

Transforming the Financial Advice Market - The Roles of Robo-advice, Financial Regulation and Public Governance in the UK

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Abstract

Access to financial advice has been a matter of concern for financial regulators and policy-makers. In this age of financialisation, individuals have greater responsibility to seek private sector financial products and services in order to meet their financial needs in life. However, individuals' needs for financial advice are often not met optimally. Advice that is compliant with regulatory requirements need not be tailor-made to individuals' needs, and inhibiting factors such as inertia, distrust and cost all play a part in individuals' disengagement from the financial advice industry. The article discusses a series of regulatory reforms in the UK to address issues such as distrust but such reforms entail trade-offs, such as increased cost in return for improved perceived credibility in the financial advice industry. The advent of robo-advice shows some promise in encouraging access to financial advice as it is often low-cost and easy to access at one's convenience. However, robo-advice is at the moment a standardised and limited service that is yet far from meeting individual needs for personal financial planning. The article considers a futuristic vision of artificial intelligence that is enabled with both data and investment strategy know-how in order to deliver personalised financial advice to the mass market. The article argues that such a vision attracts changes in regulatory governance, and above all, governments should consider if personalised financial advice ought to be a public good. If so, a new scheme of public and private provision of financial advice could be fostered, with the help of technological transformations.

Introduction

The UK has been studying the financial advice market since the early 2000s in order to improve access to financial advice. Access to financial advice, whether in relation to insurance, credit or investment products, is seen as an important agenda in financial inclusion.¹ In this age of financialisation, individuals have greater responsibility to seek private sector financial products and services in order to meet their financial needs in life.² From the implementation of the Retail Distribution Review in the UK in 2012 to the Financial Advice Market Review which yielded 28

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¹ House of Commons Treasury Committee, *Financial Inclusion: Credit, Savings, Advice and Insurance* (2006) at <https://publications.parliament.uk/pa/cm200506/cmselect/cmtreasy/848/848i.pdf>.

² defined as 'the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies' Gerald A Epstein, 'Introduction: Financialization and the World Economy' in Gerald A Epstein ed, *Financialization and the World Economy* (Cheltenham: Edward Elgar, 2005) at 3. Critical accounts of how financialisation leaves the public as 'feedstock' for the financial services industry or leaves them generally disempowered being relatively disengaged and lacking in competence to financially manage the future, can be found in Ismail Erturk, Julie Froud, Sukhdev Johal, Adam Leaver and Karel Williams, 'Financialisation, Coupon Pool and Conjuncture' in Ismail Erturk, Julie Froud, Sukhdev Johal, Adam Leaver and Karel Williams (eds), *Financialization At Work: Key Tests and Commentary* (Oxford: Routledge, 2008); Paul H Dembinski, *Finance: Servant or Deceiver* (transl by Kevin Cook, Basingstoke: Palgrave Macmillan 2009); Paul Langley, 'Uncertain Subjects of Anglo-American Financialization' (2007) 65 *Cultural Critique* 67.

recommendations in 2017,³ financial inclusion in the advice market is high on the regulatory agenda.⁴

The regulatory agenda for promoting access to financial advice has been focused on market-based solutions, and increasingly, solutions based on robo-advice. This article argues that market-based solutions, even in a regulated environment, are limited in a number of respects. This is because there may be an inverse relationship between affordable access and trust, and the personalisation of advice, which is what customers ideally want, is not readily within reach of the mass-market.

Section 1 discusses the matrix of regulatory frameworks that are designed to minimise the access gap to financial advice, from both the supply and demand sides. Section 2 then explores to what extent technological transformations in the advice market may help to bridge the access gap to advice and the implications for regulatory adjustments. Unlike literature that has focused on robo-advice from the outset, this article sets in context the gaps in the advice market and to what extent regulatory conditioning has shaped the structures of the market, before seeking to appraise what robo-advice achieves or otherwise. Further, the state of development in robo-advice is dynamic, and there is forward-looking expectation that technological capabilities can change, towards providing more personalised yet low-cost financial advice.⁵ Section 3 discusses future developments in the robo-advice industry, and offers broader-level reflections on the role of market-based solutions to meet the needs of financial advice, as well as the role of public governance and provision.

1. Regulatory Conditioning of Financial Advice Market- Has the Access Gap been Bridged?

Access to financial advice is conditioned by a number of supply and demand side factors. On the supply side, providers of financial advice are incentivised by a clear regulatory and legal framework that promotes certainty, so that the risks and cost of engaging in this business can be affordable and predictable. On the demand side, consumers of financial advice are motivated to access such service if they perceive the necessity or usefulness of the service,⁶ and that such service is reasonably affordable (or good value for money) and trustworthy.⁷ In relation to 'trustworthiness', there are several aspects that matter to financial advice customers: the perception of the 'credence'⁸ or future performance of financial products, the perception of the quality of financial advisors, which can relate to competence, dedication, care and other qualities inducing confidence,⁹ and the general perception of the financial services firm or sector.¹⁰

³ FCA, *Financial Advice Market Review: Final Report* (2016) at <https://www.fca.org.uk/publication/corporate/famr-final-report.pdf>.

⁴ FCA, *Call for input on Evaluation of the Retail Distribution Review and the Financial Advice Market Review* (2019) at <https://www.fca.org.uk/publications/calls-input/evaluation-rdr-famr>.

⁵ Tom Baker; Benedict Dellaert, 'Regulating Robo Advice across the Financial Services Industry' (2018) 103 *Iowa L. Rev.* 713; Paolo Sironi, *Fintech Innovation: From Robo-Advisors to Goal-based Investing and Gamification* (Chichester: John Wiley & Sons 2016).

⁶ Such as in relation to mandatory financial products such as third-party motor insurance, home insurance.

⁷ Access and trust are crucial to the demand side in navigating financial advice, see Marie Lachance and Ning Tang, 'Financial Advice and Trust' (2012) 21 *Financial Services Review* 209.

⁸ Financial products are often described as 'credence' goods whose performance is not ascertainable until after a reasonable period has elapsed.

⁹ Lachance and Tang (2012).

¹⁰ The lack of trust in the financial sector was generally discussed in the wake of the global financial crisis 2007-9, and the revelation of price benchmark manipulation such as in relation to LIBOR, EURIBOR etc from the 2010s. See House of Lords and House of Commons, *Changing Banking for Good* (Report of the Parliamentary Commission on Banking Standards) Vol 1; Michael A Santoro and Ronald J Strauss, *Wall Street Values: Business Ethics and the Global Financial Crisis* (Cambridge: Cambridge University Press, 2012), chapters 2, 5.

Regulatory Framing of Supply Side Conditions for Offering Advice

On the supply side, the rise of financialisation provides a ripe context for the mass-marketization of financial advice, but providing financial advice also entails legal risk. Under the common law, financial advice tainted by undisclosed conflicts of interest can result in remedies and a right of rescission for the customer.¹¹ Further, negligently provided advice can entail compensatory liability for advisory firms.¹² Indeed, left to market forces, there may be a tendency on the part of banks and other financial services firms to exclude liability under the common law, framing the transactional context with the customer as ‘non-advised’ or ‘execution-only’,¹³ meaning that they act as intermediaries only to purchase or sell customers’ financial interests and the customers remain fully in control of their financial decision-making. In this manner, legal risk inhibits the development of financial advice as a widely accessible service. Exclusions of liability have been observed in early case law involving banks¹⁴ and remain important today,¹⁵ in contexts where regulation does not reach. As regulation provides for a limited number of mandatory advisory contexts, such as where retail customers are engaged,¹⁶ more sophisticated, peer-level customers can find themselves dealing at arms-length in financial product transactions, as the counterparty firm does not assume advisory responsibility. Where regulatory policy provides for customer protection in certain advisory contexts, it has also been balanced against the need not to stifle incentives on the supply side to provide advisory services.

A regulatory duty to advise of ‘suitable’ investments applies where a personalised recommendation has been made to a customer,¹⁷ excluding forms of more informal,¹⁸ generic or marketing information. Further, an investment services provider must categorise clients into one of three groups, the retail client, the professional client and the eligible counterparty.¹⁹ The professional client is defined as certain financial and corporate institutions as well as natural persons meeting certain quantitative criteria such as investible assets and frequency of financial transactions carried out previously, as well as qualitative criteria in relation to his/her expertise, knowledge and experience of financial services and transactions.²⁰ The eligible counterparty would be regarded to be at peer level to the financial services firm concerned.²¹ These two categories of customers are owed a lesser extent of (a) the duty of suitability in relation to investment advice or portfolio management, and (b) the duty of appropriateness for other financial transactions or services.²²

¹¹ *Seymour v Ockwell* [2005] EWHC 1137.

