

# REGULATORY COMPETITION AND LIFE INSURANCE SOLVENCY REGULATION IN THE EUROPEAN UNION AND UNITED STATES

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## ABSTRACT

The economic reasons for life insurance regulation have not been well developed in the finance literature. In this paper we discuss some justifications that have been advanced for regulation and argue that they are not persuasive. The most rigorous arguments in favor of the regulation of life insurance companies are as follows. First, regulation can prevent the adverse affects of information asymmetries in markets for illiquid contracts. Second, regulation can be used to ensure that insurers commit to contracts. In the case of life insurers these contracts may be incomplete, and it may be difficult to determine the terms of the contracts objectively; this is particularly so with U.K. with-profit contracts, for example. These justifications for regulation, combined with a public choice analysis of regulation, lead us to conclude that regulation should be voluntary and provided by competing private and government agencies. Finally we propose a method of moving toward such a regulatory framework starting from the current regulatory institutions in the United States and the European Union (EU). An approach based on the "mutual recognition" concept used, at least in theory, in the EU would provide an approximation to the regulatory approach we believe can be justified by economic principles.

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## 1. INTRODUCTION<sup>1</sup>

In the nineteenth century there was much coverage in the actuarial literature of the development of and rationale for insurance regulation and of the relationship between regulation and the actuarial profession (see, e.g., Hendriks 1854; Homan 1897; Hopf 1870; King 1892; Nicoll 1898; Sprague 1871; Teece 1885; Shepherd 1948). This literature is discussed in Booth (2007, forthcoming). However, with the exception of discussions in the United States concerning the legitimacy of

state and federal regulation (see below), the recent actuarial literature has tended to accept the status quo and the philosophical framework that it reflects, rather than to challenge it. This is despite the fact that the regulatory framework is increasingly dominant in actuarial and other business decisions, and there is significant actuarial involvement in the implementation of regulatory standards.

In other fields we have seen how the application of widely accepted economic and financial principles to problems facing actuaries can have important consequences. This is most notable with regard to the recent debates within the profession on the adoption of principles of corporate finance and financial economics to insurance and pension fund management. This paper takes a similar approach to the economics of regulation as has been taken by researchers applying financial principles to life and pension funds in recent years. We examine the economic theory of regulation as it applies to the regulation of solvency

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for long-term insurance companies and apply the ideas to the analysis of regulatory problems in the European Union (EU) and United States. We make the usual economic assumption of rational behavior. This is not because all consumers always and everywhere necessarily behave rationally but because we believe that, as in most areas of economics, it is a reasonable starting point for analysis. Further discussion can then surround other reasons for regulation that could be regarded as more "paternalistic" in origin. We examine only the regulation surrounding the solvency position of insurers and not regulation surrounding the sale of insurance products (i.e., we do not consider what is described in the United Kingdom as "conduct of business" regulation) where the considerations may be different from those we set out below.

The paper begins by setting out some theoretical justifications for insurance regulation. We then discuss the limitations of regulation, drawing upon the literature on public choice economics. From our discussion of regulation and public choice theory we derive conclusions as to the desirable features of a regulatory system.

Our theory has clear practical implications. We suggest appropriate forms for both private and government regulation. We then compare the actual features of the regulatory systems in the EU and the U.S. with the features we identify as desirable. One important conclusion is that the regulatory functions in a life insurance market do not have to be provided by the government and that firms should be allowed to choose the jurisdiction under which they are regulated.

## 2. INFORMATION ASYMMETRY AND INSURANCE REGULATION

A number of articles by both practitioners and academics have argued that bank and non-bank institutions should be regulated according to similar principles and hence that regulators should aim for greater consistency in their approaches to the two sectors (see, e.g., Davies 2003; Muir and Waller 2003). Within the U.S. actuarial profession, the 1999 Bowles Symposium also considered some of these issues (see, e.g., Thom 2000). However, we argue that the economic reasons for bank regulation are different from those for

regulating insurance companies, and hence that there is no a priori reason to assume that regulatory approaches suitable for one type of institution are suitable for the other.

Banks have unique features that are used to justify their regulation. Banks have two roles, as providers of *liquidity insurance* and as *delegated monitors*. The first detailed treatment of liquidity insurance is due to Diamond and Dybvig (1983), who point to the maturity transformation role of banks, which convert demand deposits into long-term and illiquid loans. In doing so, they provide liquidity insurance for their consumers, but they expose themselves to the risk that many consumers will simultaneously demand their funds and hence precipitate a bank run. Diamond's (1984) theory of delegated monitoring lies at the heart of the modern theory of banking. Diamond argues that banks take advantage of economies of scale in monitoring and managing illiquid investments on behalf of their dispersed investor base. Viewed in this light, banking is simply another example of the division of labor.<sup>2</sup>

These theories of banking give rise to standard explanations for bank regulation. Bank runs occur when depositors form self-fulfilling beliefs of imminent bank collapse. Prudential and capital regulation of banks can serve to reduce the likelihood that these beliefs will form. Furthermore, insofar as banks socially undervalue their informational assets,<sup>3</sup> there may be some justification for protecting them from excessive failure risks. However, it is far from clear that either of these situations applies in the insurance market. The liquidity transformation role of banks does not apply to insurance firms, who are seldom exposed to run-like phenomena, particularly if they have

<sup>2</sup> Wood (2003) provides a nice discussion of the liquidity role of banks. Bhattacharya, Boot, and Thakor (1998) provide an academic survey of bank regulation. Morrison and White (2002, 2004) analyze the incentive effects of bank capital regulation and of deposit insurance.

