



ChatGPT Easily Passed My Finance Exam What Should We Do About It?

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Introduction and Conclusion

ChatGPT, OpenAI's new chat bot, has caused lots of fanfare since its introduction to the public in November 2022. Within the first two months of its launch ChatGPT has more than 100 million users and has more than 13 million daily visitors.

I have encouraged my students to register and use ChatGPT. Since it is based on large language models, ChatGPT can write quality essays on sorts of topics within a few seconds. This amazing capability has raised red flags in some quarters of higher education.

In this project, I challenged ChatGPT to see how well it could do in my finance exam. The exam in question is the midterm exam I just gave in my FIN525/International Financial Management class. FIN525 is an introductory course about international financial management with special emphasis on multinational enterprises (MNEs). A MNE is defined broadly as one that is incorporated in one country, but has operating subsidiaries, branches or affiliates located in other countries. Today, almost all large companies are MNEs. The main topics covered in this course include the international monetary system, foreign trade, foreign direct investment, balance of payments, foreign exchange market, exchange rate determination, currency risk management, and global debt and equity financing.

It is already known that ChatGPT excels in writing essays. Since this is a finance course, the exam does not have this component. The exam consists of three types of questions: 1) multiple-choice questions, 2) special terminologies used in international finance, and 3) basic calculations with short answers.

The questions, correct answers, and answers by ChatGPT are presented on the right. Out of the 20 multiple-choice questions, ChatGPT got 16 correctly.

For the ten acronyms related to international finance, ChatGPT got all correctly. This should be the easiest job for a chat bot like ChatGPT.

Problem III is related to a well-known phenomenon in international finance: the impossible trinity or trilemma. The trilemma says that out of the three characteristics regarding exchange rates, a country can only choose two, regardless of what currency regime it adopts. ChatGPT did extremely well in the problem.

Problem IV involves some basic calculations regarding exchange rates. ChatGPT got it completely wrong in Q1. After given a second chance, it erred again. In Q2 ChatGPT got the correct answer at the second attempt.

ChatGPT did very well in Problem V, which is about changes in exchange rates over time. In Problem VI, ChatGPT got the calculations incorrectly. Its answer to Q2, on the other hand, was more than satisfactory.

Problem VII involves a one-time change in exchange rates. ChatGPT messed up with the calculations, but provided a perfect answer to Q2.

Overall, ChatGPT scored 85 out of 100. The grade is somewhere between B and B+. It excelled in short answers and most of the multiple-choice questions. However, it did very poorly in problem-solving questions.

What should we do about ChatGPT in teaching and learning? This issue is too complicated to be addressed here, and I don't have the answers to this important and urgent question.

How to Use ChatGPT

To use ChatGPT, one has to register first. The basic version is free, but ChatGPT Plus is not. I used the basic version in this exercise. Once logged on the interface looks like this. You can type your question in the dialogue box and then submit. The chat bot will give you the answer almost instantly.

ChatGPT

Examples	Capabilities	Limitations
"Explain quantum computing in simple terms" --	Remembers what user said earlier in the conversation	May occasionally generate incorrect information
"Got any creative ideas for a 10 year old's birthday?" --	Allows user to provide follow-up corrections	May occasionally produce harmful instructions or biased content
"How do I make an HTTP request in Javascript?" --	Trained to decline inappropriate requests	Limited knowledge of world and events after 2021

