average exchange rates during the first six months of 2021 to those of the first six months of 2020, the U.S. dollar weakened against currencies of most countries within the EMEA and Asia Pacific regions PPG operates. This had a favorable impact on Income before income taxes for the six months ended June 30, 2021 of $42 million from the translation of these foreign earnings into U.S. dollars.

New Accounting Standards

See Note 2, “New Accounting Standards,” to the accompanying condensed consolidated financial statements for further details on recently issued accounting guidance.

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 Part II, Item 1, “Legal Proceedings” of this Form 10-Q and Note 14, “Commitments and Contingent Liabilities” to the accompanying condensed consolidated financial statements for a description of certain of these lawsuits.

As discussed in Part II, Item 1 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, 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.

As also discussed in Note 14, PPG has significant reserves for environmental contingencies. Please refer to the Environmental Matters section of Note 14 for details of these reserves. A significant portion of our reserves for environmental contingencies relate to ongoing remediation at PPG's former chromium manufacturing plant in Jersey City, N.J. and associated sites ("New Jersey Chrome"). There are multiple, future events yet to occur, including further remedy selection and design, remedy implementation and execution and applicable governmental agency or community organization approvals. Considerable uncertainty exists regarding the timing of these future events for the New Jersey Chrome sites. Further resolution of these events is expected to occur over the next several 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 matter will continue to be adjusted.

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.

Forward-Looking Statements

Management’s Discussion and Analysis and other sections of this Quarterly 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. You are advised, however, to consult any further disclosures we make on related subjects in our reports to the Securities and Exchange Commission ("SEC"). 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 statements related to the expected effects on our business of the COVID-19 pandemic and the pace of recovery from the pandemic, global economic conditions, increasing price and product competition by our competitors, fluctuations in cost and availability of raw materials, the ability to achieve selling price increases, the ability to recover margins, customer inventory levels, our ability to maintain favorable supplier relationships and arrangements, the timing of and the realization of anticipated cost savings from restructuring initiatives, the ability to identify additional cost savings opportunities, the timing and expected benefits of our acquisitions, difficulties in integrating acquired businesses and achieving expected synergies therefrom, economic and political conditions in the markets we serve, 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 effectiveness of our internal control over financial reporting, the results of governmental investigations, and the unpredictability of existing and possible future litigation. However, it is not possible to predict or identify all such factors.

Consequently, while the list of factors presented here, in the 2020 Form 10-K under Item 1A and in this Form 10-Q 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.

Consequences of material differences in the results compared with those anticipated in the forward-looking statements could include, among other things, lower sales or income, business disruption, operational problems, financial loss, legal liability to third parties, other factors set forth in Item 1A of the 2020 Form 10-K and in Item 1A of this Form 10-Q 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 3. Quantitative and Qualitative Disclosures About Market Risk

Foreign Currency Risk

At June 30, 2021 and December 31, 2020, PPG had non-U.S. dollar denominated borrowings outstanding of $2.4 billion. 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 on these borrowings of $266 million at June 30, 2021 and $273 million at December 31, 2020, respectively.

The fair values of foreign currency forward contracts outstanding at June 30, 2021 and December 31, 2020 were net assets of $6 million and $2 million, respectively. The potential reduction in PPG's Income before income taxes 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 and Canadian currencies and 20% for Asian and Latin American currencies for the three months ended June 30, 2021 was $284 million and $226 million for the year ended December 31, 2020.

PPG has U.S. dollar to euro cross currency swap contracts with a total notional amount of $875 million outstanding, resulting in a net asset of $15 million and a net liability of $8 million at June 30, 2021 and December 31, 2020, 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 by reducing the value of these instruments by $91 million and $95 million at June 30, 2021 and December 31, 2020, respectively.

