

Waiting for the market? Microinsurance and development as anticipatory marketization

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journals.sagepub.com/home/epn**Nick Bernards** 

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Abstract

This article traces experiments aimed at promoting wider adoption of ‘microinsurance’ – small, simplified insurance policies targeting the poorest. Microinsurance is a central element of a wider turn towards the promotion of ‘resilience’ in global development. The development of commercial markets for microinsurance, however, has failed to meet the expectations of promoters. This article traces the ways that the diverse donor agencies, professional organizations and philanthropic organizations involved in the promotion of microinsurance have responded to these failures, primarily by seeking to articulate basic data infrastructures that might make possible profitable insurance operations. These activities are described as a kind of ‘anticipatory marketization’ – experiments seeking to prepare the ground for the emergence of markets for risk management, thus far without much success. Where microinsurance has often been described in terms of ‘financialization’, this article suggests that there are important political dynamics at play that have been overlooked. Efforts to develop markets for microinsurance, and the persistent focus on troubleshooting and re-engineering those markets in the face of failure, are not driven directly by finance capital. Rather, they reflect fraught efforts to articulate modes of social protection not requiring substantial redistribution.

Keywords

Microinsurance, neoliberalism, financialization, austerity, marketization, risk

Introduction

Risk, vulnerability and resilience are increasingly central to global development (Best, 2013; Sharma and Soederberg, 2020). ‘Microinsurance’ policies targeting the poorest are a key component of this agenda (see Johnson, 2013; da Costa, 2013; Aitken, 2015; Isakson, 2015; Bernards, 2018a).

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Important promoters include international organizations like the World Bank, the Consultative Group to Assist the Poor (CGAP), the International Labour Organization (ILO) and the International Association of Insurance Supervisors (IAIS); bilateral donors, notably the UK and Germany; and philanthropies, especially the Gates Foundation and MunichRe Foundation.

Expectations for microinsurance were very high a decade ago. Estimates abounded of widespread ‘implicit demand’ – gaps in existing forms of risk management that might be remedied with microinsurance.¹ A 2010 report from Allianz noted that the potential market for microinsurance made up ‘half the world’:

Four billion people live on incomes of less than eight dollars per day. 2.6 billion have to get by on less than two dollars per day. Besides suffering daily deprivations, the world’s poor are often more exposed to risks ranging from disease to crop failures to the consequences of climate change ... Microinsurance could help many of these people escape poverty. (Allianz, 2010: 1)

This market has yet to materialize as expected. The proportion of people covered by microinsurance policies remains small: an estimated 4.3% of the population in Asia (Mukherjee et al., 2014), 5.4% in Africa (MIC, 2016) and 8.1% in Latin America and the Caribbean (MIC, 2018). Microinsurance has remained primarily confined to life insurance. Health, property and agricultural insurance, which might be expected to have a much greater impact in terms of poverty reduction, have been much more limited. Allianz policies covered 55 million ‘emerging customers’ by 2016 – somewhat shy of ‘half the world’. Of these, moreover, 52.8 million (or, 96%) held some form of life insurance policy (Allianz, 2017), the overwhelming majority of whom (46 million) were covered by one single group term life insurance scheme in India (Allianz, 2017: 12). Microinsurance, equally, often remains heavily reliant on subsidies (especially in non-life categories), with the expectation that at some point in the future microinsurers will be able to operate on a self-sustaining basis (see Angeli-Aguiton, 2021). By some distance the largest existing agricultural index insurance scheme, for instance, the Weather Based Crop Insurance Scheme in India, is a publicly subsidized, compulsory programme (see Clarke et al., 2012). Not only has microinsurance failed to help the poorest manage the depredations of widespread precarity and climate breakdown (see Johnson, 2013; Isakson, 2015), markets for microinsurance have simply failed to materialize on the scale or in the forms which promoters expected.

This article explores, not so much the reasons for these failures – discussed in detail by, *inter alia*, Binswanger-Mkhize (2012), Peterson (2012), Isakson (2015), Taylor (2016), Bernards (2018a), Johnson et al. (2019) – but the reactions to them. I show how networks of donor agencies and consultants have increasingly focused on efforts to construct cheap and mobile calculative infrastructures in hopes of enabling profitable microinsurance operations. Interventions in microinsurance market-making have increasingly sought to make ‘second-best’ forms of data and actuarial modelling techniques available to insurers, in the absence of the highly elaborated data infrastructures built up around ‘conventional’ insurance in the global north (see Ericson et al., 2000; McFall, 2019). I trace out two key areas of intervention: (1) the mobilization of satellite data in index insurance and (2) the dissemination of ‘formula-based’ actuarial techniques for microinsurers. I describe this as a logic of ‘anticipatory marketization’ – of preparing the institutional and infrastructural substrates for market exchange in hopes that buyers and sellers will turn up.

Crucially, though, while these experiments seek to enable the profitable development of new financial markets, they are largely not being carried out by finance capital itself. This is significant because critical analyses of microinsurance and linked phenomena like index insurance have often been couched in language of ‘financialization’ (e.g. Keucheyan, 2018; Isakson, 2015). Insofar as these critiques highlight how the financialized conception of risk underlying microinsurance belies the socially and historically produced nature of climate vulnerability, precarity, and

uneven access to healthcare, this is useful. But the persistence of efforts to build markets for microinsurance in the face of the ongoing disinterest of finance capital in microinsurance complicates this story. The experiments traced here are primarily being conducted by public or voluntary sector actors hoping to resolve crises of precarity and climate vulnerability by conjuring new markets.

