

Article

ChatGPT, Help! I Am in Financial Trouble

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Abstract: This study examines the capability of ChatGPT to provide financial advice based on personal finance cases. We first write our own cases and feed them to ChatGPT to get its advice (recommendations) on them. Next, we assess the quality and the validity of ChatGPT's recommendations on these cases. We find that ChatGPT serves as a suitable starting point, but its recommendations tend to be generic, and they often overlook alternative solutions and viewpoints and priority of recommendations. Overall, our analysis demonstrates the strengths and weaknesses of using ChatGPT in personal finance matters. Further, it serves as a helpful guide to financial advisors, households, and instructors of personal finance who are already using or considering using ChatGPT and want to develop a suitable understanding of the benefits and limitations of this new technology in addressing their professional and personal needs.

Keywords: ChatGPT; artificial intelligence (AI); machine learning; personal finance; financial advisors; financial planning; finance pedagogy



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1. Introduction

American households are facing major financial challenges. According to a survey conducted by Northwestern Mutual ([Northwestern Mutual 2024](#)), Americans desire approximately USD 1.5 million in savings to have a comfortable retirement; however, the average retirement savings are below USD 90,000 in 2024. The same survey also shows that the percentage of Americans who consider themselves “disciplined financial planners” is 45% in 2024, down from 65% in 2020, and one-third of Americans express that they suffer from financial insecurity (the highest percentage since 2012). Another report shows that more and more Americans dip into their retirement savings by taking out hardship withdrawals to pay for emergencies ([Tergesen 2024](#)). Furthermore, only 44% of Americans are in a financial position to pay for a USD 1000 emergency out of their savings ([Bankrate 2024](#)). In addition to financial insecurity, financial literacy is also a major challenge in the U.S. According to a report by the TIAA Institute ([TIAA 2023](#)), the average financial literacy score is 48% in the U.S. The same report also presents compelling data linking financial literacy to financial well-being. For example, the percentage of adults who can handle one-month living expenses out of their savings is 25% among those with insufficient financial literacy and 86% among those with sufficient financial literacy. All these statistics point to the same thing: it is very important for the public to be more educated about finance and to be more active in seeking financial advice.

This paper examines the capability of ChatGPT 3.5 (and generative Artificial Intelligence (AI) in general) to be used in personal finance.¹ By analyzing ChatGPT's capability in giving financial advice, our objective in this study is to be a resource and guide for financial advisors, households, and instructors of personal finance courses who are either using AI or considering using it for their professional and personal needs. We first provide ChatGPT

with carefully and comprehensively constructed stand-alone mini cases (21 in total) and then assess the quality and validity of its recommendations (i.e., its financial advice) to hypothetical individuals in our cases.² The idea of using ChatGPT in personal finance (broadly speaking in personal financial planning) is not new, and it is gaining momentum (Pinto 2023). According to a survey (Caporal 2023), the percentage of Americans who used ChatGPT to inquire about various financial products and services, such as credit cards and personal loans, is 54%, and this percentage is over 80% for those in the high-income bracket. Furthermore, the same survey also reveals that 76% of Americans show interest in using ChatGPT for financial matters beyond recommendations on financial products and services. Americans are also turning to ChatGPT for investment advice: the percentage of Americans who use ChatGPT for investment advice is 47%, and this percentage is 53% for the members of Gen Z (Rao 2023).

The popularity and the potential of ChatGPT have led to a debate right now on whether ChatGPT will replace financial advisors and whether financial advisors will adopt a hybrid approach, harnessing the capabilities of AI in their decision making, similar to the pilot and autopilot relationship (Benartzi 2023; Perhach 2023; Lamas 2023; Rubin 2024). Financial advisors are already taking notice. According to a survey of financial advisors by SmartAsset, 27% of them are incorporating or exploring the capabilities of ChatGPT. The survey also revealed that an additional 30% of financial advisors want to explore ChatGPT (Odeniran 2023). The survey results are consistent with the recent push to support financial advisors with AI-powered tools on Wall Street (Son 2023).

We find that ChatGPT provides helpful recommendations. However, these recommendations tend to be generic. ChatGPT performs adequately in answering explicit questions but not so much for implicit questions. It does not think outside the box, and it does not bring up alternative viewpoints or solutions. Also, the chatbot does not have a holistic approach. It instead provides solutions to every problem without having a holistic view and without setting clear priorities for advice seekers. Though our main focus is not testing the accuracy of financial calculations performed by ChatGPT, in two cases where we ask ChatGPT to perform basic retirement calculations, we observe that its solutions contain errors, making them unreliable.

Despite its limitations, we believe that ChatGPT (and generative AI in general) could be a useful tool for financial advisors, households, and instructors of personal finance courses and that our cases and analyses provide a helpful guideline for these groups in using ChatGPT for their personal and professional needs. For example, financial advisors may examine the responses from ChatGPT and our analyses of them and then form an opinion on what areas they can deploy ChatGPT comfortably and on what areas they may need to exercise caution when it comes to giving advice to clients. However, financial advisors may want to be mindful of legal and compliance issues. Furthermore, there is a risk of anchoring bias in that recommendations from ChatGPT may set the stage for the client–advisor relationship, potentially causing financial advisors to overlook issues or solutions that are not brought up by ChatGPT. To mitigate this risk, financial advisors can perform their own assessment first and then use ChatGPT to improve their assessment and recommendations.

Households can also benefit from ChatGPT as a first stop for their financial questions. Armed with the knowledge from this paper on the strengths and weaknesses of ChatGPT in giving financial advice, households could find it beneficial to use ChatGPT first and then go to a competent financial advisor to obtain more specific details on how to make things work. ChatGPT can provide the client and the advisor with a framework to uncover and explore specific needs and recommendations. Our analysis indicates that ChatGPT may have a positive impact on financial literacy since it can point out financial mistakes and offer general recommendations, as echoed by Rekenenthaler (2023), and thus could enhance household financial well-being (TIAA 2023). It is important that households using ChatGPT be cognizant of the fact that ChatGPT may miss important suggestions and may ignore key considerations such as legal and tax issues.

Instructors of personal finance courses can also benefit from incorporating ChatGPT into their curriculum. For example, they can first ask their students to come up with recommendations on personal finance cases and then compare their own recommendations to those from ChatGPT. Personal finance education is very important, and its importance is now being recognized at the high school level. For example, the percentage of high school students who are required to take a personal finance class stands at 72% (Hughes 2024), and high school personal finance classes have a positive impact on the financial well-being of the youth (Urban et al. 2020). However, an important issue has arisen: some teachers do not have the training and background to teach these subjects (Hughes 2024). Teachers at all levels can use the cases, responses from ChatGPT to them, and our analyses in this paper to enhance the content of their courses. As a result, we believe that our study addresses a need in our school system. To summarize, we believe that ChatGPT can serve as a starting point in giving and finding financial advice, but its recommendations should be carefully scrutinized and assessed.

To the best of our knowledge, this study is the first to lay out stand-alone personal finance cases covering a wide range of topics, run them through ChatGPT, and provide an assessment of the response from ChatGPT on each case. Furthermore, it contributes to the literature on household finance and financial technologies (Fintech) by examining the quality and validity of recommendations from ChatGPT on personal finance issues (see Liu et al. (2024) for an extensive review of the Fintech literature). Niszczoła and Abbas (2023) examine if ChatGPT is financially literate by feeding financial literacy questions to the bot. They find that ChatGPT is financially literate, achieving near-perfect scores in its later versions. The authors also provide an example of ChatGPT giving financial advice in the face of “cash windfall”. However, they do not develop cases like we do and assess them. They also assert the following for ChatGPT: “[p]erformance can be further improved after fine-tuning by certified professionals, e.g., investment fund managers, CFAs, or PhDs in finance” (p. 4). Our approach is in line with this suggestion from the authors. Oehler and Horn (2024) construct profiles for three hypothetical investors with varying degrees of risk aversion and loss tolerance and test the suitability of portfolio recommendations from ChatGPT and 17 robo-advisors. They find that ChatGPT offers suitable portfolios for these investors, and it performs better in this task than the majority of the robo-advisors examined. Our approach differs from that of Oehler and Horn (2024) in that we focus on the quality and validity of recommendations from ChatGPT instead of comparing ChatGPT to robo-advising. Pelster and Val (2024) examine if ChatGPT can be used in picking stocks. They find that ChatGPT has the ability to predict stock returns. Ko and Lee (2024) show that ChatGPT can help with setting up diversified portfolios. Ma et al. (2024) demonstrate that ChatGPT also has the ability to forecast equity risk premiums. Research also shows that ChatGPT suffers from some of the same behavioral biases that humans do, such as confirmation and overconfidence biases (Chen et al. 2023). Our paper is also related to that of Dowling and Lucey (2023), who investigate the capabilities of ChatGPT in coming up with research ideas and developing research papers.

The rest of this paper proceeds as follows. In Section 2, we use ChatGPT to come up with recommendations for our cases, and we provide our assessment of each case. In Section 3, we first provide a comprehensive discussion of the recommendations generated by ChatGPT and then conclude the paper.

2. Assessment of Individual Cases

In this part of our study, we first write brief stand-alone cases. Next, we feed each case to ChatGPT to get its recommendations. Each case is self-contained in that it includes the case itself as well as the ChatGPT prompt. In the final step, we provide an assessment of ChatGPT’s response for each case. We present all these three components (case descriptions, recommendations, and assessment) case by case. We provide the responses from ChatGPT verbatim in this study.³ We also present the brief summaries of the cases and our assessment of ChatGPT’s responses in Table 1.

Table 1. Summary of case analyses.

Case Title	Summary	Categories	Human Assessment
1. James' Financial Troubles	James is mired in financial mistakes and troubles such as unpaid medical bills and not fully taking advantage of his retirement benefits.	Financial mistakes; debt management; saving for retirement	ChatGPT makes helpful suggestions, but it lacks an integrative approach, and it does not offer prioritization.
2. Sports Gambling and Winning the Lottery	Mark piles up a massive amount of debt from sports betting, and plays the lottery for a chance to turn his situation around.	Debt management; gambling; cash windfall	ChatGPT ignores the tax consequences of the cash windfall and the rent-free housing that he has.
3. Living the Good Life	The Smith family lives for the moment, spending what they earn to enjoy life without so much of a worry for their future.	Financial discipline; saving for college; saving for retirement	ChatGPT overlooks the existing as well as potential financial liabilities for the Smith family. It also does not bring up important topics such as life insurance.
4. A Deadly Virus Wiping Out a Family's Savings	A deadly virus creates panic and hits the stock market, and wipes out most of a family's savings.	Systematic risk; saving for retirement; asset allocation; risk management	ChatGPT does not offer risk management advice, and it does not understand the nature of the investment losses (caused by an unforeseen disease, not reckless investment choices).
5. Young Couple and Their Good Fortune	A young couple finds \$500,000 and jewelry in a house they bought, and makes investment decisions using this money.	Cash windfall; emergency savings; index funds; alternative investments	ChatGPT ignores potential legal issues that the couple may face after taking ownership of the cash windfall (as well as jewelry).
6. 90-Year-Old Grandpa Getting Rich with Options Trading	Ken, a 20-year old grandson, tries to help his grandfather grow his savings by selling naked call options.	Risk tolerance; risk capacity; saving for retirement	ChatGPT under-emphasizes ethical and personal issues arising from Ken's reckless trading strategy.
7. Hardworking Salesman Embezzles	Hank, a hardworking salesman under pressure to care for a child with a rare medical condition, embezzles money from his company and its clients so that he could save for retirement.	Fraud; saving for retirement	ChatGPT understands the illegal act done by Hank, but underestimates his legal troubles.
8. Getting the Right Kind of Mortgage	A young couple shops for a house and a mortgage, and all they could find is an adjustable rate mortgage at a time when rates are expected to rise.	Buying a home; mortgage options	ChatGPT gives unclear and vague advice to the couple. It also does not offer alternative solutions to their problems.
9. Insurance Needs	Sally, a sole-income provider in her family, is buried under significant financial and family responsibilities, and she wants to identify what insurance products she needs in case she dies unexpectedly.	Saving for retirement; saving for college; caring for elderly parents; insurance products	ChatGPT offers helpful advice but ignores additional insurance products such as disability insurance and medigap insurance.
10. Unexpected Diagnosis and Hardship Withdrawal	Howard, a financially-prudent young college graduate, burns through all of his savings to pay for the medical expenses related to an unexpected cancer diagnosis.	Emergency savings; saving for retirement; health shocks	ChatGPT lacks compassion and empathy and offers generic recommendations without considering the unique and unfortunate situation that Howard is in.
11. Gambling as Last Resort	Emily, a widow crushed under a massive amount of financial obligations that her deceased husband hid from her, gambles away all her emergency savings in a casino to find the money to pay off her debt.	Debt management; financial stress; gambling	ChatGPT ignores tax consequences and potential ongoing liabilities. It also does not prioritize which obligations should be paid first.

Table 1. Cont.

Case Title	Summary	Categories	Human Assessment
12. Estate Planning	Sarah, a widow with substantial wealth, wants to set up a trust fund for her grandchildren with stipulations.	Estate planning	ChatGPT only partially addresses Sarah's stipulations in the trust documents.
13. No Luck with Convincing His Father	Adam, a successful hedge-fund manager, fails to convince his high-net-worth father (nearing 100 years old) to invest in the stock market.	Asset allocation; risk tolerance; risk capacity	ChatGPT offers a balanced view, but misses the point that a senior citizen nearing 100 years old could be rational in avoiding the stock market due to his old age.
14. No Way to Go Wrong with the Stock Market	Henry receives advice from his best friend that he simply needs to take on more risk if he wants to see more returns in his portfolio.	Asset allocation; risk tolerance; risk-return tradeoff	The advice from ChatGPT is sound. However, it overlooks the possibility of allocating some funds to risky investments in a well-diversified portfolio.
15. Mutual Fund Fees	Beth is exploring her choices between mutual funds that charge front-end load fees and back-end load fees.	Mutual funds; investment fees	ChatGPT provides good explanations. However, it misses on the alternative funds (such as index funds) that Beth could invest in.
16. Lure of Alternative Investments	Kayla, five years away from retirement, wants to invest in timberland to boost her retirement funds.	Saving for retirement; risk tolerance; risk capacity; alternative investments	ChatGPT overlooks liquid investment options with exposure to alternative investments (such as exchange traded funds). Also, its investment advice is generic, and unlikely to help Kayla to boost her portfolio.
17. Debt Consolidation	Oliver, buried under more than \$185,000 debt, gets a debt consolidation loan.	Debt management	ChatGPT does not bring up alternatives such as refinancing and bankruptcy.
18. Retirement Problem with No Inheritance	A couple wants to know how much they will be able to have each year during their retirement.	Retirement planning	ChatGPT makes input and mathematical errors.
19. Retirement Problem with Inheritance	A couple wants to know how much they will be able to have each year during their retirement with the condition that they want to be able to leave a \$500,000 inheritance.	Retirement planning; estate planning	ChatGPT makes input and mathematical errors.
20. Saving for College	The Williams family buys call options on blue-chip stocks to save for their children's college expenses.	Saving for college; risk tolerance; risk capacity	ChatGPT does not bring up 529 accounts, and it ignores tax consequences of the employed options strategy.
21. Saving His Marriage	A hardworking couple, with kids and many financial troubles, get a loan to go on a cruise trip to turn their marriage around.	Debt management; financial stress	ChatGPT's advice does not capture the couple's actual situation.