Interest Rate Risk

The Company manages its interest rate risk of fixed and variable rates while attempting to minimize its interest costs. PPG has interest rate swaps which converted $525 million of fixed rate debt to variable rate debt. The fair values of these contracts were assets of $48 million and $67 million as of June 30, 2021 and December 31, 2020, respectively. An increase in variable interest rates of 10% would lower the fair values of these swaps and increase interest expense by less than $1 million for the periods ended June 30, 2021 and December 31, 2020. 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 had an insignificant effect on PPG's variable rate debt obligations and interest expense for the periods ended June 30, 2021 and December 31, 2020. Further a 10% reduction in interest rates would have increased the fair value of the Company's fixed rate debt by approximately $53 million and $48 million at June 30, 2021 and December 31, 2020, respectively; however, such changes would not have had an effect on PPG's income before income taxes or cash flows.

There were no other material changes in the Company's exposure to market risk from December 31, 2020 to June 30, 2021. See Note 12, "Financial Instruments, Hedging Activities and Fair Value Measurements" for a description of our instruments subject to market risk.

Item 4. 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-Q, 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.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

PPG ("the Company") 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 may relate to contract, patent, environmental, product liability, asbestos exposure, antitrust, employment, securities and other matters arising out of the conduct of PPG’s current and past business activities. To the extent these lawsuits and claims involve personal injury, property damage and certain other claims, 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 may contest coverage. 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.

As previously disclosed, the SEC is conducting a non-public investigation of accounting matters described in the Explanatory Note and in Note 2, “Restatement of Previously Reported Consolidated Annual Financial Statements" under Item 8 of the Company’s 2017 Form 10-K/A. On September 26, 2019, PPG announced a final settlement with the SEC as to the Company. Without admitting or denying the findings in the SEC’s administrative cease-and-desist order, the Company consented to the entry of the order, which imposed no financial penalty. The Company continues to cooperate fully with the SEC’s ongoing investigation relating to these accounting matters. The Company is also cooperating fully with an investigation into the same accounting matters commenced by the U.S. Attorney’s Office for the Western District of Pennsylvania (“USAO”). As previously disclosed, the USAO has informed PPG that it will not pursue any action as to the Company.

From the late 1880’s until the early 1970’s, PPG owned property located in Cadogan and North Buffalo Townships, Pennsylvania which was used for the disposal of solid waste from PPG’s former glass manufacturing facility in Ford City, Pennsylvania. In October 2018, the Pennsylvania Department of Environmental Protection (the “DEP”) approved PPG’s cleanup plan for the Cadogan Property. In April 2019, PPG and the DEP entered into a consent order and agreement (“CO&A”) which incorporated PPG’s approved cleanup plan and a draft final permit for the collection and discharge of seeps emanating from the former disposal area. The CO&A includes a civil penalty of $1.2 million for alleged past unauthorized discharges. PPG’s former disposal area is also the subject of a citizens’ suit filed by the Sierra Club and PennEnvironment seeking remedial measures beyond the measures specified in PPG’s approved cleanup plan, a civil penalty in addition to the penalty included in the CO&A and plaintiffs’ attorneys fees. PPG and the plaintiffs settled plaintiffs’ claims for injunctive relief and PPG agreed to enhancements to the DEP approved cleanup plan and a $250,000 donation to a Pennsylvania nonprofit organization. This settlement has been memorialized by an amendment to the CO&A which was appended to a Consent Agreement between PPG and the plaintiffs which has been entered by the federal Court. The remaining claims in the case for attorneys’ fees and a civil penalty are not affected by this settlement. PPG believes that the remaining claims are without merit and intends to defend itself against these claims vigorously.

For many 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, see Note 14, “Commitments and Contingent Liabilities” to the accompanying condensed consolidated financial statements under Part I, Item 1 of this Form 10-Q.

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. After having not been named in a new lead-related lawsuit for 15 years, PPG was named as a defendant in two Pennsylvania state court lawsuits filed by Montgomery County and Lehigh County in the respective counties on October 4, 2018 and October 12, 2018. Both suits seek declaratory relief arising out of alleged public nuisances in the counties associated with the presence of lead paint on various buildings constructed prior to 1980. The Company believes these actions are without merit and intends to defend itself vigorously.