¹² Based on the test in *Hedley Byrne & Co Ltd v Heller & Partners Ltd* (1964) AC 465 (HL).

¹³ *Eg Cassa di Risparmio della Repubblica di San Marino SpA v Barclays Bank Ltd* [2011] EWHC 484 (Comm).

¹⁴ *Woods v Martins Bank Ltd* [1959] 1 QB 55; Gerard McMeel and John Virgo, *Financial Advice and Financial Products* (Oxford; OUP 2014) at ch8. See strict positions discussed in relation to Singapore and Australia, Adrian Fong, ‘Fiduciary Duty in the Context of Providing Investment Services’ (2013) JIBLR 390; Joshua Getzler, ‘Excluding Fiduciary Duties: The Problems of Investment Banks’ (2008) 124 LQR 15.

¹⁵ See interest rate swaps litigation discussed below.

¹⁶ See discussion of the suitability and appropriateness rules, below.

¹⁷ The source regulation is Art 9, MiFID (Markets in Financial Instruments Directive) Commission Delegated Regulation 2017/565 which directly applies to the UK before Exit day and will be adopted into UK legislation post-Exit; FCA Handbook COBS 9A.2.2-3 for a rather wide scope of dealings, COBS 9.1 for non-MiFID retail business.

¹⁸ *Redmayne Bentley Stockbrokers v Isaacs & Ors* [2010] EWHC 1504 (Comm).

¹⁹ FCA Handbook COBS 3.4, 3.5, 3.6.

²⁰ FCA Handbook COBS 3.5.

²¹ FCA Handbook COBS 3.6.

²² Art 25(3), MiFID 2014, Arts 54, 55, MiFID Commission Delegated Regulation 2017/565; FCA Handbook COBS 10.2 for non-MiFID business in relation to retail clients, COBS 10A.2 for MiFID business.

These customers are not as well-protected as ‘retail customers’, who are defined as any customer not a professional customer or eligible counterparty.²³

For advisory and portfolio management services, financial services providers have to ensure that their service or advice is ‘suitable’ for the customer,²⁴ but retail customers benefit from a more comprehensive information collection exercise than other customers and the obligation of ‘suitability’ is more extensively owed to retail customers.²⁵ Financial services providers are entitled to assume that professional clients and eligible counterparties have the necessary knowledge and understanding of the engagement and are financially able to bear risk.²⁶ In relation to other financial transactions, financial services providers owe a duty to ensure that such transaction is ‘appropriate’ for customers, meaning that the customer understands the risks of such a transaction.²⁷ The assumption of knowledge is applied to professional customers,²⁸ so in reality, financial services providers would deal only at arms-length with such customers. In this manner, the legal risk for financial services providers in the advisory context can be delineated in accordance with the perceived need for protection by the regulator.

In reality, ‘borderline’ customers such as small and medium sized businesses are arguably aggressively categorised as ‘professional’, although that is often a trade-off for opportunities to engage in higher risk but possibly higher return financial products.²⁹ In this context, customers may be offered ‘execution-only’ products some of which are complex, hence the financial services provider becomes only an intermediary for transactions and assumes no advisory capacity. This has occurred in relation to a series of litigation involving interest-rate hedging products sold by banks to small businesses, which are classified as ‘professional customers’, on an ‘execution-only’ basis. Interest-rate hedging products allow small businesses that already borrow from their banks to swap a floating interest rate on their borrowing for a fixed one, in order to hedge against risks of interest rate or in one case, foreign currency fluctuations. However, after the Bank of England reduced interest rates to unprecedented lows after the global financial crisis 2007-9, it became too insensibly expensive to carry on with the hedging products. Nevertheless, many small businesses could not terminate the arrangements unless they paid an exorbitant break fee. These small businesses sued for mis-selling but as they were unprotected by regulatory provisions on advice,³⁰ they sought to frame their causes of action in the common law duty of care. These claimants have largely been

²³ FCA Handbook COBS 3.4.

²⁴ ‘Suitability’ is interpreted as meeting the client’s investment objectives and risk tolerance, and that the client understands the nature of the product or service engaged with and is financially able to bear those risks. For a retail customer, the financial services provider must be satisfied that all three elements are achieved and explained in a suitability report to the customer. See Art 54, Commission Delegated Regulation (EU) 2017/565 of 25 April 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council as regards organisational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive, directly applicable to the UK.

²⁵ See legislation citations *ibid*.

²⁶ Art 54, Commission Delegated Regulation (EU) 2017/565 of 25 April 2016, directly applicable to the UK, and supplemented by COBS 9.

²⁷ Art 56, Commission Delegated Regulation (EU) 2017/565 of 25 April 2016, directly applicable to the UK.

²⁸ *ibid*.

²⁹ Customers may challenge the classification especially after losses have been sustained on their riskier ventures, such as in *Bank Leumi (UK) PLC v Linda Joy Wachner* [2011] EWHC 656 (Comm), but courts have upheld firms’ classifications as long as these have been achieved with proper processes.

³⁰ *Green and another v Royal Bank of Scotland plc (Financial Conduct Authority intervening)* [2013] EWCA Civ 1197; *Thornbridge Limited v Barclays Bank Plc* [2015] EWHC 3430 (QB); *Crestsign Ltd v National Westminster Bank plc and Royal Bank of Scotland plc* [2014] EWHC 3043 (Ch); *Titan Steel Wheels Ltd v Royal Bank of Scotland plc*. [2010] EWHC 211; *MTR Bailey Trading Ltd v Barclays* [2015] EWCA Civ 667.

unsuccessful as the courts have found that responsibility has not been assumed by the financial services provider,³¹ and express exclusions of an advisory duty of care are valid.³²

Even in relation to the retail customer where the duty of suitability or appropriateness applies, these duties have been developed in a highly procedural manner. Where investment advice or portfolio management is concerned, firms need to collect three areas of prescribed information from customers, in relation to investment objectives, risk appetite and financial profile in order to recommend products that meet the customer's investment objectives, suit his/her risk appetite and whose risks are reasonably understood by the customer.³³ For other financial transactions, firms need to collect information on the customer's knowledge and understanding of the risks of the transaction concerned, in order to proceed with the transaction. This is subtly different from ensuring that clients actually understand the nature of the transaction, as firms can be satisfied on the basis of the objective profiles of clients.³⁴ In sum, the duties of suitability and appropriateness, even when they apply in full, are highly procedural, and can mitigate a firm's legal risk as compliance is evidenced by adhering to sound procedures and systems that give rise to the ultimate recommendation, providing *ex ante* safety against *ex post* allegations of negligence. The pressure to mitigate the cost of access associated with the legal risk for financial services providers has also resulted in the FCA introducing the regime for 'streamlined advice'. This is advice that meets the suitability standard in a more limited way, in relation to specific and limited financial needs articulated by the customer.³⁵ Even if suitability and appropriateness are nuanced legal standards, regulators constantly face a push-back in relation to mitigating the legal risk for advisory services.

The legal framework for the advisory context in the UK is thus finely balanced in terms of customers' interests in protection and firms' legal risk in providing advice. However there are other forms of regulatory conditioning for the demand side.

Regulatory Framing of Demand Side Conditions for Financial Advice

Regulatory developments have made improvements to demand side conditions such as the cost of access to financial advice and the perceived 'trustworthiness' of financial services providers.³⁶ Although the cost for accessing financial advice is market-based and the Financial Conduct Authority (FCA) does not directly intervene in price, there is some regulatory encouragement towards low-cost access to automated advice. The FCA has set up a dedicated unit to advise financial businesses that intend to provide retail-level low-cost robo-advice.³⁷ The low-cost nature of robo-advice will be discussed in detail shortly but this is not without tradeoffs.

³¹ *Grant Estates*, above and *Green and another v Royal Bank of Scotland plc (Financial Conduct Authority intervening)* [2013] EWCA Civ 1197.

³² *JP Morgan Chase Bank (formerly known as The Chase Manhattan Bank) (a body corporate) and Others v Springwell Navigation Corporation (a body corporate) and by Counterclaim Springwell Navigation Corporation (a body corporate) v JP Morgan Chase Bank (formerly known as The Chase Manhattan Bank) (a body corporate) and Others* [2008] EWHC 1186 (Comm), also discussed critically in Christa Band, 'Selling Complex Financial Products to Sophisticated Clients: *JP Morgan Chase v Springwell*: Part 1' (2009) 24 JIBLR 71; *Murphy v HSBC Bank plc* [2004] All ER (D) 211.

