

Rai, Suyash; Ananth, Bindu; Mor, Nachiket

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Universalizing complete access to finance: Key conceptual issues

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Universalizing Complete Access to Finance: Key Conceptual Issues

Suyash Rai, Bindu Ananth, and
Nachiket Mor

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Suyash Rai and Bindu Ananth work for IFMR Trust. Nachiket Mor is the president of the ICICI Foundation for Inclusive Growth and the chair of the IFMR Trust Governing Council. This paper is part of a forthcoming volume entitled *Financial Regulation and Reforms in Emerging Markets*, edited by Masahiro Kawai and Eswar Prasad (Brookings Institution Press).

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Please contact the author(s) for information about this paper.

Asian Development Bank Institute
Kasumigaseki Building 8F
3-2-5 Kasumigaseki, Chiyoda-ku
Tokyo 100-6008, Japan

Tel: +81-3-3593-5500
Fax: +81-3-3593-5571
URL: www.adbi.org
E-mail: info@adbi.org

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Abstract

In this paper, we present two stylized models of the financial system. We make the case that in order to realize the potential of a well-functioning complete financial market, financial system designers and financial service providers will need to think about ways to deliver financial propositions that are customized to individual households by responding to their unique circumstances. This will entail the presence of proximate, well-trained providers that intermediate between the customer and those large “product manufacturers” whose goal is financial well being and not merely product sales. These providers would need to use expertise in financial advice or wealth management to develop integrated financial propositions for clients. We also highlight some of the important debates that arise in making this stylized financial system a reality.

JEL Classification: D14, D18, D53, D91, G00, G18, G21, G28, R20

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1. INTRODUCTION

A household's financial life can be seen as a combination of exposure to time and contingent states. Financial wealth can be seen as a combination of assets that are currently owned and the present value of future income discounted at an appropriate risk-adjusted rate. Financial services must help a household manage and increase its consumption smoothly and fully utilize its human capital, financial capital, and other resources to improve its well-being. There are, therefore, two core functions that the financial system has to fulfill for each and every household: first, management of risk by movement of resources across contingent states, and second, intertemporal consumption smoothing by movement of resources across time.

The outcomes of any financial inclusion effort must be benchmarked to these core functions. All financial products and services as well as institutions are means to achieve these outcomes in an efficient manner. Financial markets and institutions should evolve to promote complete markets that allow households to hedge future uncertainty by trading in every state of the world.¹ Consumers should be able to bundle together securities in portfolios to choose patterns of consumption expenditure over uncertain states of nature.² By enabling trade in insurance policies covering factors outside the economic system, financial services can help overcome the problem of uncertainty that prevents certain markets from coming into being, and allow the allocation achieved to be efficient and therefore welfare enhancing.³

Financial providers can significantly help the household manage idiosyncratic risks. Financial contracts at regional levels may also protect against certain regional-level idiosyncratic risks (but systemic risks for the household) such as natural disasters. At a greater scale, mechanisms could be developed that help countries globally pool and hedge risks, such as economic depression, rapid currency devaluation, inflation, and so on. It is argued that macrosecurities, traded at national, regional, and industry levels are critical aspects of a comprehensive risk management strategy.⁴ Certain other risks, such as macrolongevity risk, challenge finance as a science to develop mechanisms to manage the risk, without simply increasing the buffer (risk capital).⁵

The functions of a well-operating financial system would remain stable across contexts—rural and urban, developed country and developing country, rich and poor.⁶ These functions are universal, and they are particularly important for low-income households, who often constitute a good part of the financially excluded population. Low resource levels merely imply that while mistakes are expensive for everyone, they are far more so for low-income households that juggle many balls to survive.⁷ Though the functions remain stable, the products, delivery channels, delivery institutions, market infrastructure, and the regulatory and supervisory framework required to deliver on these functions may change significantly

¹. Arrow (1964) details how risky financial securities can help in risk management by allocation of risk bearing. Arrow and Debreu (1954) develop the idea of an integrated model of production, exchange, and consumption in a complete market. Debreu (1959) captures uncertainty by expanding the characteristics in the model used to define consumption goods by making them state contingent, where all possible future states of the world are defined by unique combinations of a set of environmental variables.

². Financial securities play two important roles in spreading risk: they eliminate diversifiable (individual) risk from consumption expenditure and transfer non-diversifiable (market) risk across consumers.

³. Arrow (2009).

⁴. See Shiller (2003) for detailed discussions on such systemic risk and the macro securities to manage them.

⁵. For a discussion on the importance of macro longevity risk and the extent of buffer required by pension funds to reduce the probability of underfunding, see Hari and others (2008).

⁶. On the functional perspective of finance, see Bodie and Merton (1993); Merton and Bodie (1993, 1995, 2005); Merton (1995).

⁷. See Collins and others (2009) for detailed discussions on households' financial diaries that document financial activities at the household level.

across contexts. The question is, how can the financial system help the households fulfill these functions in an efficient and orderly manner?

In this chapter, we take the functions as a given and focus on the “how” question, considering the conceptual issues arising in an emerging market context, especially those related to product design, product delivery, and channel design. (Taking this to the next level of detail would require considering national and subnational contexts.) In the next section, we discuss two stylized approaches for delivering financial services, both with different implications for the roles and responsibilities of clients, providers, and regulators. In the subsequent sections, we highlight select issues with policy implications that should be resolved for effective financial inclusion.

2. TWO CONTRASTING BLUEPRINTS OF FINANCIAL SYSTEMS

At the front end, where the interaction between the clients and the financial system happens, there are many approaches that the financial services provider could take with respect to the way the services are delivered to the clients. In a stylized sense, there are two types of approaches that could be taken: on one hand, the provider could follow a hands-off approach, basically making a menu of products available; on the other hand, the provider could actively advise clients and take responsibility for that advice. Detailed descriptions of these approaches follow.

