Based on the provided PDF slides and academic papers, here is the Literature & Presentation Synthesis Report.

Literature & Presentation Synthesis Report

Part 1: Synthesis & Grouping

1. **Foley, S., Karlsen, J. R., & Putniņš, T. J. (2019): Sex, Drugs, and Bitcoin**

Source Document: "Foley, Karlsen, Putnins_2019_Sex, Drugs, and Bitcoin.pdf"
Synthesis of Findings: This paper estimates the scale of illegal activity in Bitcoin. The authors use network cluster analysis (SLM) and detection-controlled estimation (DCE) to identify illegal users. They find that approximately one-quarter of bitcoin users and one-half of bitcoin transactions are associated with illegal activity 1. The paper concludes that illegal activity significantly contributes to the value and network effects of Bitcoin 2.
Verbatim Q&A from Slides:*Source: "Solutions_Exercise 3 BitcoinBlockchain.pdf" 3*
Question a): "What proportion of the trading activity in Bitcoin accounts for illegal activities?"

Answer (Verbatim):

- "Approximately 46% of bitcoin transactions"
- "Approximately 26% of bitcoin users"
- "Calculated to be around $76 billion per year"
- "Europe and North America are the largest regions for illegal bitcoin activity"

Question b): "Why is the proportion of illegal activity in Bitcoin so high? Please explain the parameters and conditions that make Bitcoin attractive for unlawful behavior!"

Answer (Verbatim): "Bitcoins are not anonymous but if users protect their anonymity, they can be used to make transactions without revealing their identity. … The decentralized nature of the bitcoin network means that no central authority can seize bitcoins or prevent transactions from being processed."

2. **Griffin, J. M., & Shams, A. (2020): Is Bitcoin Really Untethered?**

Source Document: "Griffin Shams (2020, JF) Bitcoin Untethered.pdf"
Synthesis of Findings: The authors investigate whether Tether (a stablecoin) is used to manipulate Bitcoin prices. They test the "Pull" hypothesis (Tether is demand-driven) versus the "Push" hypothesis (Tether is minted to support prices). They find that Tether purchases are timed following market downturns and result in sizable increases in Bitcoin prices, consistent with the supply-driven "Push" hypothesis 4, 5.
Verbatim Q&A from Slides:*Source: "Solutions_Exercise 4 CryptocurrenciesICOs.pdf" 6*
Question a): "A legal investment strategy that would have been profitable in the past"

Answer (Verbatim):

- "Buy Bitcoin if Tether supply increases"
- "Sell Bitcoin if Tether supply decreases or increase stops"

Question b): "What kind of data would you need?"

- **Answer (Verbatim):** "$Information on Tether supply \to$ monitor blockchain"

3. **Fisch, C., & Momtaz, P. P. (2020): Institutional Investors and Post-ICO Performance**

Source Document: "Institutional investors and post-ICO performance_Fisch_Momtaz.pdf"
Synthesis of Findings: This study examines the role of institutional investors in Initial Coin Offerings (ICOs). The authors argue that institutional investors certify quality and reduce information asymmetry. Empirical results show that ICOs backed by institutional investors exhibit higher long-term performance (measured by Buy-and-Hold Abnormal Returns) and liquidity 7, 8.
Verbatim Q&A from Slides:*Source: "Solutions_Exercise 4 CryptocurrenciesICOs.pdf" 9*
Question a): "What is the hypothesis of this paper? What are the dependent and explanatory variables used?"

Answer (Verbatim):

- "Hypothesis: Institutional investors are able to screen and coach cryptocurrency firms to reduce the information asymmetry in the ICO context"

- "Dependent variable: Post-ICO Performance"
- "Independent variables: Institutional Investor Backing (Dummy)"

Question b): "What are the differences between institutional and retail investors in the ICO context?"