³³ Art 54, 55 MiFID Commission Delegated Regulation 2017/565, FCA Handbook COBS 9.2.1-3; COBS 9A.2.1-10.

³⁴ Art 56, MiFID Commission Delegated Regulation 2017/565; FCA Handbook COBS 10.2, 10A.2.

³⁵ FCA, *Streamlined Advice and Related Consolidated Guidance* (2017) at <https://www.fca.org.uk/publication/finalised-guidance/fg-17-08.pdf>.

³⁶ See 'What FT readers really want from their financial adviser' (Financial Times, 30 Nov 2018).

³⁷ FCA's Advice Unit at <https://www.fca.org.uk/firms/advice-unit>.

Other cost-reduction measures in regulation include a cap on the management fees of defined contribution pension schemes³⁸ so as to motivate savers to join such schemes, as well as a number of cost-related reforms for portfolio management. Cost-related measures are seen as important as empirical research finds that the use of an intermediary increases cost for financial savers, as intermediaries generate charges by turning over portfolios and trading.³⁹ Hence, regulatory intervention has been introduced to ensure that intermediaries are transparent with and justify their costs. Regulation requires that an aggregate *ex ante* and *ex post* figure for charges and cost in portfolio management must be provided,⁴⁰ compelling financial services providers to offer transparency and engage in more meaningful competition. Further, regulatory reforms compel research payments or 'soft dollars' to be made transparent, budgeted and subject to customers' consent.⁴¹ This improves customers' positions by limiting firms' opportunities to overcharge customers.

Cost-based interventions are part of the trust-boosting conditions facilitated by regulation. In the financial advice market, advice can be regarded as not trustworthy or credible if it is of poor quality or is affected by incentives that are not aligned with customers' interests. Empirical research has found that advice can be affected by the adviser's incentives, such as commissions paid by product providers,⁴² and this affects the trust environment between advisers and customers. In this respect the FCA has undertaken pioneering reform to introduce conflict-free advice, via the Retail Distribution Review (RDR) introduced in 2012.⁴³

The Review made two major achievements, one in raising the mandatory level of training and competence for financial advisors, and the second in reforming adviser remuneration in order to align advisers' incentives with customers' interests. Financial advisers now have to meet prescribed qualifications for training, and preliminary findings in the FCA's post-RDR review suggest that this reform has been welcomed by both the industry and consumers, and place advisors in a better position to offer credible services to the public.⁴⁴ Indeed the FCA has also been vigilant in removing approvals for individuals who fail to convince the FCA of their skills and competence. In *Maoudis*,⁴⁵ the individual concerned was weakly qualified but provided a limited range of advisory services in debt management and counselling. The FCA was of the view that although the range of services provided was limited, the individual was unable to provide a full and informed perspective to his customers in relation to a wider range of debt management possibilities such as voluntary schemes of arrangements and personal bankruptcy.⁴⁶ This disqualification decision was upheld by the Upper Tribunal.

³⁸ FCA, *Charges in Workplace Personal Pension Schemes: A Consultation Paper* (Oct 2014) and *Final rules for Charges in Workplace Personal Pension Schemes and Feedback on CP14/24* (March 2015) on the charge cap, but excluding transaction costs.

³⁹ Mitchell Marsden, Cathleen D. Zick and Robert N. Mayer, 'The Value of Seeking Financial Advice' (2011) 32 *Journal of Family and Economic Issues* 625.

⁴⁰ Art 50, MiFID Commission Delegated Regulation 2017/565, FCA Handbook COBS 4.1.

⁴¹ Art 13, MiFID Commission Delegated Directive 2017/563; FCA Handbook COBS 2.3B.

⁴² Marsden et al (2011).

⁴³ FCA, *Review of Retail Distribution in the UK* (2006). The review was completed and implemented in 2012, see FCA, *Policy statement (PS11/9) on delivering the RDR and other issues for platforms and nominee-related services* (2011) at http://www.fsa.gov.uk/pubs/policy/ps11_09.pdf.

⁴⁴ FCA, *Post-implementation review of the Retail Distribution Review* (2014) at <https://www.fca.org.uk/news/news-stories/post-implementation-review-retail-distribution-review>.

⁴⁵ *Steven Maoudis T/A Montana Debt Management v The Financial Conduct Authority* [2016] UKUT 0548.

⁴⁶ *ibid*.

One of the most popular complaints against financial advisers relate to the possibility that advice may be tainted by conflicts of interest, as advisers were remunerated by commissions from product providers, incentivising advisers to steer customers towards products that offered optimal commission for the adviser.⁴⁷ The RDR introduced a phenomenal change by structurally intervening into the market practices for advisers' remuneration. Commissions from product providers are largely banned,⁴⁸ and advisers need to seek remuneration from their customers. Therefore, advisers' roles are changed from being merely intermediaries between product distributors and customers to being an end-product provider to their customers, the product now being advice. Regulation also sets out in prescribed detail how charging structures are to be designed and communicated to clients in order to ensure transparency and fairness.⁴⁹ By banning product commissions, it is envisaged that advisers that are 'independent', i.e. not tied to any particular product distributor/s, would be able to survey the market more objectively and recommend suitable products to customers. Indeed the FCA's preliminary post-RDR review finds that customers are less likely steered towards products that used to pay high commissions to advisers.⁵⁰ The advice market has however become more costly as adviser charges are levied up front. The FCA finds that this has only a small deterring effect to some customers and continues to monitor impact on access.⁵¹

In implementing the RDR, the FCA recognised that there could be a tradeoff between cost of access and quality of advice that can be trusted. However, it is doubtful that the RDR has improved the quality of advice just by removing conflicts from advice. This is because independent advice, i.e. the service of surveying the entire market and providing an objective and suitable recommendation, is not applicable to all advisers, and remains the most expensive to access.

Many advisers are 'restricted' in nature, such as banks that sell their own mortgage products and product distributors that are affiliated with particular fund management and insurance companies.⁵² These advisers remain only able to advise on a limited range of products. Further, for basic products such as a current bank account, life insurance or personal pension scheme, there may be an interest in keeping the cost of access low in order to promote financial inclusion. Hence, the ban on commissions has been relaxed in relation to restricted advice and basic advice, so that customers may still benefit from not having to pay advisers up front, where they would be paid by product rebates under certain arrangements.⁵³ In this manner, conflict-free advice is not completely

⁴⁷ John Chalmers and Jonathan Reuter, 'Is Conflicted Investment Advice Better than No Advice?' (NBER Working Paper 2015) at <https://www.nber.org/papers/w18158>.

⁴⁸ FCA, *Policy statement (PS11/9) on delivering the RDR and other issues for platforms and nominee-related services* (2011) at http://www.fsa.gov.uk/pubs/policy/ps11_09.pdf.

⁴⁹ FCA Handbook COBS 6.1A.

⁵⁰ FCA, *Post-implementation review of the Retail Distribution Review* (2014).

⁵¹ *ibid.* But another study found that improvement in 'trust' ie unbiased advice does not improve access as those who can least afford continue to not access advice, see Utpal Bhattacharya, Andreas Hackethal, Simon Kaesler, Benjamin Loos and Steffen Meyer, 'Is Unbiased Financial Advice to Retail Investors Sufficient? Answers from a Large Field Study' (2012) 25 *Review of Financial Studies* 975.

⁵² One of the largest financial advice firms in the UK, Hargreaves Lansdown moved from branding itself as 'independent' to 'restricted' after the RDR was implemented as independent advice is too expensive to offer and entails complicated and onerous legal obligations, see <https://www.yourmoney.com/investing/hargreaves-lansdown-to-stop-providing-independent-financial-advice/>.

⁵³ FCA Handbook COBS 2. 3A.9 where restricted advisers provide an 'ongoing' service therefore exempted from the commission ban.

achieved under the RDR.⁵⁴ This article now turns to explore the access gap to advice that remains despite the regulatory conditioning discussed above.

Access Gap

Ideally, financial customers wish to access affordable and trustworthy advice⁵⁵ but it is arguable that the regulatory conditioning of the supply and demand sides discussed above are not able to address fully the needs of financial customers. Financial customers also suffer from behavioural limitations that contribute to the access gap.

Inverse Relationship between Personalisation and Access

First, as advice is a market-based good, it is subject to market conditions such as higher price for perceived higher quality. What customers ideally desire, which is personalised financial advice provided independently, is likely to be a luxury or premium market good that is beyond the reach of many.