2.1 Product Menu–Driven Approach

This approach entails design and provision of several disaggregated, stand-alone products available from a variety of “product manufacturers” with a “thin” front end between manufacturers and clients. The front end in this system is typically an agent or distributor that markets the products to the customer. There may be functional overlap across products, but each product is sold as a discrete entity. In this approach, customers choose the set of products that makes sense to them, so there is heavy dependence on customers’ ability to understand a variety of products and process features.

The extent to which the products have a positive or negative impact on the customer would depend on how well the customer can choose and use the appropriate product, within the eligibility constraints. So, under this approach, the need is to have a set of well-designed products and an army of agents. The misselling concerns (discussed in more detail later) are more around communication of information on product features. This approach characterizes most financial systems currently prevalent. It is easy to see how this scales for many products such as insurance, collateralized loans, mutual funds, and payment products. Hence this approach has dominated most efforts toward financial inclusion, which is often defined in terms of access to one or a few products. Interactions between the product and the nature of a household’s financial needs have been largely overlooked.

2.2 Customized Financial Proposition Approach

The alternative pathway is to develop and offer financial propositions (with underlying contingent claims) tailored to individual profiles, with effective and proactive risk selection and control.⁸ The back end here continues to be a variety of product manufacturers, but the customer-facing front end is a financial institution that is not defined by a product frame.

⁸. On the possibilities of customized financial propositions, see Aaron (1999); Bodie (2003); Bodie, Hammond, and Mitchell (2001); Merton (2001, 2002, 2003).

In this interface, the provider would start with this question: given the balance sheet, goals, and risk preference of this household, how can I provide a financial proposition that helps it smooth consumption over its life cycle? The process would ideally start with the provider going through an intensive, structured interaction with the household that helps it understand the household's current financial and human capital situation (see discussion below), understand the nature of uncertainties faced by the household, assess the risk and time preference, and document the goals and priorities of the household. Then the provider would create a financial proposition that would fit the household's requirements. Presuming that an exact combination of products is possible, this should provide a kind of "wrapping" around the household, to protect it from risks, while helping move resources across time to smooth consumption.⁹

The underlying structures in both these approaches are equivalent from the financial functions point of view, but they differ mainly in the *process* of designing and delivering the interface between the customer and the system. So the key difference is in whether the frontline provider's focus is on the *customer* or on the *product*, and what the assumption about the customer's *expertise* is. For example, if the household owns livestock that is a primary source of income, in both cases the mechanism to insure the animal would be available, but in the integrated proposition approach, it would be fundamental to any conversation with the individual, whereas in the disaggregated approach, the product would be available to be purchased at the discretion of the client.

In the disaggregated approach, the household may be presumed to be the "expert" on choosing the right option, while in the former approach, based on the household's expressed risk preferences and goals, portfolio allocation expertise is provided by the provider. This distinction and combining of these stylized approaches can have important implications for the eventual impact on a household's financial well-being. This is an important strategic question for the future of financial inclusion, for policy as well as practice.

Chapter 11 of this volume, by Alfred Hannig and Stefan Jansen, gives a good sense of the progress made in the financial inclusion efforts worldwide, and covers some of the important issues that the sector is currently dealing with to ensure expansion of financial access, as well as the implications thereof in terms of impact at the micro- and macro level. It is being observed that in countries like India, with the rapid rise of commercial microfinance, the viability of the product menu-driven approach is increasing, and institutions are expanding the range of services being offered.¹⁰

In a way, this chapter complements the one by Hannig and Jansen by discussing issues related to the next stage in financial inclusion efforts and by looking beyond just making basic products available. In the next section, we discuss certain conceptual challenges and consider the two approaches for financial inclusion in light of these challenges.

⁹. As an analogy, one could take the example of a general practitioner in a health system who looks at the overall health of the people enrolled with it. The practitioner is not just selling services but actually looking at the client outcomes, with some shared responsibility with the clients and with the drug companies and other suppliers. The practitioner starts by understanding the clients' health status, past illnesses, lifestyle, risk factors (like diabetes), and so on. Then she considers all these and the available solutions she is aware of, and prescribes a set of solutions that she believes would work for the client.

¹⁰. See Cull, Demirgüç-Kunt, and Morduch (2008) for a discussion on commercialization of microfinance and its implications.

3. SELECT CONCEPTUAL CHALLENGES IN FINANCIAL INCLUSION

It is important to consider the implications of the two blueprints discussed above, and to evaluate their potential in terms of their implications for fulfilling the functions of finance efficiently and effectively.

3.1 Designing Products: Simplicity and Complexity

In the wake of the “subprime crisis,” there has been a lot of discussion about the complexity and simplicity of products, and how this affects usage and outcomes. The school of thought that places the onus of financial literacy on the customer is in a “race to simplify.” However, from a financial inclusion perspective, we worry that this significantly undermines the true potential of finance. Consider the following examples.

Two of the ways for a farmer to finance her sowing operation could be through a crop loan payable in equal monthly installments, or through a crop loan where principal and interest payments are linked to the amount of rainfall obtained in her region. Clearly, for the provider, the first product is simpler to design, provide, and communicate. The latter is complex because it combines a loan with insurance-like features and will require the lender to hedge the rainfall risk at its level. At the time of disbursing the loan, the provider in the second instance would not be able to give the farmer a “simple” fixed repayment schedule. However, from the perspective of the functionality required for a farmer to manage volatile income streams, the latter appears to be a much superior alternative because the financial products absorb the volatility. In the first case, the volatility for the farmer is perhaps exacerbated by adding a fixed outflow to a very volatile cash flow, making the farmer worse off. In the second case, the provider uses its expertise to integrate a solution for the farmer, which she or he otherwise might not be able to create without such expert support.