2.1. Case #1: James' Financial Troubles

2.1.1. Case Description

James has \$10,000 in credit card debt. Even though he has \$100,000 in a bank account, he only makes the minimum payments on his credit card debt. His company offers him a 401(k) plan, and they will match the first 6% of his contributions. He only contributes only 2%, leaving money on the table. James also has unpaid medical bills, and he ignores them. He hopes that the hospitals will just give up collecting them and will leave him alone. Provide sound financial advice to James.

2.1.2. Response from ChatGPT

James is currently in a precarious financial situation, and it's essential for him to address these issues proactively to secure his financial well-being in the long term. Here's some sound financial advice for him:

1. **Emergency Fund:** While having \$100,000 in a bank account is good, it's important to allocate a portion of it as an emergency fund. Aim for 3–6 months' worth of living expenses in a separate account. This will provide a financial cushion in case of unexpected expenses or job loss.
2. **Credit Card Debt:** Instead of just making minimum payments, James should prioritize paying off his credit card debt as soon as possible. With \$10,000 in debt, the high-interest rates associated with credit cards can quickly accumulate more debt over time. Consider creating a debt repayment plan, focusing on paying off high-interest debt first.
3. **401(k) Contribution:** Taking advantage of an employer's 401(k) match is essentially free money. By only contributing 2%, James is leaving valuable benefits on the table. He should consider increasing his contribution to at least 6% to maximize the employer match, as it's essentially an immediate return on investment.
4. **Medical Bills:** Ignoring unpaid medical bills is not a sustainable solution. Hospitals and medical providers are likely to pursue collections, which can negatively impact James' credit score and financial stability. Instead, he should communicate with the providers to negotiate payment plans or explore options for financial assistance.
5. **Budgeting:** James should create a detailed budget to track his income and expenses. This will help him identify areas where he can cut back on spending and allocate more towards debt repayment and savings goals.
6. **Financial Education:** It's important for James to educate himself about personal finance and develop healthy financial habits. Resources like books, online courses, or working with a financial advisor can provide valuable guidance tailored to his specific situation.

By addressing these financial issues systematically, James can improve his financial health and build a more secure future for himself. It's essential for him to take proactive steps now to avoid further financial stress down the road.

2.1.3. Our Assessment

ChatGPT offers a helpful blueprint to James. However, it is just answering questions in isolation instead of taking an integrative approach. In other words, it does not appear to see the big picture. For example, James could be better off paying off his bills first and then contributing to his retirement plan. Also, it is unclear if James could afford a larger contribution to his retirement plan in the first place. Though the employer's match is indeed free money, he may not be in a financial position to divert more of his paycheck for his retirement savings. Another observation is that ChatGPT does not include a timeline for when and in what priority recommendations should be carried out. For example, advisors might provide clients with an implementation schedule telling them to take care of the highest priorities first and then focus on other recommendations weeks or months later.

James has a substantial amount of money in his bank account (\$100,000). ChatGPT advises him to carve out an emergency fund from these savings. It appears ChatGPT cannot delineate that the \$100,000 in cash is already acting as an emergency fund, and it also does not help James segregate that money into various priorities. Also, although ChatGPT recommends James create a budget, it does not tell him how to do it. This leaves him in the precarious position of knowing he should make changes but unable to know how to do so.

2.2. Case #2: Sports Gambling and Winning the Lottery

2.2.1. Case Description

Mark has a lot of money problems. He works while his partner stays home with kids (ages 4 and 2). After taxes, he brings home \$75,000 a year, and they live in his parent's

rental home rent-free. Unbeknown to his partner, Mark spent a lot of money on sports betting, and racked up \$500,000 on his multiple credit cards. He is under a lot of stress, and he does not see any way out. While going through some old books at home, he found a \$100 bill stacked away in one of them. He immediately went to the nearest gas station and bought lottery tickets, spending all his money. To his shock, he won the jackpot of \$750,000! Develop a sound financial plan to help Mark out of his current problems and to wisely use the lottery prize.

2.2.2. Response from ChatGPT

Mark is facing significant financial challenges, including high credit card debt resulting from gambling and stress about his financial situation. Winning the lottery presents an opportunity to address these issues and build a stable financial future. Here's a sound financial plan for Mark:

1. **Addressing Gambling Addiction:** Mark needs to acknowledge his gambling addiction and seek help from a professional counselor or support group specialized in gambling addiction. It's crucial to address the root cause of his financial troubles to prevent future relapses.
2. **Paying Off Credit Card Debt:** With the lottery winnings, Mark should prioritize paying off his \$500,000 credit card debt immediately. High-interest credit card debt can quickly spiral out of control, so eliminating it will provide him with significant financial relief.
3. **Emergency Fund:** After paying off the credit card debt, Mark should set aside a portion of his winnings to establish an emergency fund. Aim for at least 3–6 months' worth of living expenses to provide financial stability in case of unexpected events.
4. **Budgeting and Financial Planning:** Mark needs to create a comprehensive budget that accounts for all expenses, including housing, utilities, groceries, childcare, and savings. He should involve his partner in this process to ensure they're aligned on financial goals and priorities.
5. **Investment and Retirement Planning:** With the remaining lottery winnings, Mark should consider investing in long-term financial assets such as retirement accounts (e.g., 401(k), IRA), index funds, or real estate. Consulting with a financial advisor can help him make informed investment decisions tailored to his financial goals and risk tolerance.
6. **Open Communication with Partner:** Mark should be honest with his partner about his past gambling addiction and the lottery winnings. Open communication and transparency are essential for building trust and jointly managing their finances effectively.
7. **Seeking Professional Advice:** Mark should consider consulting with a financial planner or advisor to develop a personalized financial plan tailored to his circumstances and goals. A professional can provide guidance on managing windfall gains, investing wisely, and planning for the future.

By addressing his gambling addiction, paying off debt, building an emergency fund, budgeting effectively, and making informed financial decisions, Mark can overcome his current financial challenges and secure a brighter financial future for himself and his family.

2.2.3. Our Assessment

ChatGPT has helpful suggestions for Mark. However, it does not incorporate the effect of taxes. Mark will need to pay taxes on the cash windfall from gambling. For example, if his tax rate is 30%, his remaining win will be \$525,000. This will cover the credit card debt, but it will not leave much to set up an emergency fund or to make long-term investments. Due to the omission of this important point, some of the advice offered by ChatGPT is moot. ChatGPT also overlooks an important detail in this case. The family lives rent-free, which is a significant financial benefit. Given that households spend about 40% of their income on rent,⁴ Mark's annual income should be viewed as \$125,000 (60% of which is \$75,000). This income level should provide Mark with the ability to build his retirement portfolio

(assuming that he stops gambling). As with the first case, again, a timeline would be important. ChatGPT recommends Mark pay off the credit card debt first before establishing an emergency fund. However, should this be done, an emergency may cause him to incur credit card debt all over again.

Addressing gambling addiction is a great suggestion. While Mark seeks treatment and/or counseling, the family can also benefit from using data aggregation services that show spending from all the credit cards in one place and credit monitoring services that will alert if a new credit card is issued in James' name. Though these steps may appear invasive to Mark, they may help his family to rebuild trust and hold him accountable.

Another important point is the potential tax consequences when it comes to Mark and his family living rent-free. The burden here falls on Mark's parents in that they may need to pay gift taxes since they do not charge rent to their son and his family.⁵ This demonstrates that Mark's parents not only give up rental income to help their son but also may face tax liabilities for helping him.

2.3. Case #3: *Living the Good Life*

2.3.1. Case Description

The Smith family is living in the most expensive house in their neighborhood (two parents and four teenagers). They have the latest models in everything from foreign luxury cars to the latest video games. Both parents work and take in over \$500,000 in total a year after taxes. Their skills are much needed where they work, and they feel very secure in their jobs. It is for this reason that they decided not to save for retirement until all the kids go to college. Their current priority is to make memories with their kids. They have a second mortgage on their house, but they do not think it is a big deal. Once kids leave the house, they think they can easily handle this debt. They did not save any money for their kids' college, but they are not too concerned because kids can get either scholarships or loans, and they are comfortable with being co-signers on their loan applications. Come up with recommendations for the Smith family that could help them make better financial decisions.

2.3.2. Response from ChatGPT

The Smith family's current financial approach is risky and unsustainable in the long term. Here are some recommendations to help them make better financial decisions:

1. **Create a Comprehensive Budget:** The Smith family should create a detailed budget that accounts for all expenses, including mortgage payments, utilities, groceries, transportation, entertainment, and savings. Tracking their spending will help them identify areas where they can cut back and prioritize saving for important financial goals.
2. **Emergency Fund:** Establishing an emergency fund is crucial for financial stability. The Smith family should set aside enough money to cover at least 3–6 months' worth of living expenses. This fund will provide a financial safety net in case of unexpected events such as job loss or medical emergencies.
3. **Retirement Savings:** It's never too early to start saving for retirement. Even though the Smiths feel secure in their jobs, unforeseen circumstances could arise, affecting their income and ability to save later. They should prioritize contributing to retirement accounts such as 401(k)s or IRAs to ensure a comfortable retirement lifestyle.
4. **College Savings:** Saving for their children's college education is essential to avoid burdening them with excessive student loan debt. The Smiths can explore options such as 529 college savings plans, which offer tax advantages for education expenses. Encouraging their children to apply for scholarships and grants can also help alleviate the financial burden.
5. **Evaluate Lifestyle Choices:** The Smith family should reassess their priorities and consider whether their current lifestyle choices align with their long-term financial goals. Downsizing to a more affordable home, cutting back on luxury expenses, and prioritizing experiences over material possessions can help them save money and reduce debt.

6. **Debt Management:** Taking on additional debt, such as a second mortgage, should be approached with caution. The Smiths should develop a plan to pay off existing debts systematically, starting with high-interest debts first. They should also avoid accumulating more debt unless absolutely necessary.
7. **Financial Education:** Educating themselves and their children about financial literacy and responsible money management is crucial. The Smiths can seek out resources such as books, workshops, or online courses to improve their financial knowledge and instill good financial habits in their children.

By implementing these recommendations, the Smith family can make better financial decisions, achieve financial stability, and secure a brighter future for themselves and their children.

2.3.3. Our Assessment

ChatGPT does a decent job with its suggestions for this case. However, we would like to note the following points that are missed by ChatGPT. The Smith family already has a second mortgage (it already happened). ChatGPT treats the second mortgage as a possibility instead of a reality. ChatGPT also does not pay attention to the fact that Mr. and Mrs. Smith will be co-signers on their children's college loans (if their children get any). If they end up having to pay off their children's loans, they will not be able to save for their retirement as much as they initially hoped. Furthermore, with their expensive lifestyles, it would be devastating if one of the parents became disabled or died. To manage such risks, the parents may want to consider buying life and/or disability insurance.

Chat GPT does a suitable job again recommending an emergency fund, but a comprehensive wealth manager would also ask questions regarding their risk management, liability protection, etc. ChatGPT seems to be adding various bricks to a financial house and disregarding a solid foundation, then building from the bottom up.

2.4. Case 4: A Deadly Virus Wiping out a Family's Savings

2.4.1. Case Description

The Frank family was always proud of their financial habits. Both parents worked and maximized their retirement savings. They taught their kids (ages 10 and 12) sound money management habits. They sometimes went extreme to save money (such as keeping the temperature at 60 during the winter and wearing coats all day) to show to their kids how important it was to make sacrifices for a secure financial future. The Frank family lived next to the Turner family who spent most of what they made due to their firm belief in the idea that you only live once and you need to enjoy life all the time. When their kids complained about how strict their parents were and mentioned the lavish lifestyle of their neighbor's kids, Mr. and Mrs. Frank explained to their kids that they would be the winners in the long term. One week everything changed. A deadly virus emerged, creating panic in the financial markets. As a result, the stock market tanked by 90%, wiping out most of the Frank family's wealth. Due to this wipe-out, they now had almost the same amount of net worth as their neighbor. After observing what happened, their kids had the following to say to Mr. and Mrs. Frank: "What you did was for nothing. You made us sacrifice all the time, whereas our friends had fun all the time. Now there is no difference between us and them except they have great memories, and we have none". Suppose that Mr. and Mrs. Frank came to you for advice and wanted to seek your council on where they went wrong. They cannot help but think that their kids were right. Provide sound advice to Mr. and Mrs. Frank.

2.4.2. Response from ChatGPT

Mr. and Mrs. Frank's dedication to financial responsibility and teaching their children sound money management habits is commendable. However, the sudden loss of wealth and their children's reaction present an opportunity for reflection and adjustment. Here's some sound advice for Mr. and Mrs. Frank:

1. **Balance is Key:** While it's essential to prioritize financial stability and saving for the future, it's also crucial to find a balance between saving and enjoying life. Extreme frugality, such as keeping the temperature at 60 degrees during winter, may not be necessary and can negatively impact quality of life.
2. **Teach Financial Resilience:** Alongside teaching the importance of saving and sacrifice, it's equally important to educate children about financial resilience and adaptability. Life is unpredictable, and unexpected events, like the recent market crash, can happen. Teaching children how to navigate financial challenges and bounce back from setbacks is a valuable lesson.
3. **Value Experiences as well as Savings:** While saving for the future is important, so is creating meaningful experiences and memories with loved ones. Encourage the Frank family to find a balance between saving money and enjoying life's experiences. It's possible to prioritize both financial security and creating cherished memories.
4. **Communicate Openly with Children:** Engage in open and honest conversations with children about financial decisions and the reasons behind them. Help them understand the importance of long-term financial planning while also acknowledging the value of enjoying life in the present.
5. **Reassess Priorities and Goals:** Use this experience as an opportunity to reassess financial priorities and goals as a family. Discuss what truly matters to them and how they can align their financial habits with their values and aspirations.
6. **Seek Professional Guidance if Needed:** If the Frank family feels overwhelmed or uncertain about their financial situation, they may benefit from seeking advice from a financial advisor. A professional can provide personalized guidance and help them create a financial plan that balances their short-term enjoyment with long-term security.

