# 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: March 31, 2022**
**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 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 March 31, 2022, 236,194,347 shares of the Registrant's common stock, par value $1.66 2/3 per share, were outstanding.

**PPG INDUSTRIES, INC. AND SUBSIDIARIES**

**INDEX**


| | | PAGE |
|---|---|---|
| **Part I. Financial Information** | | |
| Item 1. | Financial Statements (Unaudited): | |
| | Condensed Consolidated Statement of Income | 2 |
| | Condensed Consolidated Statement of Comprehensive Income | 3 |
| | Condensed Consolidated Balance Sheet | 4 |
| | Condensed Consolidated Statement of Shareholders' Equity | 5 |
| | Condensed Consolidated Statement of Cash Flows | 6 |
| | Notes to Condensed Consolidated Financial Statements | 7 |
| Item 2. | Management's Discussion and Analysis of Financial Condition and Results of Operations | 23 |
| Item 3. | Quantitative and Qualitative Disclosures About Market Risk | 30 |
| Item 4. | Controls and Procedures | 31 |
| **Part II. Other Information** | | |
| Item 1. | Legal Proceedings | 31 |
| Item 1A. | Risk Factors | 32 |
| Item 2. | Unregistered Sales of Equity Securities and Use of Proceeds | 32 |
| Item 6. | Exhibits | 32 |
| **Signatures** | | 34 |

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 March 31 2022 | 2021 |
|---|---|---|
| Net sales | $4,308 | $3,881 |
| Cost of sales, exclusive of depreciation and amortization | 2,698 | 2,232 |
| Selling, general and administrative | 974 | 891 |
| Depreciation | 102 | 90 |
| Amortization | 43 | 39 |
| Research and development, net | 115 | 102 |
| Interest expense | 30 | 30 |
| Interest income | (9) | (6) |
| Impairment and other related charges | 290 | — |
| Other charges | 13 | 17 |
| Other income | (26) | (13) |
| Income before income taxes | $78 | $499 |
| Income tax expense | 55 | 114 |
| Net income attributable to controlling and noncontrolling interests | $23 | $385 |
| Net income attributable to noncontrolling interests | (5) | (7) |
| Net income (attributable to PPG) | $18 | $378 |
| | | |
| Earnings per common share (attributable to PPG) | $0.08 | $1.59 |
| | | |
| Earnings per common share (attributable to PPG) - assuming dilution | $0.08 | $1.58 |

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

## Condensed Consolidated Statement of Comprehensive Income (Unaudited)

| *($ in millions)* | Three Months Ended March 31 2022 | 2021 |
|---|---|---|
| Net income attributable to controlling and noncontrolling interests | $23 | $385 |
| Other comprehensive income/(loss), net of tax: | | |
| Defined benefit pension and other postretirement benefits | (4) | (5) |
| Unrealized foreign currency translation adjustments | 37 | (128) |
| Other comprehensive income/(loss), net of tax | $33 | ($133) |
| Total comprehensive income | $56 | $252 |
| Less: amounts attributable to noncontrolling interests: | | |
| Net income | (5) | (7) |
| Unrealized foreign currency translation adjustments | 3 | 2 |
| Comprehensive income attributable to PPG | $54 | $247 |

*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)* | March 31, 2022 | December 31, 2021 |
|---|---|---|
| **Assets** | | |
| Current assets: | | |
| Cash and cash equivalents | $960 | $1,005 |
| Short-term investments | 73 | 67 |
| Receivables, net | 3,659 | 3,152 |
| Inventories | 2,439 | 2,171 |
| Other current assets | 496 | 379 |
| **Total current assets** | $7,627 | $6,774 |
| Property, plant and equipment (net of accumulated depreciation of $4,564 and $4,532) | 3,322 | 3,442 |
| Goodwill | 6,232 | 6,248 |
| Identifiable intangible assets, net | 2,590 | 2,783 |
| Deferred income taxes | 237 | 197 |
| Investments | 267 | 274 |
| Operating lease right-of-use assets | 879 | 891 |
| Other assets | 734 | 742 |
| **Total** | $21,888 | $21,351 |
| **Liabilities and Shareholders' Equity** | | |
| Current liabilities: | | |
| Accounts payable and accrued liabilities | $4,492 | $4,392 |
| Restructuring reserves | 171 | 173 |
| Short-term debt and current portion of long-term debt | 319 | 9 |
| Current portion of operating lease liabilities | 190 | 192 |
| **Total current liabilities** | $5,172 | $4,766 |
| Long-term debt | 6,834 | 6,572 |
| Operating lease liabilities | 684 | 693 |
| Accrued pensions | 821 | 834 |
| Other postretirement benefits | 668 | 672 |
| Deferred income taxes | 667 | 646 |
| Other liabilities | 709 | 757 |
| **Total liabilities** | $15,555 | $14,940 |
| Commitments and contingent liabilities (Note 14) | | |
| Shareholders' equity: | | |
| Common stock | $969 | $969 |
| Additional paid-in capital | 1,093 | 1,081 |
| Retained earnings | 20,251 | 20,372 |
| Treasury stock, at cost | (13,381) | (13,386) |
| Accumulated other comprehensive loss | (2,714) | (2,750) |
| Total PPG shareholders' equity | $6,218 | $6,286 |
| Noncontrolling interests | 115 | 125 |
| **Total shareholders' equity** | $6,333 | $6,411 |
| **Total** | $21,888 | $21,351 |

*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, 2022** | $969 | $1,081 | $20,372 | ($13,386) | ($2,750) | $6,286 | $125 | $6,411 |
| Net income attributable to controlling and noncontrolling interests | — | — | 18 | — | — | 18 | 5 | 23 |
| Other comprehensive income/(loss), net of tax | — | — | — | — | 36 | 36 | (3) | 33 |
| Cash dividends | — | — | (139) | — | — | (139) | — | (139) |
| Issuance of treasury stock | — | 24 | — | 5 | — | 29 | — | 29 |
| Stock-based compensation activity | — | (12) | — | — | — | (12) | — | (12) |
| Dividends paid on subsidiary common stock to noncontrolling interests | — | — | — | — | — | — | (1) | (1) |
| Reductions in noncontrolling interests | — | — | — | — | — | — | (11) | (11) |
| **March 31, 2022** | $969 | $1,093 | $20,251 | ($13,381) | ($2,714) | $6,218 | $115 | $6,333 |

| *($ in millions)* | Common Stock | Additional Paid-In Capital | Retained Earnings | Treasury Stock | Accumulated Other Comprehensive Loss | 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 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 |