Answer (Verbatim):

- "Retail investors: “wisdom of the crowd” but often lack of professional expertise/experience"
- "Institutional investors: Professional screening and coaching abilities $\to$ active investors"

4. **Vallée, B., & Zeng, Y. (2019): Marketplace Lending: A New Banking Paradigm?**

Source Document: "Marketplace Lending A New Banking Paradigm.pdf"

Synthesis of Findings: The authors model and empirically test adverse selection in P2P lending platforms (LendingClub). They identify sophisticated investors who use detailed loan data to outperform unsophisticated investors. They find that sophisticated investors (using "Robot" or "Advanced" accounts) are less likely to experience defaults than passive investors 10, 11.

Verbatim Q&A from Slides:*Source: "Solutions_Exercise Marketplace_Lending.pdf" 12, 13*

Question d): "Inspect Table 4 in the paper. What happens to the performance of sophisticated investors as screening costs increase?"

Answer (Verbatim): "Conclusion: When the investor’s screening cost increases, sophisticated investor outperformance is reduced."

Question f): "Inspect Figure 5 in the paper. How does the prescreening intensity evolve as the crowdfunding platform develops?"

Answer (Verbatim): "Conclusion: Grades show better explanatory power for default over time. $\to$ This evolutions suggests an improvement in the accuracy of platform prescreening."

5. **Loos, B., et al. (2019): Robo-Advisors and Investor Behavior**

Source Document: "Loos et al (2019).pdf"

Synthesis of Findings: Using data from a German bank, this paper analyzes the impact of robo-advice on investor portfolios. It finds that investors who switch to robo-advice reduce extreme portfolio risks, increase diversification, and reduce the "home bias." However, total portfolio turnover increases 14, 15.

Verbatim Q&A from Slides:*Source: "Solutions_Exercise 6 Robo_Market_Trends.pdf" 16, 17*

Question c): "Inspect Table 4, column 4 in the paper. Loos et al. (2020) estimate a regression coefficient of 9.541 for the variable “After Joining Robo-Adviser”. What is your economic interpretation for this result?"

Answer (Verbatim): "The equity share increases by 9.5% after joining the robo service. $\to$ Robo-Advice helps to mitigate the problem of low stock market participation."

Question e): "Summarize the main conclusions of the paper."

Answer (Verbatim): "Overall, the results suggest that robo-advice improves the performance of investors (Relative to self-directed investors)."

6. **Doidge, C., Karolyi, G. A., & Stulz, R. M. (2017): The U.S. Listing Gap**

Source Document: "The U.S. Listing Gap.pdf"

Synthesis of Findings: The paper documents a sharp decline in the number of U.S. listed firms since 1996, creating a "listing gap" compared to other developed nations. This is attributed to a high delist rate (mergers) and a low new list rate. The authors argue the net benefit of being listed has decreased for small firms 18, 19.

Verbatim Q&A from Slides:*Source: "Solutions_Exercise ICOs.pdf" 20, 21*

Question d): "Why did many firms go private since 1996?"

Answer (Verbatim):

- "For both young firms and seasoned firms, merger delists are the most frequent type of delists after the peak"
- "Voluntary delistings remain rare"

Question e): "What do the researchers conclude from their study?"

Answer (Verbatim): "The benefit of being listed increases with firm size and faster than the cost, at least beyond some threshold. As a result, larger firms are listed, smaller firms are not"

7. **Keys, B. J., & Wang, J. (2019): Minimum Payments and Debt Paydown**

Source Document: "Keys_Wang_2019.pdf"
Synthesis of Findings: The paper analyzes how credit card holders respond to minimum payment disclosures (nudge). They find that a significant portion of consumers anchor their repayments to the minimum due or near the minimum, even when they could pay more. This suggests that minimum payment formulas act as a strong anchor 22, 23.
Verbatim Q&A from Slides:*Source: "Solutions_Exercise 2 Payment Systems.pdf" 24*

Note: The slide provides introductory text rather than a specific Q&A block for this paper, asking students to read the text.

Excerpt (Verbatim): "“In the 1970s, typical minimum payments were about 5% of the outstanding balance."