I explain these dynamics by situating recent experiments with the technical infrastructures underpinning microinsurance in the longer history of neoliberal efforts to develop social protection systems for the poorest. Tinkering with informational infrastructures in hopes of generating a market reflects a neoliberal faith in the capacity of market mechanisms to allocate resources more efficiently than planned or directed action (see Mirowski, 2009). But it also reflects more structural fiscal constraints which are felt acutely in peripheral economies (see Alami, 2018; Koddenbrock, 2020). In this sense, the persistence of fraught efforts to develop microinsurance markets speaks to wider processes of market-construction carried out against the backdrop of deepening austerity (see Birch and Siemiatycki, 2016). Continued experiments in constructing markets for risk management reflect the challenges of redistributive models of risk management in the context of a vastly uneven distribution of resources on a global scale. Thus, we should read continued efforts to engineer markets not exactly as an indication of the pervasive spread of financial logics, but more of the structural power of finance capital in development.

I develop these arguments in three steps. In the first section below, I outline the main theoretical arguments of the paper further. The second section traces out the historical development of microinsurance as a policy intervention. In the third section, I outline two major areas of intervention in response to repeated failures of market development in the past 10 years.

Anticipatory marketization

There is a growing literature in economic sociology and geography examining processes of ‘marketization’, emphasizing the centrality of devices to the construction of ‘market’ forms (see Çaliskan and Callon, 2010; Christophers, 2014; Guermond, 2020). This has entailed treating markets as ‘the contingent outcomes of the manner in which they are performed and reiterated’, to use Boeckler and Berndt’s (2013: 425) terms. A good deal of emphasis has been placed here on the particular devices – standards, metrics, formulae, and socio-technical objects – through which market values are produced and rendered stable and legible. Muniesa et al., for instance, note that ‘Markets contain devices that aim at rendering things more “economic” or, more precisely, at enacting particular versions of what it is to be economic’ (2007: 4). Angeli-Aguiton (2019, 2021) applies a similar perspective to efforts to develop index insurance programming in Senegal, showing the troubled construction of infrastructures enabling the calculation and circulation of climate risks. ‘Devices’ in this sense don’t passively measure or reflect value, but rather actively produce and reproduce it, shaping and disciplining behaviour as a result. Fourcade and Healy (2017: 10) note that markets have ‘learned to “see” in a new way, and are teaching us to see ourselves in that way too’. Aitken’s (2017: 280) analysis of alternative credit data starts from a similar vantage point, emphasizing the troublesome development of new devices required to ‘make visible’ bodies ‘which are not legible in the language or forms of display common to mainstream finance’. Markets, in short, are usefully understood as reliant on the construction, often through somewhat ad hoc processes of bricolage, of calculative infrastructures made up of various devices enabling the constitution of dispersed patterns of activity as legible values.

On one level, the story laid out in what follows is very much about tinkering with such devices in hopes of more effectively capturing a particular ‘version of what it is to be economic’. But this leaves unanswered the basic question of *why* it is that the basic approach to addressing poverty through the construction of new markets has remained so durable in the face of the failures described in the introduction.

Indeed, the failures of microinsurance could be read as financial markets doing exactly what they're supposed to – that is, allocating resources to the most profitable activities. As one review puts simply: 'Only if microinsurance products are profitable will it be attractive for insurance companies to offer them in significant volumes' (Clarke and Grenham, 2013: s90). The conditional terms in which this statement is couched are telling, and reflective of a significant set of concerns about the ability to make microinsurance sufficiently profitable.

As Christophers (2016: 337–338) rightly notes, insurance profits depend on the conversion of concrete hazards into abstract financial risks through the exchange of streams of premium income for protection against those hazards. Christophers argues that insurers' realization of surplus value in this context depends precisely on the fact that the 'price' (in the form of promised payouts) that insurers are required to pay for peoples' capacity to generate risk bears no necessary relation to the value those risks themselves produce for insurers (the flows of premium income they generate and the return on investing them). This introduces a notable reliance of insurers both on elaborate estimations of risk and on limiting payouts (Christophers, 2016: 338). Insurers' profits in this sense are thus rooted in two preconditions. One is the presence of reliable streams of income from which streams of premia can be drawn. This condition is highly uncertain with respect to microinsurance. Indeed, we might argue that a basic, unavoidable problem is that the constitution of profitable new markets for microinsurance is difficult or impossible where underlying streams of peoples' income are limited and irregular (see Bernards, 2018a). These concerns are longstanding for microinsurance advocates (see Wipf et al. 2006). A recent report on the potential contributions of insurance in sub-Saharan Africa, for instance, concludes that incomes remain too low across the region to support the development of extensive insurance markets (Chamberlain et al., 2017).