Often there are underlying assumptions about product pricing and design that the client may not be aware of, and the client’s decision may become impossibly complex to make. One example would be financing the retirement stage. The client would like to fulfill the function by entering into mechanisms that help him save money during times of income and invest it in a combination of assets so that an adequate amount is available during the retirement stage. He also would want to manage longevity risk and health risk after the retirement, because both these risks may render the savings inadequate. There is expected selection bias priced into mechanisms to manage either of these risks.¹¹ An annuity would be priced to take into account the fact that a person who is not well would not want to purchase it, while the health insurance is priced with the opposite logic, that is, a person who is likely to fall ill is more likely to purchase it. Both are selection biases that offset each other to some extent, and bundling an annuity with health insurance (or long-term care insurance) should bring the price down for the household. So, even though it is simple for the provider to sell stand-alone health insurance (or long-term care insurance) products, most clients would not be able to understand the underlying logic of product design and actuarial calculation, and therefore would not be able to enter into the appropriate financial contract.

Who does simplicity favor in cases like these? Disaggregated product delivery leaves the households with the responsibility for making decisions about product choices. Individuals and households are essentially looking to fulfill certain functions, which could be fulfilled by a number of product combinations, with varying degrees of efficiency and convenience for the household. Even if each product is individually easy to understand, together the products may pose a technically complex financial decision involving detailed asset allocation and estimates of the optimal level of goal financing required at different stages of life, including

¹¹. See Merton (2003) for a detailed explanation of this example.

the savings for the postretirement phase. This is an important design issue for financial inclusion because the eventual effectiveness of financial inclusion would depend significantly on how the products are used by the households, which in turn depends on how the products are designed.

3.2 Fixing Responsibilities: Provider's and Client's Responsibilities for Outcomes

There is a need for a detailed assessment of the extent to which the different stakeholders could be held accountable for the client outcomes. In addition to the clients, there are four categories of stakeholders that could be held accountable:

- advisors and/ providers of financial services, who interface between clients and the financial system;
- risk aggregators and fund managers, who manage client portfolios;
- third party agencies like rating agencies, which minimize the market information asymmetry; and
- regulators and the central bank, which are responsible for the overall stewardship of the system

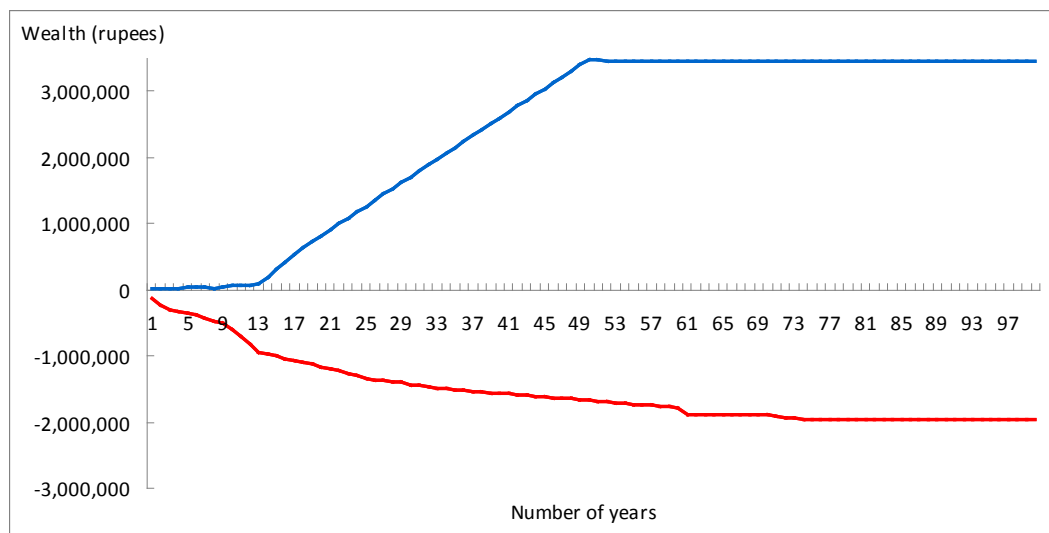
Several debates on financial literacy have placed the onus on the customer to understand the intricacies of financial mechanisms, but there is insufficient emphasis on the capability of the provider and its preparedness for counseling customers on financial choices. How well trained is the customer representative of the provider in helping customers navigate complex life cycle finance choices? There is a case for placing much greater importance on provider and distributor financial literacy to ensure good customer outcomes.

Instead of passing the responsibility entirely onto the clients, frontline finance workers could take the responsibility of analyzing household typologies based on risk profiles (high dependence on wage income, high volatility of cash flows due to rainfall risk), and use automated expert systems that match these profiles with financial portfolios (combinations of savings, investments, loans, and insurance mechanisms). The providers could use their expertise to build systems to implement a comprehensive process and support the financial decisions of their clients.

Here is a detailed example of such a process. As a first step in financial planning, the provider could help the client visualize cash flows over time. Adding uncertainty to some of these cash flows would reveal potential stress points in the lifecycle of the client. The task of the provider is then to advise the clients so that they can protect themselves against catastrophic scenarios while ensuring that their goals are financed and a basic level of consumption is maintained across the lifecycle.

Figures 1 through 3 visually represent the financial life of a household with four members: a husband (age thirty-four), a wife (age thirty-two), and two children (a boy age ten and a girl age eight). All persons except the girl (who will be married off) will be involved in wage labor from age twenty-one to age sixty. The man earns Rs.150 a day; the woman, Rs. 120 a day. All living, educational, and medical expenses are also included in the calculations. Figure 1 shows the wealth paths for this household across the best and worst “states of the world” without any financial mechanisms. Please note that the x-axis represents years, while the y-axis represents the wealth level at a point in time.

