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The Dominance of non-CPA-verifiers as providers of ESG Assurance Opinions

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Dr. Louis P. Le Guyader has earned an AB in Biology from Princeton University, an MBA from The University of Virginia, and a Ph.D. from Columbia University. He is an active CPA registered in New York. He has coauthored books on accounting policy with senior partners of PWC's National Office and has been commissioned by the AICPA as a sole author to write a pamphlet explaining FAS123r, Shared Based Compensation. He has published numerous research articles in leading journals and has delivered many research presentations throughout the U.S.

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ABSTRACT

ESG reporting by public U.S. companies has increased steadily since first appearing in the 1990s. The inclusion of assurance reviews to verify all or a portion of those ESG reports has not kept pace. To explore this, we compiled a cross-sectional sample of assurance opinions within ESG reports published by S&P 500 companies dated in 2024. Thus far, ESG reporting by U.S. companies has been voluntary, except for certain reports required by the European Union. Except for the EU, assurance opinions are not required by any ESG reporting framework in use through this voluntary period. U.S. companies were free to claim that their ESG reports were prepared “in accordance” with a specified ESG framework or words to that effect. As a result, many ESG reports by U.S. companies are published without third-party verification. Third party verifiers fall into two groups: CPA-verifiers that are also independent PCAOB-registered auditors, and non-CPA-verifiers from other professions. GHG emissions disclosures are the principal topic supported by such verifications. Assurance opinions on other ESG topics, including social impact and governance issues, are rare. Currently, non-CPA-verifiers have a larger market share of U.S. assurance opinions than CPA-verifiers. Even if CPA-verifiers obtain most of the remaining verification work yet to be awarded, the established market niche held by non-CPA-verifiers should remain dominant and sustainable. We conclude that the non-CPA-verifiers’ market niche for ESG assurance opinions may now be unassailable to encroachment from CPA-verifiers.

MANUSCRIPT

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I. Introduction

In the U.S., ESG reporting remains voluntary as of 2024. No ESG reporting framework in use in the U.S. through 2024 requires external verification in the way that the annual financial statements of public U.S. companies must be certified by audit opinions. At the same time as ESG reporting has increased, the use of third-party assurance opinions has not kept pace.

The voluntary nature of ESG reporting and the lack of mandate for assurance opinions has facilitated the emergence of two groups of ESG assurance verifiers: (1) CPA firms registered with the PCAOB and issue audit opinions as well as assurance opinions; and (2) other expert verifiers who are neither CPA firms nor registered with the PCAOB and are not authorized to issue audit opinions even as they issue ESG assurance opinions. The second group of verifiers has established a larger foothold in the “ESG assurance service sector” than CPA firms. Third-party non-CPA verifiers have broken into the service monopoly for audit opinions on financial statements dominated by Big 4 audit firms (PWC, Deloitte, E&Y and KPMG). This surprising development is the central topic of this study. We also examine which group may have the stronger competitive position when ESG reporting with assurance opinions become required.

II. Background

The third-party verifier’s opinion identifies the guidelines used to perform the verification work. The verification work is known in accounting and ESG circles as “assurance reports.” The principal deliverable contained in any assurance report is an “assurance opinion.” Such

“opinions” take one of two forms: either a “limited” or a “reasonable” level of assurance. See Appendix A for an example of such an assurance opinion from APEX, a non-CPA independent verifier. To contrast this assurance opinion an assurance opinion from an independent PCAOB-registered CPA firm, see Appendix B for an assurance opinion from PWC.

When external verification is provided, the verifier asserts independence from the ESG reporting company. This assertion may be required by the assurance guideline that the verifier claims to follow, or their own internal policies. Whatever the reason, independence is a critical aspect of assurance opinions highlighted by the ESG reporting company and the verifier. The assurance opinion is often labelled “third party” to emphasize and advertise this point.

Audit opinions on financial statements verify compliance with identified accounting models such as US GAAP Accounting Standards Codification® (FASB 2025) and IFRS Accounting Standards Navigator (IFRS 2025a). Neither accounting model includes an ESG reporting framework. nor do they include instructions or requirements for the audit opinion on financial statements or the assurance opinion on ESG reports. ESG Assurance opinions do not necessarily verify compliance with an ESG reporting framework in the same way audit opinions verify compliance with financial accounting rules. When presented, assurance opinions must be flexible enough to function in tandem with any number of ESG reporting frameworks.