The second key precondition for insurance profits is an infrastructure enabling fine-grained calculations of premia and payouts. As Ewald notes, 'insurance has two bases: first, the statistical table or graph that testifies to the regular occurrence of certain events; second, the calculation of probabilities that are then applied to these statistics so that one can evaluate the possibility of these same events' (1990: 142). In the past few decades, private insurers have developed elaborate systems for calculating risks in increasingly fine-grained detail. Ericson et al. (2000: 534), now 20 years ago, noted a trend towards the 'unpooling' of risks in private insurance, with insurers segmenting categories of risk with the emergence of 'increasingly detailed risk information (e.g. financial, medical) which is available to actuaries and underwriters, both concerning individual insureds and concerning trends in populations'. These trends are amplified by the widespread, if contradictory, adoption of increasingly personalized risk pricing through, for instance, self-tracking (see McFall, 2019). In short, insurance profits depend on an increasingly dense infrastructure of calculative methods and data generation. Responses to the failures of microinsurance market construction have sought, in essence, to engineer workable systems to approximate the functions of these insurance infrastructures. But if this takes us some way towards explaining *how* the troubleshooting of microinsurance markets has taken place, it still leaves us unable to say much about *why* and with what implications. For this, we need to think about the development of devices and infrastructures in the wider context of political power and accumulation in which these processes of experimentation take place (cf. Bernards and Campbell-Verduyn, 2019; Erturk et al., 2013; Christophers, 2014).

One possible direction is given by previous analyses framing the turn to microinsurance as part of a wider 'financialization' of development (see Keucheyan, 2018). The promotion of microinsurance is reflective of a world in which the interests, logics and methods of finance capital are increasingly predominant. It's worth noting, though, that there is little evidence in what follows that the promotion of microinsurance is being driven directly by finance capital. This isn't a straightforward case of finance 'prospecting' for new asset streams, in Leyshon and Thrift's (2007) phrase. There are some start-up firms operating on a fairly small scale, in many cases in close collaboration with donors, and one large transnational insurer (Allianz) with some degree of participation in

microinsurance. Some reinsurers, notably MunichRe and SwissRe, have been involved to a degree through philanthropic activity and by providing reinsurance to some microinsurance projects, although their activities remain limited by the lack of interest from insurers in selling microinsurance. Nonetheless, the experiments described below are primarily underpinned, financed and driven by a range of development agencies, philanthropies and consultancies. Finance capital, as such, is most often involved at a remove. The relationship of microinsurance to financial markets, in short, is fundamentally *anticipatory*. It seeks to lay the groundwork for the future development of profitable insurance markets, which may never be realized in practice.

This dynamic of anticipatory marketization is conditioned in important senses by the quasi-permanent austerity conditions prevailing across much of the global south. Experiments in microinsurance, in short, are part of a wider process of state transformation under conditions of austerity (e.g. Peck, 2001; Birch and Siemiatycki, 2016; McBride, 2016). They represent in efforts to work around the deeply embedded fiscal constraints embedded in the subordination of peripheral economies in the global financial system. The Third World Debt crisis, alongside global financial deregulation, restructured global financial flows in ways that exacerbated restrictions on resources available to global south governments. Combined with political imperatives, post-structural adjustment, to privatize key industries and to restrict public spending (see Kentikelenis et al., 2016), these have deepened quasi-permanent conditions of austerity. Access to credit for many developing country governments is increasingly determined by global market conditions over which they have little control, leading to increasingly volatile cycles of debt crises and austerity (see Alami, 2018; Bassett, 2018; Bonizzi et al., 2020). Having effectively dismantled state and collective institutions which might have enabled some degree of risk management across much of the global south, global financial markets have increasingly appeared the only viable source of ‘sustainable’ protection against climate, health and other vulnerabilities facing the poorest. While these initiatives have often failed to deliver, continued tinkering with infrastructures in hopes of conjuring markets makes sense in the context of these persistent constraints.

Austerity logics and the history of microinsurance

It’s significant that the concept of ‘microinsurance’ is, originally, the ILO’s – emerging out of efforts to develop community-based forms of social protection for informal and agricultural workers excluded from contributory pensions and social security. This turn to ‘community’ programming took place in the context of structural adjustment, alongside early experiments with index insurance, primarily at the World Bank. The latter gathered pace as the Bank turned in the 1990s and early 2000s towards a conception of poverty rooted in vulnerability and risk management (see Best, 2013). These divergent strands of work increasingly converged, thematically and institutionally, in the 2000s, and the community orientation of the ILO’s work was subsumed with the more market-oriented approach pushed by the Bank. This convergence is helpful in understanding the particular dynamic of anticipatory marketization traced in the latter parts of this article.

The ILO started a series of projects seeking to extend social security to non-standard workers in the 1970s and 1980s. These projects struggled to outline how the financing of social security schemes could work for agrarian or informal workers. Missions to Iran (ILO, 1977) and Malaysia (ILO, 1980) recommended subsidies, with the former report noting that ‘government subsidies remain the only practical source’ of financing for the extension of social security in rural areas (ILO, 1977: 9). The ILO also proposed a non-contributory scheme for ‘indigent’ populations in Gabon (ILO, 1982). However, in the context of structural adjustment, publicly financed programmes were untenable. A report to the Cameroonian government noted this explicitly (ILO, 1989: 130). The ILO’s advisors were faced with a dilemma: contributory schemes would be near-impossible for workers with precarious incomes, but public support was difficult to provide in the context of tightening austerity.