<sup>3</sup> That is, they fail to account for all the benefits that arise as a consequence of their information gathering. So, for example, a firm that is able to raise cheap equity finance as a result of the strong signal that bank monitoring sends will value the information more than a bank does. Hence, the bank may not gather information even when doing so would result in socially desirable corporate activity.

discretion over surrender values.<sup>4,5</sup> Similarly, a very high proportion of insurance company assets are typically quoted in the market, and insurance companies therefore do not maintain the same informational assets as banks.<sup>6</sup>

In fact, there is little academic discussion of rationales for insurance regulation.<sup>7</sup> The small extant literature focuses upon the importance of informational problems between the insurer and the insured. For example, the U.K.'s Financial Services Authority (FSA) states in a recent business plan that asymmetric information is a primary regulatory concern (FSA 2004a, p. 8).

The formal welfare analysis of informational asymmetries dates back three decades, and the 2001 Nobel Prize for economics was awarded for pioneering work in this field (see, e.g., Akerloff 1970 and Rothschild and Stiglitz 1971). When there are informational asymmetries between buyer and seller, an uninformed buyer may form a rational belief that he or she is being offered low-quality goods. The purchaser's beliefs will reduce his or her willingness to pay, and the only rational response by the seller is for the seller to offer the low-quality goods for which the purchaser is willing to pay. In this equilibrium, high-quality goods will never trade:<sup>8</sup> some welfare-enhancing transactions will not occur through the arm's-length exchange that characterizes impersonal market transactions.

<sup>4</sup> Bancassurance firms, formed by the merging of bank and insurance companies, raise interesting questions that are addressed in Morrison (2003) and Freixas, Lóránth, and Morrison (forthcoming). Our concern here is with the bulk of the life insurance sector, to which the arguments in the text apply.

<sup>5</sup> It is possible for run-like phenomena to occur. For example, if an insurer receives a credit downgrading and it offers guaranteed surrender values, it is possible that policyholders will wish to receive their money at the very time when redemption clauses in securities funding the insurer's capital base are triggered. This is unheard of in the U.K., though not in the U.S.A., and can be avoided by the way an insurer structures its business. The risk of a run, however, is intrinsic to the nature of fractional reserve banking. Also such runs are naturally contagious in banking but not generally so in insurance.

<sup>6</sup> Unquoted investments are held, and the size of insurers means that the holdings are high in total value. However, they are small as a proportion of total insurance company investments: typically less than 10% in the U.K.

<sup>7</sup> Though there are some interesting new perspectives in Plantin and Rochet (2007).

<sup>8</sup> Models of adverse selection of this type can also exhibit pooling equilibria, in which all agents trade at a common price.

The insurance market is certainly characterized by bilateral informational asymmetries. This is particularly the case in long-term insurance. Normally, the insurer has relative ignorance of the insured's specific properties, even after underwriting. Also, insured agents are relatively ignorant of the financial health of potential insurers.

Even though informational problems can undermine arm's-length price-intermediated exchange, it does not necessarily follow that regulatory intervention is appropriate. Market forces can provide the incentives that economic agents require to design institutional solutions to the problem. For example, informational problems in the second-hand car market can be overcome through the provision of warranties. Similarly, informational problems in the bond markets are resolved through ratings provided by third-party rating agencies and not through government certification.<sup>9</sup> Borrowers willingly pay for ratings so as to break down informational barriers between themselves and potential providers of capital.

Can transparency in the insurance market be generated by market institutions? Some evidence suggests that it can. For example, at the start of 2004 the U.K. mutual insurer Standard Life was downgraded by Standard and Poor's from AA- to A+. Sesame, then the U.K.'s largest independent financial adviser, responded by suspending all sales of Standard Life with-profits life insurance products.<sup>10</sup> This action will have incentive effects for Standard Life. It may also indicate an increased emphasis by consumers upon third-party certification. If this is the case, then commercially generated reporting standards may ultimately resolve informational problems, if they are not crowded out by government regulation.

Although some of the insurance market has adopted some commercial solutions to informational problems, its failure to do so on a wider scale is rather puzzling. Insurance companies do provide the market with some, albeit highly complex, information about themselves. Why are

<sup>9</sup> Examples of rating agencies failing to predict financial difficulties in, for example, the Enron case do not negate our argument: no system of screening is perfect.

