Doubling security!
The role of standards in the unification of the life insurance and pension market

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Abstract:

The paper is about the significance of life insurance services in the financialisation of contemporary global economy and the decisive role that standards play in this regard. A few existing studies outside the field of actuarial sciences have rightly identified insurances as an institution of informal governance and alternative sovereignty. From a sociological, political science and international political economy perspective, its power lies on the increasing ability to shape norms of behaviours. Most studies appraise discursive regimes and governmental rationalities of moral and societal risks either from a Foucauldian perspective or to further investigate Beck's hypotheses on the emergence of a risk society. In contrast, the paper focuses on the transnational authority of insurance contracts, by showing how technical standards are key instruments in controlling, transferring and distributing risks in a wide range of domains in which states intervene as well. Insurance policies, even backed by state law, are not enough; they require standards to ensure unification of the market. From this standpoint, the paper argues that standards double the security supposedly provided by the risk-dispersion technique of insurance contracts. Life insurance policies can thus translate lives into property potentially accessible on a worldwide basis. The empirical analysis focuses on standards that promote a liquid capital market in order to support the internationalisation of the life insurance market related to contemporary pension policy reforms.

a. Introduction

Total insurance premiums spent in 2013 as percentage of GDP in advanced markets are as high as 8.27% of GDP with an average of more than $ 3'600 of premiums paid per capita (Swiss Re, 2014: 34). Insurance companies and pension funds account for, respectively, 39% and 33% of total institutional assets under management in Europe, or an amount estimated between € 10 and € 12 trillion at end 2014. (European Fund and Asset Management Association, 2015). Beyond figures alone, insurance services are key market integrators closely related to the financialisation of contemporary capitalism. As banks' long-term lending shrinks and governments set to be durably stuck in austerity gear, they have become important players for financing long-term investments such as in infrastructure, innovation, education and health. Considering the closer relationships of life insurers with pension schemes and pension funds resulting from recent developments in capital markets, they also gained considerable prominence in how our society faces the challenge of an ageing population.

To what extent does the insurance industry lie at the core of the post-crisis accumulation regime and how does it rely on standards to create new markets and, more generally, make new insurable objects, on which an ever-larger part of the world's population depend for their security? This paper aims at responding to those questions in order to shine a distinct spotlight on how insurance is a significant institution of informal governance and alternative sovereignty. While hardly any studies exist outside the professional field of actuarial studies, analyses in economic sociology, political science and international political

economy focus on the ability of insurance to shape norms of behaviours and enact power as discursive regimes and governmental rationalities[1]. In contrast, the paper focuses on the technical authority of standards as key instruments in controlling, transferring and distributing risks in a wide range of domains which also elicit state intervention. It presents a case study of the standards developed to support the securitisation of products sold by life insurance companies, pension funds and investment banks since the early 2000s. Approaches inspired by Regulation Theory provide thought-provoking understanding of the institutional, conventional and symbolic power that confers regulatory potential on quality standards[2]. They tend, however, to overcome the transnational level at which the intertwined economic and political dimensions of quality standards exert their authority beyond national institutional varieties and across sovereign States. The paper draws on literature on private authority in international relations to describe standardisation processes as a form of transnational authority supporting the unification of the insurance market. It argues that the transnational authority provided by standards is a key market instrument in the securitisation of the insurance industry and, in that sense, doubles the security supposedly provided by the risk-dispersion actuarial tools of insurance companies.

Following a brief background on the existing literature on the insurance industry and its relation to global finance and governance, the paper outlines the analytical framework explaining the authority of insurance standards as a particular instance of quality standards for services. The following section presents the rationales for standards in the life insurance industry in the post-crisis context. The subsequent section outlines our empirical analysis on the technical specifications used for the internationalisation of the life insurance market related to contemporary pension policy reforms. It shows in particular how standards were from the outset considered as an essential tool to support the securitisation of life-related products of the insurance industry. The conclusion wraps up the argument and discusses some of its broader implications.

b. Insurance: that obscure object of global finance and governance

Recent socio-legal scholarship has analysed the insurance industry as an institution of informal governance resting on a system that, although largely behind the scene, remains closely connected to State power in its capacity to exert a control at distance in counterpart to security guaranties. According to Ericson, Doyle and Barry (2003: 14), “insurance is even

[1] See for instance: (Ewald, 1991; Ericson, et al., 2003; O'Malley and Roberts, 2014; Lobo-Guerrero, 2016 forthcoming).

[2] See for instance: (Chanteau, 2011; Du Tertre, 2013; Graz and Niang, 2013; Petit, 2013; Allaire and Lemeilleur, 2014).

THE main institution of governance after the State". Certain lines of private insurance are mandatory, such as those for cars or for occupational accident according to countries. In other cases, they are not, but can be compelled upon request from one party to a contract (for renting an object, for instance). General conditions, information provided, exclusion clauses and so on confer to insurers a role of "extra-legal regulators". As Heimer (2002: 128) points out, "in requiring insurance coverage as a condition for operating a business, owning a home, driving a car, holding office, or engaging in any number of activities, governments, employers, banks and other organizations are also requiring policyholders to follow insurers' rules".

