The Economics of Complex Decision Making: The Emergence of the Robo Adviser

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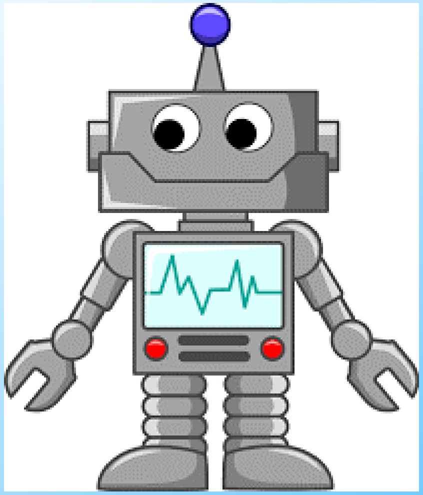

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What are Robo Advisers?

- Online services that provide financial advice and manage customers' investment portfolios
- Pure robo advisers provide advice online with no human interaction
- They use questionnaires to gather customer financial information
- They use computer algorithms to select investment portfolios
- They automatically rebalance their clients' portfolios and may perform other services
- Robo advisers respond to investing complexity

Investing Complexity

- Constructing an investment portfolio is an inherently complex problem
  - Risk tolerance
  - Diversification
  - Life cycle changes
  - Complex products
  - Tax issues
  - Rebalancing

- The problem is exacerbated by widespread financial illiteracy
- Industry responses include mutual funds, target date funds

Robo Adviser Services

- Portfolio construction
  - Risk allocation
  - Diversification
- Adjustments to portfolio
  - Rebalancing
  - Tax management
  - Life cycle changes
  - Reinvestment of dividends