<sup>10</sup> "Standard Life Dropped by Top IFA after Credit Downgrade," *The Daily Telegraph*, February 27, 2004.

third-party interpretations of this information not more widespread in the insurance market? We argue that the reason is the illiquidity of life insurance contracts and its effect upon the governance of insurance companies. To present our argument, we first discuss the governance of firms with liquid financial liabilities.

Corporate governance is concerned with the mechanisms that bind the corporation's managers to act in the interests of their financiers. One route to good governance is a liquid secondary market in corporate securities. When a company's bonds and equities are traded in liquid securities markets, a poor result causes a sell-off of its securities. The resultant price drop provides incentives for sophisticated investors to take large positions and to force changes in the company's management. The risk that this will occur serves to discipline managers. The simple fact that ownership stakes in the company are traded in a liquid market serves to incentivize information-gathering among potential buyers, as well as good behavior among managers.

These incentive effects are anticipated by potential investors and increase their willingness to purchase the firm's securities. In other words, a transparent and liquid secondary market in corporate securities serves to reduce the company's cost of funds by providing the right incentives to its managers. Good managers will take advantage of this effect by spending on disclosure, for example, on credit ratings, or on providing information to shareholders, in order to generate incentives and hence to reduce their cost of funds. A failure to spend on disclosure would reveal a manager to be poor or, at least, would raise the cost of capital of the company to the level of that of companies with poor management. In summary, market forces generate a virtuous circle that ensures that every company with liquid securities pays for credible information disclosure. This in turn provides managers with the right incentives.

What prevents the market mechanisms that we highlight above from working in insurance companies? It is worth stressing that we do not know for sure that they do not work. It is possible that government-imposed disclosure requirements have crowded out the development of private mechanisms, and, as we have noted above, there

are private screening services that are used by insurance intermediaries. It is certainly the case that market mechanisms *have* succeeded in overcoming information asymmetry problems in the non-life insurance (property and casualty) fields. Until 2004 solvency standards for U.K. non-life insurance companies were very arbitrary, based on simple ratios of historic claims and/or premiums. But it was quite normal for non-life insurance companies to hold a high multiple (10 to 20 times) of their statutory solvency requirement because they were targeting a particular credit rating. If they did not achieve their target credit rating, they would not obtain wholesale and, possibly, retail business; they would also find access to capital more expensive.

The life market is different, however, because of the long-term nature of contracts, and because of the different capital structures that frequently exist in life insurance companies. To see how disclosure incentives are affected by these characteristics of life insurance markets, consider a single consumer who wishes to purchase a life insurance policy. The customer signs a long-term insurance contract. If the customer exits the policy early, then he will bear the costs of his decision, assuming that surrender values are calculated on an actuarially neutral basis and that any calculated surrender value is positive. These costs will include the acquisition expenses of the policy that will be taken into account when calculating the asset share for the policy. This level of acquisition costs, combined with the fact that an insurance policy is assigned to a particular individual, means that policies are *illiquid*.<sup>11</sup>

In these circumstances the effects for existing policyholders of better disclosure in the life market are ambiguous. Information disclosure will certainly help new customers to make better entry decisions: customers will clearly prefer to invest in well-managed and well-capitalized businesses. But insured agents are unlikely to exit after signing their contract, and so the provision of better information (for example, via credit ratings) will only help future generations of investors. Furthermore, in a company that is experiencing difficulty, existing policyholders may be

<sup>11</sup> There are second-hand markets in some policies, but these markets are not nearly as liquid as securities markets.



able to rely upon future policyholders to share the burden of losses, if they can be attracted. In other words, disclosure that discourages further investment by new policyholders may damage existing policyholders. Hence, disclosure by firms selling long-term insurance may not be generated by market forces, and third parties who interpret and simplify information may not evolve.

In summary, although rating agencies can affect customers' decisions, it is still possible that, as a rule, information *might* not be generated in life insurance markets where there are illiquid, long-term contracts. In addition, many life insurance companies are mutual companies and have no shareholders or bondholders. The predominant source of funds for a mutual insurer is the group of existing policyholders, who, as we argue above, are likely to be biased *against* better disclosure.

There is more than one solution to this problem. Using statutory regulation, insurers might be required to disclose information. On the other hand, insurers might be required to issue subordinated debt, the pricing of which would signal to policyholders and potential policyholders in much the same way as a rating agency's assessment of an insurance company does. We will look further at potential solutions to these specific problems below.

### 3. TIME CONSISTENCY AND INSURANCE REGULATION

Time inconsistency arises when an agent makes a promise that it will prefer in the future to break. A credible commitment to keep the promise may improve the terms of trade: for example, an insurer may be able, by promising to maintain a certain level of solvency, to sell insurance at a price sufficiently high to cover the expected costs of meeting its promise. A credible promise therefore raises welfare. However, after receiving fees that reflect the value of the promise the insurer may simply choose to renege upon its promise if it is not legally enforceable. Potential customers will anticipate this effect and will refuse to pay the enhanced prices that a promise that had a credible means of enforcement would command.