In the late 1980s, ILO officials began to advocate schemes organized at the community level as a solution to this dilemma. They touted ‘traditional’ institutions – village associations, *tontines*, and mutual benefit schemes – as alternative means of providing social protection (Mouton and Gruat, 1989: 52). In the 1990s, these activities were ramped up. The ILO ran a major ‘interdepartmental’ project on the informal sector, centred on three major cities in developing countries: Bogota, Manila and Dar es Salaam, in 1994–5. The project solidified the idea that the best means of covering non-standard workers was through the use of small-scale financial mechanisms building on ‘traditional’ practices (van Ginneken, 1996), and paved the way for the concept of microinsurance.

The first usage of the term ‘microinsurance’ was, in essence, an effort to develop a consistent concept for this loose series of experiments. Officials in the Social Protection department of the ILO initially advanced the concept of ‘microinsurance’ to refer to autonomous community-directed organizations linked into larger structures to facilitate the pooling of risk, to describe these emerging alternative forms of social protection (Dror and Jacquier, 1999). As an explicit alternative to both state- and market-based approaches, they proposed ‘microinsurance’ as a set of ‘autonomous enterprises’ operated at the community level, with ‘networks to link multiple small area- and occupation-based units into larger structures that can enhance both the insurance function (through a wider pooling of risk) and the support structures needed for improved governance (through training, data banks, research facilities etc.)’ (1999: 77). Critically, the authors define microinsurance as a necessary response to the (presumed permanent) incapacity of the state to provide effective social protection to the poorest:

In many LMICs where the State has never provided more than rudimentary services, such as in sub-Saharan Africa, exclusion is linked to the inability of the market and of society to incorporate certain subgroups that cumulate a different profile of impeding characteristics, such as low income, malnutrition, low health status (and hence low insurance status within for-profit insurance schemes), rural habitat, low education levels and ethnic/tribal origin. (Dror and Jacquier, 1999: 72)

In short, we can trace this turn to microinsurance to efforts to mitigate the worst impacts of structural adjustment within the confines of the semi-permanent austerity increasingly imposed on peripheral states in the global financial system.

By this time, the World Bank in particular had started a parallel turn to index insurance in response to deepening agrarian vulnerabilities (see Johnson, 2021). This happened in the context of a wider re-thinking of poverty, increasingly framed in terms of vulnerability and risk-management, in the aftermath of the failures of structural adjustment (see Best, 2013). Index insurance contracts do not indemnify clients against specific losses, but rather specify a set payment triggered by an underlying event used as a proxy for likely damages (see Clarke, 2011; Johnson, 2013). Serious proposals for index insurance in agriculture in the global south date to the late 1990s and early 2000s. Notably, many of these early articulations were, rather like Dror and Jacquier’s, explicit responses to the difficulties of state intervention in the context of austerity:

Most [government programmes] have proved an expensive drain on the public purse ... For many small countries, such government assistance can be extremely costly and may represent a high percentage of GNP when the disaster is large. This can have serious consequences for the monetary and fiscal policies of small countries. (Skees et al., 1999: 2)

Or, while index-based microinsurance for small farmers was more straightforwardly market-oriented than the ILO’s version of microinsurance, both responded to a common context of durable austerity.

This helps explain the increasing convergence, both institutionally and thematically, between these strands of work in the 2000s. By the time Dror and Jacquier's article on microinsurance was published, the ILO's Social Protection department was already shifting away from the community-centred programmes of the 1990s in favour of advocating for social protection 'floors' (see Deacon, 2013; Bernards, 2018b: 104–5). Microinsurance thus almost entirely passed over to the ILO's newly-formed Social Finance branch in the early 2000s, and was also rapidly taken up by a growing network of other international and regional regulatory institutions. The networks emerging around the idea of 'financial inclusion' were particularly significant. The ILO's Social Finance branch chaired a working group on insurance at Consultative Group to Assist the Poor (CGAP). Equally, though, the background context of austerity outlined above was important in reinforcing the turn to markets in significant ways.

Promoters grew increasingly concerned with the need to 'scale-up' microinsurance in the early 2000s. The consensus here was that microinsurers needed to be able to operate profitably in order to operate on a sustainable basis. Profitability, in turn, was seen to depend on expanding operations: 'The future success of microinsurance depends on achieving prudent, profitable and continuous growth and development' (Botero et al., 2006: 583). The aim here, explicitly, was to enable microinsurance operations to 'become independent' and 'forc[e] them to stand on their own two feet' (Churchill et al., 2005: 20). This was also taken to mean that microinsurers needed to be brought under the regulatory and operational fold of the existing insurance sector. Access to reinsurance was increasingly seen as necessary for scaling up, particularly for index insurance schemes where correlated losses were likely: 'Microinsurance is only viable to the extent that the providers remain solvent following large-scale losses. If microinsurers with limited resources choose to indemnify large covariant and recurring risks, they must guard against insolvency by diversifying their portfolios geographically and transferring risks to the global reinsurance markets' (Reinhard and Qureshi, 2006: 35). Because reinsurers were generally restricted to covering licensed insurers, developing regulatory regimes to permit licensing of microinsurers took on a good deal of importance.