*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 Cash Flows (Unaudited)**

| *($ in millions)* | Three Months Ended March 31 2022 | 2021 |
|---|---|---|
| **Operating activities:** | | |
| Net income attributable to controlling and noncontrolling interests | $23 | $385 |
| Adjustments to reconcile net income to cash from operations: | | |
| Depreciation and amortization | 145 | 129 |
| Pension income | (7) | (9) |
| Environmental remediation charges | — | 16 |
| Impairment and other related charges | 290 | — |
| Stock-based compensation expense | 6 | 17 |
| Deferred income taxes | (36) | (7) |
| Cash used for restructuring actions | (32) | (26) |
| Change in certain asset and liability accounts (net of acquisitions): | | |
| Receivables | (530) | (354) |
| Inventories | (325) | (189) |
| Other current assets | (88) | (37) |
| Accounts payable and accrued liabilities | 326 | 110 |
| Taxes and interest payable | (54) | 22 |
| Noncurrent assets and liabilities, net | (30) | (32) |
| Other | 8 | (48) |
| **Cash used for operating activities** | ($304) | ($23) |
| **Investing activities:** | | |
| Capital expenditures | ($194) | ($80) |
| Business acquisitions, net of cash balances acquired | (9) | (356) |
| Other | 20 | 12 |
| **Cash used for investing activities** | ($183) | ($424) |
| **Financing activities:** | | |
| Proceeds from commercial paper and short-term debt, net of payments | $586 | $300 |
| Repayment of term loan | — | (400) |
| Proceeds from the issuance of debt, net of discounts and fees | 55 | 692 |
| Purchase of treasury stock | (40) | — |
| Issuance of treasury stock | 6 | 20 |
| Dividends paid on PPG common stock | (139) | (128) |
| Payments related to tax withholding on stock-based compensation awards | (12) | (11) |
| Other | (13) | (4) |
| **Cash from financing activities** | $443 | $469 |
| Effect of currency exchange rate changes on cash and cash equivalents | (1) | (40) |
| Net decrease in cash and cash equivalents | ($45) | ($18) |
| Cash and cash equivalents, beginning of period | 1,005 | 1,826 |
| **Cash and cash equivalents, end of period** | $960 | $1,808 |
| | | |
| **Supplemental disclosures of cash flow information:** | | |
| Interest paid, net of amount capitalized | $52 | $52 |
| Taxes paid, net of refunds | $114 | $97 |
| | | |
| **Supplemental disclosure of noncash investing activities:** | | |
| Capital expenditures accrued within Accounts payable and accrued liabilities at period-end | $31 | $31 |

*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 March 31, 2022 and the results of its operations and cash flows for the three months ended March 31, 2022 and 2021. 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 2021 Annual Report on Form 10-K (the "2021 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 months ended March 31, 2022 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 2022***

Effective January 1, 2022, PPG adopted Accounting Standards Update ("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 certain financial instruments with characteristics of liabilities and equity, including convertible instruments and contracts in an entity's own equity. Adoption of this standard did not materially impact PPG's consolidated financial position, results of operations or cash flows.

***Recently Issued Accounting Standards***

In March 2020, the FASB issued ASU No. 2020-04, “Reference Rate Reform." This ASU provides optional expedients and exceptions to U.S. GAAP 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. As of March 31, 2022, PPG has not applied any of the optional expedients or exceptions allowed under this ASU. PPG does not believe that this ASU will have a material impact on its consolidated financial position, results of operations or cash flows.

## 3. Inventories

| *($ in millions)* | March 31, 2022 | December 31, 2021 |
|---|---|---|
| Finished products | $1,369 | $1,175 |
| Work in process | 257 | 234 |
| Raw materials | 774 | 723 |
| Supplies | 39 | 39 |
| Total Inventories | $2,439 | $2,171 |

Most U.S. inventories are valued using the last-in, first-out method. These inventories represented approximately 29% of total inventories at both March 31, 2022 and December 31, 2021. If the first-in, first-out method of inventory valuation had been used, inventories would have been $206 million and $174 million higher as of March 31, 2022 and December 31, 2021, respectively.

## 4. 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.

The Company identified indicators that the carrying value of an indefinite-lived intangible asset and certain definite-lived intangible assets may not be recoverable as of March 31, 2022, and the carrying value of those assets was assessed for impairment. As a result of this assessment, the Company recorded impairment charges of $124 million related to the indefinite-lived intangible asset and $23 million related to definite-lived intangible assets in the condensed consolidated statement of income during the three months ended March 31, 2022. Refer to Note 7, "Impairment and Other Related Charges" for additional information.

The Company did not identify an indication of goodwill impairment for any of its reporting units as of March 31, 2022.

The change in the carrying amount of goodwill attributable to each reportable segment for the three months ended March 31, 2022 was as follows:

| *($ in millions)* | Performance Coatings | Industrial Coatings | Total |
|---|---|---|---|
| January 1, 2022 | $5,034 | $1,214 | $6,248 |
| Acquisitions, including purchase accounting adjustments | 39 | (10) | 29 |
| Foreign currency impact | (44) | (1) | (45) |
| March 31, 2022 | $5,029 | $1,203 | $6,232 |

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

| | March 31, 2022 | | | December 31, 2021 | | |
|---|---|---|---|---|---|---|
| *($ in millions)* | Gross Carrying Amount | Accumulated Amortization | Net | Gross Carrying Amount | Accumulated Amortization | Net |
| *Indefinite-Lived Identifiable Intangible Assets* | | | | | | |
| Trademarks | $1,333 | N/A | $1,333 | $1,449 | N/A | $1,449 |
| *Definite-Lived Identifiable Intangible Assets* | | | | | | |
| Acquired technology | $856 | ($624) | $232 | $862 | ($616) | $246 |
| Customer-related | 1,927 | (1,081) | 846 | 1,956 | (1,064) | 892 |
| Trade names | 326 | (150) | 176 | 336 | (144) | 192 |
| Other | 50 | (47) | 3 | 51 | (47) | 4 |
| Total Definite-Lived Intangible Assets | $3,159 | ($1,902) | $1,257 | $3,205 | ($1,871) | $1,334 |
| Total Identifiable Intangible Assets | $4,492 | ($1,902) | $2,590 | $4,654 | ($1,871) | $2,783 |

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

As of March 31, 2022, estimated future amortization expense of identifiable intangible assets is as follows:

| *($ in millions)* | Future Amortization Expense |
|---|---|
| Remaining nine months of 2022 | $140 |
| 2023 | $165 |
| 2024 | $150 |
| 2025 | $135 |
| 2026 | $115 |
| 2027 | $100 |
| Thereafter | $452 |

## 5. 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 also incurs 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.

In the fourth quarter 2021, the Company approved business restructuring actions related to recent acquisitions targeting further consolidation of its manufacturing footprint and headcount reductions. The majority of these restructuring actions are expected to be completed by the end of 2023.

In the second quarter 2020, the Company approved a business restructuring plan which included actions to reduce its global cost structure. The program addressed weakened global economic conditions stemming from COVID-19 and related pace of recovery in a few end-use markets along with further opportunities to optimize supply chain and functional costs. In the second quarter 2019, the Company approved a business restructuring plan which included actions to reduce its global cost structure. The remaining actions of the 2020 and 2019 restructuring programs are expected to be completed in 2022.

The following table summarizes restructuring reserve activity for the three months ended March 31, 2022 and 2021:

| | Total Reserve | |
|---|---|---|
| *($ in millions)* | **2022** | **2021** |
| January 1 | $231 | $293 |
| Cash payments | (32) | (26) |
| Foreign currency impact | (5) | (11) |
| March 31 | $194 | $256 |

## 6. Borrowings

In March 2022, PPG privately placed a 15-year €50 million 1.95% fixed interest note. This note contains covenants materially consistent with the 1.200% notes discussed below. This debt arrangement is denominated in euros and has been designated as a net investment hedge of the Company's European operations. Refer to Note 12 "Financial Instruments, Hedging Activities and Fair Value Measurements" for additional information.

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 "2021 Indenture"). The 2021 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 2021 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 2021 Indenture. The aggregate cash proceeds from the notes, net of discounts and fees, was $692 million.