Ultimately, the goal is to find a balance between enjoying life's experiences and securing a stable financial future. By adjusting their approach and incorporating lessons learned from this experience, the Frank family can continue to instill valuable financial habits in their children while also creating meaningful memories together.

2.4.3. Our Assessment

Even though the Frank family now has almost the same net worth as their unthrifty neighbors, it would be a mistake to accept their financial history and status as the same. The Frank family had better money management skills, and those skills will be with them no matter what happens to their stock market account. While the neighbor's net worth will stagnate, their net worth is likely to recover from the meltdown in the financial markets thanks to their superior financial habits and decisions. A related point is the importance of staying invested in the stock market, which is not brought up by ChatGPT. Trying to time the market is not a profitable strategy for most investors. Unless the productive capacity of the economy is wiped out, there is a strong chance of a rebound in the financial markets.⁶ However, if the Frank family is adamant about managing the downside risk of their portfolio for the next downturn in the financial markets, they could adopt risk management strategies such as using stop loss orders or choosing a larger portfolio allocation to money market funds or similar assets. It is also essential to emphasize that the Frank family is setting up their children for success in the long run by teaching them sound money management habits.

We agree with ChatGPT on finding the balance between enjoying life now and saving for the future. The Frank family should be more cognizant of the fact that financial prudence should not come at the expense of extreme sacrifices. However, ChatGPT seems to make general recommendations, and it ignores the psychology of financial planning and why consumers may or may not make financial decisions. In other words, what are the underlying feelings or values that drive financial decisions? Individuals may know what they should do but still not act in their own best interest. A human approach may help address this. Furthermore, a financial advisor will stay in touch with the client to make sure recommendations are being implemented. There is no way for ChatGPT to do this.

2.5. Case 5: Young Couple and Their Good Fortune

2.5.1. Case Description

Sam and Julie grew up in the same neighborhood. They both knew Ms. Lily who lived by herself in the house that her dad built for her, and she had no family. After Ms. Lily died, Sam and Julie bought her house and moved in there to start their family. The house needed a lot of repairs. Both Sam and Julie liked repair work and they enjoyed making this place their home. One day, when they were taking down a wall, they found a hidden compartment and a large box in it. To their surprise, inside the box, there was cash worth \$500,000 and a lot of jewelry. Sam and Julie could not believe their luck. They wanted to use this money very carefully. They put \$50,000 of the cash in a savings account for emergencies and they bought low-cost index funds for the rest. They did not touch the jewelry (gold) since they read that gold prices may go up this year. Evaluate the decisions that Sam and Julie made and suggest recommendations if they need any.

2.5.2. Response from ChatGPT

Sam and Julie made some prudent decisions regarding the unexpected windfall they discovered, but there are a few considerations to evaluate and potential recommendations to make:

1. **Emergency Fund Allocation:** Setting aside \$50,000 of the cash for emergencies is a wise move. This fund provides a financial safety net for unexpected expenses or emergencies that may arise. It's generally recommended to have 3–6 months' worth of living expenses in an emergency fund, so they may want to assess whether \$50,000 is sufficient based on their lifestyle and expenses.
2. **Investment in Low-Cost Index Funds:** Investing the majority of the cash in low-cost index funds is a sound strategy for long-term wealth accumulation. Index funds offer diversification and typically have lower fees compared to actively managed funds. However, they should ensure that their investment strategy aligns with their financial goals, risk tolerance, and time horizon.
3. **Jewelry Investment:** Choosing not to sell the jewelry and instead holding onto it due to potential increases in gold prices may be a speculative decision. While gold can serve as a hedge against inflation and economic uncertainty, its value can also be volatile. Sam and Julie should carefully monitor the gold market and consider diversifying their investment portfolio beyond just gold.
4. **Estate Planning:** Since Sam and Julie are starting a family in Ms. Lily's house, they may want to consider updating their estate plan to ensure their newfound wealth and assets are properly distributed in the event of their passing. This may include creating or updating wills, establishing trusts for their children, and appointing guardians if necessary.
5. **Financial Advisor Consultation:** Given the significant amount of money involved, Sam and Julie may benefit from seeking guidance from a financial advisor. A professional can help them create a comprehensive financial plan, assess their investment strategy, and make informed decisions aligned with their financial goals.
6. **Tax Implications:** Depending on the jurisdiction, there may be tax implications associated with the cash windfall and investment gains. Sam and Julie should consult with a tax advisor to understand any tax obligations and optimize their tax strategy.

Overall, Sam and Julie have taken some prudent steps with their newfound wealth, but it's important for them to continue making informed financial decisions and seek professional advice when necessary to maximize the potential benefits and ensure long-term financial security.

2.5.3. Our Assessment

ChatGPT has helpful suggestions for Sam and Julie. However, while it advised them to talk to a financial advisor, it should have also advised them to talk to a lawyer. This is because it is legally ambiguous as to whether they can keep this unexpected windfall.⁷ In

case Sam and Julie legally cannot keep the cash and jewelry that they found, they may need to turn everything over to the state.⁸ By investing the money they have found, Sam and Julie may have broken the law and may need to hire attorneys to defend them. Therefore, it will be prudent for them to set aside extra money for legal expenses. Additionally, a human financial advisor would be able to make a referral to a competent legal professional and help the clients build trust with that new professional since the financial advisor is already familiar with their situation and can act as a mediator. Finally, what is the legal liability for clients following advice from ChatGPT? We assume that ChatGPT would be immune from any legal liability in case of negligence.

2.6. Case #6: 90-Year-Old Grandpa Getting Rich with Options Trading

2.6.1. Case Description

Ken, a 20-year-old finance major, learned about options trading in college, and he was very excited to try it. However, he did not have any money to trade options. Mr. Wilson, Ken's 90-year-old grandfather, loved his grandson and was always proud of him. Mr. Wilson lived a lot longer than he thought he would, and he was getting worried about outliving his retirement savings. One day he was talking to Ken about his worries, and a light bulb went off in Ken's head. He told his grandpa about options trading. Mr. Wilson did not quite understand the ins and outs of it, but he trusted his grandson. At the recommendation of Ken, Mr. Wilson opened a brokerage account and got approval to sell naked call options. Ken took care of running the account. After a year, the account was up by \$5,000,000. Mr. Wilson was so grateful to his grandson for this work. He now felt financially secure. He closed the account, kept \$4,000,000 to himself, and gave the rest to Ken. Evaluate the plan that Ken came up with to help his grandfather.

2.6.2. Response from ChatGPT

The plan that Ken came up with to help his grandfather is highly risky and potentially harmful for Mr. Wilson's financial security. Selling naked call options, especially for someone like Mr. Wilson, who may not fully understand the risks involved, is extremely speculative and can lead to significant losses.

Here are some key concerns with the plan:

1. **Lack of Understanding:** Mr. Wilson did not fully understand options trading, particularly the risks associated with selling naked call options. Trusting his grandson without fully comprehending the strategy exposes him to substantial risk.
2. **Age and Risk Tolerance:** At 90 years old, Mr. Wilson should be focusing on preserving his capital and minimizing risk, rather than engaging in high-risk trading strategies. Selling naked call options is one of the riskiest options trading strategies and is not suitable for someone in Mr. Wilson's stage of life.
3. **Potential Losses:** While the account was up \$5,000,000 after a year, this outcome could have easily been the opposite. Selling naked call options exposes the seller to unlimited losses if the underlying asset's price rises significantly, leading to substantial financial harm.
4. **Lack of Diversification:** Relying solely on one trading strategy, especially one as risky as selling naked call options, lacks diversification. Diversifying across asset classes and investment strategies is essential for managing risk and preserving wealth.
5. **Conflict of Interest:** Ken's involvement in running the account may introduce a conflict of interest. He may prioritize maximizing returns for himself over Mr. Wilson's best interests, potentially leading to inappropriate investment decisions.
6. **Regulatory Considerations:** Selling naked call options typically requires a high level of options trading approval from the brokerage, which may not have been appropriate for Mr. Wilson given his lack of experience and understanding.

Overall, while Ken may have had good intentions, the plan to have his grandfather engage in options trading, specifically selling naked call options, is highly risky and not suitable for someone in Mr. Wilson's position. It's important to prioritize financial security

and preservation of capital, especially in retirement. Instead, Ken should have explored safer and more conservative investment strategies for his grandfather's retirement savings.

2.6.3. Our Assessment

We concur with ChatGPT's assessment of this case. Selling naked calls exposes the option trader to unlimited losses, which is not an appropriate type of risk for someone who is 90 years old. There are ethical issues in adopting trading strategies on behalf of someone who does not understand them. ChatGPT focuses on monetary losses, but even loss of lives is possible with risky trading strategies. If Ken had lost all his grandfather's savings (or even put him in debt due to the unlimited downside risk from his trades), this could have been devastating for his grandfather. For example, there is anecdotal evidence of a senior citizen committing suicide after she lost all her money in a sweepstakes scam (Finney 2018). It is important to note that selling naked calls is not a violation of any securities law per se, but as pointed out by ChatGPT, it exposes the investor to unlimited losses, which could have wiped out the grandfather's net worth. Selling naked calls is also a perilous situation for Ken due to the risks involved in trading options. For example, in 2020, a university student named Alexander E. Kearns died by suicide after seeing a negative \$730,000 balance in his trading account, even though he may not have lost money in totality of his option positions (Dokoupil et al. 2021).

Here, all went well with the options trades, producing a significant benefit to Ken and his grandfather. However, if Ken had lost money for his grandfather, there might have been legal consequences for him based on whether the oral agreement he had with his grandfather was legally enforceable. This potential legal issue is not raised by ChatGPT.

2.7. Case #7: Hardworking Salesman Embezzles

2.7.1. Case Description

Hank was a hardworking salesman. He put in more hours than anyone else at work. The main reason was that he needed the money badly to help pay for medical expenses for his daughter who was born with a rare medical condition. He was able to pay his bills but could not save anything for retirement. That was when he started increasing the invoice price to his customers (by only 0.25%) and keeping this extra part to himself. He was very good with computers, and he was able to keep this money to himself without messing up the company's books. Also, the company was flush with cash, and he knew that this small amount would not matter to the owners who were aware of his financial difficulties. To his surprise, he was able to generate \$5,000,000 in savings from this meager percentage increase in the invoice price over 20 years that he worked for his company. He now felt ready to retire. Based on his family history, he hoped to live another 35 years. Suppose that Hank came to you for financial advice. Evaluate his situation and provide him with sound financial advice.

2.7.2. Response from ChatGPT

Hank's situation raises several ethical and legal concerns, and it's important to address these before providing financial advice:

1. **Ethical Considerations:** Increasing invoice prices without authorization is unethical and could lead to legal consequences if discovered. It violates the trust of both the customers and the company owners.
2. **Legal Implications:** Manipulating invoice prices for personal gain constitutes fraud and could result in legal action against Hank if uncovered.

Given these ethical and legal concerns, here's sound financial advice for Hank:

1. **Stop the Unauthorized Behavior:** The first step for Hank is to cease the practice of increasing invoice prices immediately. Continuing this behavior could have serious legal and ethical ramifications.

2. **Seek Professional Advice:** Hank should consult with a financial advisor or planner who can help him assess his current financial situation and develop a plan for retirement that is ethical and legal. The advisor can also provide guidance on managing his daughter's medical expenses and optimizing his retirement savings.
3. **Maximize Retirement Savings:** Despite the challenges, Hank should prioritize saving for retirement through legitimate means. He should contribute to retirement accounts such as a 401(k) or IRA to build a nest egg for his future.
4. **Budget and Expense Management:** Hank should carefully review his expenses and look for areas where he can cut back to increase his savings. Creating a budget and sticking to it can help him better manage his finances and save for retirement without resorting to unethical behavior.
5. **Healthcare Planning:** Given his daughter's medical condition, Hank should explore all available options for managing her healthcare expenses. This may include researching insurance coverage, government assistance programs, and negotiating with healthcare providers for lower costs.
6. **Consider Legal Remedies:** Hank may want to consult with a legal advisor to understand the potential legal implications of his actions and explore options for rectifying the situation if necessary.
7. **Ethical Reflection:** Hank should reflect on the ethical implications of his past actions and consider ways to make amends or contribute positively to society in his retirement years.

It's crucial for Hank to address the ethical and legal issues surrounding his past behavior and focus on building a secure and ethical financial future for himself and his family.

2.7.3. Our Assessment

ChatGPT does not condone Hank's illegal (embezzlement) behavior. Hank cheated both his company and customers by inflating the invoice prices. Given that Hank may face jail time because of his embezzlement, he may need to consider what will happen to his family in his absence rather than maximizing retirement savings. This important point is missed by ChatGPT. Also, the case states that Hank is unable to save any money due to medical expenses. Therefore, advising him to save money through 401(k) or IRA (in point 3) does not make much sense unless such a plan is coordinated with aggressive financial planning. This is emphasized in point 4 but in isolation from point 3. However, going back to our first comment, all these suggestions could be moot if Hank goes to jail. For example, financial advisors or planners may not be able to help him since he engaged in an illegal activity (point 3) and may be under obligation to report him to the authorities. Additionally, how can Hank possibly know all the possible choices for healthcare and government programs? ChatGPT makes a general recommendation, but a human financial advisor would be able to provide more concrete and specific recommendations.

2.8. Case #8: Getting the Right Kind of Mortgage

2.8.1. Case Description

Sally and Matt, a young couple with no kids, were looking for their dream home. They finally found it but had problems getting a mortgage. The only mortgage they could find one was an adjustable-rate mortgage. They read in the news that interest rates were expected to go up significantly next year, and they hurried to get this adjustable-rate mortgage before the expected increase in the rates. Their mortgage application was approved, and they truly loved the feeling of being homeowners. Evaluate the financial situation and decisions of Thomas and Julie and come up with recommendations for improvement.