Against this background, insurance services control, transfer and distribute risks in a wide range of domains in which States can as well intervene. Some recent studies in history and sociology have examined a number of concrete practices in various insurance lines (see among others: Baker and Simon, 2002; Ericson, et al., 2003; Collier, 2008; Lengwiler, 2009; Clark, et al., 2010; Doyle, 2011). Most of them apply the concept of governance to appraise discursive regimes and governmental rationalities of moral and societal risks either from a Foucauldian perspective or to investigate further Ulrich Beck's hypotheses on the emergence of the risk society. Such studies typically focus on the domestic realm and more particularly on the US, Canada or the City of London – or cast their analysis on a reconceptualization of finance and securitisation. Thus, insurance cannot be merely identified as a bulwark against the uncertainty of contemporary risk society (Beck, 1992). As Aradau and her co-authors emphasise, such an argument undermines the "variable ways in which life is secured [and] fails to acknowledge that the identification of risk is *not* the same as recognizing the uncertainty or uncontrollability of future events" (Aradau, et al., 2008: 150). By pooling risks into sophisticated actuarial tools, insurance products sold by companies shape multiple and contradictory forms of private governance beyond state control at an increasingly global level. Very few studies have further investigated the pioneering hypotheses of the late Susan Strange and Virginia Haufler on the ambiguous authority of the public/private nexus of insurance services across domestic and global realms (Strange, 1996: 122-34; Haufler, 1997). The case of insurance in climate change policy and recent studies on life insurance remains the exception proving the rule.[3]

[3] On climate change see: (Paterson, 2001; Haufler, 2009; Grove, 2010). Recent life insurance studies focused on the private/public nexus of their authority draw on economic sociology and post-structuralist approaches; see in particular: (Lehtonen, 2014; Lehtonen and Van Hoyweghen, 2014; Lobo-Guerrero, 2016 forthcoming). A notable exception is (Zhang, 2014), who provides a detailed, yet non-mathematical and technical critical analysis of the paradigm shift in life insurance regulation, principally in the United States.

By combining Foucauldian approaches, security studies, and international political economy, Lobo-Guerrero's trilogy study has greatly contributed to recent scholarship on the particular power of the insurance industry. He conceives insurance as a technology of government that promote and protect distinct lifestyles through a complex process which "renders uncertainty fungible" (Lobo-Guerrero, 2011: 4, 2012, 2016 forthcoming). The strings of this peculiar form of "insurantial sovereignty" reconstitutes the international, all the more with the recent development of liberal governance practices "premised on the capacity to transform uncertainty into risk and to act upon it through risk management partnerships and schemes (Lobo-Guerrero, 2012: 125). Our author has furthermore underlined how this has recently been reinforced by the growing use of capital markets to complement old-style actuarial calculus for hedging risk portfolios. Together with highly sophisticated simulation and modelling techniques, the so-called securitisation of life insurance is thus seen as a strategy to "liberate insurability from the temporal strictures of traditional actuarial practices and create an infinite space for market development" (Lobo-Guerrero, 2014: 366). Securitisation, simulation and risk modelling unmistakably support an insurance industry that brings together powerful transnational forces shaping a global finance-led accumulation regime. Yet, the financial manoeuvres, mathematical calculus and asset management techniques used by insurers and investment bankers to issue life-related bonds need additional qualification against some agreed benchmark before finding a swift pathway on capital markets. Otherwise, the market would never be liquid enough to offer any prospects of "infinite space for market development". In other words, standardisation is part and parcel of securitisation.

Those few studies take due account of norms of behaviour and institutional forms, which private insurance contracts rely upon to provide security at a scale that transcends state's territorial sovereignty. Yet, in contrast to accounts of insurance governance in terms of discursive regimes, governmental rationalities, and securitisation and modelling strategies, this paper focuses on how the insurance industry relies on its ability to define standards according to which controlling, transferring and distributing risks as well as eliciting as much as possible state interventions. Before examining this particular role of standards, I present some theoretical considerations on the ambiguous authority of standards in service industries.

c. The authority of quality standards for services

In the context of early negotiations towards what would later be the General Agreement on Tariffs and Trade (GATS), *The Economist* put the following oft-cited formula: services are

"things which can be bought and sold but which you cannot drop on your feet"[4]. The definition catches in a nutshell the puzzle we face when we try to define services. Most frequently cited characteristics of services are immateriality (such as in teaching or health), co-production (i.e. the relationship between a customer defining its needs and a provider offering a service), perishability (that is, the impossibility to stock services in an inventory like goods) and heterogeneity (i.e. the idiosyncratic needs of clients supposedly banning any form of standardisation standardisation) (Millar and Choi, 2011: 28). Following Hill's seminal contribution (Hill, 1977), services involve a particular processes that transform the state of an individual or object and a particular relation that results from the co-production between the producer and the consumer. It ensues that "models of pure exchange economics of a Walrasian type in which existing goods are traded between economic units are quite inapplicable and irrelevant to services" (Hill, 1977: 318). In the same vein, Gadrey has emphasised the great variety of demand rationales characterising services, which are, accordingly, deeply embedded in social institutions (Gadrey, 2003).

Service activities such as the insurance industry are thus structured around a great number of formal and informal networks that support in particular their co-production between customers et providers, and the heterogeneous demand rationales. However revolutionary the technological shift of the cloud is and notwithstanding the localisation and materialisation of data-farms, the global and timely delivery of services depends on a number of standards. They not only establish the conditions of access to the market; they often are instrumental to create markets as such. Their *raison d'être* is to provide a response to the following puzzle: how to establish commonly accepted criteria to specify the expected characteristics of a service and define a benchmark against which conformity to a promised service may be judged. Despite an undoubtedly fragmented environment across nations and industries, the issue generally remains the same: define the quality of the service.

In classical and neoclassical market theory, quality is not disputed by the agents, who are held to have the same representation of the item being traded – a representation founded on the supposedly complete information provided by the price signal. Scholars on asymmetries of information developed a fresh view on the notion of quality as an independent and determining variable in the markets, distinct from self-regulatory markets based on price information. In what has become a classic article of economics, Akerlof showed the fundamental information asymmetry characterising a market, using the example of used cars, in which the seller has information about the goods which the buyer does not

[4] "A GATT for services", The Economist, 12 October, 1985.

possess[5]. A further hypothesis makes inroads into uncertainty about quality, shared by all agents, particularly with regard to products whose past or – more importantly in a context characterised by the emergence of new markets – whose future is unknown (Hirschman, 1970; Lupton, 2005). As a service-based relationship involves co-production between the provider and the beneficiary, additional uncertainty results from the co-incidence of these two types of quality (Parasuraman, et al., 1985; Grönroos, 1990; Johnson and Nilsson, 2003). Accordingly, quality is always a bone of contention, whose ambiguous status lends itself to be tweaked in various ways and subject to controversy.