A particular example of time inconsistency (see, e.g., Goodhart 2003) arises in monetary ec-

onomics. Where central banks are politically controlled, a political party may make a commitment to run a sound monetary policy as part of its manifesto. However, the promise is not credible because, once elected, the party in government can run monetary policy to maximize the probability of being re-elected—for example, making monetary policy more lax before the following general election. Granting the central bank independence is a way of resolving the time consistency problem.

In general, when an insurance company promises a benefit to a policyholder, how does the insured know that, over the long time period for which a life insurance contract normally applies, the insurer will keep its promises? Disclosure requirements alone are not enough to ensure that an insurer keeps its promises. In certain situations it might be difficult to enforce long-term contracts in practice. Commitment problems of this type are not one way: it may also be difficult for the insurer to be sure that the insured will keep his promises to pay premiums over the long term of an insurance contract. We consider both sides of this commitment problem below, and then relate it to regulation.

#### 3.1 Commitment of the Insured to the Insurer

In practice, it is difficult for insurers to hold customers to long-term contracts. For example, a customer may lapse his policy and receive a zero or positive surrender value when the asset share of his policy is negative. Alternatively, if term insurance premium rates have fallen, good lives may leave a pool of insured lives, by lapsing their policies, and start their contracts again elsewhere, leaving the company with a deteriorating pool of lives. In practice it is difficult to prevent customers from following these courses of action.

Insurers have developed ways of dealing with these problems. Hendel and Lizzeri (2003) show how, with front-end loading, the insured pays a premium greater than the actuarial risk premium in the earlier years of the contract (for example, level premiums in a whole-life insurance contract). With sufficient front-end loading, customers will not leave the company because asset shares will be less likely to be negative so surrender values are more likely to reflect asset shares.

In the special case of health insurance, front-end loading, or level premiums for an increasing risk, would serve substantially to increase the health insurance premiums that customers pay early in their lives. To the extent that young people have lower incomes and find it hard to finance higher premiums, Hendel and Lizzeri note that customers will rationally refuse to meet higher front-end costs. Because of this, level premium contracts to finance increasing health risks are unusual. As a result, insurers are unwilling to offer long-term contracts, and thus customers are exposed to the risks of deteriorating health that arise under short-term health insurance contracts. This is one reason advanced for greater Federal involvement in health insurance in the United States (such as proposed by the Clinton plan in 1993). However, Cochrane (1995) suggests that market mechanisms are evolving and could further evolve to alleviate this problem.

### 3.2 Commitment of the Insurer to the Insured

We have argued that the special features of life insurance contracts give life insurers a large and captive pool of policyholders. The cost of keeping a promise to these policyholders may therefore be significant. The company will meet this cost only when it is outweighed by the reputational gain that it experiences in its dealings with potential new policyholders. It follows that, in situations where future business streams dry up, the company may try to renege upon the implicit promises that it has made to its captive policyholders—perhaps in subtle ways.

While contract law provides existing investors with some protection for as long as the company remains in business, it is well understood by economists that contracts are incomplete and that the spirit of a contract can be undermined in many ways.<sup>12</sup> In other words, the contract may not have an enforceable clause defining the insurer's response to every possible future contingency. As a result, some policy terms may be deliberately vague, as in U.K. with-profit contracts. Moreover, when the incompleteness relates to investment policies, a policyholder might purchase a contract from an insurer who can change the investment

policy and raise the risk attached to the policy, without any facility to allow the policyholder to close his contract and be compensated for any costs incurred. An insurer may also take more care managing new money invested with the company than it does with money invested through more mature policies. Also, a company could continue to write new business on loss-making terms, to the detriment of the fund backing existing policies, in order to keep a flow of new business.

These are common problems in the U.K. life insurance industry, and they arise because it is not feasible to write insurance contracts that anticipate responses to these scenarios. Nevertheless, market mechanisms have evolved that provide informal, extra-legal solutions to the problem of ex-post alteration of implicit contractual terms. A lengthy economic literature studies these mechanisms: see Morrison and Wilhelm (2007, ch. 2) for a survey. Corporate bond contracts, for example, frequently contain clauses that make bonds puttable in the event of a credit downgrading. Also, insurance regulators in the United Kingdom are increasingly active in ensuring that customers are protected in the interpretation of implicit clauses in with-profit business, though this is a relatively recent phenomenon. Indeed, this paper is proposing that this development is an important aspect of insurance regulation, albeit we suggest that adherence to it can be voluntary and the regulatory mechanisms private.

This discussion suggests that recent expressions of concern about closed funds in the U.K. may be well-founded, though the actions of insurers in managing closed funds have recently become more heavily regulated. The removal of a future flow of business from the fund may undermine managerial incentives. Hence closed funds may be managed with less care. Indeed, a Consumers' Association representative suggested in a newspaper article at the end of 2003 that companies might even "milk" closed funds to cross-subsidize new business.<sup>13</sup>

In summary, insurers have a credibility problem. It is hard for a company to make a long-term promise, perhaps stretching 80 years or more, en-

<sup>12</sup> See Hart (1995) for a survey of the main ideas in this field.