Item 1A. Risk Factors

There were no material changes in the Company’s risk factors from the risks disclosed in the 2020 Form 10-K.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Issuer Purchases of Equity Securities

No shares were repurchased in the three months ended June 30, 2021 under the current $2.5 billion share repurchase program approved in December 2017. The maximum number of shares that may yet be purchased under this program is 8,896,486 shares as of June 30, 2021. This repurchase program has no expiration date.

Item 6. Exhibits

See the Index to Exhibits on page 42.

PPG INDUSTRIES, INC. AND SUBSIDIARIES

Index to Exhibits

The following exhibits are filed as part of, or incorporated by reference into, this Form 10-Q.

†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.
††32.1	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.
††32.2	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.
101.INS*	Inline XBRL Instance Document
101.SCH**	Inline XBRL Taxonomy Extension Schema Document
101.CAL**	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF**	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB**	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE**	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Inline XBRL for the cover page of this Quarterly Report on Form 10-Q, included in the Exhibit 101 Inline XBRL Document Set.

† Filed herewith.
†† Furnished herewith.
*The instance document does not appear in the Interactive Data File because its XBRL (Extensible Business Reporting Language) tags are embedded within the Inline XBRL document.
**Attached as Exhibit 101 to this report are the following documents formatted in Inline XBRL: (i) the Condensed Consolidated Statement of Income for the six months ended June 30, 2021 and 2020, (ii) the Condensed Consolidated Balance Sheet at June 30, 2021 and December 31, 2020, (iii) the Condensed Consolidated Statement of Cash Flows for the six months ended June 30, 2021 and 2020, and (iv) Notes to Condensed Consolidated Financial Statements for the six months ended June 30, 2021.

SIGNATURES

Pursuant to the requirements 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.

PPG INDUSTRIES, INC.
(Registrant)

Date: July 20, 2021

By: /s/ Vincent J. Morales
Vincent J. Morales
Senior Vice President and Chief Financial Officer
(Principal Financial Officer and Duly Authorized Officer)

By: /s/ William E. Schaupp
William E. Schaupp
Vice President and Controller
(Principal Accounting Officer and Duly Authorized Officer)

Exhibit 31.1

PRINCIPAL EXECUTIVE OFFICER CERTIFICATION

I, Michael H. McGarry, certify that:

1. I have reviewed this quarterly report on Form 10-Q of PPG Industries, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 20, 2021

/s/ Michael H. McGarry

Michael H. McGarry
Chairman and Chief Executive Officer

Exhibit 31.2

PRINCIPAL FINANCIAL OFFICER CERTIFICATION

I, Vincent J. Morales, certify that:

1. I have reviewed this quarterly report on Form 10-Q of PPG Industries, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 20, 2021

/s/ Vincent J. Morales

Vincent J. Morales
Senior Vice President and Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of PPG Industries, Inc. for the period ended June 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Michael H. McGarry, Chairman and Chief Executive Officer of PPG Industries, Inc., certify to the best of my knowledge, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of PPG Industries, Inc.

Michael H. McGarry

chael H. McGarry
Chairman and Chief Executive Officer
ly 20, 2021

A signed original of this written statement required by Section 906 has been provided to PPG Industries, Inc. and will be retained by PPG Industries, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report on Form 10-Q of PPG Industries, Inc. for the period ended June 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Vincent J. Morales, Senior Vice President and Chief Financial Officer of PPG Industries, Inc., certify to the best of my knowledge, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of PPG Industries, Inc.

/s/ Vincent J. Morales

Vincent J. Morales
Senior Vice President and Chief Financial Officer
(Principal Financial Officer)
July 20, 2021

A signed original of this written statement required by Section 906 has been provided to PPG Industries, Inc. and will be retained by PPG Industries, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.