
2018 Inspection PricewaterhouseCoopers LLP

(Headquartered in New York, New York)

April 28, 2020

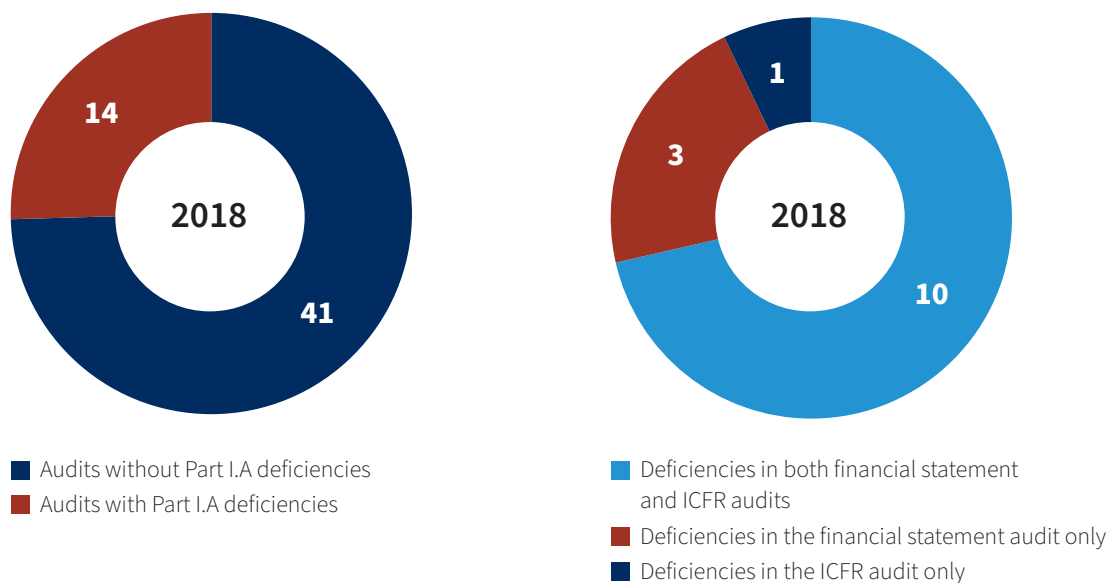
Executive Summary

Our 2018 inspection report on PricewaterhouseCoopers LLP provides information on our inspection to assess the firm’s compliance with Public Company Accounting Oversight Board (“PCAOB”) standards and rules and other applicable regulatory and professional requirements. This executive summary offers a high-level overview of: (1) Part I.A of the report, which discusses deficiencies (“Part I.A deficiencies”) in certain issuer audits that were of such significance that we believe the firm, at the time it issued its audit report(s), had not obtained sufficient appropriate audit evidence to support its opinion on the issuer’s financial statements and/or internal control over financial reporting (“ICFR”), and (2) Part I.B of the report, which discusses deficiencies that do not relate directly to the sufficiency or appropriateness of evidence the firm obtained to support its opinion(s) but nevertheless relate to instances of non-compliance with PCAOB standards or rules.

The fact that we have included a deficiency in this report — other than those deficiencies for audits with incorrect opinions on the financial statements and/or ICFR — does not necessarily mean that the issuer’s financial statements are materially misstated or that undisclosed material weaknesses in ICFR exist. If a deficiency is included in Part I.A or Part I.B of this report, it does not necessarily mean that the firm has not addressed the deficiency.

Overview of the 2018 Deficiencies Included in Part I

Fourteen of the 55 issuer audits we reviewed in 2018 are included in Part I.A of this report due to the significance of the deficiencies identified. The identified deficiencies primarily related to the firm’s testing of controls over and/or substantive testing of revenue and related accounts, business combinations, and loans and related accounts.



The most common Part I.A deficiencies in 2018 related to testing the design or operating effectiveness of controls selected for testing, evaluating significant assumptions or data that the issuer used in developing an estimate, and identifying controls related to a significant account or relevant assertion.

Other deficiencies identified during the 2018 inspection that do not relate directly to the sufficiency or appropriateness of evidence the firm obtained to support its opinion(s), which appear in Part I.B, related to Form AP and audit committee communications.

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2018 Inspection

During the PCAOB's 2018 inspection of PricewaterhouseCoopers LLP, we assessed the firm's compliance with laws, rules, and professional standards applicable to the audits of public companies.

We selected for review 55 audits of issuers with fiscal years generally ending in 2017. For each issuer audit selected, we reviewed a portion of the audit. We also evaluated elements of the firm's system of quality control.

What's Included in this Inspection Report

This report includes the following sections:

- **Overview of the 2018 Inspection and Historical Data by Inspection Year:** Information on our inspection, historical data, and common deficiencies.
- **Part I – Inspection Observations:**
 - **Part I.A:** Deficiencies that were of such significance that we believe the firm, at the time it issued its audit report(s), had not obtained sufficient appropriate audit evidence to support its opinion on the issuer's financial statements and/or ICFR.
 - **Part I.B:** Deficiencies that do not relate directly to the sufficiency or appropriateness of evidence the firm obtained to support its opinion(s) but nevertheless relate to instances of non-compliance with PCAOB standards or rules.
- **Part II – Observations Related to Quality Control:** Criticisms of, or potential defects in, the firm's system of quality control. Section 104(g)(2) of the Sarbanes-Oxley Act ("the Act") restricts us from publicly disclosing Part II deficiencies unless the firm does not address the criticisms or potential defects to the Board's satisfaction no later than 12 months after the issuance of this report.
- **Appendix A – Firm's Response to the Draft Inspection Report:** The firm's response to a draft of this report, excluding any portion granted confidential treatment.

2018 Inspection Approach

In selecting issuer audits for review, we use both risk-based and random methods of selection. We make most selections based on (1) our internal evaluation of audits we believe have a heightened risk of material misstatement, including those with challenging audit areas, and (2) other risk-based characteristics, including issuer and firm considerations. We select the remaining audits randomly to provide an element of unpredictability.

When we review an audit, we do not review every aspect of the audit. Rather, we generally focus our attention on audit areas we believe to be of greater complexity, areas of greater significance or with a heightened risk of material misstatement to the issuer's financial statements, and areas of recurring deficiencies. We may also select some audit areas for review in a manner designed to incorporate unpredictability.

Our selection of audits for review does not constitute a representative sample of the firm's total population of issuer audits. Additionally, our inspection findings are specific to the particular portions of the issuer audits reviewed. They are not an assessment of all of the firm's audit work nor of all of the audit procedures performed for the audits reviewed.

View the details on the [scope of our inspections and our inspections procedures](#).

Overview of the 2018 Inspection and Historical Data by Inspection Year

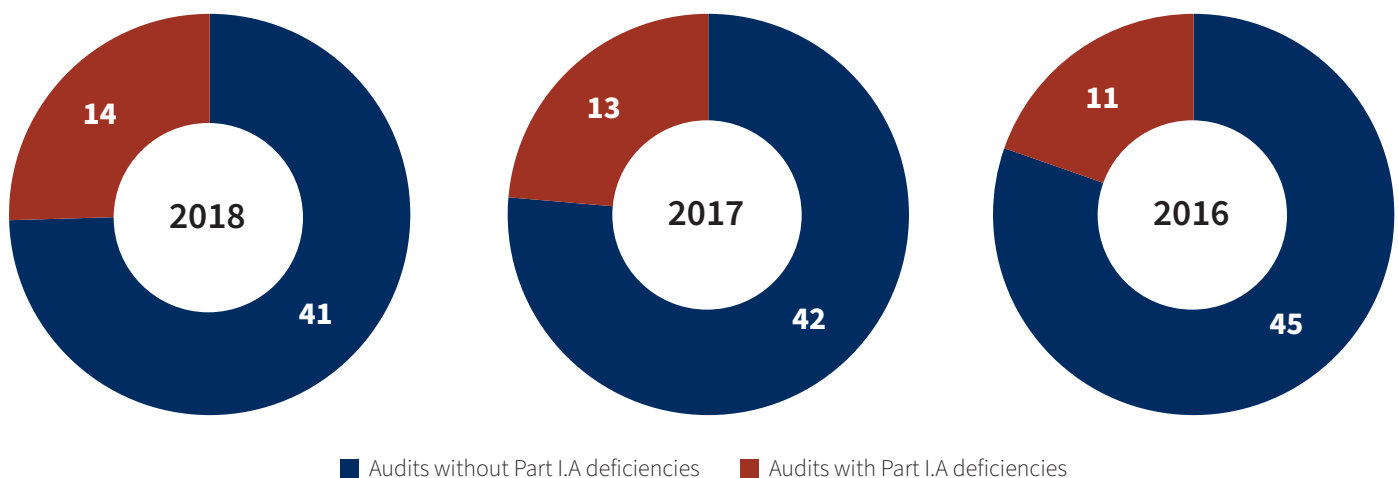
The following information provides an overview of our inspections in 2018 of the firm's issuer audits as well as data from the previous two inspections. We use a combination of risk-based and random methods to select audits for review and to identify areas on which we focus our inspection. Because our inspection process evolves over time, it can, and often does, focus on a different mix of audits and focus areas from year to year and firm to firm. As a result of this variation, we caution that our inspection results are not necessarily comparable over time or among firms.