In February 2021, PPG entered into a $2.0 billion Term Loan Credit Agreement (the "Term Loan Credit Agreement") to finance the Company's acquisition of Tikkurila, and to pay fees, costs and expenses related thereto. The Term Loan Credit Agreement provided the Company with the ability to borrow up to an aggregate principal amount of $2.0 billion on an unsecured basis. In addition to the amounts borrowed to finance the acquisition of Tikkurila, the Term Loan Credit Agreement allowed the Company to make up to eleven additional borrowings prior to December 31, 2021, to be used for working capital and general corporate purposes. The Term Loan Credit Agreement 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. 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. In June 2021, PPG borrowed $700 million under the Term Loan Credit Agreement to finance the Company's acquisition of Tikkurila, and to pay fees, costs and expenses related thereto. In December 2021,

PPG borrowed an additional $700 million under the Term Loan Credit Agreement. Borrowings of $1.4 billion were outstanding under the Term Loan Credit Agreement as of March 31, 2022 and December 31, 2021.

In April 2020, PPG entered into a $1.5 billion 364-Day Term Loan Credit Agreement (the "Term Loan"). The Term Loan contained 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. The Term Loan terminated on April 13, 2021.

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. There were no amounts outstanding under the credit agreement as of March 31, 2022 and December 31, 2021.

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 March 31, 2022, Total Indebtedness to Total Capitalization as defined under the Credit Agreement and Term Loan Credit Agreement was 51%.

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 $1.0 billion and $440 million were outstanding as of March 31, 2022 and December 31, 2021, respectively.

*Letters of Credit and Surety Bonds*

The Company had outstanding letters of credit and surety bonds of $160 million as of March 31, 2022.

## 7. Impairment and Other Related Charges

In the first quarter 2022, Russian military forces invaded Ukraine. This military action had significant and immediate adverse economic impacts on businesses operating in Russia and Ukraine. Based on deteriorating business conditions and regulatory restrictions, including the impact of economic sanctions imposed on Russia by the United States, the European Union and other governments, PPG immediately ceased sales to Russian state-owned entities, announced that the Company would cease all new investments in Russia and commenced actions to wind down most of the Company's operations in Russia.

Based on this change in facts and circumstances, the long-term cash flow forecast for the Company's operations in Russia was significantly reduced. This reduction in the long-term cash flow forecast indicated that the carrying amounts of long-lived assets and certain indefinite-lived intangible assets associated with the Company's operations in Russia may not be recoverable, and the carrying value of these assets was tested for impairment. Additionally, the Company evaluated trade receivables for estimated future credit losses, inventories for declines in net realizable value and other current assets for impairment in light of the deteriorating economic conditions in Russia and Ukraine. As a result, during the three months ended March 31, 2022, the Company recognized $290 million of Impairment and other related charges in the condensed consolidated statement of income, comprised of $201 million of long-lived asset impairment charges and $89 million of other related charges.

The $201 million of long-lived asset impairment charges is comprised of $124 million related to indefinite-lived intangible assets, $54 million related to Property, plant and equipment, net and $23 million related to definite-lived intangible assets. The $89 million of other related charges represent reserves established for Receivables, Inventories, and Other current assets impacted by the adverse economic consequences of the Russian invasion of Ukraine.

During both the three months ended March 31, 2022 and the twelve months ended December 31, 2021, net sales in Russia represented approximately 1% of PPG net sales.

## 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 months ended March 31, 2022 and 2021 were as follows:

| | Three Months Ended March 31 | |
|---|---|---|
| *(number of shares in millions)* | **2022** | **2021** |
| Weighted average common shares outstanding | 236.6 | 237.4 |
| Effect of dilutive securities: | | |
| Stock options | 0.9 | 0.9 |
| Other stock compensation plans | 0.7 | 0.7 |
| Potentially dilutive common shares | 1.6 | 1.6 |
| Adjusted weighted average common shares outstanding | 238.2 | 239.0 |
| | | |
| Dividends per common share | $0.59 | $0.54 |

Excluded from the computation of earnings per diluted share due to their antidilutive effect were 0.5 million and zero outstanding stock options for the three months ended March 31, 2022 and 2021, respectively.

## 9. Income Taxes

| | Three Months Ended March 31 | |
|---|---|---|
| | **2022** | **2021** |
| Effective tax rate on pretax income | 70.5 % | 22.8 % |

The first quarter effective tax rate of 70.5% reflects a tax benefit of $27 million on the $290 million Impairment and other related charges associated with PPG's operations in Russia.

Income tax expense for the three months ended March 31, 2022 and 2021 is based on an estimated annual effective rate, which requires management to make its best estimate of annual pretax income or loss. 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 2022 pretax results for U.S. and foreign income or loss vary from estimates, the actual Income tax expense recognized in 2022 could be different from the forecasted amount used to estimate the Income tax expense for the three months ended March 31, 2022.

## 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.

Net periodic pension and other postretirement benefit (income)/cost for the three months ended March 31, 2022 and 2021 was as follows:

| | Pension | | Other Postretirement Benefits | |
|---|---|---|---|---|
| | Three Months Ended March 31 | | Three Months Ended March 31 | |
| *($ in millions)* | **2022** | **2021** | **2022** | **2021** |
| Service cost | $2 | $3 | $3 | $3 |
| Interest cost | 19 | 16 | 4 | 3 |
| Expected return on plan assets | (36) | (38) | — | — |
| Amortization of actuarial losses | 8 | 10 | 4 | 6 |
| Amortization of prior service credit | — | — | (3) | (14) |
| Net periodic benefit (income)/cost | ($7) | ($9) | $8 | ($2) |

Net periodic other postretirement expense was higher for the three months ended March 31, 2022 compared to

2021 due to a decrease in the benefit associated with a 2017 other postretirement benefit plan design change. The 2017 plan design change resulted in a significant reduction in the Company's postretirement benefit obligation, the impact of which was amortized as a reduction of net periodic benefit cost through 2021.

PPG expects 2022 full year net periodic pension income of approximately $25 million and net periodic other postretirement expense of approximately $30 million.

*Contributions to Defined Benefit Pension Plans*

| | Three Months Ended March 31 | |
|---|---|---|
| *($ in millions)* | **2022** | **2021** |
| Non-U.S. defined benefit pension mandatory contributions | $1 | $1 |

PPG expects to make contributions to its defined benefit pension plans in the range of $10 million to $15 million during the remaining nine months of 2022. PPG may make voluntary contributions to its defined benefit pension plans in 2022 and beyond.

## 11. Accumulated Other Comprehensive Loss (AOCL)

| *($ in millions)* | Foreign Currency Translation Adjustments [1] | Pension and Other Postretirement Benefit Adjustments, net of tax [2] | Unrealized Gain on Derivatives, net of tax | Accumulated Other Comprehensive Loss |
|---|---|---|---|---|
| January 1, 2021 | ($1,663) | ($937) | $1 | ($2,599) |
| Current year deferrals to AOCL | (126) | (7) | — | (133) |
| Reclassifications from AOCL to net income | — | 2 | — | 2 |
| **March 31, 2021** | ($1,789) | ($942) | $1 | ($2,730) |
| | | | | |
| January 1, 2022 | ($1,988) | ($763) | $1 | ($2,750) |
| Current year deferrals to AOCL | 30 | (11) | — | 19 |
| Reclassifications from AOCL to net income | 10 | 7 | — | 17 |
| **March 31, 2022** | ($1,948) | ($767) | $1 | ($2,714) |

(1) The tax cost related to unrealized foreign currency translation adjustments on tax inter-branch transactions and net investment hedges as of March 31, 2022 and 2021 was $11 million and $30 million, respectively.

(2) The tax cost related to the adjustment for pension and other postretirement benefits as of March 31, 2022 and 2021 was $2 million and $1 million, respectively. Reclassifications from AOCL 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 March 31, 2022 and December 31, 2021, 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 months ended March 31, 2022 and 2021.