French régulation theory has provided several analytical tools for these questions. One of them is that quality uncertainty calls for a specific mode of regulation, distinct from price. While Fordism put price and volume at the core of the mass production and consumption of uniform standard goods, the economic focus now considers quality as a prime form of competition. In order to respond this puzzle, Allaire defines quality as an institution by drawing upon the institutional economics of John Commons [6]. Cautious as ever on the "uncertainty of meaning of the word institution", Commons' definition is as simple as it is far-reaching: an institution is "Collective Action in Control of Individual Action" (Commons, 1934: 69). In sharp contrast to neoclassical economics focused on rational individuals isolated in a state of nature, the individual with whom Commons is dealing is thus an "Institutionalized Mind" (Commons, 1934: 73). The quality of a good or a service therefore can neither derive from a price signal, nor from any intrinsic attribute of such good or service. On the contrary, it should be viewed as a social construct stemming from power relations between private and public actors who pursue their ever-evolving interests. This view of quality as an institution with explicit and codified procedures at the crossroads of power and interests calls for conventions fixing implicit anticipations and coordination expectations. This is clearly more than just providing information, which can later be passed on to the consumer via a nice label. It stems from complex negotiations, through which a series of institutional forms, regulation agreements, conventions and standards constitute and situate the qualitative attributes of a given product or service. The actors involved in this process struggle to impose a concept of quality that, following Commons' definition, allows for collective action to control the individual action of agents involved in economic transactions.

Regulation scholarship has emphasised how quality standards not only embody a cognitive dimension, but are also an expression of identity reflecting social values and

[5] See: (Akerlof, 1970; Stiglitz, 1987; Orléan, 2011: 87) for further discussion.

[6] See among others : (Allaire and Lemeilleur, 2014).

strategic interests of profitability in a competitive environment. According to Chanteau (Chanteau, 2011,paragraphe 24), standardisation is thus “a ‘total social fact’ in which exchanges of goods, exchanges of signs and constraints on individual behaviours take place in a way that make economic and political events deeply intertwined.” From this view, the uncertainty resulting from the intangible and relational nature of many service activities should not be understood as a problem of information asymmetry skewing the price mechanism, but as the logical consequence of power relations underpinning the institution of quality. Regulation scholarship has examined at length the institutional, conventional and symbolic power that confers regulatory potential on quality standards in domains such as agriculture, corporate social responsibility, and sectorial and territorial policies. It remains divided, however, on the scope of this potential and its ability to exert power. Some studies emphasise the difficulty to establish such standards in all domains where quality is characterised by non-measurable hierarchies and distinction practices (Allaire, 2012), or social relations of accessibility (Du Tertre, 2013). Others suggest that the strongest potential lies wherever quality standards embody a strong spatial dimension. Far from transnational, the space is here conceived as either local, such as with geographical indication related to the valorisation of agricultural “terroirs” (Allaire, 2012), or national, such as with the national varieties of capitalism according to which social responsibility instruments usually differ (Capron and Petit, 2011). From this perspective, quality standards such as those of corporate social responsibility, while deeply imbricated in conventions and regulations, are too weak and not embedded enough in social relations to make for the authority of a truly new mode of regulation (Lamarche, 2011). It remains unclear, accordingly, how the deeply intertwined economic and political dimensions of quality standards can concretely exert their authority. Moreover, with a strongly local or national understanding of the regulatory potential of quality standards, little emphasis is made of the their authority not only within, but also across sovereign States.

Viewed with the transnational lenses of scholarship on private authority in international affaires, quality standards convey the growing ability of non-state actors to establish rules and standards of behaviour accepted as legitimate by a wide range of agents that have not formally delegated their sovereign rights to do so. In her pioneer investigations on the Retreat of the State, Susan Strange suggested that “between the two extremes of non-state authorities welcomed and opposed by states lie certain non-state authorities whose relation to governments is variable or ambiguous” (Strange, 1996: 94). In her concluding remarks, she notoriously equated the advent of non-state actors in the arena of global politics to Pinocchio’s problem: at a loss when caught without any more strings to guide him. The lack

of a clear definition of non-state actors in world politics has led, in her words, to "a ramshackle assembly of conflicting sources of authority", making it particularly hard to decide "where do allegiance, loyalty, identity lie" (Strange, 1996: 199). According to Cutler and her colleagues, it is precisely these conflicting sources of authority that create a new form of private authority in international affairs. Cutler emphasises in particular the political significance of legal doctrines that have twisted the status of the subject of law: "the implication of treating corporations and individuals as objects and not subjects are deeply troubling empirically and normatively. […W]hile transnational corporations and private business associations may be objects of law (*de jure*), they are in fact, operating as subjects (*de facto*)" (Cutler, 1999; Cutler, 2003: 149). This analysis in terms of private international authority sheds some light on the range of actors that have gained authority in an international context that traditionally denied them such a privilege. It included in-depth studies of firms and inter-firm cooperation leading to political roles for actors traditionally associated with the private sphere of economic transactions. It also raised the troubling normative implications of an authority geared towards maximizing capital gains and concealing the instruments serving those ends. Yet, focused as it was on the cooperation of firms across borders, this approach remained primarily concerned with a sub-set of actors. Since then, countless studies have been published on the wide range of political positions vis-à-vis global governance issues taken on by other non-state actors, such as non-governmental organisations, social movements, global civil society platforms and, not least, transnational criminal organisation. From technical self-regulation to corporate social responsibility, from environment and labour standards to financial and accounting rules, much of the literature is focused on who governs the global economy through private regulatory tools (Hall and Biersteker, 2002; Grande and Pauly, 2005; Krause Hansen, 2008; Avant, et al., 2010; Djelic and Quack, 2010; Scott, et al., 2011; Green, 2014).