Independent advice is the 'highest' quality of advice where advisers who hold themselves out as providing this service must survey the market adequately to make a suitable recommendation.⁵⁶ In situations of restricted advice or basic advice as discussed above, customers are informed upfront that advisers are only able to distribute certain limited ranges of products, and customers would have needed to determine that these ranges are likely suitable for themselves. Customers who consult independent advisers are more likely to receive personalised financial advice for their unique set of needs.

This article argues that there is an inverse relationship between access and personalisation, as easier access, which usually means mass-marketization and lower cost barriers to entry are antithetical to personalisation. This is a trend in financial participation and is explained by the efficiencies of economies of scale. One of the hallmarks of financialisation is the rise of collective investing, which is the pooling of assets from many individual savers in order to invest in portfolios of different types of diversified risks.⁵⁷ But collective investing, though democratising, is also disempowering, as individuals are not likely to be able to have tailor-made portfolios or influence the collective strategy.⁵⁸ Hence, lower-cost financial advice tends to be restricted or streamlined, and customers can be funnelled down to standardised or mass-market products as long as suitability or appropriateness requirements are met.

The need in the market is for personalised financial planning and advice.⁵⁹ Empirical research cautions that adopting a 'standardised' approach to meeting financial needs is not always appropriate as life incidents such as divorce affect financial goals and management dramatically and mass-market products often are not designed to incorporate these upheavals.⁶⁰ This is arguably a

⁵⁴ Herbert Smith, 'Retail Distribution Review: The Supervision and Enforcement of Professional Standards - A New Era?' (2010) 4 *Law and Financial Markets Review* 616.

⁵⁵ 'What FT readers really want from their financial adviser' (Financial Times, 30 Nov 2018) at <https://www.ft.com/content/f62af1c2-f25c-11e8-ae55-df4bf40f9d0d>.

⁵⁶ Art 24(8), MiFID.

⁵⁷ The modern portfolio theory and its dominance is discussed in Sironi (2016).

⁵⁸ Discussed in ch1, Roger M Barker and Iris H-Y Chiu, *Corporate Governance and Investment Management: The Promises and Limitations of the Financial Economy* (Cheltenham: Edward Elgar 2017).

⁵⁹ Marsden et al (2011); 'What FT readers really want from their financial adviser' (Financial Times, 30 Nov 2018).

⁶⁰ See discussion in Michael Faloon and Bernt Scherer, 'Individualization of Robo-Advice' (2017) *Journal of Wealth Management* 31.

market deficit given that the experience of severe disruption in one's financial life, such as a divorce, is common among the adult population of developed financial jurisdictions like the UK.⁶¹

Behavioural Issues- Inertia, Future Discounting and What it Takes to Overcome these

Financial customers often heavily 'discount' future needs and display inertia in seeking advice about long-term financial planning and goals.⁶² This is less pronounced for credit and borrowing, as immediate needs may arise, such as for home mortgages or personal loans, but highly pronounced for saving and investment, especially for long-dated purposes such as retirement.⁶³ Empirical research reports that behavioural and psychological factors are highly important in influencing an individual's decision to seek financial advice, often seen as a 'help-seeking' move.⁶⁴ There is a tendency that the better-capacitated customer may seek help in a more optimal manner. Empirical research has found that advice is more readily accessed by households with greater wealth and financial literacy.⁶⁵ Conversely, poorer households with weaker levels of financial literacy may remain unserved.⁶⁶ There is a need for policy to address the limitations of market-based solutions for 'vulnerable customers'.⁶⁷

For example, the FCA is concerned about the market for pension advice where many pensioners discount their need for purchasing advice.⁶⁸ Under rules in the UK⁶⁹ which allow pensioners to choose how to deal with their pension pots, it has been observed that a significant number of pensioners 'cash out' their pots when they are eligible to do so.⁷⁰ These pensioners run the risks of being scammed, or facing long-term insufficiency, but they respond to the gratification of 'a bird in one hand' and may make behaviourally sub-optimal choices.

In order to address behavioural sub-optimality in the pensions advice market, the FCA has introduced a mandatory rule of disclosure so that where pension pots are to be withdrawn, pensioners must be given a choice of four options or investment pathways, plus early information of 'wake-up' packs to signpost where advice may be provided and warnings regarding the drawdown of pension pots in full.⁷¹ This is a curious measure as it compels financial intermediaries to be more proactive in 'steering' customers short of providing advice, hence mitigating their legal risk. The FCA's rule also avoids intervening in the market for advice as such, but it clearly highlights the need for advice which customers are avoiding to purchase.

⁶¹ See Office of National Statistics, *Divorce* at <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/divorce>.

⁶² Mike Dixon, *Rethinking Financial Capability* (2011) at http://www.ippr.org/files/images/media/files/publication/2011/05/financial_capabilities_1515.pdf.

⁶³ Marsden et al (2011).

⁶⁴ *ibid.*

⁶⁵ *ibid.*

⁶⁶ FCA, *Post-implementation review of the Retail Distribution Review* (2014).

⁶⁷ John Y. Campbell, Howell E. Jackson, Brigitte C. Madrian and Peter Tufano, 'Consumer Financial Protection' (2011) 25 *Journal of Economic Perspectives* 91 on whether the least privileged or advantaged require more protection; Ch8, FCA, *FCA Mission – Our Future Approach to Consumers* (2017) at <https://www.fca.org.uk/publication/corporate/our-future-approach-consumers.pdf>.

⁶⁸ FCA, *Retirement Outcomes Review: Feedback on CP18/17 and our final rules and guidance* (Jan 2019) at <https://www.fca.org.uk/publication/policy/ps19-01.pdf>.

⁶⁹ Pension Schemes Act 2015.

⁷⁰ Colin Rowe, 'The Dangers of Pension Release' (21 May 2018) at <https://www.moneyadvice.service.org.uk/blog/the-dangers-of-pension-release>.

⁷¹ FCA, *Retirement Outcomes Review: Feedback on CP18/17 and our final rules and guidance* (Jan 2019) at <https://www.fca.org.uk/publication/policy/ps19-01.pdf>.

Many financial consumers have, in response to a survey, said that they would be more prepared to access financial advice under conditions of greater ease and convenience. Their preference is for an online financial planning tool that is free.⁷² Although this relates also to cost, it possibly also reflects the need for on-demand access, in the comfort of one's environment. Often what a customer ideally desires is the privacy and simplicity of personalised financial advice. However, personalised financial advice is likely more complex than imagined.

The RDR has arguably raised the intrinsic worth of financial advice as a consumable good in itself, but without a certain level of consumer financial education, consumers may only be deterred by the price of the good instead of appreciating the potential help they can receive from purchasing advice.⁷³ Consumers remain not well-grounded in financial literacy to be able to appraise the value of financial advice as a consumable good in itself.

It is queried if the behavioural discounting of the need for advice is a phenomenon that can be addressed by market-based solutions. In this context, a radically new way of accessing advice, such as the online context, can provide a new experience that disrupts from old assumptions, attracting customers to engage with the 'new' product of financial advice. However, the new business model can appear to be 'over-promising' and it is argued below that robo-advice is limited in fully meeting financial customers' needs, although it addresses a number of issues of behavioural inhibitions discussed.

2. Technological Transformations and Addressing the Access Gap

Robo-advice is growing in popularity in the US⁷⁴ and UK,⁷⁵ although this is likely to be a business model that sits alongside a range of advisory options, rather than totally displacing existing advisory services.⁷⁶ This Section evaluates how robo-advice addresses the access gap discussed above. The next Section then considers future developments of robo-advice and whether these provide the ultimate market revolutions to meet the needs for financial advice in the mass-market. The implications for the regulatory framework are also discussed.

The Models of Robo-Advice

Robo-advice is the shorthand for automated forms of investment management interfaces. A robo-adviser can provide an algorithm-generated list of investment options for customers based on customer data, leaving customers to take further action. Robo-advisers can also be automated wealth management services where portfolios are constructed by algorithmic intelligence, monitored according to programmed parameters and automatically rebalanced according to those parameters.⁷⁷

⁷² *Public Attitudes to Financial Advice Survey* (2016) at <https://bandce.co.uk/wp-content/uploads/2016/02/201602-Public-attitudes-to-advice.pdf>.

⁷³ Ralph Bluethgen, Andreas Gintschel, Andreas Hackethal and Armin Müller, 'Financial Advice and Individual Investors' Portfolios' (2008) at <http://ssrn.com/abstract=968197>.

⁷⁴ See Facundo Abraham, Sergio L Schmukler and José Tessada, 'Robo-Advisors: Investing through Machines' (World Bank Research and Policy Brief 2019).