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 months ended March 31, 2022 and 2021, 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 three months ended March 31, 2022 and 2021 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 an asset of $10 million and $36 million at March 31, 2022 and December 31, 2021, 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 March 31, 2022 and December 31, 2021.

*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 March 31, 2022 and December 31, 2021, PPG had U.S. dollar to euro cross currency swap contracts with total notional amounts of $775 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 March 31, 2022 and December 31, 2021, the fair value of the U.S. dollar to euro cross currency swap contracts were net assets of $55 million and $50 million, respectively.

As of March 31, 2022 and December 31, 2021, PPG had designated €1.5 billion and €1.4 billion, respectively, 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 was $1.6 billion as of March 31, 2022 and December 31, 2021.

*Other Financial Instruments*

PPG uses foreign currency forward contracts to manage certain net transaction exposures that either have not been elected, or 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 $1.9 billion at March 31, 2022 and December 31, 2021, respectively. As of March 31, 2022 and December 31, 2021, the fair value of these contracts were net assets of $34 million and $24 million, respectively.

*Gains/Losses Deferred in Accumulated Other Comprehensive Loss*

As of March 31, 2022 and December 31, 2021, the Company had accumulated pretax unrealized translation gains in Accumulated other comprehensive loss on the condensed consolidated balance sheet related to the euro-denominated borrowings, foreign currency forward contracts, and the cross currency swaps of $252 million and $204 million, respectively.

The following table summarizes the location within the condensed consolidated financial statements and amount of gains related to derivative and debt financial instruments for the three months ended March 31, 2022 and 2021. All amounts are shown on a pretax basis.

| ($ in millions) | March 31, 2022 Gain Deferred in OCI | March 31, 2022 Gain Recognized | March 31, 2021 Gain Deferred in OCI | March 31, 2021 (Loss)/Gain Recognized | Caption In Condensed Consolidated Statement of Income |
|---|---|---|---|---|---|
| Economic | | | | | |
| Foreign currency forward contracts | $— | $12 | $— | ($3) | Other charges |
| Fair Value | | | | | |
| Interest rate swaps | — | 3 | — | 4 | Interest expense |
| Total forward contracts and interest rate swaps | $— | $15 | $— | $1 | |
| Net Investment | | | | | |
| Cross currency swaps | $5 | $3 | $28 | $4 | Interest expense |
| Foreign denominated debt | 43 | — | 97 | — | |
| Total Net Investment | $48 | $3 | $125 | $4 | |

**Fair Value Measurements**

The Company follows a fair value measurement hierarchy to measure its assets and liabilities. As of March 31, 2022 and December 31, 2021, 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 13, "Employee Benefit Plans" under Item 8 in the 2021 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 did not have any recurring financial assets or liabilities that were recorded in its condensed consolidated balance sheets as of March 31, 2022 and December 31, 2021 that were classified as Level 3 inputs.

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

| *($ in millions)* | March 31, 2022 | | | December 31, 2021 | | |
|---|---|---|---|---|---|---|
| | Level 1 | Level 2 | Level 3 | Level 1 | Level 2 | Level 3 |
| Assets: | | | | | | |
| Other current assets: | | | | | | |
| Marketable equity securities | $9 | $— | $— | $6 | $— | $— |
| Foreign currency forward contracts [(a)] | — | 38 | — | — | 28 | — |
| Cross currency swaps [(b)] | — | 30 | — | — | — | — |
| Interest rate swaps [(c)] | — | 1 | — | — | — | — |
| Investments: | | | | | | |
| Marketable equity securities | $84 | $— | $— | $98 | $— | $— |
| Other assets: | | | | | | |
| Cross currency swaps [(b)] | $— | $25 | $— | $— | $50 | $— |
| Interest rate swaps [(c)] | — | 9 | — | — | 36 | — |
| Liabilities: | | | | | | |
| Accounts payable and accrued liabilities: | | | | | | |
| Foreign currency forward contracts [(a)] | $— | $4 | $— | $— | $4 | $— |

(a) Derivatives not designated as hedging instruments

(b) Net investment hedges

(c) Fair value hedges

*Long-Term Debt*

| *($ in millions)* | March 31, 2022 [(a)] | December 31, 2021 [(b)] |
|---|---|---|
| Long-term debt - carrying value | $7,129 | $6,565 |
| Long-term debt - fair value | $7,202 | $6,958 |

(a) Excluding finance lease obligations of $9 million and short-term borrowings of $15 million as of March 31, 2022.

(b) Excluding finance lease obligations of $10 million and short-term borrowings of $6 million as of December 31, 2021.

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. There were 4.7 million shares available for future grants under the PPG Amended Omnibus Plan as of March 31, 2022.

Stock-based compensation expense and the associated income tax benefit recognized during the three months ended March 31, 2022 and 2021 were as follows:

| *($ in millions)* | Three Months Ended March 31 | |
|---|---|---|
| | 2022 | 2021 |
| Stock-based compensation expense | $6 | $17 |
| Income tax benefit recognized | $1 | $4 |

Grants of stock-based compensation during the three months ended March 31, 2022 and 2021 were as follows:

| | Three Months Ended March 31 | | | |
|---|---|---|---|---|
| | 2022 | | 2021 | |
| Grant Details | Shares | Fair Value | Shares | Fair Value |
| Stock options | 487,277 | $36.52 | 527,464 | $29.27 |
| Restricted stock units | 189,411 | $143.92 | 162,601 | $129.64 |
| Contingent shares [(a)] | 57,134 | $151.87 | 55,540 | $136.60 |

(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 three months ended March 31, 2022 was calculated with the following weighted average assumptions:

| | |
|---|---|
| Weighted average exercise price | $151.87 |
| Risk free interest rate | 2.0 % |
| Expected life of option in years | 6.5 |
| Expected dividend yield | 1.6 % |
| Expected volatility | 25.7 % |

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.

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. Performance against the earnings per share growth and the cash flow return on capital target is calculated annually, and the annual payout for each goal is weighted equally over the three-year period.

The Company also provides grants of contingent shares to selected key executives that may be earned based on PPG total shareholder return ("TSR") over the three-year period following the date of grant. Contingent share grants (referred to as "TSR awards") are made annually and are paid out at the end of each three-year period based on the Company's stock 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 Index for the three-year period following the date of grant. This comparison group represents the entire S&P 500 Index as it existed at the beginning of the performance period, excluding any companies that were removed from the index because they ceased to be publicly traded. The payment of awards following the three-year award period is 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. Contingent share awards earn dividend equivalents for the award period, which are paid to participants or credited to the participants' deferred compensation plan accounts with the award payout at the end of the period based on the actual number of contingent shares that are earned. Any payments made at the end of the award period may be in the form of stock, cash or a combination of both. The TSR awards qualify as liability awards, and compensation expense is recognized over the three-year award period based on the fair value of the awards (giving consideration to the Company's percentile rank of total shareholder return) remeasured in each reporting period until settlement of the awards.

## 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, antitrust, employment 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 exposure to asbestos, including exposure to asbestos-containing products of Pittsburgh Corning Corporation ("PC") for which the Company was alleged to be liable (the Company and Corning Incorporated were each 50% shareholders in PC prior to April 27, 2016). In 2000, PC filed for relief under Chapter 11 of the Bankruptcy Code in the U.S. Bankruptcy Court for the Western District of Pennsylvania, and the Bankruptcy Court enjoined the prosecution of asbestos litigation against the Company during the pendency of the bankruptcy proceeding.