8. **Solactive (2017): Solactive Robo-Advisory Research**

Source Document: "Solactive Robo-Advisory.pdf"
Synthesis of Findings: This industry white paper compares U.S. and German robo-advisors. It profiles three investor types (Bart, Lisa, Abraham) and analyzes asset allocation. It notes that German robo-advisors are more costly and utilize more active management/VaR strategies compared to the U.S. focus on passive ETFs 25, 26.
Verbatim Q&A from Slides:*Source: "Solutions_Exercise 6 Robo_Market_Trends.pdf" 27*
Question b): "List 3 similarities and 3 differences between Robo-Advisory platforms in the USA market and the German market."

Answer (Verbatim):

- "Similarities: 1. Passive investment approach 2. ETF based 3. Web-based questionnaire"
- "Differences: 1. Cost (US cheaper) 2. Tax-loss harvesting (US standard, DE rare) 3. Investment strategies (US MPT, DE VaR)"

Part 2: Tables & Data

1. Sophisticated Investor Outperformance (Vallée & Zeng, 2019)

Data extracted from Table 4: Difference in Difference Analysis 28. Referred to in Slide 12.

Variable	Robot Account	Advanced Account	Monitor-Only Account
Coefficient (Base)	-0.072***	-0.057***	0.013*
Interaction (x Post)	0.040***	0.013*	-0.001
t-statistic (Base)	(-7.00)	(-8.03)	(1.88)
t-statistic (Interaction)	(3.20)	(1.73)	(-0.09)

Interpretation: Robot accounts (sophisticated) have a significantly lower probability of charge-off (-0.072) compared to the baseline. After the information shock ("Post"), this advantage decreases (+0.040), indicating screening costs reduce outperformance.

2. Robo-Advisors and Investor Behavior (Loos et al., 2019)

Data extracted from Table 3: Before-after summary statistics 14. Referred to in Slide 15.

Variable	Before (Mean)	After (Mean)	Difference (Mean)	p-value

Net cash average (EUR)	3,618	5,384	1,766	.000***
Days per month with login	9.7	11.5	1.8	.000***
Investment total (EUR)	41,971	73,509	31,538	.000***
Investment in funds (EUR)	22,397	45,055	22,658	.000***
Number of trades total	1.7	3.7	1.9	.000***

Interpretation: After joining the robo-advisor, clients significantly increase their account activity, investment volume, and number of trades.

Part 3: Comprehensive Appendix

A. Sex, Drugs, and Bitcoin (Foley et al., 2019)

- **Full Title & Authors:** Sex, Drugs, and Bitcoin: How Much Illegal Activity Is Financed through Cryptocurrencies? (Foley, S., Karlsen, J. R., & Putniņš, T. J.)
- **Main Research Questions:** What is the scale of illegal activity financed through Bitcoin, and how does this activity evolve over time?
- **Methodology Summary:** The authors use the "Smart Local Moving" (SLM) algorithm for network clustering to identify user communities and a Detection-Controlled Estimation (DCE) model to estimate the size of the illegal user base using data from darknet seizures (e.g., Silk Road) as "ground truth."
- **Key Findings & Results:** Approximately 46% of bitcoin transactions and 26% of users are associated with illegal activity, amounting to roughly $76 billion annually. Illegal users transact more frequently and hold less bitcoin than legal users.
- **Executive Summary:** This study quantifies the "black market" utility of Bitcoin, revealing that nearly half of all transactions are linked to illegal activities. The analysis suggests that despite the blockchain's transparency, encryption technologies allow Bitcoin to function as a major conduit for illicit trade. The findings imply that illegal utility is a fundamental component of Bitcoin's valuation.

B. Is Bitcoin Really Untethered? (Griffin & Shams, 2020)

- **Full Title & Authors:** Is Bitcoin Really Untethered? (Griffin, J. M., & Shams, A.)
- **Main Research Questions:** Is the stablecoin Tether used to manipulate the price of Bitcoin, and is its issuance driven by investor demand or supply-side manipulation?
- **Methodology Summary:** The authors analyze blockchain data to track Tether flows and use regression analysis to test "Push" (supply-driven) versus "Pull" (demand-driven) hypotheses regarding Tether issuance and Bitcoin price movements.
- **Key Findings & Results:** Tether issuance is highly clustered and often occurs after market downturns, leading to significant increases in Bitcoin prices. The data supports the "Push" hypothesis, suggesting Tether is used to stabilize and inflate cryptocurrency prices rather than simply responding to investor demand.
- **Executive Summary:** This paper provides evidence that the stablecoin Tether has been used to manipulate Bitcoin prices, particularly during the 2017 boom. By tracking flows from the Tether treasury to exchanges, the authors show that unbacked Tether issuance supports Bitcoin prices during downturns. These findings challenge the view that cryptocurrency markets are driven solely by decentralized market forces.