The most highly-used and reputable providers of ESG reporting guidelines from the mid-1990s to 2024 include GRI (the Global Reporting Initiative) (GRI 2025), SASB® (the Sustainability Accounting Standards Board) (SASB 2025), and the TCFD (Task Force on Climate Related Disclosures) (TCFD 2025) , among others. These providers are not-for-profit non-government

organizations (NGO) and have no legal or regulatory authority. They are ascribed legal authority only if their framework is adopted by a legal jurisdiction with authority over ESG reporting. The potential adoption provides the mechanism which gives the IFRS accounting model its legal authority, jurisdiction by jurisdiction.

Since the ESG NGO guidelines do not have the force of law, they amount to strong recommendations that have become globally recognized and accepted in practice. The new ISSB (the International Sustainability Standards Board) of the IASB (the International Accounting Standards Board) (IFRS 2025b) is under development for future adoption. The existing ESG reporting frameworks are, to varying degrees, being combined into a single ESG reporting framework under development by the ISSB. GRI appears to remain the most active independent NGO in this group. The SASB is visibly coordinated with the ISSB. The TCFD has announced that the organization is disbanding.

The reader with little familiarity with financial statement audit opinions could easily surmise that ESG assurance opinions amount to same kind of audit opinion used for financial statement reporting. This surmise is incorrect and bears examination to understand differences between the two groups that provide assurance opinions.

The assurance review is conducted using techniques agreed between the reviewer and management. Assurance review techniques can therefore cover a wide array of review techniques as compared with a financial audit using PCAOB rules. Assurance reviews are almost never meant to verify entire ESG reports unlike the focus of audit opinion on the entirety of financial statements.

The ESG review is normally conducted on a specified ESG topic. The disclosure of GHG emissions data is the principal topic supported by assurance reports. Assurance reports on other ESG topics, including social impact and governance issues, is rare. Assurance reports are not uniform across reporting companies in the way that audit opinions on financial statements are homogenous. We believe the lack of uniformity is due in part to the lack of regulation over ESG reporting. It is also attributable to the pervasive regulatory impact of the PCAOB over US GAAP reporting and auditing, and the associated third-party audit and internal control opinions.

A critical factor to consider is that CPA-verifiers and non-CPA-verifiers do not use different regulatory or industry guidelines for their assurance work. This implies that the two groups provide discernibly different products to ESG reporting companies and their stakeholders. This may impact how a company selects its ESG verifier.

III. RESEARCH

A. The data set

We compiled a cross-sectional sample of ESG reports published by S&P 500 companies with external or third-party assurance opinions dated in 2024. Beginning with the entire S&P 500 and using ESG reports published in 2024, we screened out companies who do not provide ESG reports. We then further screened out companies that publish ESG reports without assurance opinions. We finally screened out companies who asserted their ESG reports were supported by assurance opinions but could not document the assertion by failing to provide ESG reports or the identity of the third-party-verifiers.

About a one-third of U.S. companies do not provide obtainable assurance reports with their ESG reports. Our sample consists of 332 obtainable assurance reports signed in 2024 by an identifiable verifier – 66 percent (two-thirds) of the S&P 500.

We assigned assurance reports to one of the two groups: reports provided by non-CPA-verifiers and reports provided by CPA-verifiers. See Table 1.

Table 1 Sample Description – Third-Party Assurance Opinions Verifiers on GHG emissions disclosures in published 2024 ESG reports					
Assurance Opinion Verifiers	# of Verifiers with Complete Reports within ESG Reports				
	None	Non-CPA verifiers	CPA- verifiers	TOTAL	Percent
No Assurance Opinions Obtainable:	174	n/a	n/a	174	34.4%
Complete assurance opinions obtained from ESG reports					
1. Non-CPA-verifiers	n/a	243	n/a	243	48.0%
2. CPA-verifiers	n/a	n/a	89	89	17.6%
TOTAL	174	243	89	506	100.00%

B. Analysis

Our analysis of the industry sector for “assurance services” was conducted using the two observed groups: CPA-verifiers and non-CPA verifiers. We found the two sectors to be significantly different.

Of the over 1,600 PCAOB-registered audit firms (PCAOB 2025a), only 6 firms were found to offer ESG assurance opinions. The low number of providers signals the considerable degree concentration in an industry sector, the “assurance opinion service sector.” The CPA provider group was dominated by the BIG 4 accounting firms. As often happens the Big 4 group of accounting firms was adjusted to allow for Grant Thornton and BDO firms. Table 2 describes this grouping. Note that each of the BIG 4 list New York City as the center for their operations, while Grant Thornton and BDO list Chicago. Choosing New York City as the business policy

center for these firms allows each to associate themselves in proximity to the major market locations. There is no similar concentration of ESG activity or knowledge that would explain such a concentration.