Following a settlement with certain of the Company's insurers that was incorporated into a plan of reorganization for PC, the Bankruptcy Court issued a channeling injunction that prohibits claimants from asserting claims against, among others, the Company arising out of exposure to asbestos or asbestos-containing products manufactured, sold or distributed by PC or asbestos on or emanating from any PC premises. The channeling injunction by its terms also precludes the prosecution of other asbestos-related claims against the Company arising out of prior relationships with PC. The foregoing PC-related claims are referred to as "PC Relationship Claims." The channeling injunction channels the Company's liability for PC Relationship Claims to a trust funded in part by the Company and certain of its insurers (the "Trust"), and this Trust is the sole recourse for holders of PC Relationship Claims.

The channeling injunction does not extend to claims against the Company alleging:

- exposure to asbestos or asbestos-containing products manufactured, sold or distributed by the Company or its subsidiaries that are not PC Relationship Claims ("Products Claims"); and
- personal injury caused by asbestos on premises presently or formerly owned, leased or occupied by the Company ("Premises Claims").

In 2009, the Company established a $162 million reserve for Products Claims that it has monitored and reviewed on a periodic basis, and until 2021, the Company had not had sufficient current claims information or settlement history on which to base a better estimate of this liability in light of the Bankruptcy Court's injunction staying most asbestos claims against the Company which was in effect from April 2000 through May 2016.

*Current open and active claims*

The Company is aware of certain asbestos-related claims pending against the Company and certain of its subsidiaries, consisting of Products Claims, Premises Claims and claims against a subsidiary the Company acquired in 2013 ("Subsidiary Claims"). The Company is defending these claims vigorously.

In 2019, as certain claims data became available and as a supplement to its periodic monitoring and review, the Company began performing an annual valuation analysis, based in part on discussions with counsel and reports from valuation consultants, of its claims history and the amount of the Company's potential liability for asbestos-related claims. As a result of the Company's 2019 review of its asbestos-related liabilities, a charge of $12 million was recorded in the consolidated statement of income to increase the reserve to reflect the Company's estimates of potential liability for Premises Claims and Subsidiary Claims.

In 2020, based on the results of the Company's annual valuation analysis, no adjustments to the Company's estimate of its asbestos-related liabilities were required.

In the fourth quarter of 2021, as additional claims data became available following the expiration of the Bankruptcy Court's injunction in May 2016, the Company adjusted its estimate of potential liability for Products Claims. The

2021 valuation analysis with respect to Products Claims was based, in part, upon a review of claims data; annual filings by disease and year; pending, paid and dismissed claims; indemnity cash flows; and estimates of future claim, indemnity and acceptance rates. The Company also further adjusted its estimates of potential liability for Premises Claims and Subsidiary Claims in the fourth quarter of 2021.

As a result of the Company's fourth quarter 2021 review of its asbestos-related liabilities, income of $133 million was recorded in the consolidated statement of income to reduce the reserve to reflect the Company's current estimate of potential liability for asbestos-related bodily injury claims through December 31, 2057. As of December 31, 2021, the Company's asbestos-related reserves totaled $54 million.

As of March 31, 2022, the Company's total asbestos-related reserves were $52 million. The Company believes that, based on presently available information, the total reserves of $52 million for asbestos-related claims will be sufficient to encompass all of the Company's current and estimable potential future asbestos liabilities. These reserves, which are included within Other liabilities on the accompanying condensed consolidated balance sheets, involve significant management judgment and represent the Company's current best estimate of its liability for these claims.

The Company monitors and reviews the activity associated with its asbestos claims and evaluates, on a periodic basis, its estimated liability for such claims 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) whether closed, dismissed or dormant claims are reinstituted, reinstated or revived; (iii) the amounts required to resolve both currently known and future unknown claims; (iv) the amount of insurance, if any, available to cover such claims; (v) the unpredictable aspects of the tort system, including a changing trial docket and the jurisdictions in which trials are scheduled; (vi) the outcome of any trials, including potential judgments or jury verdicts; (vii) the lack of specific information in many cases concerning exposure for which the Company is allegedly responsible, and the claimants' alleged diseases resulting from such exposure; and (viii) 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. While the ultimate outcome of the Company's asbestos litigation cannot be predicted with certainty, the Company believes that any financial exposure resulting from its asbestos-related claims will not have a material adverse effect on the Company's consolidated financial position, liquidity or results of operations.

**Environmental Matters**

In management's opinion, the Company operates in an environmentally sound manner and the outcome of the Company's environmental contingencies will not have a material effect on PPG's financial position or liquidity; however, any such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized. Management anticipates that the resolution of the Company's environmental contingencies will occur over an extended period of time.

As remediation at certain 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 adjust the reserves for these sites. In 2022 and 2021, 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 March 31, 2022 and December 31, 2021, 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)* | March 31, 2022 | December 31, 2021 |
|---|---|---|
| New Jersey Chrome | $71 | $89 |
| Glass and chemical | 81 | 83 |
| Other | 110 | 110 |
| Total | $262 | $282 |
| *Current portion* | *$85* | *$97* |

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 months ended March 31, 2022 and 2021 were as follows:

| | Three Months Ended March 31 | |
|---|---|---|
| *($ in millions)* | **2022** | **2021** |
| Environmental remediation pretax charges | $6 | $19 |
| Cash outlays for environmental remediation activities | $23 | $9 |

*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. Over the years, sites have been added as well as removed from the JCO process. Of the original sites in the JCO, 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 the 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 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 substantially completed pursuant to approved remedial action work plans. Remediation of chromium contaminated soils at certain other smaller sites is dependent on redevelopment activity by others, the timing of which is unknown. PPG regularly evaluates the assessments of costs incurred to date versus current progress and the potential cost impacts of the most recent information. Based on these assessments, the reserve is adjusted accordingly.

Groundwater remediation at the former Garfield Avenue chromium manufacturing site and adjacent sites is expected to occur over several years. A final groundwater remedial action work plan was submitted to NJDEP in the fourth quarter of 2021. The NJDEP approved the groundwater remediation action work plan in the first quarter of 2022.

PPG’s financial reserve for remediation of all New Jersey Chrome sites was $71 million at March 31, 2022. The major cost components of this liability are related to excavation of impacted soil as well as groundwater remediation. These components each account for approximately 50% and 15% 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.

## 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 months ended March 31, 2022 and 2021, service revenue constituted less than 5% of total revenue.

Net sales by segment and region for the three months ended March 31, 2022 and 2021 were as follows:

| ($ in millions) | Three Months Ended March 31 2022 | 2021 |
|---|---|---|
| **Performance Coatings** | | |
| United States and Canada | $1,063 | $998 |
| Europe, Middle East and Africa ("EMEA") | 949 | 811 |
| Asia Pacific | 274 | 276 |
| Latin America | 284 | 234 |
| Total | $2,570 | $2,319 |
| **Industrial Coatings** | | |
| United States and Canada | $652 | $571 |
| EMEA | 504 | 445 |
| Asia Pacific | 423 | 406 |
| Latin America | 159 | 140 |
| Total | $1,738 | $1,562 |
| **Total Net Sales** | | |
| United States and Canada | $1,715 | $1,569 |
| EMEA | 1,453 | 1,256 |
| Asia Pacific | 697 | 682 |
| Latin America | 443 | 374 |
| Total PPG | $4,308 | $3,881 |

*Allowance for Doubtful Accounts*

All trade receivables are reported on the condensed consolidated balance sheet at the outstanding principal amount adjusted for any allowance for doubtful accounts and any charge-offs. PPG provides an allowance for doubtful accounts 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 allowance for doubtful accounts on a quarterly basis to ensure the estimate reflects regional risk trends as well as current and future global operating conditions.

