

Is ChatGPT taking over technical accounting?

Not yet. Making progress.

Background

ChatGPT is a chatbot developed by OpenAI Inc. and launched in November 2022. OpenAI Inc. is headquartered in San Francisco, started as a non-for-profit business in 2015, transitioned to a for-profit status in 2019. Currently, ChatGPT is offered in two options: a) free plan; b) ChatGPT plus for \$20/month. Paid plan provides faster response, priority access to new features. Access is provided at openai.com/blog/chatgpt.

The chatbot or a chatterbot simulates interactive human conversation. It can also generate response to specific questions related to various specialized field of knowledge, including medical, legal, accounting and other fields. One of a more controversial use of ChatGPT was by students when doing their homework.

ChatGPT can be integrated into other software application through API for a fee quoted for 1 thousand of "tokens" (equivalent of ap. 4 characters).

Currently, ap. 49% of Open AI is owned by Microsoft, following reported \$ 10 billion investment in January 2023. Another 49 % is said to be owned by Andreessen Horowitz, Calif based VC firm.

The purpose of this publication is to assess ChatGPT ability to access and retrieve accounting information, answer specific technical accounting questions.

Analysis

Our review of ChatGPT capabilities was performed by asking specific accounting questions and analyzing provided answers. Our analysis of the answers was focused on their precision, accuracy and overall relevance. We divided our question in three categories:

- a) Access to authoritative guidance, other sources of accounting knowledge
- b) General accounting knowledge and definitions
- c) Practical questions, fact patterns

Questions asked, ChatGPT provided answers and proposed corrections are provided in **Appendix A**, Questions, Answers, Corrects.

Overall, we noted that ChatGPT provides accurate answers to practical question involving specific fact patterns, e.g., reporting of warrants attached to preferred stock. ChatGPT was also able to determine, in two examples, which cash redemption features embedded in a warrant would result in liability classification of a warrant and which would not. However, in one question involving determination of a lease commencement date, ChatGPT provided incorrect

answer. In another case, involving determination of functional currency of a foreign subsidiary, the bot did not provide the correct answer either.

We noted ChatGPT lack of ability to provide specific and accurate U.S. GAAP definitions such as definition of a derivative financial instrument. However, the bot was able to more or less accurately describe GAAP notion of a "common control".

We noted ChatGPT is seemingly unable to access open resources as such authoritative accounting guidance published at asc.fasb.org and accounting guide published by Big Four accounting firms.

We believe that whenever the bot was not able to provide an accurate and a completely accurate answer, the answer provided gave a good introductory understanding of a relevant subject matter. For example, even through the bot was not able to accurately describe when a reporting entity should adopt liquidation basis of accounting, it described the overall concept and general terms of its application.

We believe that the overall quality of ChatGPT answers can be described by the following extract from a recent publication in the New Yorker by Ted Chiang:

Think of ChatGPT as a blurry jpeg of all the text on the Web. It retains much of the information on the Web, in the same way that a jpeg retains much of the information of a higher-resolution image, but, if you're looking for an exact sequence of bits, you won't find it; all you will ever get is an approximation. But, because the approximation is presented in the form of grammatical text, which ChatGPT excels at creating, it's usually acceptable. You're still looking at a blurry jpeg, but the blurriness occurs in a way that doesn't make the picture as a whole look less sharp.

Overall, accuracy and precision of bot provided answers is as such that a professional accountant should not rely on them without performing additional research. Having said that, answers provided to some technical accounting questions were surprisingly accurate.

Microsoft has indicated that it will allow business to create their version of ChatGPT. We will see if any specific versions will be created to handle complicated GAAP and other specialized accounting questions.

Appendix A: Questions, Answers, Corrections

Access to authoritative guidance, other sources of accounting knowledge:

Q1: Can you provide exact wording of ASC 205-30-25-2?

ChatGPT answer (truncated): I'm sorry, but I do not have the exact wording of ASC 205-30-25-2. The Accounting Standards Codification (ASC) is maintained by the Financial Accounting Standards Board (FASB) and is only available for purchase through their website.

Corrections to ChatGPT answer: Basic access to ASC 205-30-25-2 and other parts of U.S. GAAP is provided for free at asc.fasb.org/Login. Professional access is provided for additional fee and include a number of features such as search and copy functions.

Q2: Can you find some guidance on lessee's accounting for lease deposits issued to lessors per PwC guide Leases?