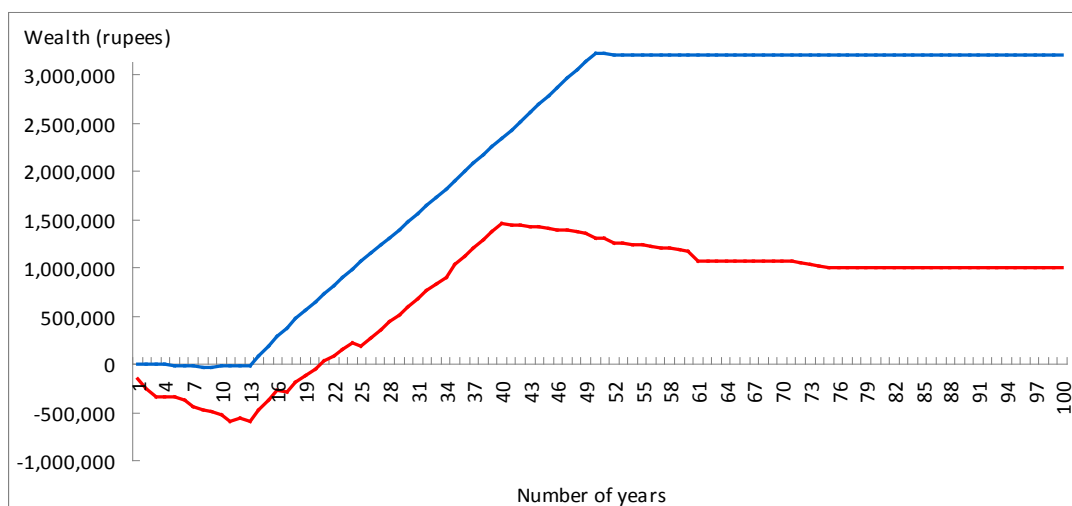
Figure 1: Life Wealth Envelope for Example Household without Any Financial Mechanisms



Source: Authors' calculations.

Figure 2 shows the cash flow paths for this household across the best and the worst states of the world if life insurance is purchased for the earning members up to the extent of their human capital, and disability insurance is purchased to the extent of loss of human capital plus living expenses for the remaining years. As can be seen, the life wealth “envelope” becomes narrower and shifts upward, with the financial situation in the worst state of the world improving because the risks are insured against.

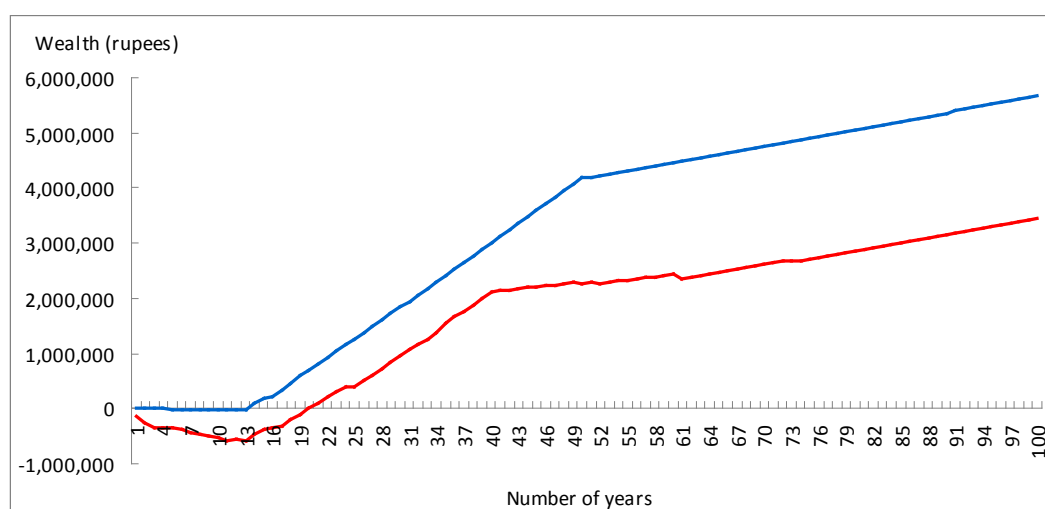
Figure 2: Life Wealth Envelope for Example Household with Life and Disability Insurance



Source: Authors' calculations.

Figure 3 shows the cash flow paths for the example household across the best and the worst states of the world if the family also buys an asset worth Rs. 100,000 fifteen years hence and makes Rs. 30,000 annually out of it, in a way extending its earning life beyond the working years of the earning member.

Figure 3: Life Wealth Envelope for Example Household with Insurance and Financial Asset



Source: Authors' calculations.

This example illustrates how a provider could use its expertise and household information to model the financial lives of clients and take responsibility for advising them about their financial decisions. Now, in this example, if the provider had advised this household to take a big loan without purchasing an adequate insurance policy, would this amount to misselling? Perhaps it would because even a cursory analysis by the provider could have shown the need for insurance in the household. In this instance, the situation is somewhat clear, but there may be cases where things are somewhat ambiguous. Defining the provider's responsibility would require detailed assessment of what the provider can help the household with. The example just discussed shows that a provider may be able to do much more than what is presently being offered. This issue is further explored later in the context of communication between providers and clients.

Provider skills and capability are one aspect of the story. Directly following from this is the issue of providers' accountability, based on the roles they play vis-à-vis the financial decision making by clients, especially if a bad customer outcome obtains.