⁷⁵ Tatiana Nikiforova, 'The Place of Robo-Advisors in the UK Independent Financial Advice Market: Substitute or Complement?' (2017) at <http://ssrn.com/abstract=3084609>; Gregor Dorfleitner, Lars Hornuf, Matthias Schmitt and Martina Weber, 'The Fintech Market in Germany' (2016) at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2885931.

⁷⁶ Philipp Maume, 'Regulating Robo-Advisory' (2018/9) *Texas International Law Review*, forthcoming.

⁷⁷ Pablo Sanz Bayón and Luis Garvía Vega, 'Automated Investment Advice: Legal Challenges and Regulatory Questions' (2018) 37 *Banking and Financial Services Policy Report* 1.

It has been observed that robo-advisors are able to offer on-demand 24/7 access in the comfort of one's environment as long as one has an internet connection.⁷⁸ This seems to meet the access preferences of many as empirically surveyed.⁷⁹ Crucially, robo-advice is often accessible to those who have small amounts to save, such as Nutmeg's promise to onboard customers saving from as little as £100 initially.⁸⁰ This has the potential to help with 'democratising finance' and increasing financial inclusion, an outcome already observed in the US where robo-advisors have garnered over USD\$400 billion assets under management and looking to exceed USD\$1.5 trillion by 2023.⁸¹ The cost of use is also generally lower than other forms of investment fund management, as annual charges can be three times lower.⁸² From an affordability point of view, robo-advisors have the potential to incentivise access, and in the UK⁸³ and Germany,⁸⁴ the two largest robo-adviser markets in Europe, there is an upward trend in terms of growth in robo-advisors' market share. Further, the general distrust of 'manipulative' and 'greedy' humans after the global financial crisis 2007-9 may pave the way for more social acceptance of automated services which can be seen as programmable without biases,⁸⁵ and are able to functionally and objectively serve a customer's needs.⁸⁶ In sum, the interface of online access can mitigate some of the behavioural biases towards inertia and can potentially improve the state of financial education. However, robo-advice suffers from several limitations.

Robo-advisors are often 'restricted advisers' that are tied to a limited range of products⁸⁷ and they may be far from offering the kind of bespoke financial planning that is sought after by financial customers.⁸⁸ Indeed, most robo-advisors are programmed to adopt diversification strategies adhering to Modern Portfolio Theory,⁸⁹ and recommend investing only in exchange-traded funds,⁹⁰ or passive index-linked funds that are often seen as cost-effective and reliable in performance.⁹¹

⁷⁸ Andrea L. Seidt; Noula Zaharis; Charles Jarrett, 'Paying Attention to That Man behind the Curtain: State Securities Regulators' Early Conversations with Robo-Advisers' (2019) 50 U. Tol. L. Rev. 501; Wolf-Georg Ringe and Christopher Ruof, 'A Regulatory Sandbox for Robo Advice' (ILE Working Paper 2018) at <http://hdl.handle.net/10419/179514>.

⁷⁹ *Public Attitudes to Financial Advice Survey* (2016) at <https://bandce.co.uk/wp-content/uploads/2016/02/201602-Public-attitudes-to-advice.pdf>.

⁸⁰ <https://www.nutmeg.com/new-to-investing>, but see Benjamin P. Edwards, 'The Rise of Automated Investment Advice: Can Robo-Advisors Rescue the Retail Market' (2018) 93 Chi.-Kent L. Rev. 97 who finds that some robo-advisors allow savers to start investing from as low as \$8.

⁸¹ Abraham et al (2019).

⁸² *ibid* and Ringe et al (2018).

⁸³ Dorfleitner et al (2016).

⁸⁴ *ibid*.

⁸⁵ Douglas W Arner, Janos Barberis, Ross P Buckley, 'The Evolution of Fintech: A New Post-Crisis Paradigm?' (2016) 47 Georgetown Journal of International Law 1271,1286.

⁸⁶ Frank D Hodge, Kim I Mendoza and Roshan K Sinha, 'The Effect of Humanizing Robo-Advisors on Investor Judgments' (2018) at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3158004.

⁸⁷ For example the largest robo-adviser Nutmeg in the UK has over £800m in assets under management but is a restricted adviser recommending its own products.

⁸⁸ Marsen et al (2011).

⁸⁹ Abraham et al (2019); Michael Faloon and Bernt Scherer, 'Individualization of Robo-Advice' (2017) *Journal of Wealth Management* 31.

⁹⁰ Meaning that are liquid and traded on an exchange within the day, see Maume (2018/9).

⁹¹ The outperformance of passive index-linked funds has often been touted as superior to actively managed 'stock-picker' funds, see Kevin R James, 'The Price of Retail Investing in the UK' (FSA Occasional Paper 2000) arguing that passive investing works out better for investors as cost is low and eats less into yield; 'Active share revealed to have feet of clay', *Financial Times* (where Nomura research doubts the benefits of active investing (25 Jan 2015); Burton G Malkiel, 'Efficient Markets and Mutual Fund Investing: The Advantages of Index Funds'

Sironi⁹² is of the view that the universe of exchange-traded funds is able to offer investors a world of diversification possibilities, as exchange-traded funds have been described as an excellent way to gain exposure to many types of even illiquid products.⁹³ However, what is clear is that the automated investing strategy of the robo-advisor does not accommodate the universe of investment strategies, such as active investment management of various types. This is because such strategies can be more discretionary and do not adhere strictly to portfolio diversification.⁹⁴ Although automated wealth management by robo-advisors offer a good range of investment products in the vast passive management and exchange-traded funds market, it is important to recognise their current limitations.

To What Extent do Robo-Advisors Bridge the Access Gap?

The affordability and ease of access are promising factors that can reshape financial customer's engagement with financial advice. However, consumers may have concerns as to whether robo-advisors can robustly meet the regulatory standards for advice and whether personalised advice can be obtained.

On the first issue, there has been a significant amount of academic debate in the US as to whether robo-advisors can meet the fiduciary standard of care in advising customers. Fein is the most pronounced critic of robo-advisors in this regard,⁹⁵ as extensive exclusions and disclaimers delineate sharply the standard of care that customers can expect. Further, there is doubt that robo-advisors elicit sufficient information from customers to be able to recommend suitable products.⁹⁶ Further, there are concerns that robo-advisors are programmed by firms that embed their preferences in the algorithms, such as preferences based on sub-optimal management of conflicts of interest.⁹⁷ However, other commentators are of the view that robo-advisors can be programmed optimally and properly, and in this manner, based ultimately on human design, algorithms can deliver a standard of service that is compliant with regulation.⁹⁸ Even human advisers may rely on automation and

in John D Haslem (ed), *Mutual Funds: Portfolio Structures, Analysis, Management, and Stewardship* (Chichester: John Wiley & Sons 2010) at chapter 7.

⁹² Sironi (2016).

⁹³ David J Abner, *The ETF Handbook: How to Value and Trade Exchange-Traded Funds* (Chichester: John Wiley & Sons, 2010) at ch2. Gary L Gastineau, 'Mutual Funds versus Exchange-Traded Funds' in John D Haslem (ed), *Mutual Funds: Portfolio Structures, Analysis, Management, and Stewardship* (Chichester: John Wiley & Sons 2010) at ch14.

⁹⁴ For example, actively managed funds would pick stocks and can gain concentrated positions. However, recent scandals involving actively managed funds as charlatans in fact deploying a closet-tracking strategy has reputationally affected these funds, see 'European markets watchdog examines closet trackers', *Financial Times* (23 Nov 2014).

⁹⁵ Melanie Fein, 'FINRA's Report on Robo-Advisors: Fiduciary Implications' (2016) at <http://ssrn.com/abstract=2768295>; Melanie Fein, 'Robo-advisors; A Closer Look' (2015) at <http://ssrn.com/abstract=2658701>.

⁹⁶ Faloon and Scherer (2017); Bernd Scherer, 'Algorithmic Portfolio Choice: Lessons from Panel Survey Data' (2017) 31 *Financial Markets Portfolio Management* 49; Michael Tertilt and Peter Scholtz, 'To Advise, or Not to Advise — How Robo-Advisors Evaluate the Risk Preferences of Private Investors' (2018) 21 *Journal of Wealth Management* 70-84.

⁹⁷ Megan Ji, 'Are Robots Good Fiduciaries: Regulating Robo-Advisors under the Investment Advisers Act of 1940' (2017) 117 *Colum. L. Rev.* 1543.