The IAIS was a particularly important player in this respect. The IAIS is a network of national and subnational insurance regulators. The first significant initiative towards developing global regulatory standards for microinsurance was the development and publication of an issues paper on microinsurance by the IAIS and the CGAP Working Group (IAIS, 2007). The paper flags up the 'immense potential' of the microinsurance market 'if insurers can develop efficient and effective innovations' (2007: 17), in terms much like the optimistic pieces cited in the introduction. The paper references to Pralahad's (2005) *Fortune at the Bottom of the Pyramid* and its arguments about the poor as a 'latent market', competition for which would drive poverty-reducing innovations. While there's a recognition throughout the paper that governments might, especially in the short term, be needed to help develop microinsurance schemes and even pay premiums, there's a clear emphasis on ensuring 'that the demarcation line between social security programmes and market-led approaches is clear, and subsidies do not inhibit market initiatives' (2007: 15). The issues paper still pitches the development of microinsurance very much as a way of meeting the gaps left by conventional state and mainstream financial market coverage of risks: 'Of particular interest is the provision of coverage to persons working in the informal economy that do not have access to formal insurance nor social protection benefits paid by employers directly, or by the government through employers' (IAIS, 2007: 11). Insurance mechanisms are seen as means of sidestepping the weaknesses of public provision. Drawing on ILO work in West Africa, the paper notes that for 'informal' workers, public redistributive systems rarely work, and that 'the only way for the poor to be covered is to set up microinsurance mutuals that are very inexpensive' (IAIS, 2007: 20). Nonetheless, the role of regulators is generally framed in terms of ensuring that microinsurers public or private are run on a self-sustaining basis, likely to be fostered even for non-

commercial providers by licensing requirements – ‘Without an insurer’s licence, the microinsurer is trapped in a vicious cycle: no licence and no reinsurance means greater risk of failure and the risk of being shut down by the regulator or police services’ (IAIS, 2007: 27).

The IAIS issues paper was followed up by the establishment of the Access to Insurance Initiative (A2ii) in 2009 as a joint venture of the IAIS, ILO, CGAP, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and FinMark Trust (FMT) (a public–private trust based in South Africa and funded by the British Department for International Development). A2ii works largely in conjunction with the IAIS, but has a separate secretariat hosted by GIZ. One of A2ii’s first major initiatives, in conjunction with the IAIS, was to publish a follow-up issues paper on the regulation of mutuals and cooperatives in the provision of insurance (IAIS, 2010). In general, the issues paper emphasizes the desirability of bringing mutuals and cooperatives under the same regulatory frameworks as commercial insurers. It also clearly frames mutuals and cooperatives as ‘stepping stones’ towards the development of commercial insurance markets:

Historically, when risks are too large for individuals to manage in their own right, they have looked to pool these risks. This pooling may start through relatively intuitive, informal risk pooling and later develops into more formalised products ... and eventually, insurance products provided by formal insurers. (2010: 13)

Here the IAIS echoes a common refrain in discussions of ‘financial inclusion’ about the costly reliance of the poor on ‘informal’ financial practices for managing risks (World Bank, 2013). But equally, frames the development of effective markets as, essentially, a step-wise development out of informal forms of risk pooling, to be fostered by regulatory provisions encouraging the ‘formalization’ of informal operations.

I started out this article by describing what happened next – namely, very little. Informal risk pooling did not lead straightforwardly to the development of markets, and ‘latent markets’ for microinsurance (*per* Pralahad, 2005) largely stayed latent. As noted above, the major exceptions here are various kinds of life and funeral insurance policies. Life insurance in general is comparatively simple to tie in to other purchases – for instance, taking out a loan in the case of credit life. Equally, some of the largest ‘markets’ for funeral microinsurance have been generated not by expanding coverage to new clients but by registering existing informal funeral societies – South Africa, which has by some distance the highest microinsurance coverage rate in the world at well over 60% of the population, is a notable example (see Bernards, 2018a). For the moment, though, it’s important to emphasize that the growing emphasis on market development from the early 2000s was fundamentally the product of austerity logics. The turn to markets was driven in large part by the difficulties of articulating social protection systems for the poorest in a context where redistributive state spending was effectively prohibited. Concerns about ‘profitability’ and ‘scaling up’ in this context are intimately linked to efforts to build microinsurance operations capable of operating independently without subsidies.

Re-engineering markets for microinsurance

‘Markets’ for microinsurance fell far short of expectations. The remainder of this article examines responses to these failures. These responses have increasingly focused on experimental means of more directly building the infrastructures needed for the assessment of risks through the development or application of new technologies, through the development of calculative practices that might work with more limited data. Importantly, although index insurance and microinsurance more generally continue to have somewhat different (although

overlapping) institutional bases, responses to failures of market-making in both spheres have converged on significantly similar modes of intervention.