Table 2
Sample Description: CPA verifiers

Identified CPA-verifiers (and their common identifying name) By Market Share Grouping	PCAOB Registration Number and Principal U.S. office (A)	# of Assurance Opinions	Percent of Total Identified Assurance Opinions
♦ ♦ Market Leader: PCAOB-registered CPA-verifier ♦♦			
(PWC) PricewaterhouseCoopers LLP	238 - NYC	27	8.1%
TIER ANALYSIS for MARKET GROUPING – CPA-verifiers			
1. First Tier: CPA-verifiers (more than 40 assurance opinions) --- NONE			
2. Second Tier: CPA-verifiers (20 or more but less than 40 assurance opinions)			
(PWC PricewaterhouseCoopers LLP	238 - NYC	27	8.1%
3. Third Tier: CPA-verifiers (10 or more but less than 20 assurance opinions)			
(EY) Ernst & Young Global Limited	42 - NYC	20	6.0%
(KPMG) Klynveld Peat Marwick Goerdeler	185 - NYC	19	5.7%
(Deloitte) Deloitte Touche Thomatsu Limited	34 - NYC	19	5.7%
4. Third Tier: All other PCAOB-registered CPA-verifiers (less than 10 assurance opinions)			
(Grant Thornton) Grant Thornton International Limited	248 - Chicago	3	0.9%
(BDO) BDO USA P.C.	243 - Chicago	1	0.3%
Subtotal		89	26.7%
(A) Obtained from the PCAOB registration tool Firm Summary (PCAOB 2025b). All CPA firms serving as third-party verifiers are also registered PCAOB auditors. None of the non-CPA-verifiers were found to be registered with the PCAOB nor appeared to be members of the AICPA.			

The non-CPA-verifier group was most noteworthy in having about 40 verifiers across the S&P 500 as compared with the 6 CPA firms observed. See Table 3. The tier structure within each group reflects a similar industry composition: (1) there is one firm with substantially more opinion activity than any other firm in both groups (PWC for the CPA-verifiers and APEX for the non-CPA verifiers) and (2) the fourth-tier group among CPA verifiers are almost negligible but concentrated in two firms, while the fourth-tier group for non-CPA verifiers represents a sizable

component of the group. The fourth tier non-CPA verifiers are responsible for a great fragmentation of verifiers, with many members of the group providing less than 5 opinions. While non-CPA verifiers may be less well known than the CPA verifiers, Table 4 is presented to improve the reader's familiarity with this sub-sector of the assurance service industry.

Table 3 Sample Description: Non-CPA-verifiers			
Non-CPA-verifiers By Market-Sharing Grouping	Type of Verification Firm (See also Table 3)	# of Assurance Opinions	Percent of Total Identified Assurance Opinions
♦♦ Market Leader: non-CPA-verifier ♦♦			
APEX	Engineering	> 60	20.6%
TIER ANALYSIS for MARKET GROUPING – non - CPA-verifiers			
1. First Tier: Non-CPA-verifiers (more than 40 assurance opinions)			
APEX	Engineering	>60	20.6%
2. Second Tier: Non-CPA-verifiers (20 or more but less than 40 assurance opinions)			
LRQA	Inspection and Certification firm; risk management	33	9.9%
ERM CVS	Independent provider of assurance, verification and certification services	32	9.6%
3. Third Tier: Non-CPA-verifiers (10 or more but less than 20 assurance opinions)			
DNV	Independent assurance and risk management	11	3.3%
Bureau Veritas	Testing, Inspection, and certification services	10	3.0%
4. Fourth Tier: Non-CPA-verifiers (less than 10 assurance opinions) - Various			
Subtotal	Various	243	73.2%