There might be sharp disagreement as to the meaning attributed to the prominence of non-state actors, which are variously understood as suppliers of private standards making up for the failure of governments to embrace such tasks or as influential corporate actors shaping regulatory outcomes in favour of the financialisation of global capitalism. With a focus on voluntary standards as privileged instruments of market creation and regulation situated between those two poles of public and private power, this paper aims at looking not only at the ability of private actors and civil society organisations to shape markets across borders. Two other aspects play a key role in the reconfiguration of global capitalism: one is the scope of practices involved in standardisation and the other is the reconfiguration of the spatial structure in which those practices are implemented.

Casting the nature and the implications of the rise of private regulatory authority across borders in a broader context thus requires to consider and aggregate three distinct categories: the actors wielding authority, the issues concerned, and the space of their deployment. For instance, international standards set by the International Organization for Standardization (ISO) as well as those provided by the not-for profit body ASTM International (originally known as American Society for Testing and Materials) entail numerous technical experts and national delegates who play the role of new actors in the nascent technical diplomacy world, but also define the nature of the objects concerned (from nuts and bolts to sustainable innovation and societal responsibility) and the spatial structure in which they exert their power (on a national, regional, or global scale). The point here is to suggest that not only the status of actors involved in standardisation and regulation is ambiguous (with all sorts of quasi-state and non-state bodies included), but also the scope of issues concerned and the space on which such authority is recognised. This non-conventional form of power and regulation is here conceived as a transnational authority, that is, a form of authority based on the ambiguous juxtaposition of instances of power transforming the relation between transnational capitalism and territorial sovereignty. The remaining of the paper outlines an empirical analysis on the transnational authority of standards used in the life insurance industry to create new capital markets in direct need of a global scale.

d. Ageing without security in the age of securitisation: life insurance in the post-crisis era

The service sold by insurance companies is a protection against risk. It takes the form of an insurance policy that, on the one hand, provides to the policy holder the contractual right to claim that protection should the event occurs and, on the other hand, commits the insurance company to pay if and when that time comes. For insurance companies, the promise to pay policyholders are financial liabilities, for which they need be sure to have the money from day one to far into the future. To guarantee that protection, their task is to spread risks among the greatest and most diversified set of policy holders in order to diminish their exposure to a certain type of claims, or even a single claim too big to pay. For decades, let alone centuries, actuaries have used probability calculus to model matrixes and curves of potential losses and their frequency against which pricing the premiums charged to policy holders. The weight given to the geographical distribution of potential losses, their frequency, their size, – that is where, how often, how severe the event may be – will depend of the line of insurance concerned. A large difference exists between life and natural catastrophes insurance. It is very difficult to have a trustworthy knowledge to estimate future losses from natural catastrophes such as earthquakes, windstorms and floods; the geographical

distribution of the loss has a huge impact, with major fluctuations in size in case of extreme events (think of Fukushima!) and whose frequency is so low that there is no reliable historical data series upon which building probabilistic calculus. In contrast, for life insurance, actuaries have built a solid probabilistic and statistical knowledge to derive life expectancy estimates from mortality tables aggregating data such as age, gender, socio-economic class, smoker status, and much other health-related information. In this case, the geographical distribution of the loss has less impact, the frequency is high and the size of the loss has minor fluctuations and tends to be evenly distributed in the portfolio (in this case, risk management is like controlling for the accumulation of billions of rain drops, in contrast to a sudden flush flood). All in all, the larger, the longer and the more granular the information gathered, the better the probability calculated – and, most likely, the higher the company's profits.

This is, however, only the liability side of the balance sheet. On the asset side, an insurance company holds reserves to cover those liabilities. Those reserves are made of various assets, such as its shares and the premiums paid by policy holders. As insurers are contractually bound to the promise to pay the insured events, even those that may occur far in the future, they face a particularly difficult trade-off between safety and long-term economic return when investing this reserve capital in the economy. As Zhang emphasises, "there are no investments in the economy as certain and as guaranteed as promises made by insurance companies. By definition. The unavoidable implication is that insurers' assets can never be as securely guaranteed as their liabilities – which those assets are supposed to cover" (Zhang, 2014, chap 4). How do insurers manage the risk that their assets loose value in the future and, thus, compromise their promise to policy holders? For long, the basic tool at hand has been to invest assets in low risk and long maturity instruments, such as real estate and high grade corporate and sovereign bonds, with special attention paid to the diversification of the portfolio on both the asset and liability sides of the balance sheet. Another long established technique is reinsurance. In order to share a portion of the risks included in their portfolio, insurers use the services provided by specialized reinsurance companies that take over that part of the risk in return for a corresponding part of the premiums. This is particularly used for high loss and low frequency hazards such as natural catastrophes; but it has also been used since the 1890s in life insurance for hedging so-called 'substandard' risks – those regarded as so high and extraordinary that they were previously insured with a hefty surcharge or, more commonly, excluded from access to a life insurance policy (Lengwiler, 2009).

While safety, diversification and reinsurance have been used across the industry since its early days, securitisation is a more recent development. It profoundly transformed the way

insurers do their job. In the same way as the banking industry has invented sophisticated instruments to pool various types of debts into securities such as the infamous collateralised debt obligations (CDOs) that gained centre stage with the global financial crisis, insurers now commonly turn insurance policies (their liabilities) into securities sold off to investors on global capital markets. Basically, securitisation is the process by which something, which is not a security, is converted into a security, that is, into a capital market instrument. It enables insurers to transfer risk out of themselves to investors in capital markets. This involves ceding the risk to a special purpose vehicle (SPE) in charge of issuing securities and using the proceeds from the sale to pay out any claims emerging from the risk transferred (Ramella, 2010: 230). While the technique has been pioneered in the domain of natural catastrophes, it is now widely used in the arrangements used for transferring risks from pension plans and pension funds to life insurance and reinsurance. As (re)insurers are seen to have only limited capacity to accept this transfer of risks, capital market solutions are increasingly viewed as a promising option for hedging the risk that pension plans and annuity providers are not willing or able to retain via a capital buffer. Recent developments in the securitisation of the life insurance industry give rise to much overlap with the pension and the finance industry. It brings the industry ever closer to investment banking and shapes new demands for pricing and regulatory standards.