ChatGPT answer (truncated): I'm sorry, but as a language model AI, I do not have access to specific firm's internal guidance or client work products. However, in general, lessees are required to account for lease deposits in accordance with generally accepted accounting principles (GAAP).

Corrections to ChatGPT answer: Refer to question LG 3-13 in PwC guide Leases available for public access at viewpoint.pwc.com/dt/us/en/pwc/accounting_guides/leases/leases__4_US/preface__12_US.html

Q3: Where on the balance sheet provided on the Form 10-K does Tesla Inc present right-of-use assets related to its finance leases?

ChatGPT answer (truncated) Right-of-use (ROU) assets related to finance leases are typically presented on the balance sheet of a company like Tesla, Inc. as lease assets or lease obligations. The exact location on the balance sheet will depend on the company's accounting policies and the format of its financial statements.

Corrections to ChatGPT answer: On the balance sheet as included in its most recent Form 10-K, Tesla Inc reported right-of-use assets related to finance leases as part of company's property, plant and equipment, net.

General accounting knowledge and definitions:

Q1: What are specific criteria for a financial instrument to be considered a derivative under U.S. GAAP?

ChatGPT answer (truncated): Under U.S. GAAP, a financial instrument is considered a derivative if it meets the following criteria:

- 1) It is a contract that requires no initial net investment, or the required investment is smaller than would be required for other types of contracts with a similar response to changes in market factors;
- 2) Its value changes in response to changes in an underlying variable, such as a commodity price, a rate, an index of prices or rates, or a financial instrument price;
- 3) It is settled at a future date;

In addition to these criteria, a financial instrument may also be considered a derivative if it is embedded in another contract and meets certain criteria to be considered a derivative.

Corrections to ChatGPT answer: Per ASC 815-10-15-83c a derivative instrument must meet "net settlement requirements" as further detailed in ASC 815-10-15-99 through 138. Per ASC 815-10-15-83a, a derivative contract should also have 1) one or more underlying and 2) one or more national amounts or payment provisions or both. Although some derivatives contracts are settled at a future date, future settlement is not a required characteristic of a derivative instrument.

Q2: When should a reporting entity adopt the liquidation basis of accounting under GAAP?

ChatGPT answer (truncated): Under U.S. GAAP, a reporting entity may adopt the liquidation basis of accounting in limited circumstances. The liquidation basis of accounting is used when a reporting entity is in the process of liquidating its operations and winding down its business.

Adoption of the liquidation basis of accounting is only appropriate if the reporting entity's management has determined that it is probable that the reporting entity will not continue as a going concern, and that it will be able to pay its obligations and distribute its assets in accordance with its liquidation plan.

Corrections to ChatGPT answer: Generally, an entity adopts liquidation basis of accounting when the liquidation is imminent (ASC 205-30-25-1). Liquidation is imminent when either of the following occurs: a) a plan for liquidation has been approved or b) a plan for liquidation is imposed by other forces (ASC 205-30-25-2). A reporting entity may also adopt a liquidation basis of accounting if a plan for liquidation was specified in the entity's governing documents at the entity's inception.

Q3 How does GAAP define transactions under common control?

ChatGPT answer (truncated): Under U.S. GAAP, transactions between entities under "common control" refer to transactions between entities that are controlled by the same person or group of persons. "Control" is defined as the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities.

Corrections to ChatGPT answer: The above answer is generally correct. Generally, common control exists when an individual or entity holds more than 50% of the voting ownership interest of each transacting entity (Emerging Issues Task Force, EITF 02-5).

Practical questions, fact patterns

Q1: A lessee signs a lease agreement on January 1, 2022, obtains card keys to access office space on January 15, 2022, occupies the office space on January 30, 2022 and makes first lease payment on the next day. When is the lease commencement date per GAAP?

ChatGPT answer (truncated): The lease commencement date according to Generally Accepted Accounting Principles (GAAP) is the date on which the lessee obtains the right to control the use of the underlying asset, which in this case is the office space.

Based on the information provided, the lessee signed the lease agreement on January 1, 2022, obtained the card keys to access the office space on January 15, 2022, and occupied the office space on January 30, 2022. Therefore, the lease commencement date according to GAAP would be January 30, 2022, when the lessee obtained the right to control the use of the office space.