Write your question right here

I. 20 Multiple-Choice Questions (20 x 2 = 40 points)

N	Question	Correct choice	Choice by ChatGPT
1	The phase of the globalization process characterized by imports from foreign suppliers and exports to foreign buyers is called the A) Domestic phase B) Multinational phase C) International trade phase D) Import-export banking phase	C	C
2	Which European country below does not use the euro as its official currency? A) Germany B) Spain C) Greece D) Britain	D	D
3	Under a fixed exchange rate regime, the government of the country is officially responsible for A) Intervention in the foreign exchange markets using gold and reserves B) Settling the fixed/parity exchange rate C) Maintaining the fixed/parity exchange rate D) All of the above.	D	D
4	Which of the following is NOT an attribute of the "ideal" currency? A) Monetary independence B) Full financial integration C) Exchange rate stability D) All are attributes of an ideal currency	D	B
5	Other things being equal, which of the following exchange rate will benefit a U.S. multinational enterprise that sells its products in Japan? A) ¥130/\$ B) ¥120/\$ C) ¥110/\$ D) They are all the same	C	A
6	Before July 2005, the Chinese RMB was officially valued at a rate of RMB8.28 per US\$. More recently the exchange rate is RMB 6.30 per US\$. Thus, the Chinese RMB has _____ against the U.S. dollar. A) Strengthened B) Weakened C) Remained neutral D) All of the above.	A	A
7	Which of these factors may differ for management of a domestic firm vs. a multinational firm? A) Culture B) Corporate governance C) Political risk D) All of the above may differ.	D	D
8	The HK dollar vs. the US dollar can be best described as _____. A) fixed using Currency Board B) free floating C) none of the choices D) managed float	A	A
9	The post-WWII international monetary agreement that was developed in 1944 is known as the A) Bank for International Settlement B) Gold Standard C) Floating Rate Regime D) Bretton Woods Agreement	D	D
10	The International Monetary Fund (IMF) _____. A) uses the Special Drawing Right (SDR) as its unit of account B) was created as a result of the Bretton Woods Agreement C) aids countries with balance of payment and exchange rate problems; D) All of the above are correct choices.	D	D
11	An international gold standard for currency exchanges has the implicit effect of _____. A) Making currencies float relative to the price of gold B) Limiting the growth of a country's money supply subject to the ability of the official authorities to obtain more gold C) Melting the polar ice caps D) Encouraging the United Kingdom to abandon the Pound Sterling in favor of the Euro.	B	B
12	Which of the following is a way in which the euro affects markets? A) Countries within the Euro zone enjoy cheaper transaction costs. B) Currency risks and costs related to exchange rate uncertainty are reduced. C) Consumers and business enjoy price transparency and increased price-based competition. D) All of the above.	D	D
13	Other things constant, a weak U.S. dollar is normally expected to _____. A) promote exports and discourage imports B) promote both exports and imports C) discourage both exports and imports D) discourage exports and promote imports	A	A
14	The balance of payments may be defined as _____. A) The amount still owed by an exporting firm after making an initial down payment B) The amount still owed by governments to the International Monetary Fund C) The measurement of all international economic transactions between the residents of a country and foreign residents D) The amount of a country's merchandise trade deficit or surplus.	C	C
15	Jane is planning to take a vacation trip to Mexico following her graduation from college. Her parents have given her a \$2000 graduation present. If the current exchange rate is Ps20 per US\$, how many pesos (Ps) will Jane have to enjoy her vacation in Mexico? A) Ps 100 B) Ps 2,000 C) Ps 20,000 D) Ps 40,000	D	D
16	Which statement is true about arbitrage? A) Arbitrage involves no risk. B) Arbitrage means guaranteed profit. C) Arbitrage opportunities are not expected to exist in competitive financial markets D) All of the above are true.	D	C
17	Which of the following is NOT a part of the Current Account of the Balance of Payments? A) Net export/import of goods B) Balance of Trade C) Net portfolio investment D) Net export/import of services	C	C
18	Suppose a currency dealer quotes the following spot rates: Bid rate: \$1.550/£ Offer rate: \$1.560/£ As a client, if you are to buy £1,000,000 from the dealer you will have to pay A) \$1,550,000 B) \$1,560,000 C) \$645,161 D) \$641,026	B	B
19	Which of the following is NOT an item to be considered in BOP calculations for the United States? A) A foreign investor purchases U.S. Treasury bills. B) A U.S. firm manages the development of an oil field in Iraq. C) A U.S. consumer buys a Samsung cell phone made in Korea from a local Wal-Mart store. D) A U.S. citizen living in Connecticut travels to Canada and buys a case of LaBatt's Canadian beer.	C	D
20	Which of the following is the best definition of money laundering? A) Legal transfer of funds through the usual international payments mechanisms; B) The transfer of cash into collectibles that are then transferred across borders; C) The cross-border purchase of assets that are then managed in a way that hide the movement of money and its ownership. D) False invoicing of international trade transactions.	C	C

II. Write down the full names of the following acronyms related to international finance (10 x 1 = points)

N	Acronym	Correct Name	Answers by ChatGPT
1	IMF	International Monetary Fund	International Monetary Fund
2	SDR	Special Drawing Right	Special Drawing Right
3	Libor	London Interbank Offer Rate	London Interbank Offer Rate
4	MNE	Multinational Enterprise	Multinational Enterprise
5	ADR	American Depositary Receipt	American Depositary Receipt
6	CNY	Chinese Yuan	Chinese Yuan
7	BIS	Bank for International Settlements	Bank for International Settlements
8	BOP	Balance of Payments	Balance of Payments
9	FDI	Foreign Direct Investment	Foreign Direct Investment
10	GBP	Great British Pound	Great British Pound

III. (10 points) The Impossible Trinity

Q	Correct answers	ChatGPT's answers	Points
Q1 (5 points): What are the three desirable features of a currency regime in the context of the impossible trinity?	1. Exchange rate stability 2. High capital mobility across borders 3. Independence of monetary policy	The three desirable features of a currency regime in the context of the impossible trinity are: 1. Fixed exchange rates 2. Capital mobility 3. Monetary policy autonomy (Note: the answer is shortened for brevity)	5 points
Q2 (5 points): Use the Hong Kong dollar, which has been fixed under Currency Board since 1983, to illustrate the concept of the Impossible Trinity. In other words, which two features are achieved and which one is not for Hong Kong?	The HK dollar has been fixed under the Currency Board by the Hong Kong Monetary Authority. As such, the HK dollar has 1) exchange rate stability and 2) high capital mobility. But the Hong Kong Monetary Authority does not have monetary policy independence.	In the case of Hong Kong, it has achieved the first two features: free capital movement and a fixed exchange rate. However, Hong Kong has given up its independent monetary policy. (Note: the answer is shortened for brevity)	5 points

IV (10 points) Basic calculations regarding exchange rates.