While securitisation was undoubtedly one of the drivers of the global financial crisis in 2007-8, the life insurance industry keeps giving it centre stage in the post-crisis environment. Shaping new standards for pricing securitized life insurance products and establishing commonly accepted contracts is critical in this regard. A standardized securitization of life insurance products responds to the three following challenges of the post-crisis environment. First, it provides instruments of principle-based regulation that respond to attempts by state regulators to adopt more complex and stringent regulation with closer convergence towards the banking industry – something we considered in the previous section focused on the insurance supervisory and regulatory environment. It also offers a convenient way to mitigate the dramatic implications that post-crisis ultra-low interest rates have for life insurance companies, facing a higher cost of their products (to match the loss of compound interests), lower returns from investments of their assets, and an increased valuation of their liabilities.[7]

[7] In an environment marked by a long-term prospect of low interest rates, the price of premiums goes up as a lower share of the benefit sold by the policy is expected to be funded by compound interest rates. For instance, at 0% interest rate, a benefit of $100'000 in 20 years would require to pay a yearly $5'000 premium, whereas with a 5% investment return this would only require an annual payment of $2'880, with 42% of the benefit paid out of interest rate income. Low interest rates thus make life insurance products either more expensive or their benefits lower, and this clearly affects the demand for insurance policies. As insurers invest most of their premiums in high quality bonds, low interest

Set against the backdrop of a long-term prospect of super low interest rates, the pessimistic tone of the leading world reinsurer Swiss Re is largely shared among the industry: "the longer interest rates stay low, the higher the losses in [life insurance] will be" (Swiss Re, 2012: 38). Last but not least, the ability to scale up the market of securitized products according to standardized methods responds to the significant challenge that the long-term and macro trend of ageing has become for life insurance companies. The impact of an ageing population varies according to the type of pension arrangements. The evolution of fertility rates, improved life expectancy and the end of the baby boom generation have joined market ideology as main driving forces behind the shift towards a massive substitution of defined contribution for defined benefits systems across industrialised countries. Significant tax and other State incentives also support the development of complementary funded private pensions. Since the crisis of the 1970s, debates on the so-called burden of social expenditures and more broadly the crisis of the welfare State have spread across countries through various transnational channels to "become staple items on the political agenda" (Leimgruber, 2013: 293)[8]. Governments have time and again attempted to push vast reforms to close the funding gap between contributions and benefits.

e. The Cost of Not Dying: How to Standardise Longevity Risk

In a post-crisis environment of low interest rates and principle-based regulation, the life insurance industry can surely play its own game in the reforms of pension systems swiping countries with an ageing population. For it not only guarantees against the cost of dying (i.e. paying an indemnity to a beneficiary in case of death of the insured); it also sells policies to hedge the cost of not dying (i.e. providing pay-outs to the insured for an agreed period of time, sometimes as long as the time s/he stays alive). The cost of not dying hedged by life insurers is closely related to the annuity market (Inkmann, et al., 2011: 281). Annuities are generally defined as contracts that provide periodic payments for an agreed-upon span of time. With substantial variation in length-of-life across people, a life annuity allows a retiree to exchange either an accumulated capital or a lump-sum for a guaranteed stream of income

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rates also reduce their investment returns. Finally, lower interest rates increase the value of their liabilities. Following the previous example of an insurer with a liability to pay someone $100'000 in 20 years time, the value of that liability today must be discounted by the expected amount derived from compound interests over those next 20 years. The present value of the future amount is thus reduced in proportion of the average interest rate expected for that duration. The smaller the interest rate, the higher the value of the future sum in today's money – that is, the higher the liability weighs on their balance sheet. For further details, see for instance (Swiss Re, 2012), on which draws the previous explanation.

[8] For insights on the role of international organisations such as the OECD and the World Bank and other transnational policy actors on the privatisation of pension policies and the shift toward transferring risks to policy holders, see among others : (Orenstein, 2008; Mandin and Palier, 2009).

that will be paid as long as she is alive (Brown, et al., 2001). The development of standardised instruments for creating a new global market of securitised pension-related policies thus rests on a proper understanding of the risk borne by annuities, how to price it, and of course, in which market to expect most revenues.

While the United States remains by far the biggest country in terms of pension funds assets under management (with close to 60% of the estimate $ 25tr in OECD countries), the United Kingdom is by far the largest market for annuities. This is so since the accumulated capital of occupational plans and of personal pensions must be used to purchase an annuity at retirement. Until the conservative Chancellor George Osborne put en end to compulsory annuitisation in 2014 – a reform labelled as the biggest of the century by asset managers at JP Morgan –, life insurance companies operating in the UK not only benefited from the world's largest market, but lead the way in product innovation and ways of developing risk differentiation (Rusconi, 2008; Marschallek, 2011; Berens, 2015).