<sup>13</sup> The representative was Mick McAteer, quoted in *The Sunday Telegraph*, December 10, 2003.

tirely believable—particularly where aspects of the promise are not objectively determined. As we argue at the start of this section, a credible promise would raise the premium that insured agents would be prepared to pay. Hence the company *might well want to make the promise* in order to raise its profits. The problem is that both the insurer and its customers know that in certain circumstances, the insurer will break those implicit aspects of promises that cannot be enforced through the courts.

The time consistency problem that we identify here is fundamental to the operation of life insurance markets. It has not been carefully articulated and developed theoretically in the insurance or actuarial literature.<sup>14</sup> However, there is evidence that it has been understood by market participants and was once well understood by regulators. In the U.K., for example, the issue appears to have been anticipated by the 1853 House of Commons Select Committee on Assurance Associations. In its report, the Select Committee summarized views for and against life insurance regulation by the state. In favor of regulation, the committee said:

On the one hand, even admitting the general wisdom of the principle of non-interference on the part of the Government in matters of trade, it has been contended that the question of life insurance differs so materially, in its general character, from ordinary trading transactions that it may fairly be considered as an exception to that rule. (Select Committee 1853, para. VIII)

Two of the reasons given for that exception were that

Obligations undertaken by such Associations have reference to a very remote and uncertain period; . . . that, unlike any ordinary transaction of trade, a contract, once entered into cannot be discharged or abandoned if doubts about the stabil-

<sup>14</sup> Doherty and Schlesinger (1990) looked at conditions under which individuals would insure when the potential insured is faced with companies with different default probabilities. However, the issue we discuss here is different. The company may have an infinitesimal probability of default; it may have every intention of managing the business to maintain that situation, but how does it persuade the customer that this is the case?

ity of the Office should arise. (Select Committee 1853, para. VIII)

The discussion of this issue was well informed too. For example, Hendriks (1854), made the point that the actual proposals of the Select Committee related to ensuring that capital was sufficient to establish the bona fide intentions of the company at an early stage of its existence, yet, suggested Hendriks, the Committee should have been focusing on the *permanency* of a company's intentions (our italics): this is precisely the point we are discussing here.

#### 4. REGULATION AS CONTRACT ENFORCEMENT

It seems therefore that the difficulty that life insurers experience in making time-consistent promises is a fundamental problem. How could this problem be resolved? We would expect new institutional arrangements to evolve in response to a problem of this magnitude. For example, suppose that the insurer could find a trustworthy intermediary, independent of itself and the insured, who would commit to enforce its promises and interpret implicit contractual terms. This intermediary would need significant legal power over the insurer since, as we have argued, the problems here stem from the inability of standard contract law to adjudicate over disputes. Provided the intermediary was trustworthy, its special powers would render the intermediary's promise credible, and hence would resolve commitment problems in the insurance market. Hence, by extending the range of contracts that the insurer could write with its customers and improving the security of those promises, the intermediary would raise welfare.

Market-based institutions have evolved to deal with time-inconsistency problems in some parts of the insurance or long-term savings markets. For example, in the unit trust (mutual fund) industry in the U.K., investments are held by custodians who are independent of managers of the fund. This ensures that the investments are ring-fenced and cannot be used for some other purpose of the fund management company. In company pension funds, decisions about the use of funds are entrusted to trustees who manage a ring-fenced fund that is independent of the assets

of the sponsoring company.<sup>15</sup> Indeed, it could be argued that the actuarial profession grew as a response to the commitment problem (see also Booth 2003, 1997). Employing individuals who owe a duty to their profession to behave in a particular way is one way a company can signal its credibility.<sup>16</sup>

It is possible though that the market may fail to evolve sufficiently effective commitment institutions in the case of particular types of contract. For example, this might be because the law as currently framed precludes institutions from the necessary ceding of sovereignty. In this case the contract enforcer may need to be a third party whose power derives from statutory authorities. This could still be a private body. Let us call this third party a "regulator." We can then think of regulation as *contract enforcement*. Regulation defined in these terms raises welfare by expanding the range of contracts available to the insurance company because potential policyholders will be reassured that obligations to them, whether explicit or implicit, will be met.

It seems possible that the mutual structure, which implies policyholder control of an insurer, has developed as a method of dealing with commitment problems. However, the mutual structure reduces the liquidity of the instruments that finance the insurer as there are no traded shares. Reduced liquidity may cause insured agents expect to favor informational opacity in their dealings with new customers. If a better solution to the commitment problem can be found, then the informational asymmetry problem may also be resolved through a market-driven jettisoning of the mutual structure.