C. Institutional Investors and Post-ICO Performance (Fisch & Momtaz, 2020)

- **Full Title & Authors:** Institutional investors and post-ICO performance: an empirical analysis of investor returns in initial coin offerings (ICOs) (Fisch, C., & Momtaz, P. P.)

- **Main Research Questions:** Do institutional investors play a certification and monitoring role in the unregulated ICO market, and does their presence improve post-ICO performance?
- **Methodology Summary:** The study employs Ordinary Least Squares (OLS) and Two-Stage Least Squares (2SLS) regressions with instrumental variables to analyze a dataset of ICOs, checking for the impact of institutional backing on long-term returns (BHAR).
- **Key Findings & Results:** ICOs backed by institutional investors significantly outperform those without such backing in the long run. Institutional investors appear to provide effective screening and coaching, mitigating information asymmetry in the ICO market.
- **Executive Summary:** This research highlights the value of institutional investors in the crypto space, demonstrating that their involvement signals quality and leads to better venture performance. Institutional backing serves as a crucial quality signal for retail investors in an otherwise opaque market. The study confirms that traditional financial intermediation theories apply to decentralized finance contexts.

D. Marketplace Lending: A New Banking Paradigm? (Vallée & Zeng, 2019)

- **Full Title & Authors:** Marketplace Lending: A New Banking Paradigm? (Vallée, B., & Zeng, Y.)
- **Main Research Questions:** How does adverse selection affect marketplace lending platforms, and do sophisticated investors systematically outperform unsophisticated ones?
- **Methodology Summary:** The authors develop a theoretical model of adverse selection and test it using loan-level data from LendingClub and investor-level data from LendingRobot, employing Difference-in-Differences (DiD) analysis around an information shock.
- **Key Findings & Results:** Sophisticated investors who actively screen loans outperform passive investors, but this advantage diminishes when the platform reduces the information available to investors. Platforms face a trade-off between maximizing volume and maintaining a level playing field for unsophisticated investors.
- **Executive Summary:** The paper demonstrates that information asymmetry exists even within fintech platforms designed for transparency, allowing sophisticated algorithms to "cream-skim" the best loans. It shows that platforms may strategically reduce information disclosure to protect less sophisticated investors and maintain liquidity. This dynamic highlights the tension between transparency and fairness in fintech lending.

E. The U.S. Listing Gap (Doidge et al., 2017)

- **Full Title & Authors:** The U.S. listing gap (Doidge, C., Karolyi, G. A., & Stulz, R. M.)
- **Main Research Questions:** Why has the number of U.S. listed firms declined so sharply since 1996, and why is this trend not observed in other developed countries?
- **Methodology Summary:** The authors use a Vector Auto-Regression (VAR) model and panel regressions on data from CRSP, Compustat, and the World Federation of Exchanges to analyze listing counts, new lists, and delists over time.
- **Key Findings & Results:** The U.S. "listing gap" is driven by an unusually high rate of delists (primarily through mergers) and a persistently low rate of new listings. This trend suggests that the net benefits of being a public company in the U.S. have deteriorated, particularly for smaller firms.
- **Executive Summary:** This study documents a structural shift in U.S. capital markets where the population of public firms has halved since its peak in 1996. The decline is unique to the U.S. and is driven by high M&A activity and a lack of new IPOs. The findings suggest regulatory or structural costs make public listing less attractive for all but the largest U.S. firms.