In the profession, the risk hedged by financial instruments that pass over capital markets the securitized solutions imagined by insurers to offload their ageing and pension-related risk is known as longevity risk. The notion was forged around the turn of the century to deal with the birth of those risk transfer markets. Longevity risk describes the "uncertainty surrounding the increases in life expectancy— as a result of unanticipated changes in mortality rates" (Blake, et al., 2013: 5). Accordingly, it does not seek to address the viability of pension systems or solvency of insurers per se, but rather the complicated issues that arise when insurers, pension funds, pension schemes and investment bankers seek to hedge the risk associated to the fact of guaranteeing continued streams of revenue to different populations that will experience different longevity outcomes. For all those actors involved in this new "life market" (Blake, et al., 2013), the cost of not dying is so difficult to price that it needs standards against which define the market. According to one the leading experts that contributed to give major currency to the notion, longevity risk is "the most important risk that pension funds and insurers face, because it is the only one you can't hedge – in contrast to credit or interest risks using well-known financial models – and it is the most unfair towards future generation that would taken the burden of it if not properly addressed now".[9]

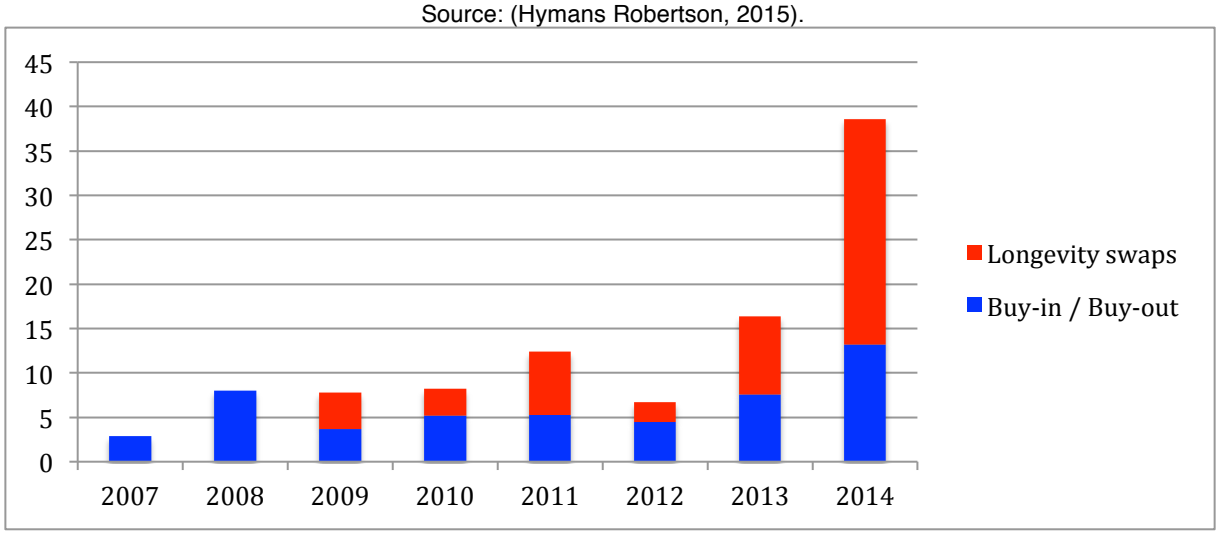
Over the last decade, insurance services were part and parcel of the surge of buy-out arrangements, annuity contracts and securitized solutions sold to pension funds and pension

[9] Interview with David Blake, Director of the Pension Institute, Cass Business School, London, 20 April 2015.

schemes to offload the longevity risk borne on their balance sheet[10]. It remains difficult to have reliable estimates in the five leading markets (UK, US, Netherlands, Canada and Ireland) due to a lack of transparency and comparability in the information released by large consulting firms advising and tracking those deals. The last few years typically saw some jumbo deals of over £ 1 billion in each country, with many smaller deals. Figure XX presents an overall picture of the fast growing market of longevity risk transfers in the United Kingdom since the outburst of the global financial crisis.

Figure XX. Volume of longevity risk transfer deals in the United Kingdom (2007-14; £ bn).

Source: (Hymans Robertson, 2015).



Despite such recent developments, life insurance and reinsurance companies have experienced difficulties in creating bold new markets in relation to an ageing population and current reforms of pension policies. The lack of standards for pricing the cost of not dying was from the outset the main difficulty faced by the industry. Why is this so? A first response is to consider that what is true for financialised capitalism is also true for the securitisation of insurance. Without uniform contract and pricing standards, capital markets can't expect to attain the depth and liquidity required to scale up from a niche financial innovation (Lysandrou, forthcoming). Standardised forms of provision are requested whenever a

[10] In a pension buy-out, a pension fund and/or plan sponsor hands over all the assets and liabilities of the fund to an external provider, typically an insurer or reinsurer who then has the sole responsibility for making payments to the members of the pension plan or fund. As emphasised by a recent OECD report, "while the plan sponsor offloads all risk, this arrangement exposes plan members to counterparty risk, or the risk that the insurer becomes insolvent, as the structure no longer has the same benefit protection mechanisms in place as the pension plan" (OECD, 2014a: 177). The situation is different with a pension buy-in, in which the pension fund or plan sponsor buys an annuity contract to rely on (re)insurers to fully or partially insure its liabilities, while retaining them and remaining responsible for the payment of pension benefits to its members. In both cases, the use of capital market to furthermore hedge those contracts has dramatically surged in the aftermath of the financial crisis and the prospect of long-term super low interest rates.

financial market grows in scale; they assist asset managers' demands for systematic comparisons of securities in determining their suitability for inclusion in a particular portfolio. While life insurers have developed over Centuries sophisticated products using mortality tables, the securitisation of those products generates additional requirements in terms of standardised bases of reference. A second answer – , more specific to the insurance industry – is thus required to reconstruct the origins and developments of standards supporting the securitisation of longevity risk and so-called "life markets".