Most product liability regimens go by the Latin maxim *volenti non fit injuria*, or "a person is not wronged by that to which he or she consents."¹² Lack of consent is seen as the main ground for pressing legal liability against the provider. This paradigm has to be nuanced in the context of financial services. Unlike physical products, financial products lack visibility, and unlike many services, they reveal their real outcomes some time down the line from the time of purchase. The client has limited ability to assess *ex ante* the quality of the product and its impact. Consenting to a thirty-page contract written in complex language when all providers have similar looking contracts does not mean much. So the regulation has to start by setting fair ground rules to enable truly informed consent. There also may be a case for *ex-post* liability regimes in the context of financial service providers.

There are factors in financial service delivery that might lead to bad customer outcomes if provider liability is lacking in the system. For example, there are financial products in which returns to the clients may suffer due to excessive speculation by the provider.¹³ Also, there are situations where the complicated underlying design of the product challenges the client's ability to understand and analyze the risks associated with the product. There is also the possibility of a provider not disclosing the risks or losses clearly, that is, not making clients

¹². Geistfeld (2010).

¹³. Bankers' Trust is an example here, where speculation to increase returns led to losses for several clients.

aware of losses that might occur in certain states of the world, or informing clients about the losses much later, when nothing can be done about them. Hence provider liability is critical when it comes to transparency and information dissemination of the financial products. Some of these factors probably can be controlled by enhancing providers' liability, both ex ante and ex post, and therefore, the regulations have to be set accordingly to bolster the financial system.

However, the imposition of excessive product liability may become so expensive for the providers that it impedes their active efforts to innovate for a client's benefit.¹⁴ Similarly, as in any product liability mechanism, the regulators would need to minimize misuse of the liability for making unreasonable claims. How can the incentives of the providers be aligned with the long-term implications for the clients in an efficient manner? The real challenge lies in ensuring that the products are well designed and that communication between the provider and the client is high quality from the customer's perspective. How can one tell ex post whether a purchase was preceded by adequate understanding, and to what extent can the provider be held accountable for failure on this front? Clearly, the policymakers would need to start by closely examining how the industry manages the risks and uncertainty inherent in designing and commercializing products and processes. Subsequent to this, they should try to carefully draw lines between the liabilities of various stakeholders, including the regulators.

It is not just the risk aggregators and providers of products that are liable; there are also other agencies playing important roles in connecting clients with the financial system. For example, the rating agencies' role has come under much scrutiny in recent times. How can liability be fixed on them for their rating, which has advice implicitly embedded in the "product"?

The role of regulators and policymakers is to consider the overall financial system and ensure that its development proceeds in a stable and sustainable manner. Poor regulation can lead to inadequate management of systemic risk, which can lead to unfavorable outcomes at various levels in the system, including for the households. So, in some such cases, the responsibility would belong to the regulator and policymakers, and these players must find a way to compensate the household's losses, after a due process of establishing responsibility.¹⁵ This can be seen as a part of the responsibility of the regulator.

The clients themselves have to be held responsible for the decisions that they do make in full cognizance. Here the key issues that may confound provider liability are, first, how to ensure that this regulation does not amplify moral hazard on the clients' part, and second, how to know that clients' behavioral biases did not lead to suboptimal outcomes.

3.3 Communication about Product Features

As discussed earlier, the availability of multiple financial products presumes a fair amount of expertise on the part of the clients.¹⁶ Most clients are not trained in finance, and the increasing complexity underlying the product contracts is difficult even for trained people to understand. Moreover, the product contracts have not done much to help the clients make the right choices. For example, credit card contracts have become so incomprehensible that the cost of understanding them may be quite high.¹⁷ These challenges will be faced by those who are going to be financially included.

¹⁴. This issue has been debated in other industries subject to rigid product liability regimes.

¹⁵. See Giesen (2006) for an argument for treating the liability of supervisors as a regular form of civil law liability (either in tort or contract).

¹⁶. For more on the challenges faced by customers in dealing with complex noncustomized products, see Merton and Bodie (2005) and Willis (2008).

¹⁷. See Warren (2007) for a discussion on increasing complexity in product communication.

Understanding the process of communication between the provider and the client is important. There are essentially four ways in which the provider can communicate with the customer:

- information: explaining the product features;
- computation: helping the customer understand implications of a certain product or set of products in the specific context of the household;
- advice: offering an integrated financial proposition to the client as an advice; and
- decision: deciding on behalf of the client.

In the first instance, the provider may just share appropriate product details with the clients in a transparent, easy to understand format. However, even if these details are provided, the household still faces the task of estimating the impact of certain product decisions on its life. This is primarily a challenge of estimation (of optimal liquidity requirements at different stages of life) and computation (the math about implications). In the second way of communicating with a customer, the provider may help the customer understand the implications of specific product decisions by doing the computation and simulation based on inputs received from the household. In the preceding section's discussion on the responsibility of providers, a detailed example of such a computation and simulation tool is presented. Both of these kinds of communication exist in the product menu-driven approach to product design.

The third kind of communication entails the provider developing an integrated financial proposition on behalf of the client, offering it as advice, and letting the client decide. In this alternative, the onus will be on the provider to explain the rationale for the advice. This kind of communication necessarily builds on "computation" that supports the development of advice to be given to the clients.

In the fourth approach to communication, the provider decides on behalf of the clients. This alternative is actually not rare. It is crucial to highlight that *defaults* in products and *bundling* of products have advice built into them, in a manner that decisions are made on behalf of the clients. This is conceptually different from offering customized financial propositions wherein the proposition is provided as an expert's "advice" and the decision is made by the clients. The rationale for last approach is often put in terms of the household's limitation in making the right decisions. For example, self-control bias is given as a rationale for putting defaults in saving plans. Similarly, the microfinance institutions that bundle the life insurance product with the loan presume that the client would not purchase it and thus leave the lender and family exposed to mortality risk.