Q	Correct answers	ChatGPT's answers	Points
Q1 (5 points): Citibank has the following quotes: \$1.10/€ and ¥125/\$. Please calculate the exchange rate between ¥ and €.	The cross rate between ¥ and € is \$1.10/€ x ¥125/\$ = ¥137.5/€ That is, one euro buys 137.5 yen.	ChatGPT's answers are not reported here to save space. It completely messed up here. I gave it a second chance by resubmitting the question. ChatGPT was stubborn and gave the same incorrect answer. 3 points were awarded for the efforts.	3 points for efforts
Q2 (5 points): Prior to World War I, US\$20.67 were needed to buy one ounce of gold. At the same time, one ounce of gold could be purchased in Britain for £4.2474. What was the exchange rate between the British pound and U.S. dollar?	The exchange rate between the British pound and U.S. dollar is calculated as below: US\$20.67/£4.2474 = US\$4.8665/£ Or £4.2474/US\$20.67 = £0.2055/US\$	ChatGPT's answers are not reported here to save space. Again, it completely messed up at the first attempt. I gave it a second chance by resubmitting the question. It got the correct answer at the second attempt. I gave 4 points out of generosity and encouragement.	4 points

V. (10 points) Changes in exchange rates

Before the Brexit referendum result was announced in June 2016, the pound sterling was trading at \$1.50/£. Today, the exchange rate is \$1.30/£. Please answer the following two questions:

Q	Correct answers	ChatGPT's answers	Points
Q1 (5 points): Has the pound sterling appreciated or depreciated against the dollar during this period of time?	The pound has depreciated against the dollar since Brexit.	The pound sterling has depreciated against the dollar during this period of time.	5 points
Q2 (5 points): Please calculate the percentage change for the pound sterling with respect to the dollar.	The percentage change for the pound sterling with respect to the dollar is (1.30-1.50)/1.50 = -13.33%	Percentage change = (1.30 - 1.50) / 1.50 x 100% Percentage change = (-0.20 / 1.50) x 100% Percentage change = -0.1333 x 100% Percentage change = -13.33%	5 points

VI. (10 points) Suppose we have the following BOP data for the US.

Current Account Balance: -\$880 billion; Capital Account Balance: -\$5 billion
Financial Account Balance: \$780 billion; Changes in Official Reserves: -\$20 billion
Please answer the following two questions.

Q	Correct answers	ChatGPT's answers	Points
Q1 (5 points): How much is net errors and omissions (also known as statistical discrepancy) for 2022?	By definition of E&O, -880 - 5 + 780 - 20 + E&O = 0 E&O = 125	The formula for calculating net errors and omissions (NEO) is: NEO = Current Account Balance + Capital Account Balance + Financial Account Balance + Changes in Official Reserves Plugging in the given values, we get: NEO = -\$880 billion - \$5 billion + \$780 billion - (-\$20 billion) NEO = -\$880 billion - \$5 billion + \$780 billion + \$20 billion NEO = -\$85 billion Therefore, the net errors and omissions (statistical discrepancy) is -\$85 billion.	3 points Partially correct.
Q2 (5 points): Why do countries need to keep official reserves?	Countries keep official reserves mainly to maintain the stability of their currencies and of their financial system.	Countries keep official reserves for several reasons, including: To maintain confidence in their currency To support international trade To support their financial system To provide a safety net	5 points

VII. (10 points) One-time change in exchange rates under fixed rate regime

In December 1994, the government of Mexico officially changed the value of the Mexican peso from 3.2 pesos per dollar to 5.5 pesos per dollar. Please answer the following two questions.

Q	Correct answers	ChatGPT's answers	Points
Q1 (5 points): What was the percentage change in the value of the Mexican peso against the dollar? Please show calculation process.	The percentage change for the peso is (3.2 - 5.5)/5.5 = -41.8%	To calculate the percentage change in the value of the Mexican peso against the dollar, we need to use the following formula: Percentage change = (New value - Old value) / Old value x 100% In this case, the old value is 3.2 pesos per dollar, and the new value is 5.5 pesos per dollar. Using the formula above, we get: Percentage change = (5.5 - 3.2) / 3.2 x 100% Percentage change = 2.3 / 3.2 x 100% Percentage change = 71.88% Therefore, the percentage change in the value of the Mexican peso against the dollar was an appreciation of approximately 71.88%.	3 points for the efforts
Q2 (5 points): Was this change a depreciation, devaluation, appreciation, or revaluation? Explain.	The Mexican peso is devalued by 41.88%.	This change was a devaluation of the Mexican peso. A devaluation refers to a deliberate lowering of the value of a country's currency relative to another currency or a basket of currencies. In this case, the Mexican government changed the exchange rate of the peso to the U.S. dollar from 3.2 pesos per dollar to 5.5 pesos per dollar, which means that it now took more pesos to buy a dollar. This was a deliberate policy decision made by the Mexican government in order to boost exports and improve its balance of trade.	5 points