One important area of intervention has been the promotion of demand for microinsurance. The failure to translate supposedly ‘implicit’ demand into actual purchases of microinsurance as easily as expected has led to a proliferation of studies on the determinants of microinsurance demand (e.g. Kouame and Komenan, 2012; Eling et al., 2014; Stein, 2016; Platteau et al. 2017) and a growing emphasis on the promotion and marketing of microinsurance to potential clients, especially through efforts at promoting insurance ‘literacy’ (Cole, 2015; Fonseca, 2016). Efforts to engineer demand through behavioural interventions of course speak to a wider tendency in neoliberal development interventions towards ‘nudging’ (see Berndt, 2015). Alongside behavioural nudges, though, there have also been protracted efforts to develop the infrastructural bases for profitable microinsurance operations.

Here it’s worth pointing out that a lack of available data is a longstanding diagnosis of the underlying problems of profitability in microinsurance. This is identified explicitly in the 2007 IAIS guidelines, for instance: ‘Even when there are relevant longevity, mortality and morbidity data, which is infrequent, these tables do not typically reflect the risk of low-income households that are more exposed to a wider variety of risks’ (IAIS, 2007: 13). For agricultural insurance, likewise, concerns about the lack of appropriate data, and the expense involved in collecting it by conventional means, are frequently flagged as major concerns. For instance:

Traditional crop insurance is largely absent in less-developed countries, because costs of implementation are high and there are not enough effective financial institutions to broker policies. Furthermore, insurance policies perversely provide an incentive for farmers to neglect their fields, a problem that is usually countered by expensive site visits by insurance claims adjusters, which would not be financially feasible in the developing world. (Brown et al., 2011: 213)

Efforts to respond to failures of market-construction increasingly turn on efforts to build new infrastructures for calculating risks with second-best forms of available data.

Index insurance and satellite data

Here and in the next subsection, I explore some specific examples of efforts to create the bases for profitable microinsurance operations with interventions making new forms of data available. I look first at efforts to tinker with data infrastructures for index insurance.

Index insurance has significant limitations from the perspective of the smallholding farmers it is ostensibly targeted towards. The derivative character of index insurance instruments leaves borrowers subject to so-called ‘basis risk’ – the possibility that the cover provided fails to fully compensate for losses (Clarke, 2011; Johnson, 2013). There are more fundamental questions that some authors have raised about the value of index insurance based on narrowly technical conceptions of, say, weather risk that ignore the broader patterns of social and ecological relations through which the very uneven exposure of agrarian populations to such risks are produced (see Isakson, 2015; Taylor, 2016; da Costa, 2013; Johnson, 2013; Bernards, 2021).

These limitations do a lot to explain weaker than expected ‘demand’ among target populations for index insurance (da Costa, 2013; Taylor, 2016). One critic for instance, usefully notes that:

The better-off farmers will have little demand for insurance because they are already sufficiently well insured via their informal mechanisms ... On the other hand, the poor farmers could benefit from agricultural insurance, but are too poor and credit constrained to translate the potential benefit into effective demand. (Binswanger-Mkhize, 2012: 193)

Existing index insurance schemes have as a result often remained heavily reliant on subsidies. Beyond subsidization, though, it's difficult to envision a solution to the problems posed by precarious incomes without abandoning index insurance altogether.

Promoters of index insurance have often sought to resolve the failure to develop working markets by preparing institutional and infrastructural bases for profitable insurance operations in hopes of prompting the development of markets.

One way of doing this has been to tinker with means of setting indices. The simplest approach to index insurance is to select a relevant variable correlated with crop losses – rainfall is most common, where drought or flooding would be a threat to farm output. However, the kind of reliable and fine-grained local weather data that would allow the calculation of appropriate indices and thresholds simply isn't always available. Index insurance 'cannot reliably scale up if it only works in areas covered by existing rain gauges, which lack extensive historical weather data records at least two decades long' (Mann et al., 2014: 1). 'Spatial basis risk' is a particular problem here – where a plot of land is too far from the physical weather station where a given weather index is measured, and regional differences mean that crops are lost but the index is not triggered (see GiZ, 2019). In practice, this has meant that index insurance schemes often have been accompanied by efforts at constructing a rather mundane infrastructure of rain gauges. As Angeli Aguiton (2021) shows particularly clearly in an analysis of index insurance programmes in Senegal, this is often a fraught, expensive, and labour-intensive process. Rain gauges need maintenance and checking. They can be automated to report data to a central server through a mobile connection, but only where mobile network coverage is available.

Another significant challenge here is that – even setting aside the historical and structural embeddedness of environmental hazards – the risks faced by smallholder farmers are typically not limited to weather alone but also include, for instance, pests and disease. An alternative approach, then, has been to develop 'area-yield insurance' products. Here the index is based on the historical average of crop yields, with payouts when yields fall below historical averages by a set threshold. Area yield insurance holds some advantages for farmers relative to weather indices insofar as, by definition, it covers a wider range of risks. But it is also expensive to administer. Typically, indices and area yields have been calculated by site visits. A report on one CGAP project in Nigeria, for instance, notes that 'the field sampling required by insurers to determine average yields in each community or unit of area insured is costly and imposes a heavy logistical burden—it entails sampling campaigns at different times in different regions for different crops—to scale coverage nationwide' (Hernandez et al., 2018: 2).