⁹⁸ John Lightbourne, 'Algorithms & Fiduciaries: Existing and Proposed Regulatory Approaches to Artificially Intelligent Financial Planners' (2017) 67 *Duke L.J.* 651; Marika Salo and Helena Happio, 'Robo-Advisors and Investors: Enhancing Human-Robot Interaction Through Information Design' (2017) at <http://ssrn.com/abstract=2937821>.

digitalised services to help with their roles, and there should not be a presumption that pre-programmed algorithms are unable to meet the regulatory standards required.

Under the regulatory regimes in the UK/EU, it is arguable that programming robo-advisors to meet the regulatory standards of suitability or appropriateness is well-facilitated. Compliance with suitability entails the eliciting of information as prescribed, and then matching the profile of the customer (as constructed by the mandatory information obtained) with financial products that are categorised accordingly.⁹⁹ The procedural approach in complying with suitability and appropriateness makes the advisory process programmable in terms of sequencing and matching. Indeed financial products are sorted in only a few categories for matching purposes, principally by risk appetite,¹⁰⁰ and this allows the programming of a clear labelling strategy for robo-advisors in seeking matches with customers' profiles. In a restricted advice context, it is relatively straightforward for a limited range of products to be labelled in a few categories, and customers can be sorted into these categories on the basis of relatively simple questionnaires. Such strategies are highly standardised and designed to be cost-effective and fuss-free, and they can technically meet the requirements of suitability and appropriateness. This business model presents a relatively low level of legal risk for robo-advisory firms compared to the undertaking of an independent advice model. In other words, regulatory risk is not the main concern with robo-advisors. The main concern is that despite its attractiveness and ease of access, robo-advice is a highly limited market good and customers may be misled into thinking that this is sufficient for meeting their unique financial needs.

If the robo-adviser is designed to be independent, its design would need to be more sophisticated as it would need to interrogate the labels attached to financial products generated by a number of different providers in order to sort them into categories that it is programmed to act upon. There is an increased legal risk of misunderstanding the nature of products and therefore categorising them wrongly for the purposes of matching with customers' profiles. Perhaps for this reason most robo-advisors do not offer an independent advice service. Recent EU rules on product governance may mitigate this risk as financial product manufacturers are under new regulatory duties to identify appropriate target markets and distribution channels and should provide sufficient information to their distributors.¹⁰¹ That said, it is highly likely that robo-advisors with enhanced data processing and categorisation capabilities require more investment and it becomes uncertain if low-cost access can remain possible. It is explored shortly if artificial intelligence can transform today's robo-advice.

Customers must realise that robo-advice is different from seeking personalised financial planning.¹⁰² Personalised financial planning requires processing of granular datasets and is aimed at producing a bespoke strategy. This is antithetical to how robo-advice works ie to categorise and standardise in order to attract mass-market participation. Robo-advisors are wired to simplify for its decision-making and not complexify,¹⁰³ and are unlikely to be able to produce a personalised plan based on unique events in financial lives or a rich range of diversity characteristics.¹⁰⁴

⁹⁹ Discussed under 'Regulatory Framing of Supply Side Conditions for Offering Advice', and see fnts 24-28.

¹⁰⁰ Faloon and Scherer (2017); Scherer (2017); Abraham et al (2019).

¹⁰¹ Art 24(2), MiFID 2014, Art 9, 10, MiFID Commission Delegated Directive 2017/563, FCA Handbook PROD 3.2, 3.3 and ESMA's Guidelines 2018.

¹⁰² Faloon and Scherer (2017), but see Section 3.

¹⁰³ Allen (2019).

¹⁰⁴ Nikiforova (2017); Alison Lui & George William Lamb, 'Artificial Intelligence and Augmented Intelligence Collaboration: Regaining Trust and Confidence in the Financial Sector' (2018) 27 Information & Communications Technology Law 267-283.

Further, another aspect in personalised financial planning relates to interrogating choice in the market with the individual's unique dataset. Robo-advisers direct investors to passive products such as index-linked funds or exchange-traded funds as these are benchmarked and therefore provide automatic parameters for rebalancing, not needing to involve human discretion in investment judgment. It would be ideal if robo-advisers were able to deploy their massive computing power to consider a universe of financial products, including actively managed products, even those managed in an 'alternative' manner, such as the strategies used by hedge funds,¹⁰⁵ private equity investments, derivative and hedging products etc.¹⁰⁶ However it is doubtful that robo-advisers are able to interrogate the comparisons (ie comparing apples to oranges where the different products are concerned) and the complexities of these strategies that involve unpredictable human judgment. It is explored shortly whether the advent of machine learning may offer breakthroughs in sophisticated and personalised financial planning, but the state of the art at the moment suggests that this prospect is yet futuristic. Hence one of the access gaps identified earlier ie that customers categorised as 'professional clients' may be contractually excluded from advice due to legal risk for firms,¹⁰⁷ is not likely to be addressed by the advent of robo-advice. This is because their need for financial advice relates to usually complex financial products.

Customers should ideally come with some extent of financial literacy in order to have realistic expectations of the limitations of robo-advice.¹⁰⁸ Further, behavioural tendencies on the part of customers in an online context may render them in need of specific types of protection compared to a face-to-face context. For example, in an online context, the mandatory disclosures of fair product presentation, risk warnings and fee transparency may be presented in chunks of text which customers may scroll through and not register mentally, therefore reducing the impact of protective regulation.¹⁰⁹ The presentation of the choice architecture, as pointed out by Baker and Dallaert,¹¹⁰ is crucial to customer decision-making and it should be studied further as to whether they take advantage of behavioural biases and whether specific regulatory intervention into information presentation is necessary to make information more customer-centric.

Commentators have also pointed out that as robo-advisers funnel customers down standardised options, the macro effect of such decisions should be considered at levels of scale. Baker and Dallaert opine that '[a]t sufficient scale, robo advice can shape insurance and credit pools and even move investment markets. For example, the tsunami of index investing that is currently reshaping the mutual fund industry is the result of a distributed kind of robo advice in which algorithms supplant individual fund managers.'¹¹¹ Homogenous patterns of investing can cause unwarranted asset bubbles and vicious market spirals in poor market conditions.¹¹² These conditions are

¹⁰⁵ Francois S L'Habitant, *Handbook on Hedge Funds* (Chicester: John Wiley & Sons 2006).

¹⁰⁶ Robert J Shiller, 'Democratizing and Humanizing Finance' in Randall S Kroeszner and Robert J Shiller (eds), *Reforming U.S. Financial Markets: Reflections Before and Beyond Dodd-Frank* (MIT Press 2011).

¹⁰⁷ Discussed in Section 1.

¹⁰⁸ Abraham et al (2019).

¹⁰⁹ Marika Salo and Helena Happio, 'Robo-Advisors and Investors: Enhancing Human-Robot Interaction Through Information Design' (2017) at <http://ssrn.com/abstract=2937821>.

¹¹⁰ Tom Baker; Benedict Dellaert, 'Regulating Robo Advice across the Financial Services Industry' (2018) 103 Iowa L. Rev. 713.

¹¹¹ *ibid*.

¹¹² *ibid*, and Ringe et al (2018); Edwards (2019).

especially disconcerting for investors as exchange-traded funds which purport to be liquid can become illiquid, and this can gravely damage market confidence.¹¹³

The next Section discusses the continued reliance on market-based solutions for financial advice, such as future visions of developing personalised robo-advice. However, it also reflects broadly on whether access gaps may best be met by considering in part the publicisation of financial advice, ie turning advice into a public good.

3. The Future of a Technology-led Market-based Solution for Financial Advice

The limitations of robo-advice in addressing the access gap have been recognised,¹¹⁴ but continued improvements in computer processing power in relation to data volumes and increased sophistication in algorithmic training can lead to a future where artificial intelligence can better interrogate data with more complex correlations in order to provide a personalised plan for financial customers.¹¹⁵ Machine learning technologies can potentially offer personalised financial plans for individuals. Computers can be fed massive amounts of data and financial management strategies, and investment management specialists, along with computer scientists and data analysts, can train machines to learn the various financial goals that people may have, in order to generate personalised financial plans based on individuals' goals.¹¹⁶

This article expresses mixed views as to whether machine learning is the next revolution for automating personalised financial advice and ultimately making it mass-market. Artificial intelligence, which deploys 'deep learning' or machine learning by pattern recognition,¹¹⁷ can arrive at unpredictable and bad outcomes because of wrong associations made in pattern recognition or incorrectly processing certain correlations as necessarily causal.¹¹⁸ At the moment, machine learning is being experimented on outcomes that are clear and discernible, such as the accuracy of image recognition,¹¹⁹ or winning a computer game.¹²⁰ In these experiments, machine learning has not been wholly successful or predictable. However, one can expect machine learning to progress, just as technology invariably has.¹²¹

The market for personalised financial planning based on machine learning depends on a few other developments other than technological progress. Does this service entail increased or reduced levels of legal risk for financial advisers? Legal risk is clearly an important incentive factor, and there is a need to think of regulatory development *in tandem with* and not only *in response to* technological 'arrival'.