Since the household's decisions may be shaped significantly by the method of communication, this issue is an important one when considering financial inclusion.¹⁸ Though the product menu-driven approach based simply on information may be easier for the provider, the client perspective needs to be carefully considered. Just providing information on products leaves the entire process of computation and (self) advice with the clients, who often lack the expertise or time to fulfill these functions comprehensively. In the integrated proposition approach, the providers would need to modify their client communication strategy by expanding the scope of communication from just offering product information to providing computational support and advice to clients. The decision itself may be left with the clients, but the support from the providers would enable more optimal decisions.

¹⁸ Engelmann and others (2009) provide some evidence from neuroeconomics that people may follow "expert" advice on financial decisions even if it is suboptimal. Cole and others (2009) show how psychological manipulations in product communication affect purchase decisions.

3.4 Behavioral Issues in Product Design and Delivery

There is some evidence indicating that individuals may not be perfect consumption smoothers. People may not be smoothing consumption over individual lifetimes but rather letting it track income through the life cycle, spending more when earning more and spending less when earning less, even over the short term.¹⁹ Various reasons have been cited for this observed suboptimal pattern. An increasing body of literature argues that clients' behavioral biases lead to suboptimal outcomes for them, challenging the assumption that individuals make perfectly rational decisions given their observable constraints.²⁰ One of the most prominent of these is the self-control bias that leads to suboptimal saving and borrowing decisions for the client. Such behavioral biases also may lead to suboptimal outcomes from financial access, even when the providers have ostensibly done their job.

Presuming for the time being that certain behavioral biases do exist, what then can be the response of the financial system? It could be argued that even when individuals do not behave in their own best interests, institutions may evolve to offset this behavior and produce a net result that is equivalent to the individuals behaving optimally.²¹ This could be done by designing products and processes that respond to the behavioral biases in a manner that induces individuals to select the right products that suit their behavioral profile. For example, commitment savings products and welfare-enhancing defaults in products may work for individuals facing self-control problems. Notwithstanding the potential merits of these possibilities, there are challenges inherent in this approach. It often entails making certain decisions on behalf of clients, and every such decision would require taking a normative stand on what will improve outcomes for individuals. For example, it is not obvious that reduction of consumption to increase savings is necessarily a good thing, and it is difficult to estimate when that would be the case without having a clear understanding of discount factors specific to individuals.²² Since there is diversity in the client group, clients should always be given a choice to self-select the right option.

Between the two alternative approaches to financial services delivery discussed earlier on, the integrated proposition approach seems more capable of customizing solutions that would fit the characteristics of the household. Just like the provider would assess the risk preference of the household, it could also find ways to interact with clients who are sophisticated about their biases and offer solutions that help these clients manage their portfolios in an optimal way.²³ An individual who is sophisticated about his or her biases could benefit from such arrangements, but those who are naive about their biases may end up using these mechanisms suboptimally, and may even give the provider opportunity to exploit that naiveté, with adverse effects on the client's welfare.²⁴ This is a much debated issue in the realm of financial services delivery and requires some kind of resolution for defining the role of the provider in ensuring effective financial inclusion.

¹⁹. See the study by Carroll and Summers (1991) on the relationship between income growth and consumption growth. For evidence on failure to smooth consumption over the short term, see Stephens (2003); Shapiro (2005); Huffman and Barenstein (2005).

²⁰. On behavioral issues that may impede optimal financial decisions, see Tversky and Kahneman (1974); Laibson (1997); Loewenstein, O'Donoghue, and Rabin (2003); Thaler and Sunstein (2003); O'Donoghue and Rabin (2006).

²¹. See Merton and Bodie (2005) for a conceptual discussion on how institutions can endogenously respond to behavioral limitations. See Thaler and Sunstein (2008) for examples and ideas on how "libertarian paternalism" could help individuals and households enhance their well being.

²². Karlan and Morduch (2009) provide a detailed argument on this. Also see Mitchell (2005) for a broader set of arguments regarding the trade-off between welfare and liberty in a provider approach that preempts client behavior.

²³. On sophistication and naiveté in behavioral biases, see O'Donoghue and Rabin (2001).

²⁴. See DellaVigna and Malmendier (2004) on how sophistication or naiveté about self-control can affect contract design.

3.5 Defining the Household's Portfolio: Human Capital and Financial Capital

The current frameworks of financial planning and portfolio allocation are almost always limited to financial assets. However, the financially excluded are often also the financially poor, for many of whom the most important asset for much of their lifetime is their human capital. It would be important to formally recognize the value and risk characteristics of human capital in portfolio allocation decisions.²⁵ A landless laborer's human capital will be very different from that of a school teacher, both in terms of economic value and risk profiles. The human capital of many workers in rural areas may be fairly uncorrelated with the stock market trends, and this provides diversification opportunity for the household. At the same time, the worker's return on human capital is usually quite volatile, with equity-like features (but with low average returns as well), thus making it better for the worker to invest in debt instruments.

These human capital characteristics should be incorporated in any portfolio allocation decision. The design challenge is how to ensure that this happens. If the menu-driven approach is taken, the household is expected to factor in the human capital characteristics while making the portfolio allocation decisions, whereas in the customized proposition approach, the characteristics would be understood by the provider and incorporated into the proposition. Even though the household is in the best position to understand its own human capital, it may not have the expertise to understand how this capital rates with financial capital and how it can optimize the overall portfolio. The household may not have access to the data and tools that could help establish the relationship between various components of its portfolio, including human capital. Here again, expertise may be required to understand the characteristics of the household's human capital and advise the household on the basis of the overall portfolio it is managing, thus offering a customized financial proposition.