Audits Reviewed

	2018	2017	2016
Total audits reviewed	55	55	56
Audits in which the firm was the principal auditor	54	54	53
Audits in which the firm was not the principal auditor	1	1	3
Integrated audits of financial statements and ICFR	45	49	49
Risk-based selections	45	45	46
Random selections	10	10	10

Part I.A Deficiencies in Audits Reviewed

In 2018, 11 of the 14 audits appearing in Part I.A were selected for review using risk-based criteria. In 2017, 11 of the 13 audits appearing in Part I.A were selected for review using risk-based criteria. In 2016, nine of the 11 audits appearing in Part I.A were selected for review using risk-based criteria.

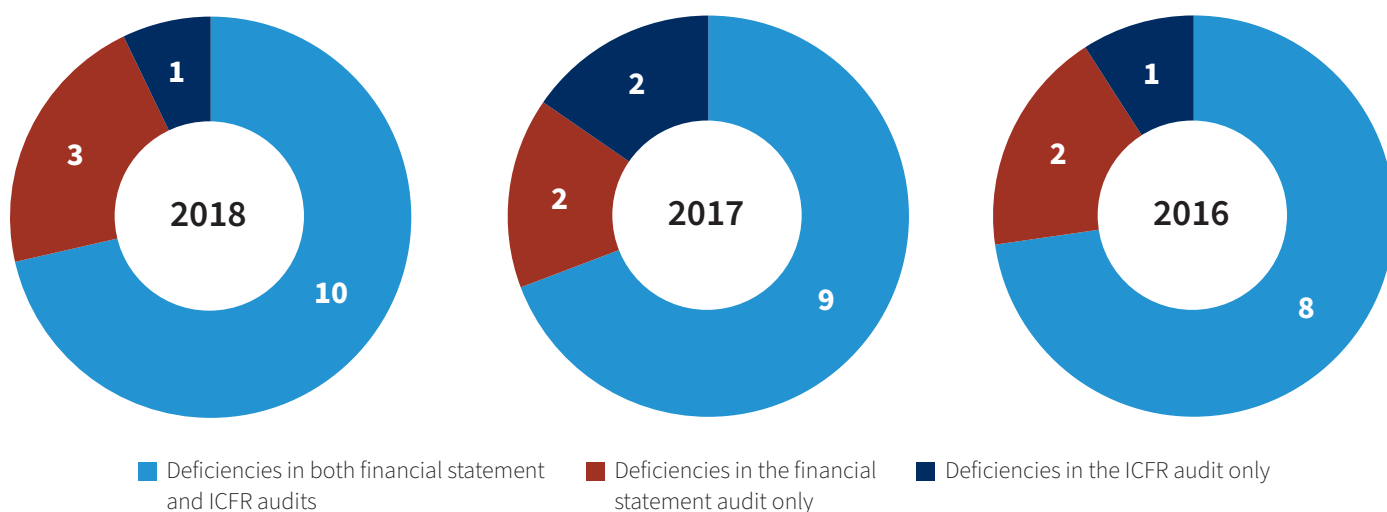


If a deficiency is included in Part I.A of our report, it does not necessarily mean that the firm has not addressed the deficiency. In many cases, the firm has performed remedial actions after the issue was identified. Depending on the circumstances, remedial actions may include performing additional audit procedures, informing management of the issuer of the need for changes to the financial statements or reporting on ICFR, or taking steps to prevent reliance on prior audit reports. Our inspection normally includes a review, on a sample basis, of the adequacy of a firm's remedial

actions, either with respect to previously identified deficiencies or deficiencies identified during that inspection. If a firm does not take appropriate actions to address deficiencies, we may criticize its system of quality control or pursue a disciplinary action.

The fact that we have included a deficiency in our report — other than those deficiencies for audits with incorrect opinions on the financial statements and/or ICFR — does not necessarily mean that the issuer’s financial statements are materially misstated or that undisclosed material weaknesses in ICFR exist. It is often not possible for us to reach a conclusion on those points based on our inspection procedures and related findings because, for example, we have only the information that the auditor retained and the issuer’s public disclosures. We do not have direct access to the issuer’s management, underlying books and records, and other information.

Audits Affected by the Deficiencies Identified in Part I.A



In connection with our 2018 inspection procedures for one audit, the issuer revised its report on ICFR and disclosed that the firm’s opinion related to the effectiveness of the issuer’s ICFR should no longer be relied upon. In connection with our 2017 and 2016 inspection procedures for two audits in each year, the issuers revised their reports on ICFR, and the firm revised its opinions on the effectiveness of the issuers’ ICFR to express an adverse opinion and reissued its reports. In addition, in connection with our 2016 inspection procedures for one audit, the issuer restated its financial statements, and the firm modified its audit report.

The following tables and graphs summarize inspection-related information, by inspection year, for 2018 and the previous two inspections. We caution any comparison of the data provided without reading the descriptions of the underlying deficiencies in each respective inspection report.

Most Frequently Identified Part I.A Deficiencies

Deficiencies in audits of financial statements	Audits with Part I.A deficiencies		
	2018	2017	2016
Did not sufficiently evaluate significant assumptions or data that the issuer used in developing an estimate	7	6	7
Did not perform substantive procedures to obtain sufficient evidence as a result of overreliance on controls (due to deficiencies in testing controls)	4	3	0
Did not perform sufficient testing related to an account or significant portion of an account or to address an identified risk	2	4	5

Deficiencies in ICFR audits	Audits with Part I.A deficiencies		
	2018	2017	2016
Did not perform sufficient testing of the design and/or operating effectiveness of controls selected for testing	8	6	7
Did not identify and test any controls related to a significant account or relevant assertion	5	7	4
Did not identify and/or sufficiently test controls over the accuracy and completeness of data or reports	3	3	2

Audit Areas Most Frequently Reviewed

This table reflects the five focus areas we have selected most frequently for review in each inspection year (and the related Part I.A deficiencies). For the issuer audits selected for review, we selected these areas because they were generally significant to the issuer's financial statements, may have included complex issues for auditors, and/or involved complex judgments in (1) estimating and auditing the reported value of related accounts and disclosures and (2) implementing and auditing the related controls.

2018			2017			2016		
Audit area	Audits reviewed	Audits with Part I.A deficiencies	Audit area	Audits reviewed	Audits with Part I.A deficiencies	Audit area	Audits reviewed	Audits with Part I.A deficiencies
Revenue and related accounts	46	4	Revenue and related accounts	49	8	Revenue and related accounts	47	6
Inventory	16	2	Inventory	22	1	Inventory	21	3
Business combinations	14	4	Business combinations	19	2	Business combinations	19	2
Goodwill and intangible assets	13	1	Goodwill and intangible assets	18	1	Goodwill and intangible assets	14	2
Long-lived assets	13	1	Long-lived assets	17	1	Long-lived assets	14	3

Audit Areas with Frequent Part I.A Deficiencies

This table reflects the focus areas with the most frequently identified Part I.A deficiencies in each inspection year with the corresponding results for the other two years presented.