¹¹³ 'Watchdogs probe systemic risks of passive fund growth' (Financial Times, 1 April 2019) on the systemic risks of the \$5.2trillion global exchange-traded funds market.

¹¹⁴ Maume (2019).

¹¹⁵ Sironi (2016); Lui and Lamb (2018).

¹¹⁶ There is a copious amount of literature on where machine learning is at, and encapsulated in Gillian Hadfield, 'Rules for Robots: Building Legal Infrastructure for Artificial Intelligence', CEL Biennial lecture, University College London, 18 June 2019.

¹¹⁷ Tomaso Aste 'Artificial Intelligence' and Jon Danielsson 'Artificial Intelligence', speeches at the LSE Symposium on Law, Technology and Finance, 16 May 2019, London.

¹¹⁸ Hillary J Allen, 'Driverless Finance' (2019) Harvard Business Law Review, forthcoming.

¹¹⁹ Yann LeCun, Yoshua Bengio & Geoffrey Hinton, 'Deep Learning' (2015) 521 Nature 436.

¹²⁰ Gabriel Synnaeve, Nantas Nardelli, Alex Auvolat, Soumith Chintala, Timothée Lacroix, Zeming Lin, Florian Richoux, Nicolas Usunier, 'TorchCraft: a Library for Machine Learning Research on Real-Time Strategy Games' (2016) at <https://arxiv.org/pdf/1611.00625.pdf>.

¹²¹ Carlotta Perez, 'Technological Revolutions and Techno-Economic Paradigms' (2009) at <http://e-tcs.org/wp-content/uploads/2012/04/PEREZ-Carlota-Technological-revolutions-and-techno-economic-paradigms1.pdf>.

First, regulatory policy must consider how liability should attach to advisory firms, and whether the legal matrix for liability needs to be adapted to fully-automated and semi-automated modes of artificial-intelligence-led personal financial planning. Machine learning currently produces unpredictable outcomes at times, based on unreasonable correlations that humans would not make,¹²² but may also produce outcomes based on good correlations that humans miss due to behavioural tendencies.¹²³ Should liability attach to the credibility or reasonableness of the outcome as judged by human standards? Financial planning outcomes are credence goods and ‘bad’ outcomes would not be discerned until after an elapse of time. On the one hand, making liability attach to outcomes may curb short-termist incentives on the part of purveyors of financial advice based on artificial intelligence. But on the other hand, ‘bad’ outcomes can be attributed to market vicissitudes. There is scope to consider a model where liability attaches to the governance of artificial intelligence systems, so that a more procedural and *ex ante* approach is taken to evaluate the legitimacy of the systems. However, that is no guarantee against the production of ‘bad’ outcomes.

It is possible that regulators may refrain from introducing any significant, technologically-led change as EU policy-makers for example have an aversion to quick regulatory reactions to technology changes, preferring technologically-neutral regulation and the functional equivalence approach of ‘same service same rules’.¹²⁴ On the one hand this is understandable as premature crafting of new regulatory regimes can lead to legitimised arbitrage and inconsistent fields of rules. However, where technological developments create novelties that disrupt assumed ways of ‘doing things’ embedded in legislation,¹²⁵ adaptation may be necessary. Such adaptation provides a clearer legal framework for market providers so as to mitigate their legal risks in offering market-based solutions. Legal clarification also helps to preserve the equivalence and consistency that policy-makers desire. For example, the Markets in Financial Instruments Directive’s imposition of governance, oversight and responsibilities for algorithmic high-frequency traders shows that specific governance needs were perceived and a functional regulation of market participants’ duties that applied more broadly did not suffice.¹²⁶

Regulatory adaptations would likely shift to the governance of the machine learning architecture in the following ways below. This is because financial regulation in investment products has always taken an *ex ante* and not an *ex post* approach. It is unlikely that firms would be willing to assume more *ex post* risk shared with customers just because artificial intelligence and automation are deployed. Regulatory developments may tend towards the following trajectories:

- (a) more explicit governance of data access and capabilities. In a survey carried out on the penetration of robo-advisers in Germany, Dorfleitner et al reports¹²⁷ that robo-advisers are lobbying for greater access to customers’ financial data held in various institutions such as banks, and are eager to build up a larger and more integrated picture of customer profiles. Hence, regulatory risks also arise in relation to access to more data, as access does not mean ethical use of such data, or that ‘right’ judgments would be made in the course of data

¹²² Arno Lodder, ‘Regulation of Algorithms’, lecture at the London School of Economics, 19 June 2019.

¹²³ *ibid.*

¹²⁴ EU Commission Communication, *FinTech Action plan: For a More Competitive and Innovative European Financial Sector* (2018); and for example, Steven Maijor speech, ‘Cryptoassets: Time to Deliver’ (26 Feb 2019).

¹²⁵ Maume (2019).

¹²⁶ Art 17, Markets in Financial Instruments Directive 2014.

¹²⁷ Dorfleitner et al (2016).

processing.¹²⁸ Further, the right of protection for EU citizens against automated decisions based on big data analysis¹²⁹ would mean that firms need to build in some form of human intervention to check automated personalised financial planning, or allow customers to challenge automated decisions.

- (b) more explicit governance of automated processes such as risk management capabilities. There has been increased reform in the regulation of internal control functions at banks and financial institutions since the global financial crisis,¹³⁰ as a key diagnosis of the crisis is that risk management systems in many firms have been poorly designed and governed, permitting excessive and imprudent levels of risk-taking in business decisions.¹³¹ Such regulatory extension to risk management and control functions in relation to technological transformations and their impact on strategy and operations can be expected. For example risk control may be explicitly extended to data protection, processing, systems resilience and reliability, stress-testing, back-testing and anti-cyberhacking protection;
- (c) more explicit governance of automated processes especially in relation to self-explication and accountability. Allen¹³² rightly points out that as artificial intelligence is trained towards deep learning, it is increasingly opaque as to how algorithms reach their 'judgments' or outcomes. There is a need for programmers to consider programming for more self-explication and accountability in order to make algorithmic intelligence more governable.¹³³ Such explication and accountability can relate for example to the generation of choice sets, so that suitability reports presented to customers more clearly specify on what basis choice sets have been generated and their qualifications;
- (d) more explicit education for customers in relation to their rights, such as cooling-off rights in distance-selling,¹³⁴ rights to valuation, exit and redemption, as well as key rights and warnings such as entitlement to disclosure, to dispute resolution, and warnings about the nature of financial products and the need to seek further levels of advice;¹³⁵
- (e) more explicit responsibility for ex ante individual and systemic risk management¹³⁶ to prevent failures associated with technological failures, as well as liability for firms for organisational and systems failures due to technological failures;¹³⁷
- (f) more explicit regulation of individual responsibility under the FCA's Senior Managers and Certified Persons regime in relation to governing artificial intelligence deployed in their business models. This regime imposes individual liability on senior managers and certified persons in relation to personal conduct, and for senior managers, personal liability for

¹²⁸ Lui and Lamb (2018).

¹²⁹ Art 22, General Data Protection Regulation.

¹³⁰ Iris H-Y Chiu, *Regulating (from) the Inside: The Legal Framework for Internal Control in Banks and Financial Institutions* (Oxford: Hart Publishing 2015).

¹³¹ Michel Crouhy, 'Risk Management Failures During the Financial Crisis' in Robert W Kolb (ed), *Lessons from the Financial Crisis* (New Jersey: John Wiley 2010); Elizabeth Sheedy, 'The Future of Risk Modelling' in Robert W Kolb (ed), *Lessons from the Financial Crisis* (New Jersey: John Wiley 2010).

¹³² Allen (2019).

¹³³ Baker and Dallaert (2018).

¹³⁴ Art 7, Distance-Selling Directive 1997.

¹³⁵ The 'hybrid' advice model, where further human-led advice is sought, arguably complements and overcomes the limitations of robo-advice as it currently stands, see Lui and Lamb (2018).

¹³⁶ Edwards (2019); Nicole G. Iannarone, 'Computer as Confidant: Digital Investment Advice and the Fiduciary Standard' (2018) 93 Chi.-Kent L. Rev. 141.