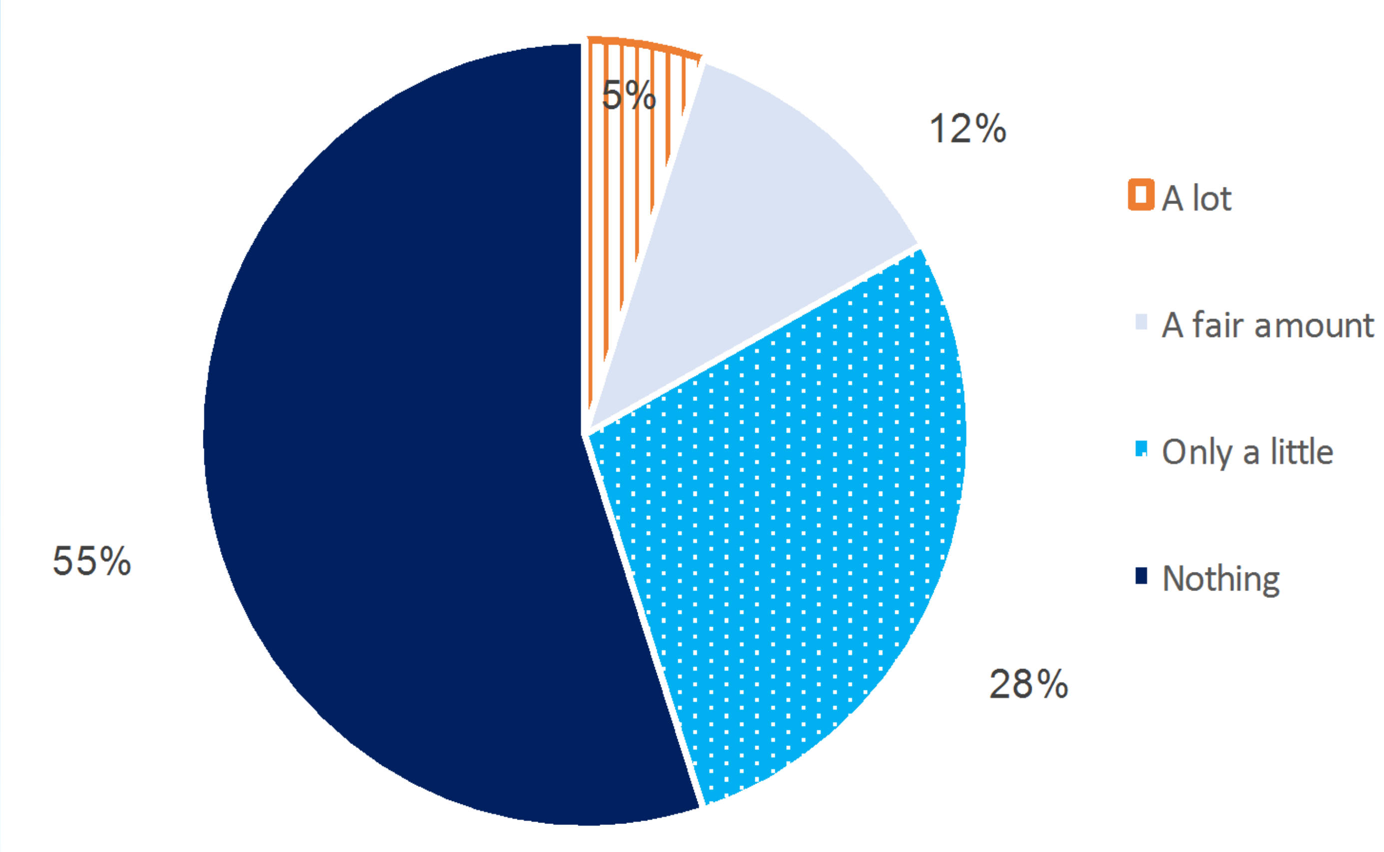
The History of Robo Advisers

- Two early robo advisers – Wealthfront and Betterment (2010)
- Fully automated services
- A solution to investment complexity
- Low cost

The Evolution of Robo Advisers

- Dozens of firms have entered the market
- Robo Advisers managed $126 billion in the U.S. in 2016 (compare to $69.1 trillion in global AUM)
- A variety of financial firms now offer robo advisers
- Development of the hybrid model
- Spread to Europe and beyond

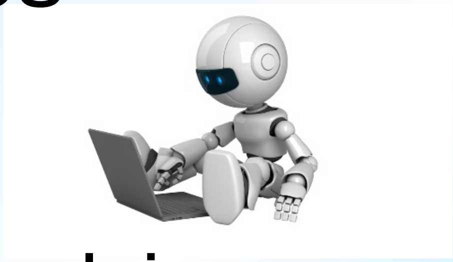
Investors’ Familiarity with Robo Advisers



The Regulation of Robo Advisers

- Robo advisers must register under the Investment Advisers Act as registered financial advisers
- If robos hold customer assets, they must register with the SEC and FINRA as broker-dealers
- Robo advisers are subject to fiduciary duties
- DOL Fiduciary Rule
- SEC release – new compliance guidance for robo advisers (2017)

Robo Advisers vs. Human Advisers – The Advantages of Robos



- Low cost (0-50 basis points) compared to personalized human advice
- Access at any time
- Computers are good at dealing with complexity
- Scalability of services allows service of small accounts
- Transparency
- Less potential for conflicts of interest

Robo Advisers vs. Human Advisers – The Advantages of Humans

- Warm body effect
- Investor education
- More flexible approach to risk tolerance
- Scope of advice
- Information basis for advice (how good are the robo questionnaires?)

Trends in Robo Advising

- The spread from stand-alone firms to traditional asset managers
- Channels for vertical distribution of sponsor products and the potential for conflicts of interest
- Hybrid adviser models
- Greater product diversification/specialization
- Use of robos by human advisers

Robo Advisers Internationally

Robo Adviser	Available countries	Advisory Fee as % of AuM (does not include fee for investments in funds)	Minimum Assets	Types
Nutmeg	UK	0.95%	£500	ETFs
Quirion	Germany Switzerland	0.48% – No Coach 0.88% – With Coach	€10,000	ETFs
Marie Quantier	France	€2.90-17.90 per quarter 5% of earnings	€5,000	ETFs
Ginmon	Germany	0.39% 10% of earnings	€1,000	ETFs
Wealth Horizon	United Kingdom	0.25% on initial deposit 0.75% for advisory 0.18% for fund charges	None	ETFs
Wealthify	United Kingdom	0.7% under £10,000 0.6% under £250,000 0.5% over £250,000	£250	ETFs

Conclusion

- Financial Advising will continue to incorporate technology to reduce costs and increase access
- Robo advisers are one example of this trend
- The evaluation of robo advisers versus human advisers is ongoing
- Further regulatory intervention is likely