The following table summarizes the activity for the allowance for doubtful accounts for the three months ended March 31, 2022 and 2021:

| ($ in millions) | Trade Receivables Allowance for Doubtful Accounts 2022 | 2021 |
|---|---|---|
| January 1 | $31 | $44 |
| Bad debt expense | 43 | — |
| Trade receivables written off as uncollectible, net of recoveries | (6) | (3) |
| March 31 | $68 | $41 |

In the first quarter 2022, PPG recorded a bad debt reserve of $43 million associated with the adverse economic impacts of the Russian invasion of Ukraine. Refer to Note 7, "Impairment and Other Related Charges" for additional information.

## 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, transparencies and transparent armor.

The Industrial Coatings reportable business segment is comprised of the automotive OEM coatings, industrial coatings, packaging coatings and 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 months ended March 31, 2022 and 2021 were as follows:

| | Three Months Ended March 31 | |
|---|---|---|
| *($ in millions)* | **2022** | **2021** |
| Net sales: | | |
| Performance Coatings | $2,570 | $2,319 |
| Industrial Coatings | 1,738 | 1,562 |
| Total | $4,308 | $3,881 |
| Segment income: | | |
| Performance Coatings | $319 | $386 |
| Industrial Coatings | 140 | 245 |
| Total | $459 | $631 |
| Corporate | (52) | (52) |
| Interest expense, net of interest income | (21) | (24) |
| Impairment and other related charges [(a)] | (290) | — |
| Business restructuring-related costs, net [(b)] | (14) | (4) |
| Acquisition-related costs [(c)] | (4) | (24) |
| Environmental remediation charges | — | (16) |
| Expenses incurred due to natural disasters [(d)] | — | (12) |
| Income before income taxes | $78 | $499 |

(a) In the first quarter 2022, the Company recorded impairment and other related charges associated with the wind down of the Company’s operations in Russia.

(b) 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.

(c) 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.

(d) In early 2021, a winter storm damaged a southern U.S. factory supporting the Company's specialty coatings and materials business as well as other Company factories in the southern U.S. Incremental expenses incurred due to this storm included costs related to maintenance and repairs of damaged property, freight and utility premiums and other incremental expenses directly related to the impacted areas.

## 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 2021 Form 10-K.

### *Highlights*

Net sales were approximately $4.3 billion for the three months ended March 31, 2022, an increase of 11.0% compared to the prior year, driven by higher selling prices and acquisition-related sales. While underlying demand in most end-use markets remained strong in the first quarter, sales volumes were down compared to the prior year due to the impact of continued supply constraints.

Income before income taxes was $78 million for the three months ended March 31, 2022, a decrease of $421 million compared to the prior year. This decrease was largely due to Impairment and other related charges of $290 million and lower sales volumes during the quarter.

### *Performance in the first quarter of 2022 compared to the first quarter of 2021*

### *Results of Operations*

| | Three Months Ended March 31 | | Percent Change |
|---|---|---|---|
| *($ in millions, except percentages)* | **2022** | **2021** | **2022 vs. 2021** |
| Net sales | $4,308 | $3,881 | 11.0 % |
| Cost of sales, exclusive of depreciation and amortization | 2,698 | 2,232 | 20.9 % |
| Selling, general and administrative | 974 | 891 | 9.3 % |
| Depreciation | 102 | 90 | 13.3 % |
| Amortization | 43 | 39 | 10.3 % |
| Research and development, net | 115 | 102 | 12.7 % |
| Interest expense | 30 | 30 | — % |
| Interest income | (9) | (6) | 50.0 % |
| Impairment and other related charges | 290 | — | 100.0 % |
| Other charges | 13 | 17 | (23.5)% |
| Other income | (26) | (13) | 100.0 % |

### *Net Sales by Region*

| | Three Months Ended March 31 | | Percent Change |
|---|---|---|---|
| *($ in millions, except percentages)* | **2022** | **2021** | **2022 vs. 2021** |
| United States and Canada | $1,715 | $1,569 | 9.3 % |
| Europe, Middle East and Africa ("EMEA") | 1,453 | 1,256 | 15.7 % |
| Asia Pacific | 697 | 682 | 2.2 % |
| Latin America | 443 | 374 | 18.4 % |
| ***Total*** | $4,308 | $3,881 | 11.0 % |

Net sales increased $427 million due to the following:

- *Higher selling prices (+10%)*
- *Acquisition-related sales (+7%)*

*Partially offset by:*

- *Lower sales volumes (-3%)*
- *Unfavorable foreign currency translation (-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, increased $466 million primarily due to raw material cost inflation and cost of sales attributable to acquired businesses, partially offset by favorable foreign currency translation.

Selling, general and administrative ("SG&A") expense increased $83 million primarily due to expenses from acquired businesses and wage and other cost inflation, partially offset by favorable foreign currency translation and restructuring cost savings.

Impairment and other related charges of $290 million were recorded during the three months ended March 31, 2022 associated with the wind down of the Company's operations in Russia. Refer to Note 7, "Impairment and Other Related Charges" in Part I, Item 1 of this Form 10-Q for additional information.

Other income was higher in the three months ended March 31, 2022 compared to 2021 primarily due to higher earnings from equity affiliates.

***Effective tax rate and earnings per diluted share***

| *($ in millions, except percentages and amounts per share)* | Three Months Ended March 31 | | Percent Change |
|---|---|---|---|
| | **2022** | **2021** | **2022 vs. 2021** |
| Income tax expense | $55 | $114 | (51.8)% |
| Effective tax rate | 70.5 % | 22.8 % | 47.7 % |
| Adjusted effective tax rate, continuing operations* | 22.6 % | 23.1 % | (0.5)% |
| Earnings per diluted share, continuing operations | $0.08 | $1.58 | (94.9)% |
| Adjusted earnings per diluted share* | $1.37 | $1.88 | (27.1)% |
| *See Regulation G Reconciliation below | | | |

The effective tax rate for the three months ended March 31, 2022 and 2021 reflects the impact of certain discrete tax items for the quarter. The Company expects that its second quarter 2022 effective tax rate will be between 23% and 24%.

Adjusted earnings per diluted share for the three months ended March 31, 2022 decreased year-over-year primarily due to commodity supply disruptions, which caused raw material cost inflation, as well as lower sales volumes stemming from commodity raw material availability and semiconductor chip shortages, that was not fully offset by realized price increases.

***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 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.

| ($ in millions, except percentages and per share amounts) | Three Months Ended March 31, 2022 | | | | |
|---|---|---|---|---|---|
| | Income Before Income Taxes | Income Tax Expense | Effective Tax Rate | Net Income (attributable to PPG) | Earnings Per Diluted Share[a] |
| As reported, continuing operations | $78 | $55 | 70.5 % | $18 | $0.08 |
| Adjusted for: | | | | | |
| Impairment and other related charges[b] | 290 | 27 | 9.3 % | 263 | 1.10 |
| Acquisition-related amortization expense | 43 | 10 | 24.8 % | 33 | 0.14 |
| Business restructuring-related costs, net [c] | 14 | 4 | 25.8 % | 10 | 0.04 |
| Acquisition-related costs[d] | 4 | 1 | 24.0 % | 3 | 0.01 |
| Adjusted, continuing operations, excluding certain items | $429 | $97 | 22.6 % | $327 | $1.37 |

| ($ in millions, except percentages and per share amounts) | Three Months Ended March 31, 2021 | | | | |
|---|---|---|---|---|---|
| | Income Before Income Taxes | Income Tax Expense | Effective Tax Rate | Net Income (attributable to PPG) | Earnings Per Diluted Share[a] |
| As reported, continuing operations | $499 | $114 | 22.8 % | $378 | $1.58 |
| Adjusted for: | | | | | |
| Acquisition-related amortization expense | 39 | 10 | 25.2 % | 29 | 0.12 |
| Acquisition-related costs[d] | 24 | 5 | 23.5 % | 19 | 0.08 |
| Environmental remediation charges | 16 | 4 | 24.3 % | 12 | 0.05 |
| Expenses incurred due to a natural disaster [e] | 12 | 3 | 24.3 % | 9 | 0.04 |
| Business restructuring-related costs, net [c] | 4 | 1 | 25.0 % | 3 | 0.01 |
| Adjusted, continuing operations, excluding certain items | $594 | $137 | 23.1 % | $450 | $1.88 |

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

(b) In the first quarter 2022, the Company recorded impairment and other related charges due to the wind down of the company's operations in Russia.