In both cases, experiments with satellite data have been held out as possible solutions (Black et al., 2018). Remote sensing of rainfall and soil moisture is increasingly seen as a means of addressing the lack or unreliability of weather-station data, and vegetation indices derived from satellited imagery are seen as possible substitutes for site visits in area-yield insurance (see Mann et al., 2014). As one review notes: 'In many developing countries there are limited ... data for index design e.g., limited crop yield data or rain gauge networks. One method of overcoming this is to use remotely sensed data from satellites' (Greatrex et al., 2015: 25). Experiments in this area, notably, have been substantially underpinned by the World Bank, CGAP, and International Fund for Agricultural Development (IFAD). IFAD in particular carried out an extensive study on remote sensing and index insurance in Senegal, which played a significant role in articulating the global shift towards remote sensing (IFAD, 2017).

Yet spatial resolution issues – the 'relationship between the farm and the pixel' (Mann et al., 2014: 3) – have posed ongoing problems. Basis risk, as the IFAD report notes, 'can be influenced by the spatial resolution of the satellite images, where index measurements may be in the form of single pixels or groups of pixels that are aggregated to form the unit area of insurance' (IFAD, 2017:

15). Put simply, satellite imagery can be used to estimate yields only over fairly wide areas, raising renewed problems of spatial basis risk. As the summary of one recent expert conference notes:

remotely sensed rainfall is only a proxy for actual rainfall ... Aggregation over space as well as over time generally improves skill ... It is important, however, that indices represent the local conditions experienced by the policyholders. It is therefore necessary to balance the improvements in skill gained by aggregating against the loss of representativity of local conditions ... (Black et al., 2018: 202)

Remote sensing, then, is nominally a cheaper and more precise infrastructure for index insurance, but introduces challenges of its own (cf. Angeli-Aguiton, 2021).

This has had implications for what remote sensing can actually do in practice. The above-mentioned CGAP project with start-up Pula in Nigeria, for instance, sought initially to use satellite data to substitute for most on-farm visits (see Hernandez et al., 2018). In practice, satellite data was too poor a predictor of yield variation at the level of individual farms to usefully substitute for site visits, as it only correlated closely with average crop losses at higher levels of aggregation. Satellite observations were repurposed for the purposes of districting – they allowed Pula to replace government administrative districts with a smaller number of larger areas in which yields were found to be more closely intercorrelated as the basis for ground-level monitoring: ‘Instead of using satellite data to predict individual farm yields, we focused on using these data to define the boundaries of units of area insured that are much larger than the [Local Government Area] and that have a common yield distribution’ (Hernandez et al., 2018: 3). Or, where remote sensing has been used, it has been as a means of refining some elements of existing infrastructures rather than replacing them.

In short, the persistent failure of efforts to construct markets for index insurance has been met with efforts to develop new market infrastructures through the application of new technologies, particularly through the deployment of remote sensing. The narrow technical conception of climate risk contained in index insurance glosses the socially and historically embedded nature of those risks. Equally, the rising precarity of the very populations targeted by index insurance, compounded by the accelerating effects of climate breakdown, mean that few even among those who might hypothetically benefit from index insurance can afford it (see Bernards, 2021). The response from microinsurance promoters has been to double down on seeking to construct more effective infrastructures through which insurance risks might be calculated, in hopes of laying the groundwork for profitable accumulation. But remote sensing can, at best, offer cheaper and more precise measures of rainfall or vegetation indices (and current evidence is ambivalent about even this). It does not resolve the more fundamental limits to index insurance from the perspective of smallholders or landless farmers.

Twinking firms – circulating spreadsheets and actuarial practices

Another area of intervention, mainly targeted at non-agricultural microinsurance, has revolved around efforts to improve firm-level calculative practices. We can observe a series of efforts at developing alternative forms of actuarial practices suitable for microinsurance operations. Interventions promoting the development of actuarial skills have been carried out by a network of public and private authorities, including IAIS, professional associations (most notably the International Actuarial Association [IAA]), private consultancies, and a number of donor-funded organizations working on microinsurance (the Microinsurance Centre [MIC]).

Officials at CGAP and the World Bank started to push for greater involvement from professional actuaries in the development of microinsurance in the late 2000s. The IAA, with encouragement and participation from CGAP, launched a Microinsurance Working Group (MiWG) in 2010. One of its major early initiatives was to develop an issue paper on actuarial functions in

microinsurance (Grenham, 2013). The paper was eventually published in 2014 (IAA, 2014). The paper notes that, for microinsurance operations whose profitability is largely premised on minimizing costs, hiring certified actuaries was likely to prove difficult. The solution, like that put forward on regulatory issues more generally in earlier IAIS guidance, was that ‘microinsurance providers may have fewer needs in some of the traditional core actuarial areas due to the nature, scale, and scope of the products offered and therefore it would be appropriate to apply proportionality when setting regulations’ (IAA, 2014: 8). These reduced requirements, the report notes, are expected to be coupled with regulatory restrictions (which have been advocated by the IAIS) limiting microinsurance operations to relatively low-risk activities – especially by incorporating shorter periods of cover and low defined limits on claims (see IAIS, 2007). The IAA, working with the IAIS and A2ii, has subsequently produced more detailed guidance on training materials on assessing the need for professional actuarial services in different areas of microinsurance operations – this is again explicitly framed as a response to the ‘scarce’ supply of people with formal actuarial training in ‘inclusive insurance’ settings (IAA, 2018: 6). Much of this work has been done in collaboration with regulators and has revolved around facilitating the development of different minimum standards for actuarial expertise in microinsurance operations,