Audit area	2018		2017		2016	
	Audits with Part I.A deficiencies	Audits reviewed	Audits with Part I.A deficiencies	Audits reviewed	Audits with Part I.A deficiencies	Audits reviewed
Revenue and related accounts	4	46	8	49	6	47
Business combinations	4	14	2	19	2	19
Loans and related accounts	3	6	1	3	0	4
Inventory	2	16	1	22	3	21
Long-lived assets	1	13	1	17	3	14

Revenue and related accounts: The deficiencies in 2018 and 2017 primarily related to testing controls over revenue. The deficiencies in 2016 primarily related to substantive testing of, and testing controls over, revenue.

Business combinations: The deficiencies in 2018, 2017, and 2016 primarily related to evaluating the reasonableness of assumptions used by the issuer to determine the fair values of assets acquired and liabilities assumed and testing controls involving the issuer’s review of assumptions used to value assets acquired and liabilities assumed.

Loans and related accounts: The deficiencies in 2018 and 2017 primarily related to substantive testing of loans.

Inventory: The deficiencies in 2018, 2017, and 2016 primarily related to substantive testing of, and testing controls over, the existence and valuation of inventory, including evaluating the reasonableness of the excess and obsolete inventory reserve.

Long-lived assets: The deficiency in 2018 related to evaluating the reasonableness of assumptions used in the issuer’s impairment analysis for a long-lived asset. The deficiencies in 2017 and 2016 primarily related to evaluating the reasonableness of, and testing controls over, the assumptions the issuer used in its impairment analyses for long-lived assets.

Auditing Standards Associated with Identified Part I.A Deficiencies

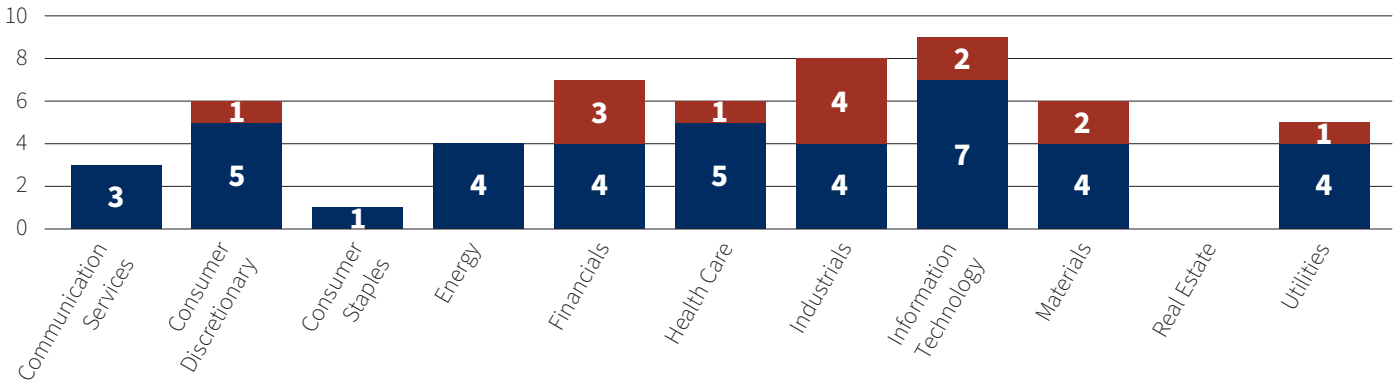
The following lists the auditing standards referenced in Part I.A of the 2018 and the previous two inspection reports and the number of times that the standard is cited in Part I.A.

PCAOB Auditing Standards	2018	2017	2016
<i>AS 1105, Audit Evidence</i>	0	1	3
<i>AS 1210, Using the Work of a Specialist</i>	0	0	1
<i>AS 2201, An Audit of Internal Control Over Financial Reporting That Is Integrated with An Audit of Financial Statements</i>	25	23	25
<i>AS 2301, The Auditor’s Responses to the Risks of Material Misstatement</i>	6	12	10
<i>AS 2305, Substantive Analytical Procedures</i>	1	0	0
<i>AS 2315, Audit Sampling</i>	5	6	0
<i>AS 2501, Auditing Accounting Estimates</i>	4	4	10
<i>AS 2502, Auditing Fair Value Measurements and Disclosures</i>	8	8	11
<i>AS 2503, Auditing Derivative Instruments, Hedging Activities, and Investments in Securities</i>	0	1	0
<i>AS 2510, Auditing Inventories</i>	0	0	5
<i>AS 2605, Consideration of the Internal Audit Function</i>	0	2	0
<i>AS 2810, Evaluating Audit Results</i>	2	3	6

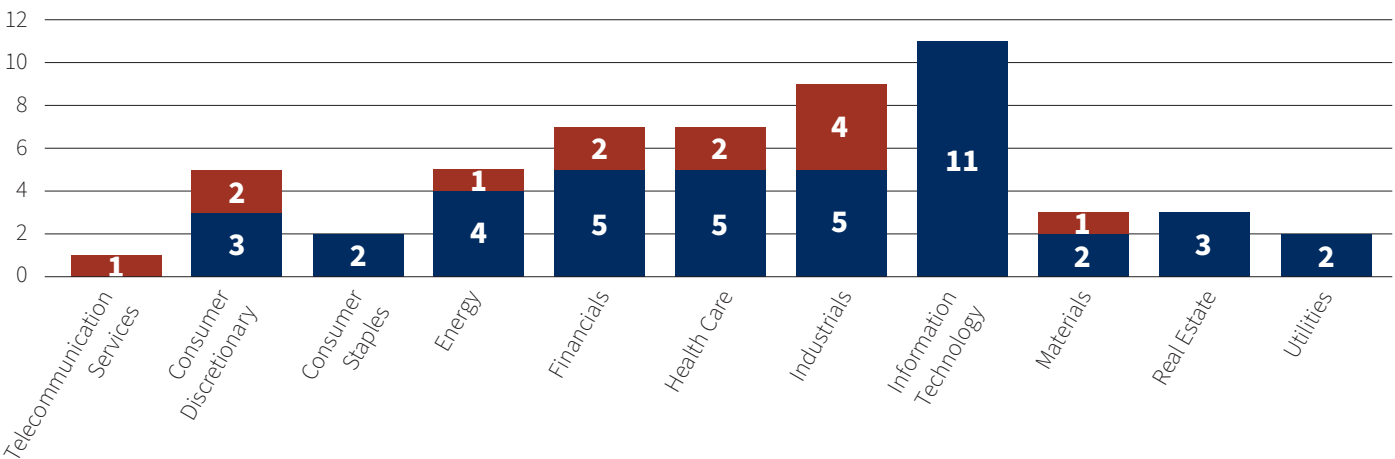
Inspection Results by Issuer Industry Sector

The majority of industry sector data is based on Global Industry Classification Standard ("GICS") data obtained from Standard & Poor's ("S&P"). In instances where GICS data for an issuer is not available from S&P, classifications are assigned based upon North American Industry Classification System data.