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

(d) 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.

(e) In early 2021, a winter storm damaged a southern U.S. factory supporting the Company's specialty coatings and materials business as well as other Company factories in the southern U.S. Incremental expenses incurred due to this storm included costs related to maintenance and repairs of damaged property, freight and utility premiums and other incremental expenses directly related to the impacted areas.

***Performance of Reportable Business Segments***

***Performance Coatings***

| ($ in millions, except percentages) | Three Months Ended March 31 | | $ Change | % Change |
|---|---|---|---|---|
| | 2022 | 2021 | 2022 vs. 2021 | 2022 vs. 2021 |
| Net sales | $2,570 | $2,319 | $251 | 10.8 % |
| Segment income | $319 | $386 | ($67) | (17.4)% |
| Amortization expense | $32 | $29 | $3 | 10.3 % |
| Segment income, excluding amortization expense | $351 | $415 | ($64) | (15.4)% |

Performance Coatings net sales increased due to the following:

- *Higher selling prices (+8%)*
- *Acquisition-related sales (+7%)*

*Partially offset by:*

- *Unfavorable foreign currency translation (-2%)*
- *Lower sales volumes (-2%)*

In the first quarter 2022, the acquisitions of Tikkurila and VersaFlex increased net sales in the Performance Coatings segment by about $160 million versus prior year.

Architectural coatings - Americas and Asia Pacific net sales, excluding the impact of currency and acquisitions ("organic sales") increased by a low-single-digit percentage. Sales in the U.S. and Canada were unfavorably impacted by ongoing raw material availability and softening do-it-yourself ("DIY") paint demand. In Mexico, PPG-Comex architectural coatings organic sales increased compared to the prior year as concessionaire network demand continued to be strong throughout the quarter and further selling price increases were implemented.

Architectural coatings – EMEA organic sales were flat year-over-year as selling price increases were offset by lower sales volumes due to softening DIY paint demand and some modest demand weakness due to geopolitical uncertainty in Europe.

Automotive refinish coatings organic sales increased by a high-single-digit-percentage, reflecting improved body shop activity stemming from higher miles driven and increased collision claims. In Europe, demand improved year-over-year.

Aerospace coatings sales volumes increased by a low-teen-percentage compared to the prior year, as commercial aftermarket demand strengthened year-over-year, but still remains below pre-pandemic levels. Net sales benefited from continued strong military demand.

Protective and marine coatings organic sales were higher by a mid-teen-percentage primarily due to strong selling price increases. Demand in the oil and gas industry improved in the U.S.

Traffic solutions organic sales increased by more than 20% year-over-year, including the benefit of higher selling prices.

Segment income decreased $67 million year-over-year primarily due to raw material cost inflation and lower sales volumes, partially offset by higher selling prices, acquisition-related earnings and savings from previously approved restructuring actions.

*Looking Ahead*

Looking ahead for the Performance Coatings segment, although disruptions in the supply chain and manufacturing environment are expected to persist, conditions are anticipated to continue to gradually improve as the quarter progresses. The supply of several key inputs remains tight, which will continue to constrain sales. Further selling price increases have been secured or are being initiated during the quarter for all businesses. The Company will continue to execute against various cost-savings initiatives, including acquisition synergy targets. Aggregate sales volumes are expected to be down by a mid-single-digit percentage compared to the second quarter 2021, including unfavorable impacts in Europe from the war in Ukraine and in China due to COVID-19 production curtailments. Second quarter acquisition-related sales are expected to be about $140 million, principally from Tikkurila. Historically, Tikkurila sales improve sequentially in the second quarter due to a weather-related stronger painting season.

***Industrial Coatings***

| | Three Months Ended March 31 | | $ Change | % Change |
|---|---|---|---|---|
| *($ in millions, except percentages)* | **2022** | **2021** | **2022 vs. 2021** | **2022 vs. 2021** |
| Net sales | $1,738 | $1,562 | $176 | 11.3 % |
| Segment income | $140 | $245 | ($105) | (42.9)% |
| Amortization expense | $11 | $10 | $1 | 10.0 % |
| Segment income, excluding amortization expense | $151 | $255 | ($104) | (40.8)% |

Industrial Coatings segment net sales increased due to the following:

- *Higher selling prices (+12%)*
- *Acquisition-related sales (+7%)*

*Partially offset by:*

- *Lower sales volumes (-5%)*
- *Unfavorable foreign currency translation (-3%)*

Automotive OEM coatings organic sales increased by a low-single-digit percentage year-over-year led by higher selling prices, partially offset by lower sales volumes due to the ongoing shortage of semiconductor chips and lower automotive industry production due to geopolitical uncertainty in Europe and increasing COVID-19 restrictions in China.

For the industrial coatings business, organic sales increased by a high-single-digit percentage year-over-year as strong selling price increases were partially offset by lower economic activity in China and Europe.

Packaging coatings organic sales increased by more than 10% year-over-year due to selling price increases in all regions, with strong growth across the canned beverage and personal care segments.

Segment income decreased $105 million year-over-year due to raw material cost inflation and lower sales volumes, partially offset by higher selling prices and savings from previously approved restructuring actions.

*Looking ahead*

Looking ahead for the Industrial Coatings segment, aggregate sales volumes are expected to be down a low-single-digit percentage compared to the prior-year second quarter, including ongoing impacts from customer supply disruptions and coatings raw material shortages, along with continuing COVID-19-related restrictions and unfavorable impacts in Europe from the war in Ukraine. Many of these factors are also expected to lead to additional coatings raw material inflation in the second quarter sequentially versus the first quarter. The company continues to prioritize working with customers to secure further selling price increases in all businesses. Segment margins are expected to continue to improve on a sequential basis in the second quarter 2022. The Company will also continue to aggressively manage costs, which includes executing against various cost-savings and restructuring initiatives. The acquisitions of Wörwag and Cetelon are together expected to deliver sales of about $60 million in the second quarter with margins below the segment's average.

***Liquidity and Capital Resources***

PPG had cash and short-term investments totaling $1.0 billion and $1.1 billion at March 31, 2022 and December 31, 2021, respectively.

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 contractual obligations.

**Cash used for operating activities**

Cash used for operating activities for the three months ended March 31, 2022 and 2021 was $304 million and $23 million, respectively. Operating cash flow decreased primarily due to unfavorable changes in working capital in the first three months of 2022 compared to the prior year.