2.8.2. Response from ChatGPT

Sally and Matt's decision to opt for an adjustable-rate mortgage (ARM) based on the expectation of rising interest rates is risky and may not be the most prudent choice

for their financial situation. Here's an evaluation of their decision and recommendations for improvement:

1. **Risk of Rising Interest Rates:** While it's understandable that Sally and Matt wanted to secure a mortgage before anticipated interest rate hikes, choosing an ARM exposes them to interest rate risk. As interest rates rise, so will their mortgage payments, potentially putting strain on their budget.
2. **Potential Payment Shock:** With an ARM, the initial interest rate is typically lower than fixed-rate mortgages, but it can adjust periodically based on market rates. When the interest rate adjusts, their mortgage payments could increase significantly, leading to payment shock and financial stress.
3. **Long-Term Financial Stability:** Sally and Matt should carefully assess their long-term financial stability and ability to afford potential increases in mortgage payments. They should consider factors such as job security, income growth potential, and other financial obligations before committing to an ARM.
4. **Exploring Other Mortgage Options:** While fixed-rate mortgages may have higher initial interest rates, they provide stability and predictability in mortgage payments over the loan term. Sally and Matt should explore alternative mortgage options, such as fixed-rate mortgages, to mitigate interest rate risk and ensure long-term affordability.
5. **Financial Planning and Budgeting:** Sally and Matt should create a comprehensive budget that includes all expenses, including mortgage payments, utilities, property taxes, insurance, and savings. They should ensure that they can comfortably afford their housing expenses while still saving for other financial goals and emergencies.
6. **Emergency Fund:** Building an emergency fund is crucial, especially for homeowners. Sally and Matt should prioritize saving for an emergency fund to cover unexpected expenses, including potential increases in mortgage payments due to interest rate adjustments.
7. **Consulting with a Financial Advisor:** Given the complexity of mortgage decisions and their potential long-term impact on financial stability, Sally and Matt may benefit from consulting with a financial advisor. A professional can provide personalized advice and help them navigate the mortgage process to make informed decisions aligned with their financial goals.

In summary, while Sally and Matt's excitement about becoming homeowners is understandable, they should carefully consider the risks associated with an adjustable-rate mortgage and explore alternative mortgage options that provide stability and long-term affordability. Prioritizing financial planning, budgeting, and consulting with a financial advisor can help them make sound decisions for their future.

2.8.3. Our Assessment

Getting an ARM when an increase in interest rates is expected does not make economic sense for this couple. They should have been discouraged from getting an ARM because of this reason. ChatGPT agrees with this point in its first evaluation but does so circuitously. Also, ChatGPT does not probe the home issue further. It tells the couple to explore alternatives such as fixed-rate mortgages (in its fourth evaluation) without a clear idea about how they could do this, even though the case clearly says that the couple could only find an adjustable-rate mortgage. For example, by changing their preferences and finding a cheaper home, the couple could qualify for a fixed-rate mortgage. Or they may explore rent-to-own or seller financing options.

2.9. Case #9: Insurance Needs

2.9.1. Case Description

Sally is under a lot of stress. She is the only breadwinner in her family. Her partner stays at home. They have four children (ages 6, 10, 12, 18). Also, Sally has elderly parents who will face significant medical bills due to rapid deterioration in their health. Sally sometimes worries about what will happen to her family if she dies unexpectedly. Her

partner has not worked for years. They have a huge mortgage on the house. The kids are young, and they need a lot of financial support, both before and after they leave the house (they promised each other to pay for the kids' college expenses). Her parents do not have enough money to pay for their medical bills. Sally and her partner also have not saved much for retirement. Suppose that Sally comes to you for financial advice on what kind of insurance she can get that will help her family in case she dies unexpectedly. Provide her with suitable suggestions.

2.9.2. Response from ChatGPT

Given Sally's significant financial responsibilities and concerns about the well-being of her family in the event of her unexpected death, obtaining suitable life insurance coverage is crucial. Here are some suitable suggestions for Sally:

1. **Term Life Insurance:** Term life insurance provides coverage for a specific period, such as 10, 20, or 30 years, and pays out a death benefit if the insured passes away during the term of the policy. Since Sally has significant financial obligations, such as the mortgage, supporting her children, and potentially covering her parents' medical bills, a term life insurance policy can provide a substantial death benefit to help her family meet these financial needs in the event of her untimely death.
2. **Coverage Amount:** Sally should consider obtaining a sufficient coverage amount to replace her income and cover her family's financial needs. This may include paying off the mortgage, funding her children's education expenses, covering ongoing living expenses for her partner and children, and potentially contributing towards her parents' medical bills. Calculating the appropriate coverage amount should take into account these various financial obligations and estimated expenses.
3. **Convertible Term Life Insurance:** Sally may want to consider a convertible term life insurance policy, which allows her to convert the policy to a permanent life insurance policy (such as whole life or universal life) without the need for a medical exam. This can provide flexibility in case her financial needs or circumstances change in the future.
4. **Rider Options:** Sally should explore adding riders to her life insurance policy for additional coverage or benefits. For example, a critical illness rider can provide a lump-sum payment if she is diagnosed with a covered critical illness, which can help cover medical expenses and provide financial support during her lifetime.
5. **Review and Update Regularly:** Sally should review her life insurance coverage regularly to ensure it aligns with her current financial situation and needs. Significant life events, such as changes in income, family size, or financial obligations, may necessitate adjusting the coverage amount or type of policy.
6. **Seek Professional Advice:** Given the complexity of life insurance options and the importance of choosing the right coverage for her family's needs, Sally should consult with a licensed insurance agent or financial advisor. A professional can help her assess her insurance needs, compare policy options, and select the most suitable coverage for her situation.

By obtaining appropriate life insurance coverage, Sally can gain peace of mind knowing that her family will be financially protected and supported in the event of her unexpected death, allowing them to maintain their standard of living and meet their ongoing financial obligations.

2.9.3. Our Assessment

ChatGPT has helpful suggestions. Sally should also explore disability insurance. If she gets into an accident and survives but finds herself unable to work, her family will not be able to rely on life insurance for financial relief. Also, Sally could explore medigap insurance for her parents, which may provide financial relief for their medical bills.⁹ Another helpful suggestion would be lifestyle changes such as more exercise so that Sally can manage her stress better and extend her life (Harvanek et al. 2021). Here, ChatGPT gives suitable advice

on the specific question (life insurance) but does not inform Sally about the other forms of insurance or choices she may consider besides buying life insurance. Also, ChatGPT does not provide specific amounts with regard to insurance coverage. A human financial advisor would be able to help with these calculations to guide on the specific amounts of coverage she should get.

2.10. Case #10: Unexpected Diagnosis and Hardship Withdrawal

2.10.1. Case Description

Howard recently graduated from college. He came from a very large family, and he always wanted to have a place of his own. He got a good job and bought himself a nice condo. Initially, everything went okay. He made enough money to pay his mortgage. He also built a healthy savings account and put away 6% of his salary, which his employer matches 100%, in his 401(k) account. One day something unexpected happened. During a routine health exam, the doctor diagnosed him with cancer. The cancer did not spread, and he had a pretty good chance to recover. He burned through all his savings, and then stopped contributing to his retirement so that he could afford to pay for his medical expenses. He had insurance, but it was not enough as some of the treatments were considered experimental. He was facing foreclosure on his condo. He hated this possibility. He decided to take a hardship withdrawal from his 401(k) so that he could pay his mortgage. Suppose Howard comes to you and asks you this question: where have I gone wrong with my finances? Provide your response.

2.10.2. Response from ChatGPT

Howard's situation is undeniably challenging, but there are several areas where he may have gone wrong with his finances:

1. **Insufficient Emergency Fund:** While Howard initially built a healthy savings account, it appears that the amount was not sufficient to cover the unexpected medical expenses associated with his cancer diagnosis. An emergency fund typically should cover 3–6 months' worth of living expenses, including potential medical costs.
2. **Lack of Adequate Insurance Coverage:** Howard mentioned having insurance, but it was not enough to cover some of the experimental treatments for his cancer. This highlights the importance of having comprehensive health insurance coverage that includes adequate benefits for various medical treatments and procedures.
3. **Halting Retirement Contributions:** Stopping contributions to his 401(k) to pay for medical expenses may have long-term consequences for Howard's retirement savings. While it's understandable that he needed to prioritize immediate financial needs, he should explore other options to cover medical expenses without sacrificing retirement savings, such as negotiating payment plans with medical providers or seeking financial assistance programs.
4. **Foreclosure Risk:** Howard's decision to take a hardship withdrawal from his 401(k) to pay his mortgage and avoid foreclosure is a last resort that comes with significant drawbacks. Not only does it deplete his retirement savings, but it also triggers taxes and penalties, and diminishes the potential for future growth.
5. **Financial Planning and Contingency Plans:** It's possible that Howard did not have a comprehensive financial plan in place that accounted for unexpected medical expenses or contingencies. Having a plan in place, along with contingency measures such as adequate insurance coverage and an emergency fund, can help mitigate financial risks and provide a roadmap for navigating unexpected events.
6. **Seeking Professional Guidance:** Howard may have benefited from seeking advice from a financial planner or advisor who could help him navigate his financial challenges and explore alternative solutions for covering medical expenses while preserving his financial well-being, including potential options for debt management or assistance programs.

Overall, Howard's situation underscores the importance of comprehensive financial planning, adequate insurance coverage, and preparing for unexpected events to ensure financial stability and resilience in the face of adversity.

2.10.3. Our Assessment

ChatGPT's suggestions sound generic and lack compassion and empathy. For point 1, it is unclear if there was any possibility of Howard being able to save "sufficient" money in case one day he may need experimental cancer treatment. This is not how most households make financial decisions. For point 2, similar to point 1, it is unclear if there was a possible way for Howard to insure himself for the cost of experimental cancer treatments. He did not have any reasonable basis to shop for such insurance, and he may not have been able to find a company to sell such insurance. Regarding points 3 and 4, it might be rational for Howard to stop saving for retirement and tap into his retirement savings even though such actions come up with penalties and tax burdens. First, the fight for survival takes precedence over saving for retirement. If Howard dies, it does not matter how much money he has in his retirement plan at the time of his death. Also, in the middle of a medical emergency, stopping retirement contributions may be a faster way to find funds for medical expenses than negotiating with hospitals and doing the paperwork to get financial assistance. Second, the costs of tapping into his retirement savings might be less than the costs of going through foreclosure, losing all his equity in the house, and incurring substantial damage to his credit history. There could be additional paths that Howard could explore. For example, he may consider asking for help from his family (borrowing money from them, etc.). He may also consider selling his house and moving back with his family or finding a more affordable rental option. From the case, it does not appear that Howard made any financial mistakes (at least major ones). ChatGPT presents the ideal solution without offering a clear path to it.

2.11. Case #11: Gambling as Last Resort

2.11.1. Case Description

When her husband died, Emily found out that he hid \$300,000 in credit card debt from her. He also borrowed money from his brothers (over \$150,000), promising to pay them back in a year. She also found out that he did not pay child support for years to his two children from his previous marriage. Also, a letter arrived from the bank threatening the foreclosure of their property. It turned out that he did not pay the mortgage for the last couple of months. She was devastated twice: she lost her husband and found herself in incredible financial difficulty. All Emily had was \$10,000 in emergency savings. She figured she would at least need \$750,000 to climb out of the mess that her husband left her in. She felt hopeless until she drove by the nearby casino. She decided to gamble away all her emergency savings. She figured that she was already in a big hole and losing another \$10,000 would not make a huge difference. It was her first time at the casino, and luck was on her side. She won \$1,000,000 that night! She told herself that she now had enough money to pay off all her debt and \$250,000 to start a new future for herself. Evaluate Emily's situation and her financial decisions. Come up with recommendations if you could.

2.11.2. Response from ChatGPT

Emily's situation is undoubtedly difficult and overwhelming, but her decision to gamble away her emergency savings at the casino is not a responsible or sustainable solution to her financial challenges. Here's an evaluation of Emily's situation and her financial decisions:

1. **Financial Crisis:** Emily is facing significant financial difficulties, including hidden credit card debt, borrowed money from family, unpaid child support, and the threat of foreclosure on her property. It's understandable that she feels overwhelmed and desperate for a solution.

2. **Gamble as a Solution:** While Emily's unexpected win at the casino may seem like a stroke of luck, relying on gambling as a solution to her financial problems is highly risky and not a sustainable long-term strategy. Gambling winnings are unpredictable and should not be relied upon to address financial obligations or debts.
3. **Windfall from Gambling:** Winning \$1,000,000 at the casino may provide temporary relief from Emily's immediate financial pressures, but it's important for her to approach this windfall with careful consideration and planning.
4. **Debt Repayment and Financial Planning:** Emily should prioritize using her winnings to pay off her existing debts, including the credit card debt, borrowed money from family, and any outstanding mortgage payments to prevent foreclosure. Creating a comprehensive debt repayment plan and budget can help her manage her finances effectively and work towards financial stability.
5. **Seeking Professional Advice:** Given the complexity of her financial situation, Emily may benefit from seeking guidance from a financial advisor or counselor. A professional can help her develop a plan to address her debts, manage her newfound wealth responsibly, and plan for her financial future.
6. **Emotional Support:** Dealing with the loss of her husband and the financial mess he left behind can be emotionally challenging for Emily. It's important for her to seek emotional support from friends, family, or a therapist to cope with her grief and navigate her financial challenges effectively.
7. **Long-Term Financial Goals:** Once Emily has addressed her immediate financial concerns, she should consider setting long-term financial goals and creating a plan to build financial security and independence for herself and her future.

In summary, while Emily's win at the casino provides temporary relief from her financial difficulties, it's important for her to approach her newfound wealth responsibly and seek professional guidance to address her debts, plan for her financial future, and rebuild her life after the loss of her husband. Gambling should not be viewed as a solution to financial problems, and it's crucial for Emily to make informed and responsible financial decisions moving forward.

2.11.3. Our Assessment

Similar to Case 2, ChatGPT ignores the taxes. Therefore, all the advice it gives needs to be re-evaluated. For example, if she needs to pay a 30% tax on the gambling proceeds, she will not have enough to climb out of the financial challenges she is in (she needs at least \$700,000). Furthermore, ChatGPT does not provide any prioritization to Emily in terms of paying off her debts. For example, should she pay her mortgage or credit card debt first? Also, death does not necessarily extinguish the unpaid child support.¹⁰ It is important that Emily be cognizant of this potential commitment. Finally, Emily may need to seek professional help with her gambling in case it becomes a habit.

2.12. Case #12: Estate Planning

2.12.1. Case Description

Sarah, a widow, has over \$10,000,000 in net worth. She feels she is nearing the end of her life. She wants to create a trust fund for each of her grandchildren (10 in total), with equal amounts going to each of them. She wants someone competent to manage the accounts until each child turns 18 (all the grandchildren are younger than 15). She wants protection so that Sarah's kids won't touch her grandchildren's money. She also wants an assurance that in case any of the grandchildren misbehaves (e.g., getting into trouble with the law), she wants all the remaining balance in their accounts to go to a nearby children's hospital. Suggest the best possible plan for Sarah.