In early 2000s, the idea to develop a standardised longevity risk index had been in the air for a few years. Longevity capital markets were seen as potentially relevant for the banking industry working more and more closely with pension funds in order to develop packaged investments and hedging instruments. Swiss Re (then, the largest reinsurer of the world) inaugurated in December 2003 the first generation of capital markets instruments with the issuance of a so-called mortality bond known as Vita 1 (i.e. the name of the special purpose vehicle created for that). But the instrument merely transferred the model previously used for natural catastrophes bonds: it only reduced exposure to catastrophic mortality events such as a severe outbreak of influenza, a major terrorist attack using weapons of mass destruction or a natural catastrophe (Blake, et al., 2013: 15-6)[11]. Together with experts from Heriot-Watt University in Edinburg, the Cass Business School Pension Institute founded by David Blake had greater plans for scaling up the market. In 2005 it organised the First International Conference on Longevity Risk and Capital Market Solutions, which would hereafter take place on a yearly basis. Together with colleagues, the objective was to ensure not only the hugely complicated maths of the new market, but also understanding how to design standardized contract that would respond to the difficulties identified in the first issuance of bonds.

The creation of new capital market instruments can't expect long-term viability without meeting the needs of both the hedgers (those buying financial instrument that covers the risk; e.g. an insurer, a pension fund or a pension scheme with too high a liability related to current or future annuities) and the speculators (those selling the instrument; e.g. an investment bank, usually with the support of a large insurance consultant firm). While the former look for hedge effectiveness, the latter seek liquidity as any financial actor. Yet, a liquid market in which hedging instruments can be easily exchanged depends on standardized contracts whose form and substance are intelligible and comparable to all actual and potential market

[11] For an analysis of this longevity bond market from a poststructuralist approch focused on the particular understandings of time it enshrines to produce truth-base insurable events, see (Lobo-Guerrero, 2014).

actors. As Blake and colleagues emphasise, “the fewer the number of standardized contracts traded, the greater the potential liquidity in each contract, but the lower the potential hedge effectiveness. There is therefore an important trade-off to be made, such that the number of standardized contracts traded provides both adequate hedge effectiveness and adequate liquidity” (Blake, et al., 2013: 12). The standardisation of longevity risk indices is thus caught in that tension between standardised index-based hedges and customized hedges. Standardized contracts have the advantages of simplicity, cost and liquidity. In their simplest form, they support an index based longevity swap (a derivative) involving a payment to the pension scheme or insurer based on the longevity experience of a reference index. Yet, understanding “how good” the risk reduction remains a difficult problem as the referred index will never exactly match the actual annuity payments being made by the insurer or pension scheme (Cass Business School and Hymans Robertson LLP, 2014: 8). Guy Coughlan, the newly appointed head of the asset liability management (ALM) risk team of JP Morgan in London was also present at the creation and shared this understanding “an essential requirement for creating any new liquid market is standardization”: the creation of a liquid market would thus require “a standardized index … as an unbiased reference by all participants [and] a limited number of standardized contracts in which liquidity can be concentrated” (Coughlan, et al., 2007: 4) [12]. In his view, in its early stage, the market could be built around just eight standardized contracts with a specific maturity (e.g., 10 years), two genders (male, female), and four age groups (50–59, 60–69, 70–79, 80–89).

It is within this mind-set that the Lifemetrics initiative began at JP Morgan London in early 2007 to provide an effective long-term hedge of the longevity risk of a pension plan or annuity portfolio[13]. The rationale from the start was that standardisation was necessary to reach scale, support liquidity and expect growth of the market with proper intermediation between buyers and sellers. Coughlan approached Swiss Re to set up a joint association bringing the major players among insurers, banks, pension funds and investors together. In April 2011, JP Morgan thought that a critical mass was reached and deemed it worthy of transferring the Lifemetrics initiative and related longevity standards to the Life and Longevity Markets Association (LLMA), a not-for-profit venture established for that purpose. Interestingly, the establishment of suitable and consistent standards, conventions and best

[12] Interview with Guy Coughlan, Chief Financial Risk Officer, USS Ltd, and former head of the asset liability management (ALM) risk team of JP Morgan, London, 30 April 2015.

[13] Interview with Guy Coughlan, Chief Financial Risk Officer, USS Ltd, and former head of the asset liability management (ALM) risk team of JP Morgan, London, 30 April 2015. Interview with Pretty Sagoo, Director, European Insurance Risk and Capital Solutions, Deutsche Bank, and Director Board LLMA & Chair LLMA and IFoA Joint Longevity Basis Risk Working Group, London, 28 April 2015.

practices are an integral part of its objectives in the promotion of a liquid traded market in longevity and mortality-related risk. In April 2015, LLMA membership included Aviva, Axa, Deutsche Bank, J.P. Morgan, Morgan Stanley, Prudential Plc and Swiss Re, to whom it provides historic and current indexes of mortality rates and period life expectancy levels across various ages for the four largest markets that are the United States, England and Wales, the Netherlands and Germany. It furthermore provides standardised valuation models for longevity and templates for standardised derivatives such as so-called q and s forwards. According to experts close to the field, Lifemetrics standards developed by LLMA are considered as having no competitors on the market even if new refined methodology are developed by practitioners elsewhere[14].

Although slow to take off and having not yet gathered pace to reach the full cruise speed of mature markets, standards supporting the issuance of securities on longevity risk have nevertheless accomplished a long journey since their early days when discussed in the academic circles of Heriot-Watt University in Edinburg and the Cass Business School Pension Institute in London, as well as among large insurance and pension consultants in the United Kingdom, such as Aon Hewitt, Mercer and Hymans Robertson. It is particularly worth noting that it has now gained a highly-coveted prominence in OECD publications. In 201,4 the OECD Working Party on Private Pensions – well known for its role in promoting the three pillar system – released a comprehensive report on longevity risk. The report emphasises in particular that “Index-based instruments offer a solution to the constraints of capital markets investors in supplying longevity protection [; …] further development of these instruments could be facilitated by additional standardization and transparency in the market” (OECD, 2014a: 183). What is more, the 2014 issue of the OECD flagship publication on pensions even put longevity risk in its first chapter. In this finely tuned analysis of far-reaching challenges of pension systems in the low returns, low interest rates and low growth environment of the post-crisis era, standardisation is portrayed as a key tool of longevity risk management: “Capital markets may have the potential to provide additional capacity if standardised instruments to hedge longevity risk via longevity bonds, swaps and other derivative contracts were available. For purposes of standardisation, these instruments may need to use longevity indices based on the general population” (OECD, 2014b: 39).