*Operating working capital*

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)* | March 31, 2022 | December 31, 2021 | March 31, 2021 |
|---|---|---|---|
| Trade receivables, net | $3,090 | $2,687 | $2,706 |
| Inventories, FIFO | 2,645 | 2,345 | 2,027 |
| Trade creditors' liabilities | 2,978 | 2,734 | 2,441 |
| Operating working capital | $2,757 | $2,298 | $2,292 |
| Operating working capital as a % of Sales | 16.0 % | 13.7 % | 14.8 % |
| Days sales outstanding | 59 | 53 | 57 |

*Environmental*

| ($ in millions) | Three Months Ended March 31 2022 | 2021 |
|---|---|---|
| Cash outlays for environmental remediation activities | $23 | $9 |

| ($ in millions) | Remainder of 2022 | Annually 2023 - 2026 |
|---|---|---|
| Projected future cash outlays for environmental remediation activities | $60 - $80 | $20 - $75 |

**Cash used for investing activities**

Cash used for investing activities for the three months ended March 31, 2022 and 2021 was $183 million and $424 million, respectively. The $241 million decrease in cash used for investing activities was primarily due to lower spending on business acquisitions, partially offset by higher capital expenditures.

Total capital spending is expected to be in the range of $500 million to $525 million in 2022 in support of future organic growth opportunities and reflecting lower capital spending in the past two years due to COVID-19 constraints.

**Cash from financing activities**

Cash from financing activities for the three months ended March 31, 2022 and 2021 was $443 million and $469 million, respectively. The $26 million decrease in cash from financing activities was primarily due to higher purchases of treasury stock and higher dividends paid year-over-year.

*Debt issued and repaid*

In March 2022, PPG privately placed a 15-year €50 million 1.95% fixed interest note. Refer to Note 6, “Borrowings” in Part I, Item 1 of this Form 10-Q for additional information.

*Credit Agreements*

In February 2021, PPG entered into a $2.0 billion Term Loan Credit Agreement (the "Term Loan Credit Agreement") to finance the Company’s acquisition of Tikkurila, and to pay fees, costs and expenses related thereto. The Term Loan Credit Agreement provided the Company with the ability to borrow up to an aggregate principal amount of $2.0 billion on an unsecured basis. In addition to the amounts borrowed to finance the acquisition of Tikkurila, the Term Loan Credit Agreement allowed the Company to make up to eleven additional borrowings prior to December 31, 2021, to 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. In June 2021, PPG borrowed $700 million under the Term Loan Credit Agreement to finance the Company’s acquisition of Tikkurila, and to pay fees, costs and expenses related thereto. In December 2021, PPG borrowed an additional $700 million under the Term Loan Credit Agreement. Borrowings of $1.4 billion were outstanding under the Term Loan Credit Agreement as of March 31, 2022 and December 31, 2021.

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. There were no amounts outstanding under the credit agreement as of March 31, 2022 and December 31, 2021.

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 March 31, 2022, Total Indebtedness to Total Capitalization as defined under the Credit Agreement and Term Loan Credit Agreement was 51%.

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 $1.0 billion and $440 million were outstanding as of March 31, 2022 and December 31, 2021, respectively.

*Other Liquidity Information*

*Restructuring*

Aggregate restructuring savings, including the impact of acquisition synergies, were approximately $15 million in the first quarter of 2022. Total restructuring savings are expected to be at least $70 million in 2022. In addition, the Company continues to review its cost structure to identify additional cost savings opportunities. Refer to Note 5, "Business Restructuring" in Part I, Item 1 of this Form 10-Q for further details on the Company's business restructuring programs. We expect cash outlays related to these actions of approximately $170 million in 2022.

***Currency***

Comparing spot exchange rates at December 31, 2021 and at March 31, 2022, the U.S. dollar weakened against the currencies of many countries within the regions PPG operates. As a result, consolidated net assets at March 31, 2022 increased by $30 million compared to December 31, 2021 primarily driven by the Mexican peso.

Comparing average exchange rates during the first three months of 2022 to those of the first three months of 2021, the U.S. dollar strengthened against the currencies of most countries within the EMEA and Asia Pacific regions where PPG operates. This had an unfavorable impact on Income before income taxes for the three months ended March 31, 2022 of $13 million from the translation of these foreign earnings into U.S. dollars.

***New Accounting Standards***

Refer to Note 2, "New Accounting Standards" in Part I, Item 1 of this Form 10-Q 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" in Part I, Item 1 of this Form 10-Q 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. Refer to the Environmental Matters section of Note 14 for details of these reserves. It is PPG's policy to accrue expenses for 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.

***Critical Accounting Estimates***

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

For a comprehensive discussion of the Company's critical accounting estimates, see Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" of our 2021 Form 10-K. There were no material changes in the Company's critical accounting estimates from the 2021 Form 10-K.

***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 COVID-19, global economic conditions, geopolitical uncertainty in Europe, increasing price and product competition by our competitors, fluctuations in cost and availability of raw materials, energy, labor and logistics, 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 2021 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 2021 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*

We conduct operations in many countries around the world. Our results of operations are subject to both currency transaction and currency translation risk. Certain foreign currency forward contracts outstanding during 2022 and 2021 served as a hedge of a portion of PPG's exposure to foreign currency transaction risk. The fair value of these contracts was a net asset of $34 million and $24 million as of March 31, 2022 and December 31, 2021, 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 was $249 million for the three months ended March 31, 2022 and $306 million for the year ended December 31, 2021.

As of both March 31, 2022 and December 31, 2021, PPG had U.S. dollar to euro cross currency swap contracts with a total notional amount of $775 million. The fair value of these contracts were net assets of $55 million and $50 million as of March 31, 2022 and December 31, 2021, 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 $74 million and $77 million at March 31, 2022 and December 31, 2021, respectively.

As of March 31, 2022 and December 31, 2021, PPG had non-U.S. dollar denominated borrowings outstanding of $1.6 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 $180 million at March 31, 2022 and $178 million at December 31, 2021.

*Interest Rate Risk*

The Company manages its interest rate risk by balancing its exposure to fixed and variable rates while attempting to minimize its interest costs. PPG has interest rate swaps which converted $525 million of fixed rate debt to variable rate debt. The fair values of these contracts was an asset of $10 million and $36 million as of March 31, 2022 and December 31, 2021, respectively. An increase in variable interest rates of 10% would lower the fair values of these swaps and increase interest expense by $2 million and $1 million for the periods ended March 31, 2022 and December 31, 2021, respectively. 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 March 31, 2022 and December 31, 2021. Further a 10% reduction in interest rates would have increased the fair value of the Company's fixed rate debt by approximately $80 million and $56 million at March 31, 2022 and December 31, 2021, 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, 2021 to March 31, 2022. Refer to Note 12, "Financial Instruments, Hedging Activities and Fair Value Measurements" in Part I, Item 1 of this Form 10-Q 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 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" in 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 2021 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 March 31, 2022 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 9,615,098 shares as of March 31, 2022. This repurchase program has no expiration date.

## Item 6. Exhibits

See the Index to Exhibits on page 33.

**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 three months ended March 31, 2022 and 2021, (ii) the Condensed Consolidated Balance Sheet at March 31, 2022 and December 31, 2021, (iii) the Condensed Consolidated Statement of Cash Flows for the three months ended March 31, 2022 and 2021, and (iv) Notes to Condensed Consolidated Financial Statements for the three months ended March 31, 2022.

**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: April 22, 2022

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

By: /s/ Brian R. Williams
Brian R. Williams
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: April 22, 2022

/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: April 22, 2022

/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 March 31, 2022 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.

/s/ Michael H. McGarry

Michael H. McGarry
Chairman and Chief Executive Officer
April 22, 2022

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 March 31, 2022 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)
April 22, 2022

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.