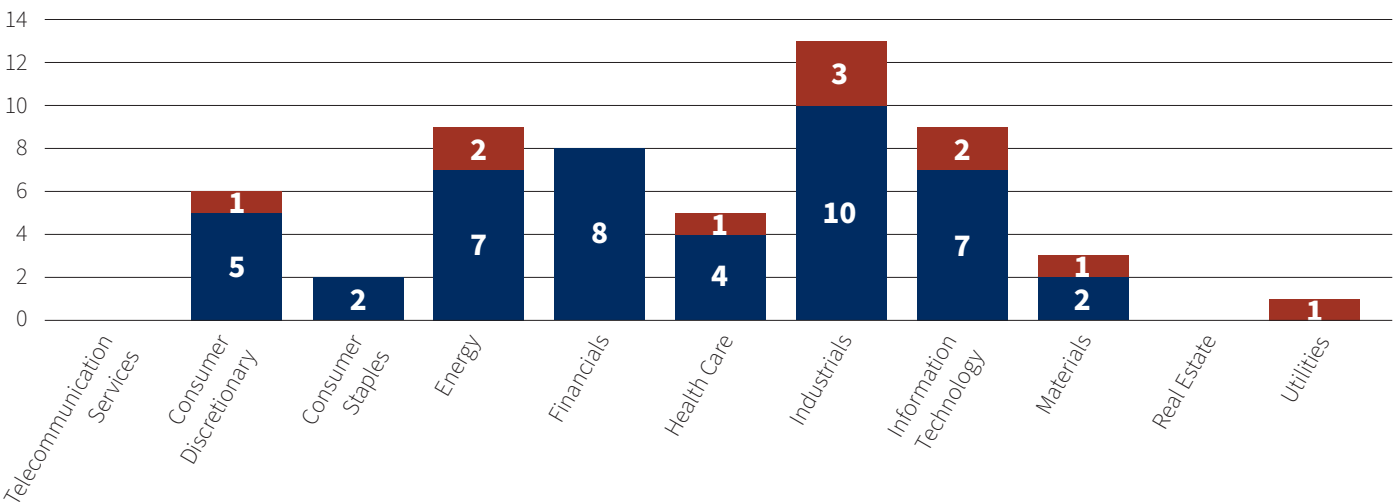
2018



2017



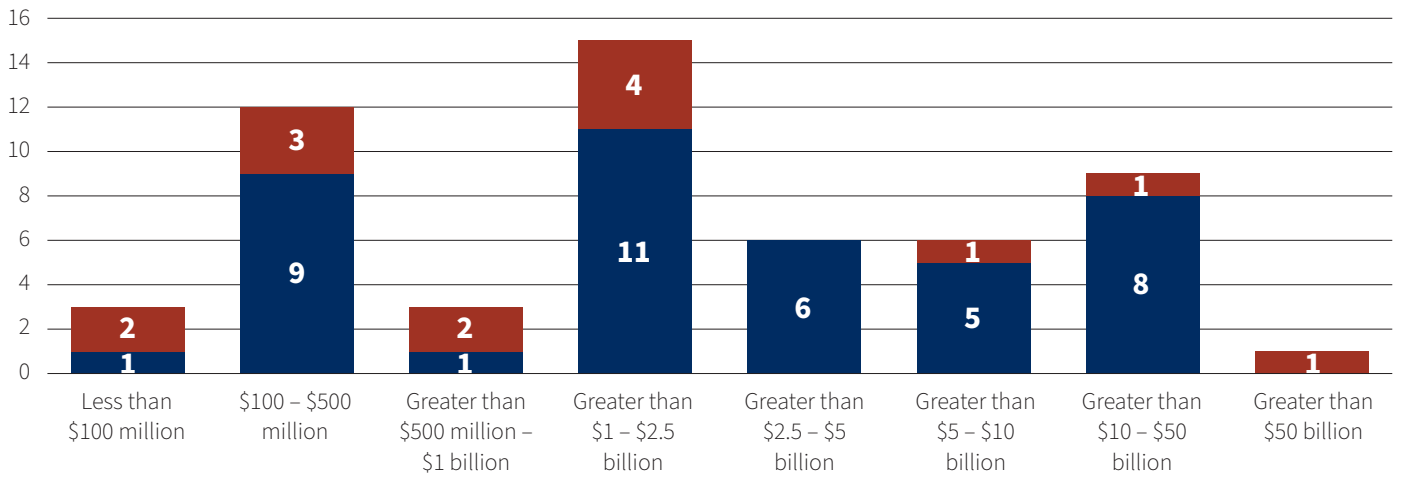
2016



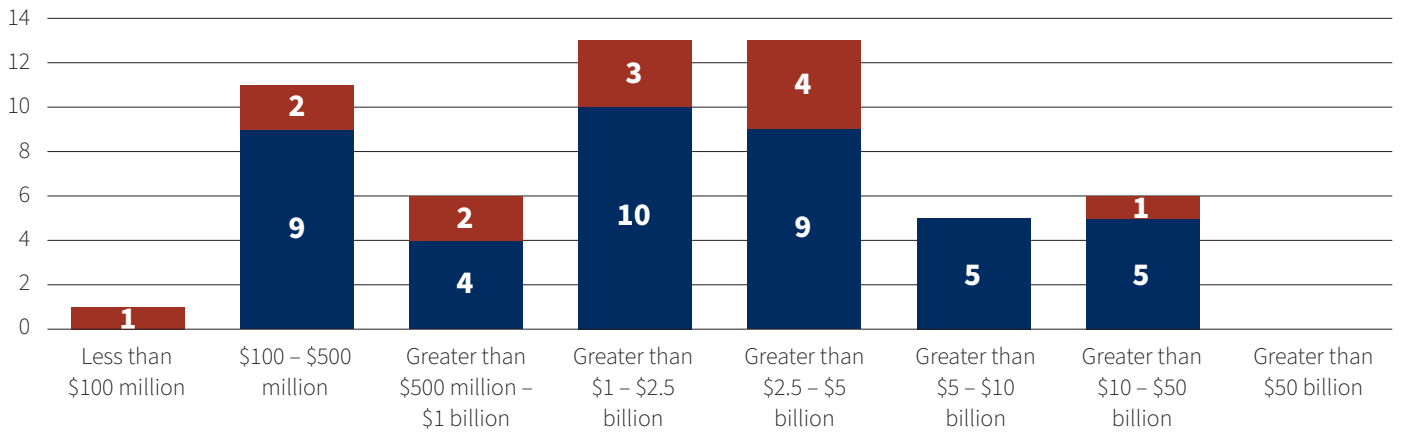
■ Audits without Part I.A deficiencies ■ Audits with Part I.A deficiencies

Inspection Results by Issuer Revenue Range

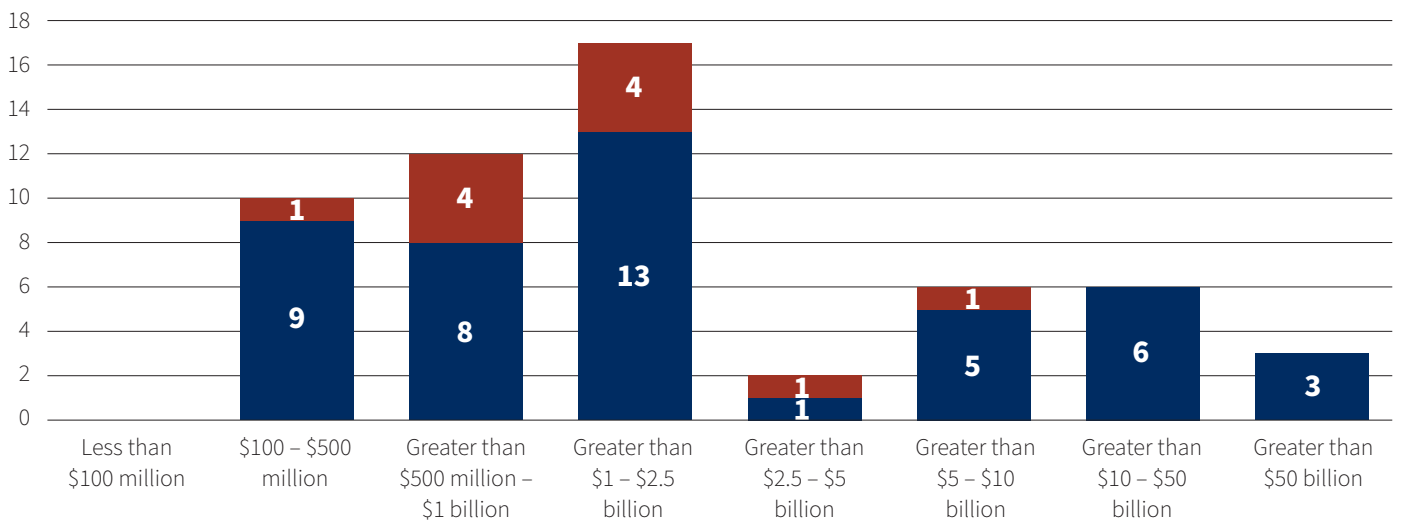
2018



2017



2016



■ Audits without Part I.A deficiencies
 ■ Audits with Part I.A deficiencies

Classification of Audits with Part I.A Deficiencies

Within Part I.A of this report, we classify each issuer audit in one of the categories discussed below based on the Part I.A deficiency or deficiencies identified in our review.