[14] So far, the only competitor on the market is the Xpect - Club Vita Indice, a more detailed series of longevity indices tailored for England and Wales by Club Vita, Deutsche Börse and Hymans Robertson’s longevity analytics arm. Cf. above-mentioned interviews; http://www.llma.org, <access on 21 April 2015>.; “Deutsche Börse and Club Vita to launch new indices for pension schemes pursuing index-based longevity swaps”, Deutsche Börse Press Release, 15 March 2012.

f. Conclusions

This paper set to respond to what extent the insurance industry lies at the core of the post-crisis accumulation regime and relies on standards to create new markets. Beyond figures alone presented in the introduction, the paper laid emphasis on how insurance is a key market integrator as securitisation makes it closer than ever to the financialisation of contemporary capitalism. Moreover, the post-crisis environment badly challenges the life insurance industry, as low interest rates is coming on top of long-term difficulties related to an ageing population. In contrast to the few analyses focused on the larger political economy implications of the securitisation of life insurance industry, the paper showed that securitisation, whatever their sophisticated modelling and simulation techniques are, needs standardisation to be effective.

In this regard, coming back on the literature, Lobo-Gerrero's insightful analysis provides ample evidence of the informal governance and alternative sovereignty exercised by the performative power of the mathematical calculus used in the modelling and simulation needed for the securitisation in life insurance. But it doesn't do justice to the standards needed to gain access to and sustain liquid capital markets. For its part, regulation theory highlights the importance of quality standards, viewed as total social facts that deeply intertwine the economic and political spheres. It remains unclear, however, how they can exert the authority of their regulatory potential, in particular on a transnational plane. Drawing upon recent approaches on the rise of private authority in international affairs, the paper argues that standards reflect a form of authority that support the transnational dimension of capitalism and rests on the ambiguous juxtaposition of instances of power made of a wide range of non state actors able to define issues spanning technical specification and deep social values across territorial sovereign states. It is from this understanding that our case study provides evidence of the ability of a small number of actors to shape standards against which pricing the bonds issued for hedging life-related products sold by insurance companies.

Why does the securitisation of the life insurance industry rely on standards? The paper first reminded that standardised contract and pricing provide liquidity as for any other financial markets; this is a fundamental determinant to guarantee scale on globally integrated financial markets. Regarding the number of standardised solutions required, an important lesson to draw here is: the lesser, the better – so as to concentrate liquidity into a limited number of standardized contracts. The paper provides a second answer, specific to the insurance industry. Standards not only guarantee liquidity, they also provide substantial means for an effective hedge of the risk borne by bonds issued to securitize annuities that

burden the balance sheet of insurers, pension funds and pension schemes. To that end, they set indexes based on dataset computed by actuaries used to work with detailed series of indices on which developing probability calculus related to life longevity (e.g. data related to expected progress in health over the next five decades). Here, hedge effectiveness competes against liquidity requirements. Beyond mere accuracy conundrum related to elements included in those indices and hypotheses set for developing models and simulation, effectiveness is correlated to the level of granularity and distinctiveness of data processed. In contrast to prospects for liquidity, the higher the number of standardized contracts, the better the hedge effectiveness. Accordingly, actors prone to gain the most of a new "life market" issuing bonds to transfer longevity risk agreed that standardisation was essential and should be set within this trade-off between hedge effectiveness and liquidity requirements.

The paper provides evidence that standards now exist to set the cost of not dying in the context of a growing securitisation of life-related insurance products. A broader implication of our analytical framework is to emphasise that the authority of such standards remains ambiguous. States are not necessarily excluded from the creation of such a new market. The potential role of governments in supporting the standard remains, indeed, a disputed issue. According to Blake, governments have an important role to play and should take an active part in it. Only them have access to the information needed to help with the construction of sophisticated national longevity indices. Moreover, as longevity risk is not actively traded in the capital markets, governments are trusted as important enablers of capital market development if they issued themselves longevity bonds that would facilitate price discovery (Blake, et al., 2014: 264). Others, on the contrary, share a more fundamentalist view of the market and do not see why governments would have any role, especially when they have their own longevity risks to solve in the first place, with massive defined benefits pensions schemes harder than ever to fund, let alone quantify their liabilities. Moreover, even without entering the sophisticated maths of Lifemetrics, we could appreciate how standards setting longevity indices are technical. However, this doesn't remain unambiguous in terms of conveyed social values as it includes all sorts of assumptions on how detailed a differentiation can be set among groups of population. The whole exercise is also done on the political economy assumption that liquid capital markets instruments are to be factored in the best guarantees for long-term revenues to an ageing population. Finally, the longevity standard was developed against the backdrop of the specificity the annuity market for life insurance companies in the United Kingdom, but from the outset it was developed as instrument ready for tapping the other major annuities market around the world, that is the United States, the Netherland, and the rising German market resulting from the early 2000s

so-called Riester reforms. In short, standardised contracts and pricing support a securitisation of the insurance and pension industry increasingly close to the investment banking and financial industry at the core of a transnational finance-led accumulation regime, but they can't do away with more customized and hedging techniques defined on a national basis and used for centuries by actuaries hired by insurance companies.

Finally, a matter for further discussion is that standards we discussed in this paper are mainly conceived as drivers of market creation, rather than regulatory tools. Therefore, the relation between such standards and the broader authority of the regulatory potential conferred on standards in the new environment of principle-based regulation remains to be further examined. This would suppose a detailed analysis of the regulatory potential of so-called "standard formula" and "internal models" referred to in the framework under the joint development of the International Association of Insurance Supervisors (IAIS) and the Financial Stability Board (FSB), after the pioneer and far-reaching rules set by the European Solvency II regime. This is of course a matter for another paper…

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