3.6 Features of the Delivery Channel

Though the functions of finance may be stable, the products, channels, and institutions required to fulfill these functions keep changing. The exact features of the ideal channel may change based on the combination of functions and product to be provided, but there are certain features of the delivery channel that may be synonymous with high-quality financial inclusion. It is almost axiomatic that the financial services channel should be able to provide the services in a convenient, flexible, reliable, and continuous manner.²⁶ Convenience and flexibility are required to make sure the delivery channel "fits" the needs of the clients. For example, low-income households have significant short-term consumption-smoothing needs, which could be fulfilled if they had convenient access to credit or saving facilities.²⁷ Low-income clients also seem highly time sensitive and often prefer to pay relatively high interest rates for convenient and "doorstep" services. Reliability and continuity help the clients actively use the channel for implementing long-term financial decisions, especially when the clients are taking a risk on the institution (investment, insurance).

The presence of a well-designed channel induces important "state-of-mind effects," both among customers and noncustomers. The fact that there is an easily accessible branch with a trained person offering services may signal reliability and continuity of access that could have a direct impact on the way households would make decisions. Inclusion is not just the opportunity to make explicit use of services but also the state of the mind that results from feeling completely included. This notion of inclusion may lead to effects even among

²⁵. For discussions on this paradigm, see Bodie, Merton, and Samuelson (1992); Bodie (2002); Ibbotson and others (2007).

²⁶. Morduch and Rutherford (2003) discuss these features of the delivery channel.

²⁷. See Collins and others (2009) for a set of examples based on the financial diaries of poor households.

nonclients that are attributable to the presence of the institution. Even for the basic model of traditional banking, there is some evidence from India that increased branch presence in previously excluded areas led to a decrease in poverty.²⁸

It may be argued that for complete financial inclusion, proximity of the channel to the clients is important to truly ensure high quality access. Physical proximity could be seen as a prerequisite to ensuring flexibility, reliability, convenience, and reliability. Now, if one juxtaposes this notion of a “proximate” financial services delivery channel with the two blueprints for a financial system, it seems that this channel design may be consistent with the design required to enable the integrated financial proposition approach. Such a financial services delivery channel would enable providers to think innovatively about customer needs, what products and services to make available, and the design of these products and services. Even though the product menu–driven approach could very well operate via such channels, the true potential of proximity would be realized better if the provider uses this proximity to apply the integrated financial proposition approach; otherwise, the understanding gained from such localization would be underutilized.

The channel essentially comprises technology and people. Technology should be secure and efficient, and the same holds true for people. Much of the human resources used to reach out to the underserved in the emerging markets is characterized by underskilled and untrained agents acting as interfaces between the provider and the customer. There are issues around incentive alignment, but there are also issues regarding the skills and capabilities of the front-end providers. Even if the role of the provider is just to sell the products, the front-end staff should be fully versed in what is being sold. If advice is being given to the clients, the provider’s front end should have appropriately trained personnel.

4. SUMMING UP

Financial services are very unlike physical products in their potential for customization and malleability. Intertemporal consumption smoothing can be provided either through savings or loans, with or without collateral. A loan can involve weekly repayment or bullet repayment; a loan when combined with rainfall insurance can allow for skipping a payment when the monsoon fails; a remittance inflow can be swept instantaneously as an account balance into a money market mutual fund. This malleable feature of financial services is what makes them so important for enabling people, particularly those who are low income, to be financially included in formal systems.

In this chapter, we have presented two stylized models of financial systems. We make the case that in order to live up to the standards of a well-functioning complete financial market (in an Arrow-Debreu sense of the term), designers will need to think about ways to deliver financial propositions that are customized to individual households by responding to their unique circumstances.²⁹ This will entail the presence of proximate, well-trained providers that intermediate between the customer and those large “product manufacturers” whose goal is financial well being and not merely product sales. These providers would need to use expertise in financial advice or wealth management to develop integrated financial propositions for their clients. We have also highlighted some of the important debates that arise in making this stylized financial system a reality.

²⁸. Burgess and Pande (2005).

²⁹. Arrow and Debreu (1954).

REFERENCES

- Aaron, H., ed. 1999. "Behavioral Dimensions of Retirement Economics." Brookings.
- Arrow, K.J. 1964. "The Role of Securities in the Optimal Allocation of Risk-Bearing." *Review of Economic Studies* 31 (April): 91–96.
- _____. 2009. "Economic Theory and Financial Crisis." Speech at the Beijing Forum, November 7 (www.beijingforum.org/en/ShowArticle.asp?ArticleID=1450).
- Arrow, K.J., and G. Debreu. 1954. "Existence of an Equilibrium for a Competitive Economy." *Econometrica* Vol. 22, July.]:265–90.
- Bodie, Z. 2002. "Life-Cycle Finance in Theory and in Practice." Working Paper 2002-02. Boston University, School of Management.
- _____. 2003. "Thoughts on the Future: Life-Cycle Investing in Theory and Practice." *Financial Analysts Journal* 59, no. 1: 24–29.
- Bodie, Z., P.B. Hammond, and O.S. Mitchell. 2001. "New Approaches to Analyzing and Managing Retirement Risks." *Benefits Quarterly* 17, no. 4: 72–83.
- Bodie, Z., and R.C. Merton. 1993. "Pension Benefit Guarantees in the United States: A Functional Approach." In *The Future of Pensions in the United States*, edited by R. Schmitt, pp. 194–234. University of Pennsylvania Press.
- Bodie, Z., R.C. Merton, and W. Samuelson. 1992. "Labor Supply Flexibility and Portfolio Choice in a Lifecycle Model." *Journal of Economic Dynamics and Control* 16 (July–October): 427–49.
- Burgess, R., and R. Pande. 2005. "Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment." *American Economic Review* 95, no. 3: 780–95.
- Carroll, C.D., and L.H. Summers. 1991. "Consumption Growth Parallels Income Growth: Some New Evidence." In *National Saving and Economic Performance*, edited by B.D. Bernheim and J.B. Shoven, pp. 305–43. Chicago University Press.
- Cole, S.A., and others. 2009. "Barriers to Household Risk Management: Evidence from India." Working Paper 09-116. Harvard Business School.
- Collins, D., and others. 2009. *Portfolios of the Poor: How the World's Poor Live on \$2 a Day*. Princeton University Press.
- Cull, R., A. Demirgüç-Kunt, and J. Morduch. 2008. "Microfinance Meets the Market." Policy Research Working Paper 4630. Washington: World Bank (May).
- Debreu, G. 1959. *Theory of Value: An Axiomatic Analysis of Economic Equilibrium*. Cowles Foundation Monograph 17. Yale University Press.
- DellaVigna, [Typesetter/proofreader note: Name is closed up with cap V.] S., and U. Malmendier. 2004. "Contract Design and Self-Control: Theory and Evidence." *Quarterly Journal of Economics* 119 (May): 353–402.
- Engelmann, J.B., and others. 2009. "Expert Financial Advice Neurobiologically 'Offloads' Financial Decision-Making under Risk." *PLoS One* 4, no. 3: e4957. (www.plosone.org/article/info:doi%2F10.1371%2Fjournal.pone.0004957).
- Geistfeld, M. 2010. "The Value of Consumer Choice in Products Liability." *Brooklyn Law Review* 74, no. 3.
- Giesen, I. 2006. "Regulating Regulators through Liability—The Case for Applying Normal Tort Rules to Supervisors." *Utrecht Law Review* 2, no. 1: 8–31.