2.12.2. Response from ChatGPT

For Sarah's situation, creating individual trust funds for each of her grandchildren is a prudent approach to ensure their financial security and well-being. Here's a suggested plan:

1. **Creation of Trust Funds:** Sarah should consult with a qualified estate planning attorney to establish a separate trust fund for each grandchild. Each trust fund should be funded with an equal amount of assets from Sarah's estate, ensuring fairness among her grandchildren.
2. **Selection of Trustee:** Sarah should appoint a competent and trustworthy individual or institution to serve as the trustee of each trust fund. The trustee will be responsible for managing the assets in the trust and making distributions according to the terms outlined by Sarah.
3. **Management Until Age 18:** The trustee will manage the trust funds until each grandchild reaches the age of 18, ensuring that the assets are prudently invested and used for the beneficiaries' benefit. The trustee should have experience in financial management and a fiduciary duty to act in the best interests of the beneficiaries.
4. **Protection from Parents:** Sarah can include provisions in the trust documents that restrict the parents' access to the trust funds. This can help ensure that the assets are preserved for the grandchildren's benefit and are not used by the parents for their own purposes.
5. **Contingency Plans for Misbehavior:** Sarah can include provisions in the trust documents that specify what happens to the trust funds in the event of a grandchild's misbehavior, such as getting into trouble with the law. If a grandchild engages in behavior deemed unacceptable by Sarah, she can stipulate that the remaining balance of the trust fund will be distributed to a designated charity or organization, such as a nearby children's hospital.
6. **Regular Review and Updates:** Sarah should periodically review and update the trust documents as needed to ensure they remain current and reflect her wishes. Changes in family circumstances or financial laws may necessitate revisions to the trust provisions.

By following this plan, Sarah can ensure that her grandchildren are provided for financially and that their inheritance is protected and managed responsibly until they reach adulthood. Additionally, she can have peace of mind knowing that contingencies are in place to address any unforeseen circumstances or misbehavior among her grandchildren.

2.12.3. Our Assessment

Sarah does not specify an age limit beyond which "misbehavior" will not cause the balance in the trust fund to be transferred to a hospital. Therefore, it will be important to ensure that even after grandchildren turn 18, they are still at risk of losing their trust fund. The response from ChatGPT reads as if once the grandchildren turn 18, they will not lose their trust funds due to misbehavior. Also, if Sarah feels that she is nearing the end of her life, she may not survive long enough to carry out the necessary revisions to the trust documents. This can be problematic for people seeking legal advice from ChatGPT.

2.13. Case #13: No Luck with Convincing His Father

2.13.1. Case Description

Adam was a successful hedge fund manager. He strongly believed that investing in the stock market was one of the best possible ways to build long-term wealth. He was able to instill his belief in all his children. However, he could not convince his father. Nearing 100 but still mentally sharp, Adam's father, Sam, refused to put even a dollar in the stock market. Being a thrifty person, Sam managed to build a substantial amount of wealth without investing in the stock market. He was now sitting over \$5,000,000 net worth and continued refusing to invest in the stock market. Frustrated with his father, Mark yelled: "You are a smart guy overall, but when it comes to investing, you have no idea how wrong you are". Sam, steadfast in his opinion of the stock market, told his son: "I would burn all my money instead of investing it in the stock market". Consider the conflict between Adam and Sam and provide an assessment of who is right and wrong.

2.13.2. Response from ChatGPT

Assessing the conflict between Adam and Sam regarding investing in the stock market requires considering both perspectives:

Adam's Perspective:

- Adam, a successful hedge fund manager, firmly believes in the potential of the stock market to generate long-term wealth.
- He likely has firsthand experience and knowledge of successful investment strategies in the stock market, which has contributed to his own financial success.
- Adam may view investing in the stock market as a prudent and effective way to grow wealth over time, supported by historical data and market trends.

Sam's Perspective:

- Sam, nearing 100 years old, has managed to accumulate substantial wealth without investing in the stock market.
- He is likely risk-averse and prefers conservative financial strategies, such as saving and frugal living, which have served him well over the years.
- Sam may have concerns about the volatility and unpredictability of the stock market, preferring the stability and security of more traditional savings and investment vehicles.

Assessment:

- Both Adam and Sam have valid points based on their respective experiences and perspectives.
- Adam's belief in the potential of the stock market is supported by historical data showing its long-term growth potential, but it also comes with inherent risks and uncertainties.
- Sam's conservative approach to wealth management has proven successful for him personally, but it may not align with the risk tolerance or investment goals of others, including Adam.
- Ultimately, the "right" approach to investing depends on individual preferences, financial goals, risk tolerance, and time horizon.

Conclusion:

- Neither Adam nor Sam can be definitively labeled as right or wrong in their perspectives on investing in the stock market.
- Each person's approach to wealth management is subjective and influenced by personal experiences, beliefs, and financial circumstances.
- It's important for individuals to carefully consider their own financial goals, risk tolerance, and investment strategies when making decisions about how to allocate their assets, whether in the stock market or other investment options.

2.13.3. Our Assessment

Ultimately, this is Sam's money, and he should not be coerced into any type of investment that he does not feel comfortable with. Also, he is almost 100 years old. Even someone who is not as risk-averse but is the same age as Sam may find it rational to stay out of the stock market. In case of a significant drop in the stock market, he may not live long enough to recover his losses. Therefore, even though Adam could be right about his views on the stock market, he may need to accept that the stock market may not be right for his father due to his old age. We feel that this important point is missed by ChatGPT.

2.14. Case 14: No Way to Go Wrong with the Stock Market

2.14.1. Case Description

Alex is an avid reader of the latest financial news and research. Having a strong quantitative background (an engineer by training), the stock market makes a lot of sense to him. One day his best friend, Henry, comes to him for financial advice. Henry is substantially behind in his retirement savings. He tells Alex that he needs a magic bullet to bring up his retirement balance. Alex explains to him the relationship between risk and

return. He later tells Henry: “If you want more returns, just load up your portfolio with more risk. It is that simple”. Evaluate the soundness and validity of the financial advice that Alex gave to Henry.

2.14.2. Response from ChatGPT

The financial advice that Alex gave to Henry, while containing an element of truth, oversimplifies the relationship between risk and return in investing. Let’s evaluate the soundness and validity of Alex’s advice:

1. **Relationship Between Risk and Return:** It is generally true that there is a positive relationship between risk and return in investing. Higher levels of risk are typically associated with the potential for higher returns, and vice versa. This concept is often referred to as the risk-return tradeoff.
2. **Diversification:** Loading up a portfolio with more risk can indeed potentially lead to higher returns, but it also increases the likelihood of experiencing significant losses. Investing solely in high-risk assets, such as individual stocks or speculative investments, exposes Henry to the risk of substantial volatility and potential loss of capital. Diversification, spreading investments across different asset classes and sectors, is a key strategy for managing risk while seeking to achieve optimal returns.
3. **Individual Risk Tolerance:** Henry’s risk tolerance, or his willingness and ability to endure fluctuations in the value of his investments, is a critical factor to consider. While pursuing higher returns may be tempting, Henry should ensure that his investment strategy aligns with his risk tolerance and financial goals. Taking on excessive risk that exceeds his comfort level could lead to emotional stress and potentially poor decision-making during periods of market volatility.
4. **Time Horizon:** Henry’s time horizon until retirement is another important consideration. If he has a long time horizon, he may have more flexibility to withstand short-term market fluctuations and pursue higher-risk investments with the potential for higher returns. However, if he is nearing retirement, preserving capital and minimizing risk may become higher priorities.
5. **Diversification and Asset Allocation:** Rather than simply loading up on risk, Henry would benefit from constructing a well-diversified portfolio tailored to his risk tolerance, financial goals, and time horizon. Asset allocation, the mix of stocks, bonds, and other asset classes in his portfolio, plays a crucial role in determining both risk and potential returns.

In summary, while there is a relationship between risk and return in investing, simply loading up on risk may not be the most prudent or effective strategy for Henry. Diversification, asset allocation, and consideration of his individual risk tolerance and time horizon are essential for constructing a balanced and suitable investment portfolio that aims to achieve his retirement goals while managing risk effectively.

2.14.3. Our Assessment

Overall, ChatGPT provides a sound assessment of this case. However, a high-risk investment could still be part of Henry’s portfolio. For example, Henry may consider allocating 10% to 20% of his portfolio to a mutual fund that invests in equities from emerging economies.

2.15. Case 15: Mutual Fund Fees

2.15.1. Case Description

Beth is considering buying a mutual fund. She reads in a newspaper that mutual funds charge many different fees. She is considering investing \$100,000. Her investment horizon is 10 years. She sees two identical mutual funds in terms of underlying assets, but one charges 6% front-end load fee, and the other charges 6% back-end load fee. She is unsure about which mutual fund she should choose. Her co-worker tells her that when it comes to mutual funds, she should always stick with the one with the lowest cost. Give proper recommendation to Beth and assess the claim by her co-worker.

2.15.2. Response from ChatGPT

Given Beth's situation, she should carefully consider the fees associated with each mutual fund before making a decision. Here's an assessment and recommendation:

1. **Front-End Load vs. Back-End Load:**

- Front-End Load: This fee is charged upfront when purchasing shares of the mutual fund. In Beth's case, if she invests \$100,000, she would pay a \$6000 fee upfront, and the remaining \$94,000 would be invested.
- Back-End Load: This fee is charged when redeeming shares of the mutual fund. In Beth's case, if she invests \$100,000 and holds the investment for the entire 10-year horizon, she would not pay any fees upfront, but she may incur a fee when selling her shares after 10 years.

2. **Consideration of Fees:**

- Beth should consider her investment horizon and financial goals when deciding between front-end and back-end load mutual funds. If she plans to hold the investment for the long term (in this case, 10 years), the back-end load option may be more cost-effective since she would avoid the upfront fee.
- However, if Beth anticipates needing to access her funds before the end of the investment horizon, the front-end load option may be preferable since it does not impose penalties for early redemption.

3. **Assessment of Co-Worker's Claim:**

- Beth's co-worker's advice to choose the mutual fund with the lowest cost is generally sound. Lower fees can translate into higher returns over the long term, as fees directly impact the overall performance of the investment.
- However, it's important to consider the specific circumstances and investment horizon when evaluating the overall cost-effectiveness of each mutual fund option. While minimizing fees is important, Beth should also weigh other factors such as her investment horizon, risk tolerance, and potential need for liquidity.

4. **Additional Factors to Consider:**

- In addition to load fees, Beth should also consider other fees associated with each mutual fund, such as management fees (expense ratio) and any additional transaction fees.
- She should also carefully review the investment objectives, underlying assets, and historical performance of each mutual fund to ensure they align with her investment goals and risk tolerance.

In conclusion, while minimizing fees is important, Beth should carefully consider her investment horizon and specific circumstances when choosing between front-end and back-end load mutual funds. Both options have their pros and cons, and Beth should select the option that best aligns with her financial goals and investment strategy.

2.15.3. Our Assessment

Overall, this is balanced advice from ChatGPT. However, ChatGPT does not entertain the possibility that there could be a no-load mutual fund option available that could be similar (if not identical) to the two mutual funds that Beth is considering. Overall, ChatGPT is adequate in answering the specific question that is being asked, but it does not bring up alternatives that may serve Beth just as well.

2.16. Case #16: Lure of Alternative Investments

2.16.1. Case Description

Kayla is 5 years away from retirement. However, her retirement savings balance is significantly below where it should be. One of her friends tells her that a lot of colleges invest part of their endowment in timberland because this investment has very high returns. She also tells Kayla that these endowments are run by professionals, so if they

think timberland is a good investment for them, it should be good for us too. Evaluate the soundness of financial advice given to Kayla by her friend.

2.16.2. Response from ChatGPT

The advice given to Kayla by her friend regarding investing in timberland may not be entirely applicable or suitable for Kayla's retirement savings strategy. Here's an evaluation of the soundness of the advice:

1. **Endowment Investments vs. Individual Retirement Savings:**

- Endowments managed by colleges or universities typically have different investment objectives, time horizons, and risk tolerances compared to individual retirement savings accounts.
- Endowments often have longer investment horizons and can afford to invest in alternative assets like timberland, which may have higher returns but also come with higher risks and longer holding periods.
- Individual retirement savings accounts, especially for someone like Kayla who is nearing retirement, typically prioritize capital preservation, income generation, and liquidity to meet short-term and medium-term financial needs.

2. **Risk Considerations:**

- Investments in timberland or other alternative assets can be illiquid and may involve higher levels of risk compared to traditional investment options like stocks and bonds.
- While timberland investments may offer the potential for high returns over the long term, they can also be subject to market fluctuations, environmental risks, and regulatory factors that could impact their performance.

3. **Professional Management:**

- While it's true that endowments are often managed by investment professionals, it's important to recognize that these professionals have access to resources, expertise, and risk management strategies that may not be available to individual investors like Kayla.
- Additionally, investment decisions made by endowments are tailored to the specific objectives and constraints of the institution, which may not align with Kayla's retirement savings goals and risk tolerance.

4. **Individual Financial Situation:**

- Kayla's retirement savings strategy should be based on her individual financial situation, goals, risk tolerance, and time horizon.
- Given that Kayla is only 5 years away from retirement and her savings balance is significantly below where it should be, she may need to focus on more conservative and diversified investment strategies aimed at preserving capital and generating income rather than pursuing higher-risk alternative investments like timberland.

In summary, while investments in timberland or other alternative assets may be suitable for certain institutional investors like college endowments, they may not be appropriate or practical for individual investors like Kayla, especially as she approaches retirement. Kayla should seek personalized financial advice from a qualified financial advisor who can help her develop a retirement savings strategy tailored to her specific needs and circumstances.

2.16.3. Our Assessment

Investing in real assets is much more complex than investing in publicly traded bonds or stocks. And it ties up capital for longer time periods. Given that Kayla is only five years away from retirement, the advice from ChatGPT on alternative investments is sound. However, if Kayla wants exposure to timberland in her portfolio, she may gain such

exposure by trading exchange-traded funds (ETFs) with exposure to stocks of companies in the timberland industry. This point is missed by ChatGPT. Also, ChatGPT advises Kayla “to focus on more conservative and diversified investment strategies aimed at preserving capital and generating income rather than pursuing higher-risk alternative investments like timberland”. It is doubtful that this advice alone (being conservative) will help Kayla close the gap in her retirement portfolio since conservative investments tend to produce conservative returns. A potential solution is that, to the extent that it is possible, Kayla increases her savings rate and perhaps takes advantage of catch-up contributions in her retirement plan. It is also important to note that endowments have an investment policy, which they follow. ChatGPT did not recommend that Kayla have one. Without having such a statement in place, Kayla (or any client in general) may make trades based on fads or unsubstantiated information, diverting themselves from their long-term goals.