This has been accompanied by a notable push to facilitate the diffusion of standardized actuarial practices at the firm level. The 2014 IAA paper, notably, advocates the adoption of ‘formula-based approaches’ to actuarial calculations, in which ‘standard factor-based formulas for calculating solvency capital and certain types of technical provisions would minimize the need for actuaries within the overall microinsurance market’ (IAA, 2014: 27) was particularly important in this respect. The IAA facilitated the production of a simplified pricing model for credit-life insurance schemes, in cooperation with the UK Actuarial Profession (UKAP) in 2012 (UKAP, 2012). A similar model for health microinsurance, designed in conjunction with actuarial-service firm Milliman, was released in 2016 (Milliman, 2016). Both models use readily available software platforms rather than the more specialized actuarial programs typically preferred by commercial insurers. They are downloadable for free as Microsoft Excel files, accompanied by instructional manuals on using the models. Second, they substitute publicly available epidemiological and mortality data – from national statistical agencies and/or the World Health Organization – for data derived from historical claims experiences. The health microinsurance model allows firms to pick from a pre-set menu of common health coverage benefits – e.g., inpatient surgery, healthcare consultation, ‘locally prevalent disease conditions’ – set maximum coverage limits per benefit, and is then geared to generate premiums based on assumptions about the demographics of scheme members, country conditions, and expected profit levels, expenses and available subsidies (see Milliman, 2016).

To an extent, formula-based actuarial practices reflect and work through a longstanding emphasis among microinsurance promoters on developing training materials for microinsurance operations. Some of the first activities carried out by the ILO in conjunction with the CGAP working group were to develop training materials, including around questions of calculating premiums and payouts, for microinsurance operations (Churchill et al., 2003). One of the ILO officials responsible for the original ‘microinsurance’ article (Dror and Jacquier, 1999), equally, went on to play a critical role in the World Bank-funded Microinsurance Academy, which provides similar training and consultancy services to microinsurers primarily in India (see World Bank, 2017). The ILO issued an updated training guide on microinsurance pricing in 2015 (Wrede and Phily, 2015), again offering some basic principles and formulae rather than actual spreadsheets with built-in pricing models. The guide emphasizes the need to supplement claims experience with a number of different data sources, including (depending on the type of insurance offered) mortality tables and health statistics from the WHO and/or national authorities, and even from published epidemiological research and from service providers in the case of health insurance (Wrede and Phily, 2015: 53–54). The

development of template models for pricing microinsurance is nonetheless an extension of this trend insofar as it seeks to make rough calculative infrastructures available for microinsurers to adopt.

Excel sheets with embedded macros don't have the same sheen of technological sophistication as remote sensing applications, but their deployments in the context of microinsurance are similar in important respects. They are intended to substitute available data for the complex, increasingly personalized and fine-grained data infrastructures on which insurance profits rely. Mortality statistics or epidemiological publications are – much like remote sensing data – proxies for highly elaborated calculative infrastructures through which insurance profits might be realized. Like satellite data, they can at best only address half the problem. The more fundamental, and intractable, problem remains that the basic reason why peripheral workers are held to need microinsurance – their disproportionate exposure to health and mortality hazards – much like the disproportionate exposure of smallholders and landless farmers to climate risks, is rooted in the same conditions that make it hard for them to purchase insurance.

Conclusion

Markets have failed to materialize on the scale and in the forms expected by promoters of microinsurance, which has led to increasingly fraught efforts at 're-engineering' markets through the experiments with the construction of new infrastructures. We could read this as a growing recognition on the part of the loose networks involved in promoting microinsurance that markets, far from being the 'spontaneous orders' of Hayekian fantasy, are materially produced, constructed and enacted.

But it's equally notable who is doing the work of construction here. Finance capital has, by and large, remained relatively uninterested in microinsurance outside of a few areas of life insurance. Yet, faced with significant and durable constraints on state expenditures, the modes of 'anticipatory marketization' traced here remain the path of least resistance for development practice. Microinsurance, at its origins, is an effort to work around these constraints. These fraught efforts at developing markets for microinsurance are a particularly clear illustration of development as anticipatory marketization. Development agencies increasingly concentrate on preparing the ground for market activity *in hopes that it materializes*.

Crucially, this should give us some pause about the way that we think of 'financialization' in development. Microinsurance has often been read as part of a wider process of financialization of development (e.g. Keucheyan, 2018; Isakson, 2015). At a minimum, the fraught history reflected here suggests that we ought to avoid the assumption that such processes are driven by financial capital directly. What I've outlined above is much less finance capital 'prospecting' for new revenue streams, in Leyshon and Thrift's (2007) terms, and much more an effort to engineer new markets to provide forms of social protection without confronting the structural power of finance capital directly.

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Note

1. See da Costa (2013) for a critique of the application of the concept of ‘implicit demand’ in the promotion of index insurance in India.

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