F. Robo-Advisors and Investor Behavior (Loos et al., 2019)

- **Full Title & Authors:** Robo-Advisors and Investor Behavior (Loos, B., Previtero, A., Scheurle, S., & Hackethal, A.)
- **Main Research Questions:** How does the adoption of robo-advisory services affect the portfolio composition, risk-taking, and trading behavior of private investors?
- **Methodology Summary:** The study utilizes a Difference-in-Differences (DiD) approach on a dataset of client transactions from a large German bank, comparing investors who adopted the robo-advisor to a matched control group.
- **Key Findings & Results:** Adopting a robo-advisor leads to higher equity participation, reduced home bias, and better diversification. However, it also results in a significant increase in portfolio turnover and trading activity.

- **Executive Summary:** This paper provides empirical evidence that robo-advisors effectively mitigate common behavioral biases like under-diversification and low stock market participation. While they improve portfolio efficiency, they also increase trading volume, potentially impacting net returns due to transaction costs. The study validates the potential of automated advice to democratize sophisticated investment strategies.

G. Minimum Payments and Debt Paydown (Keys & Wang, 2019)

- **Full Title & Authors:** Minimum payments and debt paydown in consumer credit cards (Keys, B. J., & Wang, J.)
- **Main Research Questions:** How do minimum payment disclosures on credit card statements influence consumer repayment behavior?
- **Methodology Summary:** The authors analyze a dataset of credit card accounts using a difference-in-difference strategy around the implementation of the CARD Act, which mandated clearer minimum payment warnings.
- **Key Findings & Results:** Many consumers "anchor" to the minimum payment displayed, paying exactly or near that amount even when they have the liquidity to pay more. Changes in the formula for minimum payments directly shift repayment amounts, confirming the "anchoring" heuristic.
- **Executive Summary:** This research highlights the powerful psychological effect of "anchoring" in consumer finance, where the minimum payment amount displayed serves as a default target for borrowers. It demonstrates that even small changes in disclosed minimums can significantly alter debt repayment trajectories. The findings suggest that negative amortization warnings alone are insufficient to overcome this behavioral bias.

H. Solactive Robo-Advisory (Solactive, 2017)

- **Full Title & Authors:** Solactive Robo-Advisory (Pfeiffer, T., Colin, F., & Pitteri, L.)
- **Main Research Questions:** What are the structural and strategic differences between the Robo-Advisory markets in the U.S. and Germany?
- **Methodology Summary:** The report conducts a comparative market analysis of major robo-advisors in both regions, assessing fee structures, investment philosophies (e.g., VaR vs. MPT), and target demographics using defined personas.
- **Key Findings & Results:** The U.S. market is more mature, cheaper, and relies heavily on passive ETF strategies, whereas the German market is more fragmented, expensive, and utilizes active risk management (VaR).
- **Executive Summary:** This industry report contrasts the established, low-cost U.S. robo-advisor landscape with the developing, higher-cost German market. It identifies regulatory and cultural differences (such as tax-loss harvesting in the US) that shape these distinct market structures. The analysis suggests consolidation and fee compression will eventually occur in the German market.

I. Deciphering the Liquidity and Credit Crunch (Brunnermeier, 2009)

- **Full Title & Authors:** Deciphering the liquidity and credit crunch 2007-2008 (Brunnermeier, M. K.)
- **Main Research Questions:** What were the fundamental economic mechanisms that caused the 2007-2008 financial crisis?
- **Methodology Summary:** The paper provides a qualitative economic framework analyzing the interplay between funding liquidity and market liquidity, illustrating amplification mechanisms like loss spirals and margin spirals.
- **Key Findings & Results:** The crisis was driven by a mismatch in maturity (short-term funding for long-term assets) and the erosion of lending standards ("originate and distribute"). Liquidity dried up due to the opacity of structured products, leading to a "liquidity spiral."
- **Executive Summary:** Brunnermeier provides a seminal account of the 2008 crisis, explaining how a housing downturn evolved into a systemic banking crisis through liquidity spirals and contagion. The paper highlights how the "originate to distribute" model reduced monitoring incentives. It remains a foundational text for understanding systemic risk and liquidity linkages.