2.17. Case #17: Debt Consolidation

2.17.1. Case Description

Oliver is in a financial mess. He has over \$100,000 in credit card debt. He also has around \$25,000 in unpaid medical bills and owes \$60,000 on his car loan. He sees no realistic way to pay off his debt. He shares his situation with a friend. His friend suggests that he gets a debt consolidation loan. Oliver takes this advice. He gets a debt consolidation loan and pays off all his debt. Though he now has one big debt to pay, he is glad that he is not being pursued by multiple lenders. Assess the soundness of the financial decision that Oliver made.

2.17.2. Response from ChatGPT

Oliver’s decision to consolidate his debts with a debt consolidation loan can be considered a sound financial move in certain circumstances, but it’s essential to evaluate its effectiveness and potential drawbacks:

1. **Simplification of Debt:** Consolidating multiple debts into a single loan can simplify Oliver’s financial situation and make it easier to manage. Instead of dealing with multiple lenders and payment schedules, he now has one monthly payment to make, which can help reduce confusion and stress.
2. **Lower Interest Rate:** If Oliver is able to secure a debt consolidation loan with a lower interest rate compared to the interest rates on his existing debts (such as credit cards), he could potentially save money on interest payments over the long term. This can help him pay off his debt more efficiently.
3. **Extended Repayment Term:** Debt consolidation loans often come with longer repayment terms, which can result in lower monthly payments. This may provide Oliver with some immediate relief in terms of cash flow and make it easier for him to manage his finances in the short term.
4. **Addressing Unpaid Medical Bills:** By using the proceeds from the debt consolidation loan to pay off his unpaid medical bills, Oliver can potentially avoid the negative consequences associated with medical debt, such as collection actions and damage to his credit score.

However, there are also potential drawbacks and considerations to keep in mind:

1. **Total Cost of Debt:** While consolidating debts can lower monthly payments and simplify the repayment process, it’s essential for Oliver to consider the total cost of the debt consolidation loan over its entire term. Extending the repayment term can result in paying more interest over time, even if the interest rate is lower.
2. **Risk of Secured Debt:** If Oliver secures the debt consolidation loan with collateral, such as his home or other assets, he is putting those assets at risk. Defaulting on the loan could result in the loss of the collateral, which could have severe financial consequences.
3. **Addressing Root Causes:** Consolidating debt does not address the underlying financial habits or issues that led to the accumulation of debt in the first place. Oliver

should also focus on developing a budget, reducing expenses, and increasing income to prevent future financial challenges.

4. **Impact on Credit Score:** Opening a new credit account and closing multiple existing accounts can impact Oliver's credit score, at least temporarily. It's important for him to monitor his credit report and take steps to rebuild his credit over time.

In conclusion, while debt consolidation can provide immediate relief and simplification for individuals struggling with multiple debts, it's crucial for Oliver to carefully consider the long-term implications, costs, and risks associated with this decision. Additionally, he should complement debt consolidation with efforts to address the root causes of his financial difficulties and improve his financial habits. Consulting with a financial advisor can also provide valuable guidance and assistance in navigating this process.

2.17.3. Our Assessment

ChatGPT has helpful suggestions for Oliver. However, it does not mention the bankruptcy option. Oliver may find it more beneficial to discharge his debt (allowed ones) through Chapter 7 bankruptcy instead of carrying their balance forward in a consolidated loan.¹¹ But we do acknowledge the legal challenges with the bankruptcy option and the significant harm to his credit score from using this option. Therefore, it would be important for Oliver to seek guidance from a legal professional. Also, Oliver may seek a refinancing option if it is going to help him lower his car loan payments or sell his car and buy a cheaper one. He also might be able to negotiate his medical bills and get on a payment plan.

2.18. Case #18: Retirement Problem with No Inheritance

2.18.1. Case Description

Mark and Emily are married, each saving \$30,000 a year in their 401k accounts. Assume a 7% rate of return and the couple will retire in 30 years. Also assume a 4% rate of return during their retirement and the couple will die 20 years after retirement. Calculate how much in annuity payments Mark and Emily will take (ordinary annuity) in total per year such that they will deplete their account by the time they die.

2.18.2. Response from ChatGPT

To calculate the total annual annuity payments that Mark and Emily can take in order to deplete their retirement accounts by the time they die, we can follow these steps:

1. Calculate the future value (FV) of their combined 401(k) savings after 30 years, considering their annual contributions and the 7% rate of return.
2. Calculate the present value (PV) of the remaining balance at the beginning of their retirement, discounted back 30 years at a rate of 4%.
3. Determine the annual annuity payment needed to deplete the remaining balance over 20 years during retirement.

Let's proceed with the calculations (as shown in Algorithm 1):

Algorithm 1. Solution to Retirement Problem with No Inheritance

Step 1: Calculate the future value of their combined 401(k) savings after 30 years:

$$FV = Pmt \times \left(\frac{(1+r)^n - 1}{r} \right) + P \times (1+r)^n$$

where:

- Pmt = Annual contribution
 - r = Rate of return per period (as a decimal)
 - n = Number of periods
 - P = Initial balance (0 in this case, since we're calculating future value)
-

Algorithm 1. *Cont.*

Plugging in the values:

$$FV = 30,000 \times \left(\frac{(1+0.07)^{30} - 1}{0.07} \right)$$

$$FV \approx 2,544,769.88$$

Step 2: Calculate the present value of the remaining balance at the beginning of retirement;

$$PV = \frac{FV}{(1+r)^n}$$

Plugging in the values:

$$PV = \frac{2,544,769.88}{(1+0.04)^{30}}$$

$$PV \approx 654,529.05$$

Step 3: Calculate the annuity payment needed to deplete the remaining balance over 20 years during retirement:

$$PV = PMT \times \left(\frac{1 - (1+r)^{-n}}{r} \right)$$

where:

- PMT = Annual annuity payment
- r = Rate of return per period (as a decimal)
- n = Number of periods

Solving for PMT :

$$654,529.05 = PMT \times \left(\frac{1 - (1+0.04)^{-20}}{0.04} \right)$$

$$PMT \approx \frac{654,529.05}{13.5904}$$

$$PMT \approx 48,183.86$$

So, Mark and Emily can take approximately \$48,183.86 in total per year in annuity payments to deplete their retirement accounts by the time they die.

2.18.3. Our Assessment

ChatGPT does not aggregate the savings by the couple in that it uses \$30,000 in annual savings instead of \$60,000 in savings. Also, Step 1 has a numerical error. The correct answer (based on \$30,000) is \$2,833,823.59. Step 2 is redundant. The answer from Step 1 is the beginning balance of the retirement account at the time of the retirement. Discounting it today (when the couple will start saving) does not make economic sense. Step 3 is consistent with Step 2 in that it uses the present value of the annuity formula. The solution needs to go to Step 3 straight from Step 1. Overall, the calculations from ChatGPT are not reliable.

2.19. Case #19: Retirement Problem with Inheritance

2.19.1. Case Description

Mark and Emily are married, each saving \$30,000 a year in their 401(k) accounts. Assume a 7% rate of return and the couple will retire in 30 years. Also assume a 4% rate of return during their retirement and the couple will die 20 years after retirement. Calculate how much in annuity payments Mark and Emily will take (ordinary annuity) in total per year such that they will be able to leave \$500,000 in inheritance by the time they die.

2.19.2. Response from ChatGPT

Let's break down the steps:

1. Calculate the future value (FV) of their combined 401(k) savings after 30 years of contributions and growth at a 7% rate of return.
2. Calculate the present value (PV) of the desired inheritance of \$500,000, discounted back 20 years at a 4% rate of return.
3. Determine the remaining balance in their retirement accounts at the beginning of retirement by subtracting the desired inheritance from the future value of their retirement savings.
4. Calculate the annuity payment needed to deplete the remaining balance over 20 years during retirement at a 4% rate of return.

Let's proceed with the calculations (as shown in Algorithm 2):

Algorithm 2. Solution to Retirement Problem with Inheritance

Step 1: Calculate the future value of their combined 401(k) savings after 30 years:

$$FV = Pmt \times \left(\frac{(1+r)^n - 1}{r} \right)$$

where:

- Pmt = Annual contribution
- r = Rate of return per period (as a decimal)
- n = Number of periods

Plugging in the values:

$$FV = 30,000 \times \left(\frac{(1+0.07)^{30} - 1}{0.07} \right)$$

$$FV \approx 2,544,769.88$$

Step 2: Calculate the present value of the desired inheritance of \$500,000:

$$PV = \frac{FV}{(1+r)^n}$$

Plugging in the values:

$$PV = \frac{500,000}{(1+0.04)^{20}}$$

$$PV \approx 244,542.75$$

Step 3: Determine the remaining balance in their retirement accounts at the beginning of retirement:

$$\text{Remaining Balance} = FV - PV$$

$$\text{Remaining Balance} \approx 2,544,769.88 - 244,542.75$$

$$\text{Remaining Balance} \approx 2,300,227.13$$

Step 4: Calculate the annuity payment needed to deplete the remaining balance over 20 years during retirement:

$$PV = PMT \times \left(\frac{1 - (1+r)^{-n}}{r} \right)$$

where:

- PMT = Annual annuity payment
- r = Rate of return per period (as a decimal)
- n = Number of periods

Solving for PMT :

$$2,300,227.13 = PMT \times \left(\frac{1 - (1+0.04)^{-20}}{0.04} \right)$$

$$PMT \approx \frac{2,300,227.13}{12.4873}$$

$$PMT \approx 184,107.90$$

So, Mark and Emily can take approximately \$184,107.90 in total per year in annuity payments to deplete their retirement accounts over 20 years and leave \$500,000 in inheritance by the time they die.

2.19.3. Our Assessment

As with the prior case, Step 1 has a numerical error, and it does not aggregate the savings (i.e., it uses \$30,000 instead of \$60,000). Step 2 has the correct setup, but the answer for PV is inconsistent with the inputs used. Step 4 has a numerical error as well. The denominator in the PMT equation uses the same inputs as Step 3 from the previous case but ends up with a different answer (12.4873 vs. 13.5904). Overall, the calculations from ChatGPT are not reliable.

2.20. Case #20: Saving for College

2.20.1. Case Description

The Williams family has three young children (ages 2, 4, and 6). Mr. and Mrs. Williams want to make sure that they save for each child's college expenses. They feel that their kids have a relatively long-time horizon, which will allow them to take on more risk. The

couple read about options being very risky. So, they decide to buy \$30,000 in call options on blue chip stocks for each child's portfolio. They hope that by the time each child turns 18, there will be sufficient funds in their college savings accounts. Assess the soundness of the financial decisions that the Williams family made.

2.20.2. Response from ChatGPT

The financial decision made by the Williams family to invest in call options on blue chip stocks for their children's college savings accounts carries significant risk and may not be prudent for several reasons:

1. **Riskiness of Options:** Options trading, especially buying call options, can be highly speculative and risky. Options contracts have a limited lifespan, and if the underlying stock does not move in the expected direction within the specified timeframe, the options may expire worthless, leading to a total loss of the investment.
2. **Lack of Diversification:** Investing solely in call options on blue chip stocks for college savings accounts lacks diversification. Concentrating the entire investment in a single type of derivative instrument and a limited number of stocks exposes the portfolio to heightened volatility and the potential for substantial losses if the underlying stocks do not perform as expected.
3. **Long Time Horizon Doesn't Mitigate Risk:** While the Williams family correctly recognizes that their children have a long time horizon until college, this does not inherently mitigate the risk associated with options trading. Options are inherently short-term instruments, and their value can fluctuate significantly within a short period, regardless of the investment horizon.
4. **Education Costs are Non-Negotiable:** College expenses are typically non-negotiable and have fixed timelines. Relying on speculative investments like options to fund these expenses introduces unnecessary uncertainty and risk. If the options investments do not perform as expected, the Williams family may face challenges meeting their children's educational needs.
5. **Consideration of Alternative Investments:** Instead of relying solely on options trading, the Williams family should consider a diversified investment approach that aligns with their risk tolerance and investment goals. Options trading may have a place in a well-diversified portfolio but should be approached with caution and used sparingly, especially when saving for long-term financial goals such as college education.

In summary, while the Williams family's intention to save for their children's college education is commendable, their decision to invest in call options on blue chip stocks for this purpose is risky and may not be sound. It's essential for them to reconsider their investment strategy and explore more suitable and diversified investment options to ensure the long-term financial security of their children's education funds. Consulting with a financial advisor can provide valuable guidance in developing a prudent investment plan tailored to their specific needs and goals.

2.20.3. Our Assessment

Overall, this is good advice. ChatGPT did not mention that the Williams family could use 529 accounts, which are tax-advantaged, to save for their children's college. Additionally, most options expire worthless. In this case, the Williams family will lose all their investments on options expiring out of the money. ChatGPT is also ignoring the tax implications of the options and taxations of any gains if they were to be exercised and the underlying asset subsequently sold. There is much better tax efficiency in the 529 plan with tax-deferred growth and tax-free withdrawals of qualified expenses.

Also, in point 4, the non-negotiability of college expenses is unclear and misleading. Parents can negotiate with colleges for lower tuition.¹² ChatGPT does say "typically", but the full statement may discourage some parents from even trying to negotiate tuition bills. Finally, in point 5, the title of the recommendation is misleading. It says "Consideration of

Alternative Investments” even though it does not mean alternative investments as an asset class. It actually means “other assets than options”.

2.21. Case #21: Saving His Marriage

2.21.1. Case Description

Thomas and Julie were living paycheck to paycheck. They were a hardworking couple, but they just did not make enough money to pay for the mortgage, two car loans, and childcare expenses for two toddlers. Their financial troubles put a lot of stress on their marriage. For a change in scenery, Thomas took out a \$10,000 personal loan and booked a one-week cruise trip with Julie. They left the kids with their grandparents and took off for a week of stress-free time. Evaluate the financial situation and decisions of Thomas and Julie and come up with recommendations for improvement.