Corrections to ChatGPT answer: the lease commencement date is January 15, 2022, i.e., the date on which a lessor makes an underlying asset available for use by a lessee. Note that ASC 842-10-20 defines Commencement Date of the Lease as the date on which a lessor makes an underlying asset available for use by a lessee.

Q2: A reporting entity issues an investor warrant to purchase a specified amount of its shares at a fixed price of \$ 10/share. The issuer is obligated to purchase the warrant for cash from the investors but only if a) issuer's market share prices is equal to or below \$5/share and b) the investor submits a request to purchase the warrant for cash. Should the reporting entity classify the warrant as a liability or equity instrument?

ChatGPT answer (truncated): According to GAAP, an investor warrant would be classified as a liability if the issuer is obligated to purchase the warrant for cash from the investor upon the occurrence of certain events (such as a market share price being equal to or below \$5/share, and the investor submitting a request to purchase the warrant for cash).

In this case, the issuer is obligated to purchase the warrant for cash if the conditions specified in the warrant are met, so it would be considered a liability. This is because the issuer has an

unconditional obligation to purchase the warrant and settle the liability in cash, which gives rise to a present obligation.

Corrections to ChatGPT answer: The above answer is generally correct. If the event or circumstance that can trigger a net cash settlement is not solely within the entity's control, the contract is classified as an asset or a liability (ASC 815-40-25-8).

Q3: A reporting entity issues an investor warrant to purchase a specified amount of its shares at a fixed price of \$ 10/share. The issuer is obligated to purchase the warrant from the investor for cash but only in the event of a change in the issuer's business strategy. Should the reporting entity classify the warrant as a liability or equity instrument?

ChatGPT answer (truncated): According to GAAP, an investor warrant would be classified as an equity instrument if the issuer is obligated to purchase the warrant from the investor only in the event of a change in the issuer's business strategy. This is because the issuer's obligation to purchase the warrant is contingent upon the occurrence of a specific event, which in this case is a change in the issuer's business strategy.

In this case, the issuer has a conditional obligation to purchase the warrant and settle the liability in cash, which does not give rise to a present obligation. As a result, the warrant would be considered an equity instrument and would not be recorded as a liability on the issuer's balance sheet.

Corrections to ChatGPT answer: The above answer is generally correct. If cash settlement can be triggered only by the event that is solely within the reporting entity's control, such a net cash settlement provision does not preclude equity classification (ASC 815-40-25-8).

Q4: A reporting entity sells to investors preferred stock for \$9/share. As part of the stock transfer deal, a reporting entity also transfers to investors warrants to purchase additional preferred stock at a fixed price of \$10/share. According to terms of the deal, investors are allowed to sell the warrants at any time. Should a reporting entity account for the warrants separately from the preferred stock?

ChatGPT answer (truncated): Yes, according to GAAP, the reporting entity should account for the warrants separately from the preferred stock. This is because the warrants are considered a separate financial instrument from the preferred stock and have different terms and characteristics, such as the right to purchase additional preferred stock at a fixed price.

Corrections to ChatGPT answer: The above answer is generally correct. "Detachable" warrants are considered freestanding financial instruments per ASC 815-10, *Glossary*. Therefore, such warrants will have to be accounted for separately from preferred stock.

Q5: Company A is located in Mexico and is a wholly-owned subsidiary of Company B located in the USA. Company A markets and sells products produced by Company B to Mexican customers in Mexican Pesos. The products are manufacturing by Company B in the USA. Company A has limited HR and financial reporting functions as most of these functions are performed by Company B. Functional currency of Company's B is US dollars. What is functional currency of Company A?

ChatGPT answer (truncated): The functional currency of Company A is Mexican Pesos, as this is the currency in which the company primarily generates and expends cash. Company A operates in Mexico and sells products to Mexican customers in Mexican Pesos, which means that the majority of its transactions and cash flows are denominated in Mexican Pesos.

Corrections to ChatGPT answer: Operations that are not managed independently or cannot be separated operationally or for financial reporting purpose, from parent's other operations are not considered distinct and separable (ASC 830-10-55-6). Mexican sales office would not be considered distinct and separable, but would instead be considered an extension of its most immediate parent. Therefore, the functional currency of Company A is likely to be U.S dollars, i.e., the functional currency of the parent (ASC 830-10-45-4b).

FINACCO CONTACTS:

Nick Larchenko, Managing Partner

646.713.4764 / nick.larchenko@finacco.org

Polina Leudanskaya, Director- Accounting Advisory

polina.leuda@finacco.org

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