The sole purpose of this classification system is to group and present issuer audits by the number of Part I.A deficiencies we identified within the audit as well as to highlight audits with an incorrect opinion on the financial statements and/or ICFR.

Audits with an Incorrect Opinion on the Financial Statements and/or ICFR

This classification includes instances where an audit deficiency was identified in connection with our inspection and, as a result, an issuer's financial statements were determined to be materially misstated, and the issuer restated its financial statements. It also includes instances where an audit deficiency was identified in connection with our inspection and, as a result, an issuer's ICFR was determined to be ineffective, or there were additional material weaknesses that the firm did not identify, and the firm withdrew its opinion, or modified its report, on ICFR.

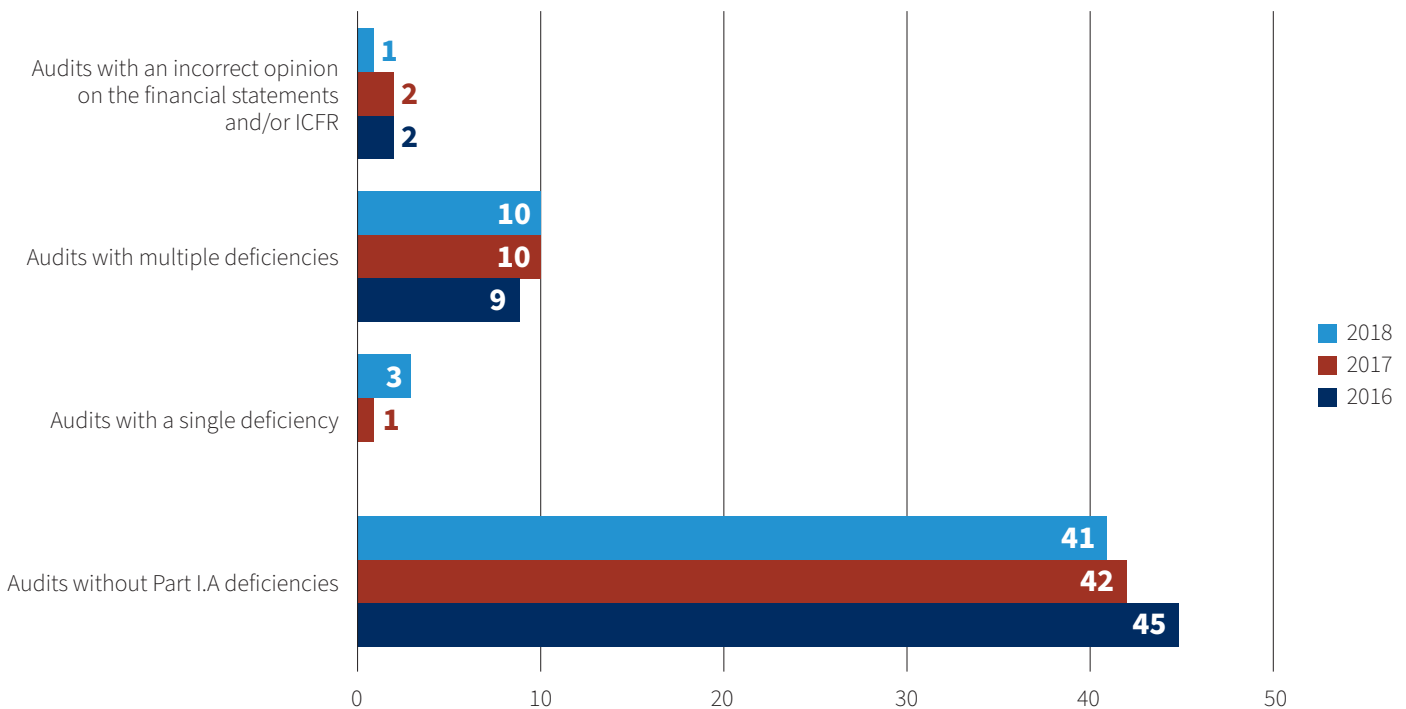
Audits with Multiple Deficiencies

This classification includes instances where multiple deficiencies were identified that related to a combination of one or more financial statement accounts, disclosures, and/or important controls in an ICFR audit.

Audits with a Single Deficiency

This classification includes instances where a single deficiency was identified that related to a financial statement account or disclosure or to an important control in an ICFR audit.

Number of Audits in Each Category



Part I: Inspection Observations

Part I.A of our report discusses deficiencies that were of such significance that we believe the firm, at the time it issued its audit report(s), had not obtained sufficient appropriate audit evidence to support its opinion on the issuer's financial statements and/or ICFR. Part I.B discusses deficiencies that do not relate directly to the sufficiency or appropriateness of evidence the firm obtained to support its opinion(s) but nevertheless relate to instances of non-compliance with PCAOB standards or rules. Consistent with the Act, it is the Board's assessment that nothing in Part I of this report deals with a criticism of or potential defect in the firm's quality control system. Any such criticisms or potential defects are discussed in Part II. Further, you should not infer from any Part I deficiency or combination of deficiencies that a quality control finding is identified in Part II.

Part I.A: Audits with Unsupported Opinions

This section of our report discusses the deficiencies identified, by specific issuer audit reviewed, in the audit work supporting the firm's opinion on the issuer's financial statements and/or ICFR.

We identify each issuer by a letter (e.g., Issuer A) and industry sector. Each deficiency could relate to several auditing standards, but we reference the PCAOB standard(s) that most directly relates to the requirement with which the firm did not comply.

Issuer audits are presented below within their respective deficiency classifications (as discussed previously). Within the classifications, we generally present the audits based on our assessment as to the relative significance of the identified deficiencies taking into account the significance of the financial statement accounts and/or disclosures affected, and/or the nature or extent of the deficiencies.

Audits with an Incorrect Opinion on the Financial Statements and/or ICFR

Issuer A – Materials

Type of audit and related areas affected

In our review, we identified deficiencies in the financial statement and ICFR audits related to **Investments**, a **Business Combination**, and **Revenue**.

Description of the deficiencies identified

With respect to **Investments**:

The issuer determined the fair value of an investment using projected cash flows of the investee company. The following deficiencies were identified:

- The firm selected for testing a control that included a review of the reasonableness of the cash flows provided by the investee company. The firm did not evaluate the specific review procedures the control owner performed to assess the reasonableness of these cash flows. (AS 2201.42 and .44)

As a result of our inspection procedures, the firm reevaluated the issuer's control over the reasonableness of the cash flows used to determine the fair value of this investment and concluded, along with the issuer, that a material weakness existed that had not been previously identified. The issuer subsequently filed a Form 8-K and disclosed that the firm's opinion related to the effectiveness of the issuer's ICFR should no longer be relied upon due to this material weakness and the other material weaknesses discussed herein.

- The issuer determined the revenue projections underlying these cash flows by multiplying, for each of the investee company's two products, the quantities of units projected to be sold by an estimated selling price. For one of these products, the firm did not evaluate the reasonableness of the projected quantities of units to be sold, beyond

inquiring of the investee company's management and comparing the current-year projected revenue for the investee company to actual revenue. (AS 2502.26, .28, and .31)

With respect to a **Business Combination**:

During the year, the issuer acquired a business and determined the fair value of the acquired intangible assets using forecasted cash flows. The following deficiencies were identified:

- The firm selected for testing a control that included the review of the reasonableness of the forecasted cash flows for the acquired business, including an assessment of the reasonableness of the revenue-growth assumptions underlying these cash flows. The firm did not evaluate the specific review procedures that the control owner performed to assess the reasonableness of the revenue-growth assumptions. (AS 2201.42 and .44)

As a result of our inspection procedures, the firm reevaluated the issuer's control over the reasonableness of the cash flows used to determine the fair value of these acquired intangible assets and concluded, along with the issuer, that a material weakness existed that had not been previously identified. The issuer subsequently filed a Form 8-K and disclosed that the firm's opinion related to the effectiveness of the issuer's ICFR should no longer be relied upon due to this material weakness and the other material weaknesses discussed herein.