2.21.2. Response from ChatGPT

Thomas and Julie’s financial situation appears to be precarious, as they are struggling to cover their expenses and are living paycheck to paycheck. Taking out a \$10,000 personal loan to fund a one-week cruise trip, while providing a temporary escape from their financial stress, is not a prudent decision and may exacerbate their financial difficulties in the long run. Here are some recommendations for improvement:

1. **Budgeting and Expense Management:** Thomas and Julie should create a detailed budget that outlines their income and expenses. They should prioritize essential expenses such as mortgage, childcare, and car loans, and look for areas where they can cut back on non-essential spending. Tracking their expenses can help them identify areas where they can save money and allocate funds more effectively.
2. **Emergency Fund:** Building an emergency fund is crucial for financial stability. Setting aside money for unexpected expenses can help prevent them from relying on high-interest personal loans or credit cards in the future. Even a small amount saved regularly can gradually build up an emergency fund over time.
3. **Debt Repayment Strategy:** Thomas and Julie should prioritize paying off high-interest debts such as credit card debt and personal loans. They may consider consolidating their debts into a lower-interest loan or exploring options for refinancing their mortgage or car loans to reduce their monthly payments.
4. **Increasing Income:** Finding ways to increase their income can help Thomas and Julie improve their financial situation. They may consider seeking additional employment opportunities, asking for a raise or promotion, or exploring side gigs or freelance work to supplement their income.
5. **Financial Counseling:** Seeking guidance from a financial counselor or advisor can help Thomas and Julie develop a personalized financial plan tailored to their specific circumstances and goals. A professional can provide valuable insights and strategies for improving their financial situation and reducing stress.
6. **Prioritizing Family Time:** While taking a one-week cruise trip may provide temporary relief from financial stress, Thomas and Julie should focus on finding affordable ways to spend quality time together as a family without going into debt. They can explore local parks, museums, or free community events as alternatives to expensive vacations.

By implementing these recommendations and adopting a proactive approach to managing their finances, Thomas and Julie can work towards achieving greater financial stability and reducing the stress on their marriage caused by financial worries.

2.21.3. Our Assessment

ChatGPT has helpful suggestions for the couple, and in particular, it makes a good point about the expensive cruise trip. If the couple feels strongly about taking a cruise trip, they may find cheaper packages (around \$2000) than the \$10,000 one. On the other hand, ChatGPT’s suggestions sound generic. For example, it advises them to pay off debt with high interest rates, and it mentions credit cards and personal loans as examples. The case

does not say that the couple had any credit card debt. Another issue is that the couple has a family (their parents) who could look after their children. Perhaps the couple could leave their kids with their grandparents (for free or for less than what it costs in a typical childcare facility). Another generic suggestion is that the couple works harder (in point 4). The case mentions that the couple already works hard. Suggesting additional employment on top of what they are already doing (and possibly at the cost of higher childcare expenses) may not be sound advice. Another important consideration is refinancing. It might be possible for the couple to refinance their mortgage and car loans and lower their monthly payments. Also, the couple could investigate the possibility of selling one of their cars and using only one vehicle, at least temporarily, to mend their financial situation.

3. Discussions and Conclusions

In this paper, we write 21 cases touching on various aspects of personal finance issues and use ChatGPT to seek financial advice and guidance on each case. Informed by ChatGPT's responses to these 21 cases, we now present the summary of the advantages and disadvantages of seeking financial advice from ChatGPT compared to human experts (please see Table 2 for the highlights from this section). We start with the disadvantages. We find that ChatGPT tends to provide generic recommendations.¹³ A human expert is likely to tailor his or her responses by taking into account the unique situation of the client. ChatGPT also tends to view issues in isolation from the big picture. It provides a list of solutions without tying them together and without prioritizing them. A human expert is very likely to piece together different inputs from the client, provide a high-level overview, and then offer the client an implementation schedule, prioritizing what needs to be done first.

Table 2. Advantages and disadvantages of using ChatGPT for financial advice.

Advantages	Disadvantages
Offers free financial advice	Provides generic recommendations
Offers 24/7 access to its financial advice	Thinks inside-the-box
	View issues in isolation
	Ignores the existence of alternative viewpoint and/or solutions
	Overlooks important details such as taxes and legal issues
	Does not offer prioritization in its financial advice (offers a to-do-list with no clear priorities)
	Ignores the psychology of financial planning
	Lacks empathy and compassion for advice seekers in challenging situations
	Has poor performance in solving retirement problems

ChatGPT ignores taxes in certain situations, such as cash windfalls, and provides misleading and incomplete guidance. A human expert is likely to caution the client about these important issues and refer the client to competent experts for further consultation if necessary. In some cases (such as unforeseen health problems), ChatGPT appears to lack compassion and empathy. For a human expert, it is very important to establish a close relationship with the client and ensure that the client feels heard and understood. ChatGPT also thinks “inside the box”. It tends to strictly evaluate what is being asked, and it does not consider alternative views. For example, if it turns down a suggestion, it sometimes does not offer a clear alternative. Similarly, if it favors a solution, it ignores the existence of alternative solutions. In other words, it tends to evaluate only what is being asked, and it does not bring up or entertain other possibilities. The user may sometimes ask the wrong question to begin with, but ChatGPT does not hesitate to provide an answer. This is an area where human experts can excel. For example, if a client asks questions about mutual funds with front-end load fees versus back-end load fees, human experts can inform the client that they can instead invest in index funds, saving themselves from hefty fees. When there are legal concerns (clear or ambiguous), ChatGPT sometimes does not bring them up. For

example, someone finding cash in the house they bought may be commended if they wisely invested this money. This is yet another area where human experts can connect the client with competent experts in their fields for further consultation. We also find that when it comes to retirement planning problems, the mathematical solutions offered by ChatGPT contain errors, and they are not reliable. Human experts, armed with specialized software, can provide the client with accurate information. In addition, ChatGPT assumes that when presented with facts, individuals will immediately take the right steps and correct their financial situations. However, human psychology is an important input in the personal decision-making process, and finance professionals are taking notice. For example, the CFP Board recently added “The Psychology of Financial Planning” to its principal knowledge domain.¹⁴ ChatGPT does not appear to be equipped to consider psychological aspects of financial planning at this point. Human experts hold an edge over ChatGPT in this area. They can ask deeper questions to understand where the client is coming from and follow up with the client to ensure that the client is on track.

ChatGPT has advantages over human experts. It is freely available, whereas human experts require payments to dispense financial advice, which can run in thousands of dollars (Stanek and White 2024). And sometimes, the costs associated with hiring a human expert can prevent advice seekers from having a financial advisor. For example, according to a survey, only 30% of the survey respondents had a paid financial advisor, and among those who did not have a financial advisor, 33% of them cited the cost of human financial advisors as the reason why they did not have a financial advisor (Godbout 2021). Another survey puts this percentage (not getting a financial advisor due to cost) at 38% for affluent and non-affluent Americans combined and 44% for affluent Americans only (Deaton 2022). Another advantage of ChatGPT over human experts is its accessibility. It is available 24 h a day (unless there are unplanned outages), whereas human experts require appointments.

In conclusion, ChatGPT offers quick and accessible financial advice, offering a valuable perspective to households, instructors of personal finance, and financial advisors. Many Americans do not have a financial advisor (Northwestern Mutual 2023), and at least some members of this group may significantly benefit from the recommendations offered by ChatGPT. Overall, ChatGPT is a suitable place to start when it comes to seeking answers to financial questions, but its users need to be mindful of this tool’s weaknesses.

Our analysis has limitations. We acknowledge that when a user puts the cases from this paper into ChatGPT, he or she may get better or worse responses than those we obtained. Also, our cases may contain information that is open to different interpretations, and hence, our assessment may miss important points.

We encourage more research on AI and financial advice. More and more powerful large language models (LLMs) are being made available to the public. As these models accomplish wide usage, we very much hope that future research can examine their performance in personal finance matters.

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Appendix A. List of Personal Finance Cases

Case #1: James' Financial Troubles

Case Description:

James has \$10,000 in credit card debt. Even though he has \$100,000 in a bank account, he only makes the minimum payments on his credit card debt. His company offers him a 401(k) plan, and they will match the first 6% of his contributions. He only contributes only 2%, leaving money on the table. James also has unpaid medical bills, and he ignores them. He hopes that the hospitals will just give up collecting them and will leave him alone. Provide sound financial advice to James.

Case #2: Sports Gambling and Winning the Lottery

Case Description:

Mark has a lot of money problems. He works while his partner stays home with kids (ages 4 and 2). After taxes, he brings home \$75,000 a year, and they live in his parent's rental home rent-free. Unbeknown to his partner, Mark spent a lot of money on sports betting, and racked up \$500,000 on his multiple credit cards. He is under a lot of stress, and he does not see any way out. While going through some old books at home, he found a \$100 bill stacked away in one of them. He immediately went to the nearest gas station and bought lottery tickets, spending all his money. To his shock, he won the jackpot of \$750,000! Develop a sound financial plan to help Mark out of his current problems and to wisely use the lottery prize.

Case #3: Living the Good Life

Case Description:

The Smith family is living in the most expensive house in their neighborhood (two parents and four teenagers). They have the latest models in everything from foreign luxury cars to the latest video games. Both parents work and take in over \$500,000 in total a year after taxes. Their skills are much needed where they work, and they feel very secure in their jobs. It is for this reason that they decided not to save for retirement until all the kids go to college. Their current priority is to make memories with their kids. They have a second mortgage on their house, but they do not think it is a big deal. Once kids leave the house, they think they can easily handle this debt. They did not save any money for their kids' college, but they are not too concerned because kids can get either scholarships or loans, and they are comfortable with being co-signers on their loan applications. Come up with recommendations for the Smith family that could help them make better financial decisions.

Case 4: A Deadly Virus Wiping out a Family's Savings

Case Description:

The Frank family was always proud of their financial habits. Both parents worked and maximized their retirement savings. They taught their kids (ages 10 and 12) sound money management habits. They sometimes went extreme to save money (such as keeping the temperature at 60 during the winter and wearing coats all day) to show to their kids how important it was to make sacrifices for a secure financial future. The Frank family lived next to the Turner family who spent most of what they made due to their firm belief in the idea that you only live once and you need to enjoy life all the time. When their kids complained about how strict their parents were and mentioned the lavish lifestyle of their neighbor's kids, Mr. and Mrs. Frank explained to their kids that they would be the winners in the long term. One week everything changed. A deadly virus emerged, creating panic in the financial markets. As a result, the stock market tanked by 90%, wiping out most of the Frank family's wealth. Due to this wipe-out, they now had almost the same amount of net worth as their neighbor. After observing what happened, their kids had the following to say to Mr. and Mrs. Frank: "What you did was for nothing. You made us sacrifice all the time, whereas our friends had fun all the time. Now there is no difference between us and them except they have great memories, and we have none". Suppose that Mr. and Mrs. Frank came to you for advice and wanted to seek your council on where they went wrong.

They cannot help but think that their kids were right. Provide sound advice to Mr. and Mrs. Frank.

Case 5: Young Couple and Their Good Fortune

Case Description:

Sam and Julie grew up in the same neighborhood. They both knew Ms. Lily who lived by herself in the house that her dad built for her, and she had no family. After Ms. Lily died, Sam and Julie bought her house and moved in there to start their family. The house needed a lot of repairs. Both Sam and Julie liked repair work and they enjoyed making this place their home. One day, when they were taking down a wall, they found a hidden compartment and a large box in it. To their surprise, inside the box, there was cash worth \$500,000 and a lot of jewelry. Sam and Julie could not believe their luck. They wanted to use this money very carefully. They put \$50,000 of the cash in a savings account for emergencies and they bought low-cost index funds for the rest. They did not touch the jewelry (gold) since they read that gold prices may go up this year. Evaluate the decisions that Sam and Julie made and suggest recommendations if they need any.

Case #6: 90-Year-Old Grandpa Getting Rich with Options Trading

Case Description:

Ken, a 20-year-old finance major, learned about options trading in college, and he was very excited to try it. However, he did not have any money to trade options. Mr. Wilson, Ken's 90-year-old grandfather, loved his grandson and was always proud of him. Mr. Wilson lived a lot longer than he thought he would, and he was getting worried about outliving his retirement savings. One day he was talking to Ken about his worries, and a light bulb went off in Ken's head. He told his grandpa about options trading. Mr. Wilson did not quite understand the ins and outs of it, but he trusted his grandson. At the recommendation of Ken, Mr. Wilson opened a brokerage account and got approval to sell naked call options. Ken took care of running the account. After a year, the account was up by \$5,000,000. Mr. Wilson was so grateful to his grandson for this work. He now felt financially secure. He closed the account, kept \$4,000,000 to himself, and gave the rest to Ken. Evaluate the plan that Ken came up with to help his grandfather.

Case #7: Hardworking Salesman Embezzles

Case Description:

Hank was a hardworking salesman. He put in more hours than anyone else at work. The main reason was that he needed the money badly to help pay for medical expenses for his daughter who was born with a rare medical condition. He was able to pay his bills but could not save anything for retirement. That was when he started increasing the invoice price to his customers (by only 0.25%) and keeping this extra part to himself. He was very good with computers, and he was able to keep this money to himself without messing up the company's books. Also, the company was flush with cash, and he knew that this small amount would not matter to the owners who were aware of his financial difficulties. To his surprise, he was able to generate \$5,000,000 in savings from this meager percentage increase in the invoice price over 20 years that he worked for his company. He now felt ready to retire. Based on his family history, he hoped to live another 35 years. Suppose that Hank came to you for financial advice. Evaluate his situation and provide him with sound financial advice.

Case #8: Getting the Right Kind of Mortgage

Case Description:

Sally and Matt, a young couple with no kids, were looking for their dream home. They finally found it but had problems getting a mortgage. The only mortgage they could find one was an adjustable-rate mortgage. They read in the news that interest rates were expected to go up significantly next year, and they hurried to get this adjustable-rate mortgage before the expected increase in the rates. Their mortgage application was approved,

and they truly loved the feeling of being homeowners. Evaluate the financial situation and decisions of Thomas and Julie and come up with recommendations for improvement.

Case #9: Insurance Needs

Case Description:

Sally is under a lot of stress. She is the only breadwinner in her family. Her partner stays at home. They have four children (ages 6, 10, 12, 18). Also, Sally has elderly parents who will face significant medical bills due to rapid deterioration in their health. Sally sometimes worries about what will happen to her family if she dies unexpectedly. Her partner has not worked for years. They have a huge mortgage on the house. The kids are young, and they need a lot of financial support, both before and after they leave the house (they promised each other to pay for the kids' college expenses). Her parents do not have enough money to pay for their medical bills. Sally and her partner also have not saved much for retirement. Suppose that Sally comes to you for financial advice on what kind of insurance she can get that will help her family in case she dies unexpectedly. Provide her with suitable suggestions.