Part 4: Missing Papers Log

The following academic articles were cited or discussed in the provided slides, but the full text PDFs were not included in the source documents.

1. **Breitung, C. (2023).** *Automated Stock Picking using Random Forests.* (Discussed in Exercise 10 Slides).
2. **Kim, A., Muhn, M., & Nikolaev, V. (2024).** *Financial Statement Analysis with Large Language Models.* (Discussed in Lecture 11/12 Slides).
3. **Lopez-Lira, A., & Tang, Y. (2023).** *Can ChatGPT Forecast Stock Price Movements? Return Predictability and Large Language Models.* (Discussed in Lecture 11/12 Slides).
4. **Azevedo, V., Kaiser, G. S., & Mueller, S. (2023).** *Stock market anomalies and machine learning across the globe.* (Discussed in Lecture 11 Slides).
5. **Van Binsbergen, J. H., Han, X., & Lopez-Lira, A. (2023).** *Man versus Machine Learning: The Term Structure of Earnings Expectations and Conditional Biases.* (Discussed in Lecture 11 Slides).
6. **McLean, R. D., & Pontiff, J. (2016).** *Does Academic Research Destroy Stock Return Predictability?* (Discussed in Exercise 7 Slides).
7. **Malkiel, B. (2003).** *Passive Investment Strategies and Efficient Markets.* (Discussed in Exercise 5 Slides).
8. **Zhang, Y., Zhu, Y., & Linnainmaa, J. T. (2024).** *Man versus Machine Learning Revisited.* (Discussed in Lecture 11 Slides).
9. **Breitung, C., & Müller, S. (2025).** *Global Business Networks.* (Discussed in Lecture 11/12 Slides).
10. **Wang, J., & Keys, B. J. (2014).** *Perverse nudges: Minimum payments and debt paydown in consumer credit cards.* (Discussed in Exercise 2 Slides - Note: The *2019* version was provided, but the 2014 working paper was also cited).

Insights from Missing Sources (Verbatim Slide Content)

The following section reconstructs key findings and critical nuances for the missing papers, relying **exclusively** on the text found in the provided lecture slides and exercise solutions.

1. **Breitung, C. (2023): Automated Stock Picking using Random Forests**
Source: *Solutions_Exercise AI_in_Finance.pdf*,,
Key Findings (Verbatim):
◦ "**Outperformance Robustness:** Findings are consistent across regions, firm sizes, and non-crisis periods, underscoring the model's adaptability."
◦ "**Significant Factor Alphas:** Five-factor model yields alphas up to 21.79% annually for equally-weighted portfolios, not fully explained by known risk factors."
Methodological Nuance (Classification vs. Regression):
◦ "ML model receives fewer information: outperformer/underperformer, no information on actual out-of-sample performance does not disproportionally focus on small/tiny stocks."
◦ "Advantage: Reduce focus on small/tiny stocks without dropping the stocks does not reduce valuable observations for training the model."

2. **Kim, A., Muhn, M., & Nikolaev, V. (2024): Financial Statement Analysis with Large Language Models**
Source: *VL12_AI in Finance Session 2-2.pdf*,
Key Findings (Verbatim):
◦ "**Complementary Insights:** GPT-4-turbo with incremental insights when combined with human analysts' forecasts, especially in situations where analysts are prone to biases or inefficiencies."
◦ "**Predictive Power in Small Firms:** GPT-4-turbo better in predicting earnings changes for smaller firms and firms with volatile earnings, where human analysts often struggle."
◦ "**Economic Implications:** GPT-4-turbo based trading with superior Sharpe ratios and alphas."
Critical Slide Note: "WARNING: The paper has currently been withdrawn!"

3. **Lopez-Lira, A., & Tang, Y. (2023): Can ChatGPT Forecast Stock Price Movements?**
Source: *VL12_AI in Finance Session 2-2.pdf*,
Key Findings (Verbatim):
◦ "**Predictive power:** ChatGPT scores partially predict out-of-sample daily stock returns, especially for smaller stocks and following negative news."
◦ "**Model comparison:** ChatGPT-4 outperforms simpler models in predicting stock movements Higher accuracy with increased model complexity."