- The issuer's forecasted cash flows were based on historical results. The firm concluded that the forecasted revenue growth rates underlying these cash flows were reasonable without performing procedures to evaluate whether the historical revenue growth rates of the acquired business, and the historical industry results, would be representative of future revenue growth rates of the acquired business, beyond inquiring of management and comparing the forecasted revenue growth rates to either the historical revenue growth rates of the acquired business or to historical industry results. (AS 2502.26, .28, .31, and .36)

With respect to **Revenue**:

The issuer manually entered sales order quantities into the issuer's revenue system. This system was programmed to convert the quantities entered into weight sold to determine the customer invoice amount. The following deficiencies were identified:

- The firm did not identify and test any controls that addressed the accuracy and completeness of sales quantities manually entered into the system. (AS 2201.39)
- The firm selected for testing controls that consisted of comparisons of the total weight of inventory shipped to (1) the weight of the products ordered by customers and (2) the weight information the issuer used to generate customer invoices. The firm did not identify and test any controls over the accuracy of the weight information used in the operation of these controls. (AS 2201.39)
- The firm selected for testing controls over the accuracy of sales prices that consisted of a review of sales order prices below a minimum price and above certain maximum prices. The firm did not identify and test any controls over the accuracy of prices that did not meet these criteria. (AS 2201.39)
- For certain other revenue, the firm identified a control deficiency related to a lack of controls over the accuracy of quantities shipped to customers and recorded as revenue. The firm identified various controls that it believed would compensate for this deficiency, but its conclusion that these controls had a mitigating effect was inappropriate because these controls did not address the risk of potential misstatement related to inaccurate quantities. (AS 2201.68)

As a result of our inspection procedures, the firm reevaluated the issuer's controls over this revenue and concluded, along with the issuer, that a material weakness existed that had not been previously identified. The issuer subsequently filed a Form 8-K and disclosed that the firm's opinion related to the effectiveness of the issuer's ICFR should no longer be relied upon due to this material weakness and the other material weaknesses discussed herein.

Audits with Multiple Deficiencies

Issuer B – Financials

Type of audit and related areas affected

In our review, we identified deficiencies in the financial statement and ICFR audits related to **Loans Receivable, Leases**, the **Allowance for Loan Losses (“ALL”)**, **Investments, Derivatives**, and **Investment and Brokerage Services Income**.

Description of the deficiencies identified

The issuer’s processes related to loans receivable, the ALL, investments, derivatives, and investment and brokerage services income were highly automated, with transactions being initiated, processed, and recorded by numerous information-technology (“IT”) systems. The firm tested certain automated and IT-dependent manual controls that used data and reports generated or maintained by these IT systems. The accuracy and completeness of these data and reports depended on effective IT general controls (“ITGCs”). The firm’s sampling approach for testing ITGCs was inappropriate because it was based on an unsupported assumption that the population of ITGCs was homogeneous. As a result, the firm’s testing of these automated and IT-dependent manual controls over these areas was not sufficient. (AS 2201.46 and .47)

With respect to **Loans Receivable** and **Leases**:

The firm’s procedures to test the outstanding balances of certain commercial loans and leases included confirmation procedures based on a nonstatistical sampling approach that was designed assuming a certain level of substantive evidence the firm planned to obtain from its other substantive procedures. These other substantive procedures did not provide the planned level of substantive evidence because these procedures were limited to testing account reconciliations and a small number of loans and leases. As a result, the nonstatistical samples were too small to provide sufficient appropriate audit evidence over these commercial loan and lease balances. (AS 2301.42; AS 2315.19, .23, and .23A)

With respect to the **ALL**:

As part of the issuer’s overall credit risk assessment for commercial loans collectively evaluated for impairment, the issuer determined loan grades for each loan. These loan grades were an important factor in estimating the ALL for commercial loans. The following deficiencies were identified:

- The firm selected for testing a control that consisted of an independent review of the loan grades and other key inputs used to estimate the ALL. All loans and commitments were subject to this review within a three-year period. The firm also selected for testing another control that consisted of the approval of all loan-grade changes made subsequent to the origination of the loan. The firm did not consider that these controls were not designed to require, in the period under audit, that all loans that the issuer had identified as having a high risk of inappropriate loan grades be subject to an independent loan-grade review. (AS 2201.42)
- The issuer determined loan grades using loan scorecards that were prepared for each borrower. The firm selected for testing a control that consisted of the monthly review of a sample of loan scorecards to evaluate the accuracy and completeness of the loan information and numerous other key inputs. The firm did not test the review procedures the control owner performed to evaluate numerous inputs to the scorecard that were important in determining the loan grade. (AS 2201.42 and .44)
- The firm used the loan scorecards in its substantive testing of the appropriateness of the assigned loan grades for commercial loans. The firm did not test, or (as discussed above) sufficiently test controls over, the accuracy and completeness of the loan information and other key inputs included in these scorecards. (AS 2501.11)

- The sample size the firm used in certain of its substantive procedures to test the appropriateness of the assigned loan grades for commercial loans was too small to provide sufficient appropriate audit evidence because these procedures were designed based on a level of control reliance that was not supported due to the deficiencies in the firm's control testing discussed above. (AS 2301.16, .18, and .37; AS 2315.19, .23, and .23A)

With respect to **Derivatives** and the **ALL**:

The issuer used various models, including models to value certain derivatives and to determine certain components of the ALL. The firm selected for testing controls that consisted of the (1) periodic validation of certain of these models, including new or updated models, and (2) annual review of all models. For the validation control, the firm did not evaluate the specific review procedures the control owners performed to validate certain aspects of certain models. Further, the firm did not evaluate certain review procedures that the control owners performed as part of the annual model review. (AS 2201.42 and .44)

Issuer C – Financials

Type of audit and related areas affected

In our review, we identified deficiencies in the financial statement and ICFR audits related to **Investments, Deposit Liabilities, and Loans Receivable**.

Description of the deficiencies identified

With respect to **Investments**:

The issuer recorded the fair values of available-for-sale (“AFS”) securities based on the prices it obtained from an external pricing service. The firm selected for testing a control that consisted of the comparison of these prices to prices obtained from another external pricing service; the securities and prices obtained from each external pricing service were manually entered by the issuer into a spreadsheet for this comparison. The firm did not identify and test any controls over whether the prices that were manually entered into this spreadsheet were accurate and complete. (AS 2201.39)

The firm selected for testing a control that consisted of the review of the categorization of AFS securities within the fair value hierarchy as set forth in FASB ASC Topic 820, *Fair Value Measurement*. The firm did not evaluate the review procedures that the control owner performed, including the criteria the control owner used to identify items for follow up and whether those items were appropriately resolved. (AS 2201.42 and 44)

With respect to **Deposit Liabilities**:

The issuer placed items in deposit clearing or suspense accounts when the items required further evaluation. The firm selected for testing controls that consisted of reviews of monthly reconciliations of the issuer's deposit clearing and suspense accounts. The firm did not evaluate the review procedures performed, including the assessment of whether items that had been cleared from these accounts had been appropriately resolved. (AS 2201.42 and .44)

With respect to **Loans Receivable**:

For the population of loans that the firm did not subject to confirmation procedures, the firm did not perform any procedures to obtain evidence that the outstanding loan balances were accurate at year end. (AS 2301.08)

Issuer D – Financials

Type of audit and related areas affected

In our review, we identified deficiencies in the financial statement and ICFR audits related to **Loss Reserves and Loans Receivable**.