Table 4
Non – CPA – Verifiers Detailed Description

NAME		Founded	Description	Ownership	Primary Geographical Activity	Website
Primary	Detailed/ Alternative					
APEX	-	1988	Multidisciplinary consulting and engineering firm with expertise in ... environment, ... and assurance	Acquired by Morgan Stanley Capital Partners (MSCP) in 2023 from Sentinel Capital Providers	50 U.S. States	www.apexcos.com and www.apexassurance.net
LRQA	Lloyd's Register Quality Assurance	1985 Spinoff of Lloyd's Register, the first "ship classification society" founded in 1760	Leading global assurance Provider specializing in certification, inspection ... helping clients ... achieve sustainability.	Sold to Goldman Sachs asset Management in 2021.	More than 150 countries	www.lrqa.com
ERM CVS	Environmental Resources Management	1987 (legacy firms founded in the 1970s)	Multinational consultancy that provides environmental ... consulting services and sustainability related services	KKR acquired majority stake in 2021 with ERM partners retaining minority stakes	Global through London HQ	www.erm.com
DNV	-	1864	Maritime Classification company; a world leading certification body	Norwegian/German; DNV veritas and GL merged in 2013 Privately held	Global through HW in Europe	www.dnv.com
Bureau Veritas	-	1828	World leader in testing inspection and certification services	French company; 2007 IPO; Major shareholders: Free Float 63.94% Groupe Wendel 35.47%	Over 140 countries	www.groupbureau.veritas.com

CONCLUSION

By 2024, we find that nearly all S&P 500 companies publish some type of ESG report. But more than 1/3 of these companies fail to provide an external independent assurance opinion with those reports.

Notwithstanding this, the steady growth in ESG reporting spawned a new subsector in the "attestation services industry." In the ESG space, this sub-sector is dominated by non-CPA-verifiers. In most other assurance sectors, CPA firms dominate.

In the near term, CPA-verifiers may very well obtain most of the remaining ESG verification work to be awarded. Even with this shift towards CPA firms and away from other professional verification firms, the current industry sub-sector is unlikely to change.

Non-CPA verifiers appear more likely than not to maintain their dominance in this niche of the attestation services industry. We conclude that non-CPA-verifiers of ESG reports may hold a niche that is unassailable to encroachment from CPA verifiers.

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APPENDIX A

Assurance Opinion from APEX – a Non-CPA verifier

APPENDIX B:

Assurance Opinion from PwC – A CPA-verifier



Report of Independent Accountants

To the Board of Directors of NVIDIA Corporation

We have reviewed the accompanying management assertion of NVIDIA Corporation that the greenhouse gas (GHG) emissions metrics for the year ended January 29, 2023, in management's assertion are presented in accordance with the assessment criteria set forth in management's assertion. NVIDIA Corporation's management is responsible for its assertion and for the selection of the criteria, which management believes provide an objective basis for measuring and reporting on the GHG emissions metrics. Our responsibility is to express a conclusion on management's assertion based on our review.

Our review was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA) in AT-C section 105, *Concepts Common to All Attestation Engagements*, and AT-C section 210, *Review Engagements*. Those standards require that we plan and perform the review to obtain limited assurance about whether any material modifications should be made to management's assertion in order for it to be fairly stated. The procedures performed in a review vary in nature and timing from, and are substantially less in extent than, an examination, the objective of which is to obtain reasonable assurance about whether management's assertion is fairly stated in all material respects, in order to express an opinion. Accordingly, we do not issue such an opinion. Because of the limited nature of the engagement, the level of assurance obtained in a review is substantially lower than the assurance that would have been obtained had an examination been performed. We believe that the review evidence obtained is sufficient and appropriate to provide a reasonable basis for our conclusion.

We are required to be independent and to meet our other ethical responsibilities in accordance with relevant ethical requirements related to the engagement.

The firm applies the Statements on Quality Control Standards established by the AICPA and, accordingly, maintains a comprehensive system of quality control.

The procedures we performed were based on our professional judgment. In performing our review, we performed inquiries and analytical procedures, read relevant policies to understand terms related to relevant information about the GHG emissions metrics, performed tests of mathematical accuracy of computations on a sample basis, and reviewed supporting documentation in regard to the completeness and accuracy of the data comprising the GHG emissions metrics on a sample basis.

GHG emissions quantification is subject to significant inherent measurement uncertainty because of such things as GHG emissions factors that are used in mathematical models to calculate GHG emissions, and the inability of these models, due to incomplete scientific knowledge and other factors, to accurately measure under all circumstances the relationship between various inputs and the resultant GHG emissions. Environmental and energy use data used in GHG emissions calculations are subject to inherent limitations, given the nature and the methods used for measuring such data. The selection by management of different but acceptable measurement techniques could have resulted in materially different amounts or metrics being reported.

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As discussed in management's assertion, NVIDIA Corporation has estimated GHG emissions for certain emissions sources for which no primary usage data is available.

Based on our review, we are not aware of any material modifications that should be made to NVIDIA Corporation's management assertion in order for it to be fairly stated.

PricewaterhouseCoopers LLP

San Jose, California
May 5, 2023