Case #10: Unexpected Diagnosis and Hardship Withdrawal

Case Description:

Howard recently graduated from college. He came from a very large family, and he always wanted to have a place of his own. He got a good job and bought himself a nice condo. Initially, everything went okay. He made enough money to pay his mortgage. He also built a healthy savings account and put away 6% of his salary, which his employer matches 100%, in his 401(k) account. One day something unexpected happened. During a routine health exam, the doctor diagnosed him with cancer. The cancer did not spread, and he had a pretty good chance to recover. He burned through all his savings, and then stopped contributing to his retirement so that he could afford to pay for his medical expenses. He had insurance, but it was not enough as some of the treatments were considered experimental. He was facing foreclosure on his condo. He hated this possibility. He decided to take a hardship withdrawal from his 401(k) so that he could pay his mortgage. Suppose Howard comes to you and asks you this question: where have I gone wrong with my finances? Provide your response.

Case #11: Gambling as Last Resort

Case Description:

When her husband died, Emily found out that he hid \$300,000 in credit card debt from her. He also borrowed money from his brothers (over \$150,000), promising to pay them back in a year. She also found out that he did not pay child support for years to his two children from his previous marriage. Also, a letter arrived from the bank threatening the foreclosure of their property. It turned out that he did not pay the mortgage for the last couple of months. She was devastated twice: she lost her husband and found herself in incredible financial difficulty. All Emily had was \$10,000 in emergency savings. She figured she would at least need \$750,000 to climb out of the mess that her husband left her in. She felt hopeless until she drove by the nearby casino. She decided to gamble away all her emergency savings. She figured that she was already in a big hole and losing another \$10,000 would not make a huge difference. It was her first time at the casino, and luck was on her side. She won \$1,000,000 that night! She told herself that she now had enough money to pay off all her debt and \$250,000 to start a new future for herself. Evaluate Emily's situation and her financial decisions. Come up with recommendations if you could.

Case #12: Estate Planning

Case Description:

Sarah, a widow, has over \$10,000,000 in net worth. She feels she is nearing the end of her life. She wants to create a trust fund for each of her grandchildren (10 in total), with equal amounts going to each of them. She wants someone competent to manage the accounts until each child turns 18 (all the grandchildren are younger than 15). She wants

protection so that Sarah's kids won't touch her grandchildren's money. She also wants an assurance that in case any of the grandchildren misbehaves (e.g., getting into trouble with the law), she wants all the remaining balance in their accounts to go to a nearby children's hospital. Suggest the best possible plan for Sarah.

Case #13: No Luck with Convincing His Father

Case Description:

Adam was a successful hedge fund manager. He strongly believed that investing in the stock market was one of the best possible ways to build long-term wealth. He was able to instill his belief in all his children. However, he could not convince his father. Nearing 100 but still mentally sharp, Adam's father, Sam, refused to put even a dollar in the stock market. Being a thrifty person, Sam managed to build a substantial amount of wealth without investing in the stock market. He was now sitting over \$5,000,000 net worth and continued refusing to invest in the stock market. Frustrated with his father, Mark yelled: "You are a smart guy overall, but when it comes to investing, you have no idea how wrong you are". Sam, steadfast in his opinion of the stock market, told his son: "I would burn all my money instead of investing it in the stock market". Consider the conflict between Adam and Sam and provide an assessment of who is right and wrong.

Case 14: No Way to Go Wrong with the Stock Market

Case Description:

Alex is an avid reader of the latest financial news and research. Having a strong quantitative background (an engineer by training), the stock market makes a lot of sense to him. One day his best friend, Henry, comes to him for financial advice. Henry is substantially behind in his retirement savings. He tells Alex that he needs a magic bullet to bring up his retirement balance. Alex explains to him the relationship between risk and return. He later tells Henry: "If you want more returns, just load up your portfolio with more risk. It is that simple". Evaluate the soundness and validity of the financial advice that Alex gave to Henry.

Case 15: Mutual Fund Fees

Case Description:

Beth is considering buying a mutual fund. She reads in a newspaper that mutual funds charge many different fees. She is considering investing \$100,000. Her investment horizon is 10 years. She sees two identical mutual funds in terms of underlying assets, but one charges 6% front-end load fee, and the other charges 6% back-end load fee. She is unsure about which mutual fund she should choose. Her co-worker tells her that when it comes to mutual funds, she should always stick with the one with the lowest cost. Give proper recommendation to Beth and assess the claim by her co-worker.

Case #16: Lure of Alternative Investments

Case Description:

Kayla is 5 years away from retirement. However, her retirement savings balance is significantly below where it should be. One of her friends tells her that a lot of colleges invest part of their endowment in timberland because this investment has very high returns. She also tells Kayla that these endowments are run by professionals, so if they think timberland is a good investment for them, it should be good for us too. Evaluate the soundness of financial advice given to Kayla by her friend.

Case #17: Debt Consolidation

Case Description:

Oliver is in a financial mess. He has over \$100,000 in credit card debt. He also has around \$25,000 in unpaid medical bills and owes \$60,000 on his car loan. He sees no realistic way to pay off his debt. He shares his situation with a friend. His friend suggests that he gets a debt consolidation loan. Oliver takes this advice. He gets a debt consolidation loan and pays off all his debt. Though he now has one big debt to pay, he is glad that he is not

being pursued by multiple lenders. Assess the soundness of the financial decision that Oliver made.

Case #18: Retirement Problem with No Inheritance

Case Description:

Mark and Emily are married, each saving \$30,000 a year in their 401k accounts. Assume a 7% rate of return and the couple will retire in 30 years. Also assume a 4% rate of return during their retirement and the couple will die 20 years after retirement. Calculate how much in annuity payments Mark and Emily will take (ordinary annuity) in total per year such that they will deplete their account by the time they die.

Case #19: Retirement Problem with Inheritance

Case Description:

Mark and Emily are married, each saving \$30,000 a year in their 401(k) accounts. Assume a 7% rate of return and the couple will retire in 30 years. Also assume a 4% rate of return during their retirement and the couple will die 20 years after retirement. Calculate how much in annuity payments Mark and Emily will take (ordinary annuity) in total per year such that they will be able to leave \$500,000 in inheritance by the time they die.

Case #20: Saving for College

Case Description:

The Williams family has three young children (ages 2, 4, and 6). Mr. and Mrs. Williams want to make sure that they save for each child's college expenses. They feel that their kids have a relatively long-time horizon, which will allow them to take on more risk. The couple read about options being very risky. So, they decide to buy \$30,000 in call options on blue chip stocks for each child's portfolio. They hope that by the time each child turns 18, there will be sufficient funds in their college savings accounts. Assess the soundness of the financial decisions that the Williams family made.

Case #21: Saving His Marriage

Case Description:

Thomas and Julie were living paycheck to paycheck. They were a hardworking couple, but they just did not make enough money to pay for the mortgage, two car loans, and childcare expenses for two toddlers. Their financial troubles put a lot of stress on their marriage. For a change in scenery, Thomas took out a \$10,000 personal loan and booked a one-week cruise trip with Julie. They left the kids with their grandparents and took off for a week of stress-free time. Evaluate the financial situation and decisions of Thomas and Julie and come up with recommendations for improvement.

Notes

- ¹ To be more accessible to households, teachers, and students with limited means, we decided to use the free version of ChatGPT in our study.
- ² Our approach is in the same spirit as that of Pinto (2023). We perform a more systematic assessment of ChatGPT in the area of financial planning and providing financial advice. Our cases represent hypothetical individuals in hypothetical cases. Any resemblance to actual cases is coincidental.
- ³ We provided all the cases in Appendix A for ease of reference.
- ⁴ <https://www.corelogic.com/intelligence/us-rent-affordability-drops-lowest-level-decades/> (accessed on 16 April 2024).
- ⁵ <https://rsmus.com/insights/services/business-tax/your-acts-generosity-could-unintentionally-your-gift-tax-exemption.html> (accessed on 23 April 2024).
- ⁶ <https://www.pimco.com/en-us/resources/education/the-benefits-of-staying-invested/> (accessed on 1 April 2024).
- ⁷ <https://www.elderlawanswers.com/500000-found-in-house-walls-belongs-to-estate-not-homeowners-9905> (accessed on 16 April 2024), <https://www.elderlawanswers.com/who-gets-cash-hidden-in-house-by-deceased-former-owner-7176> (accessed on 16 April 2024).
- ⁸ <https://www.bahrielaw.com/blog/2020/08/no-will-no-heirs-what-happens-to-your-estate/> (accessed on 16 April 2024).

- ⁹ <https://www.thestreet.com/retirement-daily/social-security-medicare/soaring-medical-debt-burdens-seniors> (accessed on 16 April 2024).
- ¹⁰ <https://www.stglawfirm.com/back-child-support-what-happens-when-a-non-paying-parent-dies/> (accessed on 17 April 2024).
- ¹¹ <https://www.experian.com/blogs/ask-experian/bankruptcy-or-debt-consolidation-which-is-better-for-you/> (accessed on 17 April 2024).
- ¹² <https://www.wsj.com/articles/families-tap-new-tools-to-negotiate-lower-college-tuition-368887c> (accessed on 17 April 2024).
- ¹³ This result is consistent with the performance of ChatGPT in other domains (Kocoń et al. 2023).
- ¹⁴ <https://www.cfp.net/news/2022/04/cfp-board-releases-six-part-book-on-psychology-of-financial-planning> (accessed on 29 April 2024).

References

- Bankrate. 2024. Bankrate's 2024 Annual Emergency Savings Report. Available online: <https://www.bankrate.com/banking/savings/emergency-savings-report/> (accessed on 6 April 2024).
- Benartzi, Shlomo. 2023. Can AI replace your financial adviser? Not yet. But wait. *The Wall Street Journal*, October 29.
- Caporal, Jack. 2023. Study: 26% of Americans have used ChatGPT for credit card recommendations. *The Ascent*, July 11.
- Chen, Yang, Meena Andiappan, Tracy Jenkin, and Anton Ovchinnikov. 2023. A Manager and an AI Walk into a Bar: Does ChatGPT Make Biased Decisions Like We Do? SSRN Working Paper. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4380365 (accessed on 8 April 2024).
- Deaton, Holly. 2022. Americans without financial advisors are more stressed. So why aren't they engaging with financial professionals. *RIA Intel*, December 8.
- Dokoupil, Tony, Michael Kaplan, Martin Finn, Cassidy McDonald, Jennie Kamin, and Rob Kaplan. 2021. Alex Kearns died thinking he owed hundreds of thousands for stock market losses on Robinhood. His parents have sued over his suicide. *CBS News*, February 8.
- Dowling, Michael, and Brian Lucey. 2023. ChatGPT for (finance) research: The Bananarama Conjecture. *Finance Research Letters* 53: 103662. [CrossRef]
- Finney, Michael. 2018. Grandmother, 82, commits suicide after falling for scam. *ABC7*, February 23.
- Godbout, Ted. 2021. Why some consumers use- and don't use financial advisors. *National Association of Plan Advisors (NAPA)*, March 26.
- Harvanek, Zachary M., Nia Fogelman, Ke Xu, and Rajita Sinha. 2021. Psychological and biological resilience modulates the effects of stress on epigenetic aging. *Translational Psychiatry* 11: 601. [CrossRef] [PubMed]
- Hughes, Stephanie. 2024. Personal finance classes are becoming the norm in high schools. *Marketplace*, February 27.
- Kocoń, Jan, Igor Cichecki, Oliwier Kaszyca, Mateusz Kochanek, Dominika Szydło, Joanna Baran, Julita Bielaniewicz, Marcin Gruza, Arkadiusz Janz, Kamil Kanclerz, and et al. 2023. ChatGPT: Jack of all trades, master of none. *Information Fusion* 99: 101861. [CrossRef]
- Ko, Hyungjin, and Jaewook Lee. 2024. Can ChatGPT improve investment decisions? From a portfolio management perspective. *Finance Research Letters* 64: 105433. [CrossRef]
- Lamas, Samantha. 2023. With ChatGPT, why do I need a financial advisor. *Morningstar.com*, June 26.
- Liu, Qianhua, Ka-Ching Chan, and Ranga Chimhundu. 2024. Fintech research: Systematic mapping, classification, and future directions. *Financial Innovation* 10: 24. [CrossRef]
- Ma, Feng, Zhichong Lyu, and Haibo Li. 2024. Can ChatGPT predict Chinese equity premiums? *Finance Research Letters* 65: 105631. [CrossRef]
- Niszczota, Pawel, and Sami Abbas. 2023. GPT has become financially literate: Insights from financial literacy tests of GPT and a preliminary test of how people use it as a source of advice. *Finance Research Letters* 58: 104333. [CrossRef]
- Northwestern Mutual. 2023. Planning & Progress Study 2023. Available online: <https://news.northwesternmutual.com/planning-and-progress-study-2023> (accessed on 17 April 2024).
- Northwestern Mutual. 2024. Planning & Progress Study 2024. Available online: <https://news.northwesternmutual.com/planning-and-progress-study-2024> (accessed on 6 April 2024).
- Odeniran, Wola. 2023. 60% of financial advisors use or are interested in using ChatGPT—2023 Survey. *SmartAsset*, July 11.
- Oehler, Andreas, and Matthias Horn. 2024. Does ChatGPT provide better advice than robo-advisors? *Finance Research Letters* 60: 104898. [CrossRef]
- Pelster, Matthias, and Joel Val. 2024. Can ChatGPT assist in picking stocks? *Finance Research Letters* 59: 104786. [CrossRef]
- Perhach, Paulette. 2023. Would you take financial advice from A.I.? *The New York Times*, May 20.
- Pinto, Ivana. 2023. ChatGPT helped me make a plan to buy a \$500,000 home, but experts warn about using AI for financial advice. *Fortune.com*, March 3.
- Rao, Rajiv. 2023. ChatGPT outperforms money managers, as Americans flock to AI for investing advice. *ZDNET*, May 18.
- Rekenthaler, John. 2023. Will ChatGPT improve financial literacy? *Morningstar.com*, March 9.
- Rubin, Bob. 2024. Here's the real reason AI can never replace financial advisors. *Fortune*, January 5.
- Son, Hugh. 2023. Morgan Stanley kicks off generative AI era on Wall Street with assistant for financial advisors. *CNBC*, September 18.
- Stanek, Becca, and Jeff White. 2024. How much does a financial advisor cost. *SmartAsset*, May 20.

- Tergesen, Anne. 2024. More Americans are treating their 401(k)s like cash machines. *The Wall Street Journal*, March 11.
- TIAA. 2023. Financial Well-Being and Literacy in a High-Inflation Environment. Available online: <https://www.tiaa.org/public/institute/publication/2023/financial-well-being-and-literacy-in-a-high-inflation-environment> (accessed on 6 April 2024).
- Urban, Carly, Maximilian Schmeiser, J. Michael Collins, and Alexandra Brown. 2020. The effects of high school personal financial education policies on financial behavior. *Economics of Education Review* 78: 101786. [CrossRef]

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