¹³⁷ Extending from Art 16, MiFID.

failures in oversight and control.¹³⁸ There is perhaps a need to designate Chief Technical Officers as senior managers, and explicate governance responsibilities for technology in the firm so that individual liability and responsibility can attach; and

- (g) rethinking whether the regulatory regime for advice needs to be adapted, such as the definition of ‘personal recommendation’ to accommodate the rise of personalised financial planning, and whether advice across different lines of products may attract a streamlined legal duty in suitability.¹³⁹

The likelihood of more *ex ante* forms of transparency, accountability and governance required under regulation¹⁴⁰ shapes the nature of legal risk as well as regulatory oversight and supervision. Market providers would have to contend not only with the cost of technological innovation but also the need to develop embedded governance and transparency technology that meets regulatory requirements and ultimately achieve societal legitimacy. It may be sometime before the different aspects of technological progress arrives at a level for mass-marketization of personalised financial planning by artificial intelligence.

At this juncture, one still has to answer the question as to the policy options for meeting the need of personalised financial planning in today’s markets. It is queried whether an ideological and not necessarily a technological revolution may point the way forward.

Public-Private Provision for Financial Advice?

Shiller¹⁴¹ argues that reliance on market-based solutions is only sound if the demand side is able to fully and rationally overcome information asymmetries and process information in order to make optimal choices. Human beings suffer from behavioural limitations as discussed, and some are worse off than others in processing complex decisions and making choices.¹⁴² Further, such human limitations are not necessarily overcome by artificial intelligence taking over financial planning, and indeed artificial intelligence arguably need more interrogation to uncover its black box. In this light, one should consider if advice should be regarded as a public good,¹⁴³ so that subsidised or ‘national advice’ services can be provided. Such provision is not a panacea but can address some of the limitations this article has discussed so far. Market-based solutions are limited as personalised financial planning is not a mass-market good but increasingly a necessity. A public goods perspective can galvanise more imaginative solutions than relying on market provision alone.

The argument has traction as the advent of financialisation means that it is necessary for individuals to navigate the private financial sector themselves to provide for their financial lives. The failure to meet financial goals or needs can result in social problems such as poverty and the need to call on social resources. Further, from a ‘justice-based’ argument drawing upon Rawls, society would, behind a veil of ignorance, support that the greatest benefit be accorded to the least advantaged.¹⁴⁴ This can support public policy for a right to affordable financial advice. However, one can argue that in these circumstances advice would become even more ‘mass-market’ in nature and can only be

¹³⁸ S63, 66A, 66B, Financial Services and Markets Act 2000 amended in 2012; 2013, FCA Handbook SYSC 23, 24.2, 27.7, COCON and FIT.

¹³⁹ Some differences in advisory duties between products are discussed in Chiu and Brener (2019).

¹⁴⁰ See below.

¹⁴¹ Shiller (2011).

¹⁴² Bluthegen et al (2008).

¹⁴³ Robert J Shiller, ‘How About a Stimulus for Financial Advice?’ (New York Times 2009) at <https://www.nytimes.com/2009/01/18/business/economy/18view.html>.

¹⁴⁴ The Difference Principle, in John Rawls, ‘Justice as Fairness: Political not Metaphysical’ (1985) 14 *Philosophy and Public Affairs* 223–51.

efficiently offered as a minimal and standardised service and not as personalised advice. These concerns are acknowledged but as regulatory intervention into how advice is offered is already costly, it is not necessarily inefficient to compare the cost/benefit¹⁴⁵ of regulating the advice market and turning some (perhaps not all) advice into a public good.

The UK has taken the position that 'generic financial advice' is a public good, accepting the Thoresen review's suggestions¹⁴⁶ that a Money Advice Service should be instituted as a public institution to provide general life stages financial advice. However such a service stops short of providing personal advice. Generic advice therefore provides a financial education sign-poster towards market-based solutions. This is a mid-way approach but it is arguable that the Money Advice Service could dispense personalised advice even if financial products are produced by the private sector. An analogy can be made with the National Health Service as being able to dispense individual prescriptions but relying on private sector pharmaceutical companies' products. Of course the analogy is imperfect as financial products are credence goods and public service advisers could fare no better than private financial advisers in relation to competence. However, they would not be restricted in the same sense as market-based advisers. It is not envisaged that a national advice service should replace market-based advisers, and useful competition can be stimulated to promote a more effective market overall. For example, the UK's provision of NEST, a public-sector based organisation¹⁴⁷ to manage defined contribution pension schemes for savers that may otherwise not be included in occupational pension schemes, is a public good provided alongside market options. This is a model that can work where both choice and a baseline provision for necessity matter.

A benefit of instituting advice as a public good is that financial product providers could be made to owe more extensive product governance and disclosure duties to the public institution, which is also motivated to understand in full the features and workings of financial products. This is beneficial for demystifying product complexity that has been seen in financial product innovations in recent decades that create externalities for customers and the financial system alike.¹⁴⁸ The public institution's scrutiny of private sector financial sector products can entail pressures to develop simpler and more effective products, having a virtuous effect upon innovation.¹⁴⁹

On the other hand, a public institution for financial advice would require a new modus of funding, and given that the UK constantly faces shortfalls in the budget for the National Health Service, it would be challenging to 'nationalise' parts of the advice industry. Further, public institutions can be susceptible to capture, and would need to be staffed to expert levels to be able to assess financial sector products robustly and manage relations with the private sector.

However, in a landscape of public and private provision for financial advice needs, technological transformations can play a part. Regulators are already studying the possibilities of Regtech, that is

¹⁴⁵ Cass R. Sunstein & Robert W. Hahn, "A New Executive Order for Improving Federal Regulation? Deeper and Wider Cost-Benefit Analysis" (John M. Olin Program in Law and Economics Working Paper No. 150, 2002); Cass R Sunstein, "The Cost-Benefit State" (Coase-Sandor Institute for Law & Economics Working Paper No. 39, 1996).

¹⁴⁶ *Thoresen Review of Generic Financial Advice* (2008).

¹⁴⁷ <https://www.nestpensions.org.uk/schemeweb/nest.html>.

¹⁴⁸ Dan Awrey, 'Towards a Supply-Side Theory of Financial Innovation' (2013) 41 *Journal of Comparative Economics* 401; Dan Awrey, 'Complexity, Innovation, and the Regulation of Modern Financial Markets' (2012) 2 *Harvard Business Law Review* 235.

¹⁴⁹ The nature of financial innovation as being both beneficial and insidious is discussed in Emiliios Avgouleas, 'Regulating Financial Innovation: A Multifaceted Challenge to Financial Stability, Consumer Protection, and Growth' in N Moloney, E Ferran and J Payne (eds), *Oxford Handbook of Financial Regulation* (Oxford University Press, 2015).

how regulatory compliance can be better embedded in machines so that compliance reporting can be made automated or that compliance requirements can be made auto-executable by machines at the regulated firm's end.¹⁵⁰ Internalising the efficiency of regulatory compliance can be aligned with the provision of financial public goods such as advice. In this manner, machine learning is not only a market-led or business-case-based development but must embed regulatory learning.¹⁵¹ Regtech arguably brings about a new discourse in terms of the public-private divide. Perhaps it is time to consider not just how technological transformations in the private sector may need to be regulated to meet public needs and interest, but how such transformations challenge the boundaries too between market-based and public goods and the roles of governance in meeting public needs and interest.

Conclusion

Policy-makers in the UK and EU look to robo-advice as a technological transformation that has the potential to bridge the access gap to financial advice as a market-based good. This article discusses how financial regulation has conditioned the supply and demand sides in the market for financial advice in order to ascertain what gaps remain. Although the affordability and online accessibility of robo-advice are promising, there are limitations to the current state of art in meeting the key need for personalised financial planning, not as a luxury good for the wealthy, but a necessary good for many in this age of financialisation. This article considers the regulatory and governance implications for futuristic visions of artificial intelligence that may deliver personalised financial planning. More importantly, policy-makers may wish to consider the public good nature of financial advice, and whether a public-private model of delivering financial advice planning for all, supported by technological revolutions, is possible. This in turn can result in more meaningful and informed governance of the use of such technology.

¹⁵⁰ Dirk A Zetsche, Ross P Buckley, Douglas J Arner and Janos Barberis, 'Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation' (2017) 23 *Fordham Journal of Corporate and Financial Law* 31.

¹⁵¹ Hadfield (2019) on embedding artificial intelligence in our institutions, rules and norms.