Lesson 8: Robo-Advisors and Digital Wealth
Module 1: FinTech Fundamentals

Digital Finance

Robo-Advisor Definition

Automated Wealth Management

- Algorithm-driven allocation
- Low minimum investment
- Passive ETF strategies
- Tax optimization

figures/robo_vs_traditional.pdf

Market Leaders

figures/robo_market_leaders.pdf

Betterment Case Study

First Robo-Advisor

- Founded: 2008
- $40B AUM (2023)
- 800,000+ customers
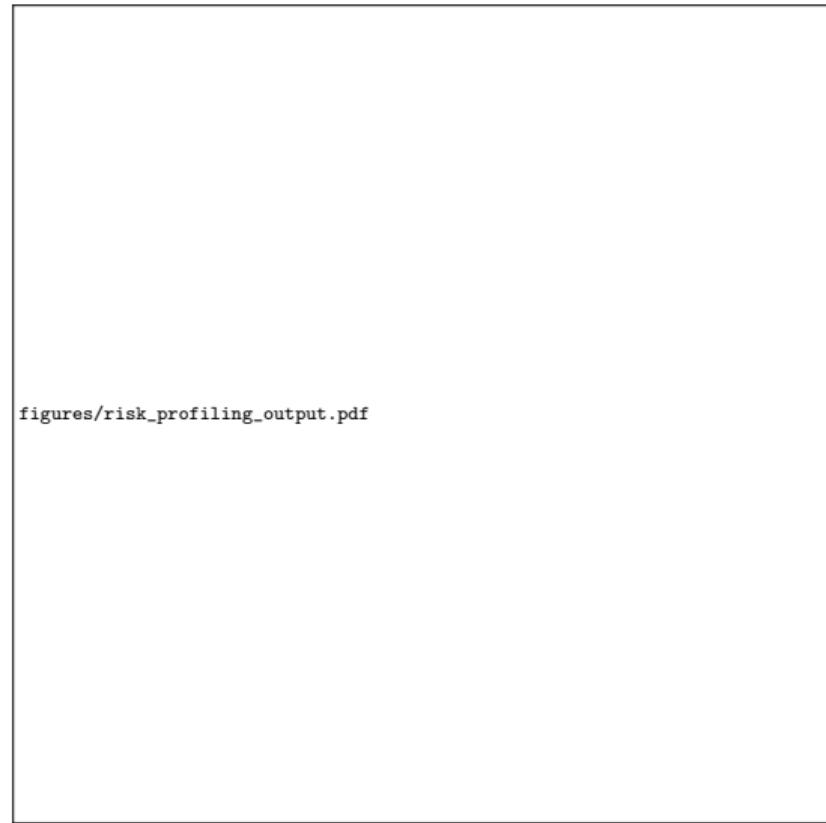- 0.25% annual fee

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figures/robo_onboarding.pdf

Risk Profiling

Questionnaire Inputs

- Time horizon
- Risk tolerance
- Financial goals
- Liquidity needs

figures/risk_profiling_output.pdf

Portfolio Construction

Modern Portfolio Theory

- Mean-variance optimization
- Efficient frontier
- ETF-only implementation
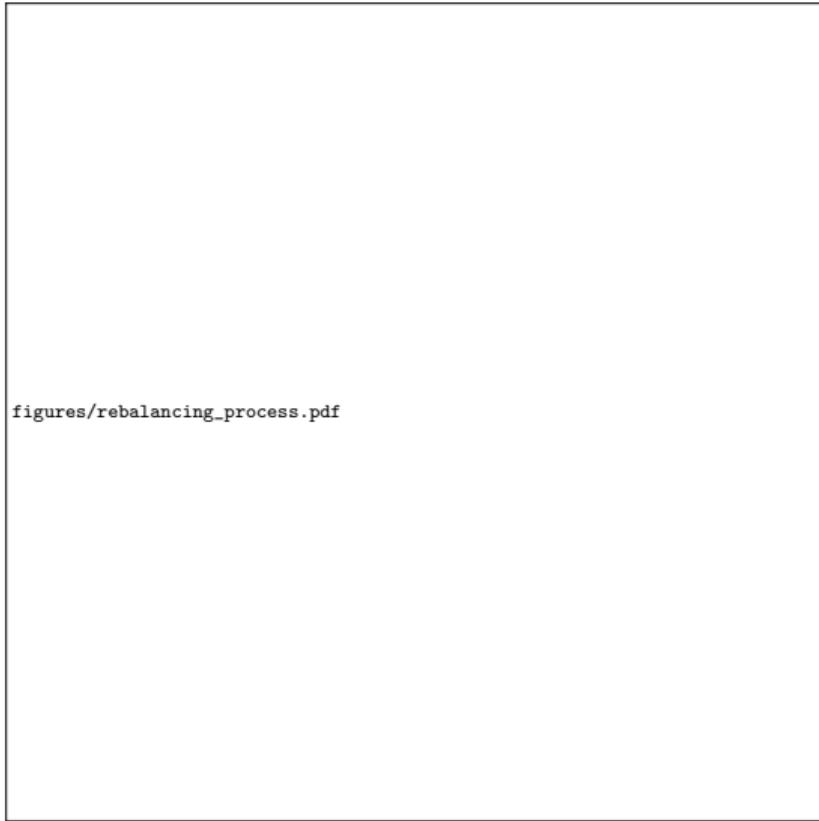- Global diversification

figures/efficient_frontier.pdf

figures/asset_allocation_profiles.pdf

Automatic Rebalancing

Drift Management

- Threshold: 5% deviation
- Calendar-based triggers
- Tax-aware trading
- Transaction cost minimization

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Tax-Loss Harvesting

Automated Tax Optimization

- Sell losing positions
- Buy similar ETF (avoid wash sale)
- $3,000 annual deduction
- 0.77% alpha (Betterment)

figures/tax_loss_harvesting.pdf

figures/fee_comparison_wealth.pdf

Fee Impact Over Time

30-Year Projection

- Portfolio: $100,000 initial
- Return: 7% annually
- Robo (0.25%): $652,000
- Advisor (1%): $574,000

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Business Model Economics

Unit Economics

- CAC: $150-300
- AUM per customer: $50,000
- Revenue: $125/year (0.25%)
- Breakeven: 2-3 years

figures/robo_unit_economics.pdf

Hybrid Models

figures/hybrid_advisor_model.pdf

Vanguard Personal Advisor

Hybrid Success

- 0.30% fee tier
- Human advisor access
- $250B AUM (largest)
- $50,000 minimum

figures/vanguard_hybrid.pdf

Traditional Firms Enter
- Schwab Intelligent Portfolios
- Fidelity Go
- Morgan Stanley Access Investing
- Fee pressure on advisors

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Challenges and Limitations

Current Issues

- Behavioral coaching gap
- Complex planning needs
- Low profitability margins
- Commoditization pressure

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Future: AI-Powered Advisors

Next Generation

- ChatGPT financial planning
- Real-time sentiment analysis
- Behavioral nudges
- Holistic financial wellness

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Key Takeaways

- **Fees**: 0.25% vs 1% saves $78K over 30 years
- **Strategy**: Passive ETF allocation + rebalancing + tax optimization
- **Market**: $2.5T AUM globally, dominated by incumbents
- **Evolution**: Pure robo → hybrid models winning
- **Future**: AI personalization and behavioral coaching