U.K. regulation and discussions of regulation from 1853 to at least 1946, and arguably until 1984, seem to have been orientated toward re-

solving the very specific issues that we have identified here. Indeed, until recently, the courts had a very important role in interpreting and enforcing contracts in the event of insolvency. The courts could take action that was not possible in the case of insolvency of other types of firms, if that helped to ensure the best possible enforcement of contracts as they were originally written.<sup>17</sup> It is also worth noting that, in the U.K. (though not in the U.S.), regulators did not seek to reduce the risk of insolvency of insurance companies in the nineteenth and early twentieth centuries. Caveat emptor prevailed, and insurers were allowed to take whatever risks they wished as long as they disclosed information and maintained a deposit.

Compare these arguments with those for the regulation of banks. In contrast to life insurers, bank customers have highly liquid demand deposit contracts. As we have noted, the primary justification for bank regulation is the existence of informational and payment system externalities arising from bank failure. These may justify a regulatory effort to limit the probability of bank insolvency (i.e., the probability of ruin). Limiting the probability of insurance company failure seems to have arisen as a regulatory strategy without, it appears, any explicit exposition of the reasons for it doing so. For example, the Australian Prudential Regulation Authority (APRA) sets capital requirements for non-life insurance companies to ensure no greater than a 0.5% probability of failure (see, e.g., Sutherland-Wong and Sherris 2004). In the U.K., the Individual Capital Assessment (ICA) of a life insurer also requires that capital is held to ensure that the probability of failure is less than 0.5% in the coming year: but why should this figure be 0.5% rather than 5% or 0.05%? Different customers will have different

<sup>15</sup> In the U.K., and in many other countries, once contributions have been made by a firm to its pension fund, the assets of the pension fund must be kept separate from the assets of the firm—though some limited self-investment of the fund in the securities of the sponsoring company may be possible. If the firm becomes insolvent, the assets of the fund cannot be used to pay the creditors of the company.

<sup>16</sup> For this reason the failure of particular professionals to manage the interests of policyholders in the way their profession would expect is extremely costly to other professionals and to the reputation of the profession as a whole. An understanding of the economics of this issue is important for the actuarial profession.

<sup>17</sup> For example, instead of winding up an insolvent insurance company, the courts could reduce the value of all insurance contracts proportionately and allow the insurer to continue or to transfer the business (perhaps as a closed fund) to another insurance company. This approach reduces the transactions costs of valuing each individual contract and removes the risk that the insured will not be able to obtain insurance elsewhere because his health has deteriorated. The court is, in effect, a third-party intermediary, acting in the best interests of the policyholders to enforce the contracts as best they can be enforced, given the prevailing financial situation of the insurer.



risk preferences, and the external effects of life insurer insolvencies are relatively limited.

The analysis above also suggests that insurance companies may actually *desire* prudential regulation because prudential regulation renders their promises more credible and attractive to customers, and hence enables them to write a greater range of contracts. It is of interest to note, for example, that the U.K. FSA has recently instituted a system of “realistic” capital requirements for insurance firms (FSA, 2004b). The FSA’s Chief Executive John Tiner has stated that the industry was eager to see such regulations introduced.<sup>18</sup> However, the industry later resisted the introduction of the rules during a period when business conditions were difficult. This is entirely in line with the thesis outlined above: when insurers are well capitalized, they may be eager to sign up to stringent capital requirements as these would facilitate contracting. The capital requirements are valuable *precisely because* the companies and their customers know that without a legally sanctioned enforcer, capitalization promises would be broken in a downturn. It is therefore natural then that, during a downturn, the industry should lobby to see the rules relaxed.

## 5. REASONS FOR LIMITING REGULATION

### 5.1 The Importance of Freedom of Contract

We have discussed reasons why we might wish long-term insurance markets to have special forms of regulation. However, to concentrate only on the failure of the market to maximize welfare would be a mistake. One should also consider the ability of governments to provide regulation and the difficulties caused by statutory regulation. Below we then propose approaches to regulation that are both compatible with the specific analysis of the reasons for regulating long-term insurance companies discussed above and compatible

with the reasons for limiting regulation discussed in this section.

Regulation interferes with freedom of contract and the operation of the market. Adam Smith (1776) famously argued that in responding to the incentives for self-enrichment that free market prices provide, economic agents improve general well-being. The ability of freely floating prices to generate efficient resource allocations is confirmed under some fairly restrictive assumptions by modern neoclassical economics (e.g., Arrow and Hahn 1971). Equally importantly, the signals that prices send can stimulate the innovation and discovery upon which social progress rests (see, e.g., Hayek 1948). Under free markets, the dispersed knowledge and skills of many economic actors can therefore be harnessed. In contrast, central direction cannot be as effective in generating ideas or motivating entrepreneurial discovery (Hayek 1948).