Description of the deficiencies identified

With respect to **Loss Reserves**:

The firm did not identify and test any controls over the issuer's determination of the discount rates that it used in cash-flow models to calculate its loss and loss adjustment expense reserves ("loss reserves"). (AS 2201.39)

For one of the issuer's segments, the firm selected for testing various controls over the models and underlying assumptions the issuer used to estimate its loss reserves. The firm did not evaluate the specific review procedures the control owners performed to assess the reasonableness of these models and the assumptions used to estimate the loss reserves. (AS 2201.42 and .44)

With respect to **Loans Receivable**:

The issuer held certain loans receivable that were measured at fair value. These receivables were collateralized by secured loans to, and equity interests in, privately-held companies ("the portfolio companies"). To estimate the fair value of the receivables, the issuer valued the portfolio companies using models for which the inputs included the historical financial information of the portfolio companies and certain assumptions. Due to certain circumstances, the historical information that was available to the issuer and used in these models was limited to unaudited financial information that was one to three years old, and the firm used this information in its substantive testing to develop independent estimates of fair value for a sample of the portfolio companies. The firm's procedures did not address the relevance of the historical financial information. (AS 2502.26, .28, and .39)

Issuer E – Information Technology

Type of audit and related areas affected

In our review, we identified deficiencies in the financial statement and ICFR audits related to **Goodwill** and **Intangible Assets**.

Description of the deficiencies identified

With respect to **Goodwill**:

The firm selected for testing a control that consisted of a review of the reasonableness of the forecasts used in the issuer's goodwill impairment analysis, including an evaluation of the revenue-growth assumptions underlying these forecasts. The firm did not evaluate the specific review procedures that the control owner performed to assess the reasonableness of the revenue-growth assumptions. (AS 2201.42 and .44)

With respect to **Intangible Assets**:

The issuer's policy was to group long-lived assets, including customer-relationship intangible assets, together at the reportable segment level for purposes of evaluating its long-lived assets for possible impairment. The following deficiencies were identified:

- The firm did not identify and test any controls over the determination of the issuer's asset groupings. (AS 2201.39)
- The firm did not evaluate, beyond reading the issuer's accounting policy, whether the issuer's determination that the lowest level of identifiable and independent cash flows available were at the issuer's reportable segments level was in conformity with FASB ASC Subtopic 360-10, *Property, Plant, and Equipment - Overall*. (AS 2501.11; AS 2810.30)

Issuer F – Industrials

Type of audit and related area affected

In our review, we identified deficiencies in the financial statement and ICFR audits related to a **Business Combination**.

Description of the deficiencies identified

During the year, the issuer acquired a business and determined the fair value of the acquired intangible assets using forecasted sales and cash flows and other assumptions, including customer attrition rates. The following deficiencies were identified:

- The firm selected for testing a control that included reviews of the reasonableness of the (1) revenue-growth assumptions underlying the forecast for the acquired business and (2) attrition-rate assumptions. The firm did not evaluate the specific review procedures that the control owners performed to assess the reasonableness of the revenue-growth assumptions. (AS 2201.42 and .44) In addition, the firm did not perform any procedures, beyond inquiring of management, to test the aspect of this control related to the issuer's evaluation of the accuracy and completeness of the historical revenue data used to determine the attrition rates. (AS 2201.42 and .44)
- The forecast the issuer used to determine the fair value of acquired intangible assets assumed significant revenue growth, and the firm documented that the issuer planned to implement various strategies to increase the revenue of the acquired business. The firm concluded that the forecasted revenue growth rates were reasonable without performing any procedures, beyond inquiring of management, to evaluate the issuer's ability to carry out its planned strategies to achieve these forecasts. (AS 2502.26, .28, .31, and .36)
- The firm did not perform any substantive procedures to test the accuracy of the historical revenue data of the acquired business that the issuer used to determine the attrition rates. (AS 2502.39)

Issuer G – Materials

Type of audit and related area affected

In our review, we identified deficiencies in the financial statement and ICFR audits related to **Inventory**.

Description of the deficiencies identified

The firm tested controls over the issuer's physical observations, which occurred as of various interim dates within the last four months of the issuer's fiscal year. The firm did not identify and test controls that addressed changes to physical inventory quantities between the dates of the physical inventory observations and year end. (AS 2201.39) In addition, certain inventory for one location was not subject to the issuer's physical observation controls, and the firm did not identify and test controls that addressed the existence of this inventory. (AS 2201.39)

The firm performed substantive analytical procedures to extend its conclusions on the existence of inventory from the interim dates at which it performed physical observations to year end. The firm did not perform procedures to obtain evidence that the expectations it used in these analytical procedures would be predictive of inventory as of year end. Further, the firm identified a significant difference between the expected and actual year-end inventory balances for one location but did not evaluate this difference beyond inquiring of management. (AS 2305.13, .14, and .21)

Issuer H – Consumer Discretionary

Type of audit and related area affected

In our review, we identified deficiencies in the financial statement and ICFR audits related to **Revenue**.

Description of the deficiencies identified

For certain revenue, the issuer received customer orders electronically that were processed through its sales system. The firm selected for testing various automated controls over the processing of orders, generation of invoices, and recording of revenue. The firm obtained an understanding of the system's configuration settings but did not test whether these automated controls were designed and operating effectively. (AS 2201.42 and .44)

The sample sizes the firm used in certain of its substantive procedures to test this revenue were too small to provide sufficient appropriate audit evidence because these procedures were designed based on a level of control reliance that was not supported due to the deficiency in the firm's control testing discussed above. (AS 2301.16, .18, and .37; AS 2315.19, .23, and .23A)

Issuer I – Industrials

Type of audit and related area affected

In our review, we identified deficiencies in the financial statement and ICFR audits related to **Revenue**.

Description of the deficiencies identified

Customer-shipment information, which was manually entered into the issuer's shipping system, was transferred from the shipping system to the sales system to record certain revenue and generate customer invoices. The firm selected for testing a control that included the issuer's review of the customer-shipment information to determine whether revenue was appropriately recorded. The firm did not identify and test any controls over the accuracy and completeness of the customer-shipment information that was entered into the shipping system and used in the operation of this control. (AS 2201.39)

The sample sizes the firm used in certain of its substantive procedures to test this revenue were too small to provide sufficient appropriate audit evidence because these procedures were designed based on a level of control reliance that was not supported due to the deficiency in the firm's control testing discussed above. (AS 2301.16, .18, and .37; AS 2315.19, .23, and .23A)

Issuer J – Industrials

Type of audit and related area affected

In our review, we identified deficiencies in the financial statement and ICFR audits related to **Revenue**.

Description of the deficiencies identified

For certain revenue, the firm did not identify and test any controls over the accuracy of sales order prices manually entered into the sales system and quantities shipped and/or invoiced to customers. (AS 2201.39)

The sample sizes the firm used in certain of its substantive procedures to test this revenue were too small to provide sufficient appropriate audit evidence because these procedures were designed based on a level of control reliance that was not supported due to the deficiency in the firm's control testing discussed above. (AS 2301.16, .18, and .37; AS 2315.19, .23, and .23A)

Issuer K – Health Care

Type of audit and related area affected

In our review, we identified deficiencies in the financial statement audit related to a **Business Combination**.

Description of the deficiencies identified

During the year, the issuer acquired a business. The firm did not perform procedures to evaluate whether all identifiable assets acquired were recognized in conformity with FASB ASC Topic 805, *Business Combinations*, beyond reading the merger agreement and purchase-price allocation that the issuer prepared and inquiring of management. (AS 2810.30)

The issuer used historical cost data as an input to determine the fair value of certain acquired intangible assets. The firm did not sufficiently test the accuracy and completeness of these cost data because its procedures were limited to inquiring of management, comparing the cost data to unaudited information, and determining that certain costs were appropriately excluded. (AS 2502.39)

The issuer used projected sales of three acquired products, adjusted by probability assumptions, to determine the fair value of certain contingent consideration arrangements related to the acquisition. The firm did not sufficiently evaluate the probability assumptions for all three products and the reasonableness of the projected sales for two of these products because its procedures were limited to inquiring of management and reading general market information. (AS 2502.26 and .28) In addition, the firm did not perform any procedures to evaluate the reasonableness of the projected sales for the third product. (AS 2502.26 and .28)

Audits with a Single Deficiency

Issuer L – Industrials

Type of audit and related area affected

In our review, we identified a deficiency in the ICFR audit related to a **Business Combination**.