- Hari, N., and others. 2008. "Longevity Risk in Portfolios of Pension Annuities." *Insurance: Mathematics and Economics* 42, no. 2: 505–19.
- Huffman, D., and M. Barenstein. 2004. "Riches to Rags Every Month? The Fall in Consumption Expenditures between Paydays." Discussion Paper Series. Bonn: Institute for the Study of Labor.
- Ibbotson, R., and others. 2007. *Lifetime Financial Advice: Human Capital, Asset Allocation, and Insurance*. Charlottesville, Va.: Research Foundation of CFA Institute.
- Karlan, D., and J. Morduch. 2009. "Access to Finance." In *Handbook of Development Economics*, edited by D. Rodrik and M. Rosenzweig, chap. 2. Amsterdam: North-Holland.
- Laibson, D. 1997. "Golden Eggs and Hyperbolic Discounting." *Quarterly Journal of Economics* 112, no. 2: 443–77.
- Loewenstein, G., T. O'Donoghue, and M. Rabin. 2003. "Projection Bias in Predicting Future Utility." *Quarterly Journal of Economics* 118, no. 4: 1209–48.
- Merton, R.C. 1995. "Financial Innovation and the Management and Regulation of Financial Institutions." *Journal of Banking and Finance* 19. (July): 461–81.
- _____. 2001. "Finance and the Role of Financial Engineering in the 21st Century." Keynote speech at the conference on Finance and the Role of Financial Engineering in the 21st Century. Kyoto University, December 12–13 (www.kier.kyoto-u.ac.jp/fe-tokyo/sympo_merton/merton-e.html#001).
- _____. 2002. "Future Possibilities in Finance Theory and Finance Practice." In *Mathematical Finance—Bachelier Congress 2000*, edited by H. Geman, and others, pp. 47–74 Berlin: Springer-Verlag.
- _____. 2003. "Thoughts on the Future: Theory and Practice in Investment Management." *Financial Analysts Journal* 59, no. 1: 17–23.
- Merton, R.C., and Z. Bodie. 1993. "Deposit Insurance Reform: A Functional Approach." *Carnegie-Rochester Conference Series on Public Policy* 38 (June): 1–34.
- _____. 1995. "A Conceptual Framework for Analyzing the Financial System." In *The Global Financial System: A Functional Perspective*, edited by D.B. Crane and others, pp. 3–31. Harvard Business School Press.
- _____. 2005. "The Design of Financial Systems: Towards a Synthesis of Function and Structure." *Journal of Investment Management* 3, no. 1: 1–23.
- Mitchell, G. 2005. "Libertarian Paternalism Is an Oxymoron." *Northwestern University Law Review* 99, no. 3.
- Morduch, J. and S. Rutherford. 2003. "Microfinance: Analytical Issues for India" (www.nyu.edu/projects/morduch/documents/microfinance/Microfinance_Analytical_Issues_for_India.pdf).
- O'Donoghue, T., and M. Rabin. 2001. "Choice and Procrastination." *Quarterly Journal of Economics* 116, no. 1: 121–60.
- _____. 2006. "Optimal Sin Taxes." *Journal of Public Economics* 90, no. 10-11: 1825–49.
- Shapiro, J. 2005. "Is There a Daily Discount Rate? Evidence from the Food Stamp Nutrition Cycle." *Journal of Public Economics* 89, no. 2-3: 303–25.
- Shiller, R.J. 2003. "The New Financial Order: Risk in the 21st Century." Princeton University Press.
- Stephens, M. 2003. "'3rd of the Month': Do Social Security Recipients Smooth Consumption between Checks?" *American Economic Review* 93, no. 1: 406–22.

- Thaler, R., and C.R. Sunstein. 2003. "Libertarian Paternalism." *American Economic Review* 93, no. 2: 175
- _____. 2008. *Nudge: Improving Decisions on Health, Wealth, and Happiness*. Yale University Press.
- Tversky, A., and Kahneman, D. 1974. "Judgment under Uncertainty: Heuristics and Biases." *Science* 185, no. 4157: 1124–31.
- Warren, E. 2007. "Unsafe at Any Rate." *Democracy: A Journal of Ideas*, no. 5 (www.democracyjournal.org/article.php?ID=6528).
- Willis, L.E. 2008. "Against Financial-Literacy Education." *Iowa Law Review* 94, no. 1: 197–285.