This argument suggests that we should proceed with caution when designing regulations. Attempts to alter the market process in pursuit of greater efficiency or “fairness” can have unforeseen and far-reaching consequences. A key point in the light of our discussion of life insurance is the possibility that regulatory mechanisms will evolve naturally within a market. For example, if a regulatory agency had responded to the catastrophic 1971 Penn Central commercial paper default by introducing and policing disclosure requirements, then the ratings agencies would not today have their important role. And, of course, centrally directed regulation need not be well-meaning: large corporate interests, or other interests, may capture the institutions that oversee them.<sup>19</sup>

The undergraduate textbook analysis of regulation focuses on *market failures* or deviations of the market outcome from a perfect market paradigm. It then assumes that a regulator, acting with perfect knowledge and in the public interest, can rectify market failures. This approach fails on three counts: first, perfect markets are not the static beasts of textbooks, and the regulator can-

<sup>18</sup> In a speech at Cass Business School on March 3, 2004, John Tiner said that “12–18 months ago, the captains of the UK life industry were almost literally knocking my door down to introduce a solvency regime along the lines of the realistic approach, and to do it quick (sic)” (<http://www.fsa.gov.uk/pubs/speeches/sp167.html>).

<sup>19</sup> The “law of unintended consequences” is so widely cited that it is hard to give a definitive reference. For a clear discussion see, for example, Hayek (1978). The classic discussion of regulatory capture is Stigler (1971).

not know what the outcome of a perfect market would have been had it existed (see Kirzner 1992; Hayek 1982), so the regulator does not know the target he should be aiming at. Second, it is unreasonable to assume that the regulator has perfect knowledge, and third, not all regulators are likely to work in the public interest.

The existence of regulatory failure, as a complement to the market failure that regulators may seek to rectify, is one conclusion from public choice economics, a subject rarely considered by actuarial academics when discussing regulation even though this subject is vital for understanding the appropriate scope of regulatory action and the form that regulatory institutions should take.<sup>20</sup>

## 5.2 Public Choice Economics

The most important premise of public choice economics is straightforward. It is that we should not assume that people will behave in one way in the political arena and in a different way in the economic arena. In the economic arena we generally assume that agents act in their own best interests and that they have imperfect knowledge, thus leading to the problems caused by information asymmetries that regulation is often designed to address. In the political sphere it is prudent to assume that agents will have those characteristics too. That is not to say that all agents in the political sphere will behave only in their own best interest—altruism is possible in both the political and economic arenas—but that it is prudent to adopt a working assumption of the pursuit of self interest. Essentially, public choice economics involves dropping the “bifurcated man” assumption that is used in the public interest justification for regulation.

Combining an assumption that participants in the political process are self-interested with our understanding of various administrative aspects of that process yields a number of implications.<sup>21</sup> The implications of public choice economics can be summarized as follows:

- Bureaucrats cannot “correct” market failure, even if they wished to do so, because they lack the information to know what the outcome of the market process would have been had the “failure” not existed.<sup>22</sup>
- Politicians will act in their own best interests when designing and supervising regulatory agencies. In the case of financial regulation politicians will be “risk averse”: they may over-regulate so as to avoid scandal.
- Bureaucrats will act in their own best interests, taking actions that will lead to promotion and advancement. The need to avoid scandal may render them risk-averse, so that their regulations reduce risks more than the regulated institutions’ customers would have chosen. Similarly, their interest in self-advancement is likely to lead to empire-building and hence to excessively large regulatory bureaus. Paradoxically, given their risk-averse nature, regulators may fail to act when problems with financial institutions come to their attention: allowing the problem to worsen may bring few disadvantages for the regulator, while leaving open the possibility that the regulator will benefit from a chance improvement in the financial situation of the company.
- Electors in general will make minimal effort to become informed about political issues, unless of course they are intrinsically interested in politics or have moral views that lead toward a specific set of political views, because the probability of an individual’s vote impacting on the result of an election is close to zero.
- Because of this, there are information asymmetries between regulatory bureaus and the electors to whom they are ultimately accountable. Electors are therefore at a relative disad-

<sup>20</sup> The 1986 Nobel Prize was awarded to James Buchanan for his work in this area.

<sup>21</sup> See Tullock et al. (2000), reprinted with revisions in the U.S. as Tullock et al. (2002), for a clear and full discussion of these issues; see also the original texts on rent seeking and public choice economics such as Tullock (1967) and Buchanan and Tullock (1962).

<sup>22</sup> This can perhaps be best explained by an example in the field of competition policy. In the U.K., the prices of water companies are regulated because of the existence of local monopolies. However, what would have happened if the market for water were perfectly competitive? We do not know the answer because the process of competition is impeded by natural monopoly (and possibly by regulation) and the process of competition has not been allowed to “discover” consumers’ true preferences. Prices may have been lower; or water companies may have supplied better quality water at higher prices; or perhaps supplied drinking and non-drinking water of different qualities. Regulation is a very blunt instrument for replicating the outcome of a so-called perfect market. The same is true in financial regulation.

vantage when assessing the merits of proposed regulations.

- Concentrated voter groups have an incentive to lobby and vote for increased regulatory protection when they are the main beneficiaries of the protection. At the same time, when the costs of increased regulation are sufficiently spread among dispersed voters, they will not find it cost-effective to organize themselves to lobby or vote to oppose the regulation.
- Because the “median voter” is pivotal in returning them to office, politicians will, other things equal, respond to his or her preferences rather than act to create regulatory institutions that might address problems of market failure.