◦ "**Limitations of smaller models:** Less sophisticated models (e.g., BERT) with limitations in processing news headlines."

4. **Azevedo, V., Kaiser, G. S., & Mueller, S. (2023): Stock market anomalies and machine learning across the globe**
Source: *VL11_AI in Finance Session 1-2.pdf*
Key Findings (Verbatim):
◦ "**Significant Return Prediction:** Machine learning models achieve monthly average returns up to 2.71%."
◦ "**Composite Predictors:** Combining multiple machine learning models increases robustness, achieving monthly returns up to 2.60%."
◦ "**Feature Reduction Benefits:** Elastic net and lasso feature reduction methods improve return predictions by eliminating noise and reducing overfitting."

5. **Van Binsbergen, J. H., Han, X., & Lopez-Lira, A. (2023): Man versus Machine Learning**
Source: *VL11_AI in Finance Session 1-2.pdf*,,
Paper's Claimed Findings (Verbatim):
◦ "Analysts' forecasts are too optimistic across all horizons."
◦ "MSE of ML approach < MSE of analyst forecasts ML predictions are more accurate."
◦ "A strategy based on trading on big differences between the two predictions yields: Monthly Alpha: 1.54% compared to a market index."
Slide Author's Critique/Reconstruction (Verbatim):
◦ "Most peculiar is the extraordinarily high sharp ratio of the Van Binsbergen et al. (2023) portfolio."
◦ "One of the 75 features is the company's actual earnings... However, this variable is from the 'last period' from the perspective of the earnings being forecasted... when the target variable is year-2 earnings, this variable is the firm's year-1 earnings, a variable unknown to econometricians and investors at time t."
◦ " Most likely Look-ahead bias as reason for strong performance."

6. **McLean, R. D., & Pontiff, J. (2016): Does Academic Research Destroy Stock Return Predictability?**
Source: *Solutions_Exercise 7 Robo_Customization_Trends.pdf*,
Key Findings (Verbatim):
◦ "Substantial decline in returns for all factor strategies post-publication."
◦ "The real benefits of smart beta are likely much lower than previously thought (consistent with McLean and Pontiff, 2016)."
◦ "Conclusion: Difficult to exploit post-publication."

7. **Malkiel, B. (2003): Passive Investment Strategies and Efficient Markets**
Source: *VL7_RoboAdvice_Introduction.pdf*
Key Findings (Verbatim):
◦ "Assets selected by fund managers perform marginally better than the market."
◦ "Small outperformance before, but underperformance after costs."
◦ "As a whole, fund managers replicate the market."

8. **Breitung, C., & Müller, S. (2025): Global Business Networks**
Source: *VL12_AI in Finance Session 2-2.pdf*,
Methodology (Verbatim):
◦ "Generate time-varying business descriptions with AI."
◦ "Construct global business networks based on description similarity."
Key Findings (Verbatim):
◦ "Global: LLM networks yield abnormal returns of 2.7%***."

9. **Wang, J., & Keys, B. J. (2014): Perverse nudges**
Source: *Solutions_Exercise 2 Payment Systems.pdf*,
Key Findings (Verbatim):
◦ "non-amortization warning and 3-year calculation saw payments increase by $24 per month."

◦ "minimum payment warning and 3-year payment calculation increased payments by only $4 per month."
◦ "absence of a strongly-worded warning against non-amortizing payments, the 3-year payment calculation amount appeared to cause borrowers who were paying in full to pay less."

10. **Zhang, Y., Zhu, Y., & Linnainmaa, J. T. (2024): Man versus Machine Learning Revisited**
Source: *VL11_AI in Finance Session 1-2.pdf*
Context: This paper is cited in the context of the critique of Van Binsbergen et al. (2023).
Key Nuance (Verbatim):
◦ The slide title "Man versus Machine Learning Revisited" appears directly above the conclusion regarding "Look-ahead bias as reason for strong performance," implying this paper confirms the bias found in the previous study.