Description of the deficiency identified

During the year, the issuer acquired a business and determined the fair value of an acquired intangible asset based on a valuation model that used forecasted revenue and gross margin assumptions as inputs. The firm selected for testing a control that included the review of the reasonableness of these assumptions. The firm did not evaluate the specific review procedures that the control owner performed to assess the reasonableness of the forecasted revenue and gross margin assumptions. (AS 2201.42 and .44)

Issuer M – Utilities

Type of audit and related area affected

In our review, we identified a deficiency in the financial statement audit related to a **Long-Lived Asset**.

Description of the deficiency identified

The issuer performed an impairment analysis for an energy-producing asset using projected cash-flow scenarios that were based on possible changes to the revenue contract underlying this asset. The issuer weighted each cash-flow scenario to develop a probability-weighted estimate of the asset's undiscounted cash flows to evaluate whether the carrying value of the asset was recoverable. The firm did not perform procedures to obtain evidence about the reasonableness of the probability weighting assigned to each of the cash-flow scenarios. (AS 2501.11)

Issuer N – Information Technology

Type of audit and related area affected

In our review, we identified a deficiency in the financial statement audit related to **Inventory**.

Description of the deficiency identified

The issuer concluded that an excess and obsolete reserve for one of the issuer's products was not necessary based on potential sales opportunities with certain customers, despite a significant decline in sales in the year under audit and a forecasted further decline in sales for the following year. The firm did not evaluate the reasonableness of the issuer's assumption that it would achieve these potential sales opportunities, beyond inquiring of management and reading certain issuer-prepared marketing and sales information. (AS 2501.11)

Part I.B: Other Instances of Non-Compliance with PCAOB Standards or Rules

This section of our report discusses any deficiencies we identified that do not relate directly to the sufficiency or appropriateness of evidence the firm obtained to support its opinion(s) but nevertheless relate to instances of non-compliance with PCAOB standards or rules. When we review an audit, we do not review every aspect of the audit. As a result, the areas below were not reviewed on every audit inspected.

The deficiencies below are presented in numerical order based on the PCAOB standard or rule with which the firm did not comply. We identified the following deficiencies:

- In five of 28 audits reviewed where one or more other accounting firms participated in the firm's audit, the firm's report on Form AP either contained inaccurate information or omitted information related to the participation in the audit by certain other accounting firms that was required to be reported. In these instances, the firm was non-compliant with PCAOB Rule 3211, *Auditor Reporting of Certain Audit Participants*.
- In one of 12 audits reviewed, the firm did not make the required written communications to, and did not discuss with, the audit committee the potential effects of certain permissible tax services on the independence of the firm. In this instance, the firm was non-compliant with PCAOB Rule 3524, *Audit Committee Pre-approval of Certain Tax Services*.

Part II: Observations Related To Quality Control

Part II of our report discusses criticisms of, and potential defects in, the firm's system of quality control.

Deficiencies are included in Part II if an analysis of the inspection results, including the results of the reviews of individual audits, indicates that the firm's system of quality control does not provide reasonable assurance that firm personnel will comply with applicable professional standards and requirements. Generally, the report's description of quality control criticisms is based on observations from our inspection procedures.

Any changes or improvements to its system of quality control that the firm may have brought to the Board's attention may not be reflected in this report, but are taken into account during the Board's assessment of whether the firm has satisfactorily addressed the quality control criticisms or defects no later than 12 months after the issuance of this report.

Criticisms of, and potential defects in, the firm's system of quality control, to the extent any are identified, are nonpublic when the reports are issued. If a firm does not address to the Board's satisfaction any criticism of, or potential defect in, the firm's system of quality control within 12 months after the issuance of our report, any such deficiency will be made public.

Appendix A: Firm's Response to the Draft Inspection Report

Pursuant to section 104(f) of the Act, 15 U.S.C. § 7214(f), and PCAOB Rule 4007(a), the firm provided a written response to a draft of this report. Pursuant to section 104(f) of the Act and PCAOB Rule 4007(b), the firm's response, excluding any portion granted confidential treatment, is attached hereto and made part of this final inspection report.

The Board does not make public any of a firm's comments that address a nonpublic portion of the report unless a firm specifically requests otherwise. In some cases, the result may be that none of a firm's response is made publicly available.

In addition, pursuant to section 104(f) of the Act, 15 U.S.C. § 7214(f), and PCAOB Rule 4007(b), if a firm requests, and the Board grants, confidential treatment for any of the firm's comments on a draft report, the Board does not include those comments in the final report. The Board routinely grants confidential treatment, if requested, for any portion of a firm's response that addresses any point in the draft that the Board omits from, or any inaccurate statement in the draft that the Board corrects in, the final report.



April 2, 2020

Mr. George Botic, Director
Division of Registration and Inspections
Public Company Accounting Oversight Board
1666 K Street, N.W.
Washington, D.C. 20006

Re: Response to Draft Report on the 2018 Inspection of PricewaterhouseCoopers LLP

Dear Mr. Botic:

On behalf of PricewaterhouseCoopers LLP (the “Firm”), we are pleased to provide our response to the Public Company Accounting Oversight Board’s (“PCAOB” or the “Board”) Draft Report on the 2018 Inspection of our Firm’s 2017 audits (the “Report”). We recognize the inspection process provides a valuable opportunity to improve the quality of our audits. We continue to support the PCAOB in its mission and are committed to furthering the public interest through the preparation of informative, accurate and independent audit reports. We also commend the PCAOB on its efforts to reformat and redesign the 2018 inspection reports to improve the content and accessibility of the reports to stakeholders. We recognize the PCAOB intends to seek input on the changes made in 2018 reports and make further refinements in future years. We are supportive of these efforts and would be pleased to engage at any time in a dialogue to provide our perspectives on current or potential future changes.

Bringing value to the capital markets by consistently performing high-quality audits remains our top priority, including addressing the matters raised in the Report in a thorough and thoughtful way. We have evaluated each of the observations set forth in *Part I - Inspection Observations* of the Report and have taken appropriate actions under both PCAOB standards and our policies. Our evaluation included those steps we considered necessary to comply with AS 2901, *Consideration of Omitted Procedures After the Report Date*, and where applicable, AS 2905, *Subsequent Discovery of Facts Existing at the Date of the Auditor’s Report* and AS No. 2201, *An Audit of Internal Control Over Financial Reporting That Is Integrated With An Audit of Financial Statements*.

We appreciate that many of our stakeholders will review the PCAOB’s report and our response and have therefore included a link to both our 2019 audit quality report and our most recent February 2020 update – *Continuing our focus on audit quality* to encourage our stakeholders to learn more about the tangible steps we are taking to maintain and improve audit quality (<http://www.pwc.com/us/auditquality>). These steps include maintaining a sustained emphasis on our purpose and values that address integrity and independence. In addition, to deliver on our strategy to leverage our unique combination of people and technology we are utilizing transformative technologies while making significant investments to upskill our people, addressing both new digital skills and foundational ones, like critical thinking, skepticism and communication. Finally, our February 2020 update also addresses a number of actions we’ve taken to further strengthen our governance and enhance our independence processes.

PricewaterhouseCoopers LLP, PricewaterhouseCoopers Center, 300 Madison Avenue, New York, NY 10017
T: (646) 471 3000, F: (813) 286 6000, www.pwc.com/us



We look forward to continuing our dialogue with the PCAOB and would be pleased to discuss any aspects of this response or any other questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read "Tim Ryan".

Tim Ryan
US Chairman and Senior Partner
PricewaterhouseCoopers LLP

A handwritten signature in black ink, appearing to read "Mark D. Simon".

Mark D. Simon
US Assurance Managing Partner
PricewaterhouseCoopers LLP