All of the features described above tend to lead political institutions in the direction of more regulation rather than to welfare-maximizing solutions in markets.

A public-choice-oriented analysis of the structure of government tends to lead toward the conclusion that government agencies should work over the smallest area possible, for example, at the state rather than the federal level in the U.S. and the country rather than union level in the EU. It also suggests that the notion of “competition” can be as important in the government sphere as in the private sphere. This provides a further argument in favor of smaller governmental units for providing regulation so that individuals and companies, at least at the margin, can move between administrative areas in response to different quality of regulation.

Regulatory competition can be regarded as important for three reasons. Competition extends the range of regulatory choices available to customers: this is particularly important given our rationale for the role of the regulator developed above. Competition places restraints on regulatory bureaus because, if they extend their power too far, they will supervise a reduced number of firms as firms can obtain regulation elsewhere. Finally, competition allows a process of discovery to take place: it cannot be assumed that the appropriate system of regulation can be known by any one particular regulatory agency and competition between regulatory agencies facilitates learning. Public choice economics also suggests that it is important to limit the discretion of regulators and make the regulatory process as transparent as possible.

## 6. CONCLUSIONS ON THE APPROPRIATE FRAMEWORK FOR LONG-TERM INSURANCE SOLVENCY REGULATION

The public choice arguments above suggest that regulators will naturally tend to extend their sphere of operations, possibly at the expense of general welfare. Hence well-designed regulatory institutions should have a clearly defined and a limited role that minimizes their scope for discretion, and hence reduces the potential for rent-seeking, regulated agents to collude with the regulator to use this discretion at the expense of the consumer.

Given the importance in the insurance market of information asymmetry, one possible role for the regulator would be simply to compel insurers to provide clear information about their risk exposures, solvency levels, and so on. Customers could then take insurance decisions as they saw fit: the resultant market forces would result in improved insurer behavior. This view of regulation is advanced by Rees, Gravelle, and Wambach (1999). Indeed, from 1870 to 1984 disclosure requirements formed the basis of insurance regulation in the U.K., although insurance regulation in most U.S. states went beyond this.

However, we have argued that in most markets, such as the corporate bond market, institutions that facilitate the disclosure and interpretation of information should arise in response to market pressures. If they have not done so in the insurance markets, then the problem relates to the structure of the markets. Specifically, we have argued that information disclosure does not occur because insurers write long-term contracts with immobile customers, and that this also generates a commitment problem for insurers. Fixing the commitment problem would raise welfare for a number of reasons, just one of which would be endogenously generated information disclosure.

Hence we argue that the most compelling argument for life insurance regulation is to provide for long-term contract enforcement to alleviate the time consistency and related commitment problems.

The point here is *not* that the regulator should determine which promises the insurer should make: simply that it should be able to enforce those commitments that the insurer *wishes* to make. The insurer could select any of a number

of possible mechanisms to signal a long-term commitment to desirable behavior. For example, an insurer might commit to hold appropriate capital given the risks inherent in its policies and the assets held against them: with sufficient capital at stake the insurer would be more likely to act in such a way that its solvency would not be endangered.<sup>23</sup> Second, the insurer might wish to commit not to invest in certain asset classes, or to enter only certain markets. Third, the insurer might make a deposit with an independent party that could be drawn upon in times of financial stress. The risk of losing the deposit will help to align the incentives of owners and policyholders as well as providing funds for the alleviation of financial distress. Fourth, insurers as an industry might wish to join together to provide some form of guarantee system, financed by the industry, along the lines of the U.K. Policyholders' Protection Fund or the U.S. Guaranty Fund system.<sup>24</sup> Other mechanisms might also be feasible, such as the employment of individuals of good standing who owe their allegiance to a profession, such as actuaries, in risk and solvency management roles; the use of double liability, common in the free banking era in the U.K., so that shareholders would be more heavily punished when insurers became insolvent; or reference of disputes to an independent ombudsman—particularly where disputes related to the interpretation of opaque contract terms.

Any of these promises made by the insurer might satisfy insured parties and hence induce them to pay higher prices for insurance. The crucial point from a regulatory perspective is that the promises will be credible only if they are adequately enforced. Some promises, such as double liability or the use of a deposit held by an independent third party, are more easily enforced than others. Enforcement of other promises re-

quires judgment and may need an "enforcer" endowed with special legal powers—a third-party regulator. It is possible to envisage a private entity performing this role, but it is also feasible that markets may not be deep enough or legal institutions be sufficiently well developed for such private regulators to arise.<sup>25</sup>

Regulation as envisaged here benefits both consumers and insurers by enabling them to write better contracts. Contract selection remains the problem of the counterparties to the contract: customers will select the most attractive contracts, and companies will compete to provide them. The mechanism of commitment is part of the contract and more credible mechanisms of commitment would be valued by the customer. This argument is in sharp contrast to the concern that allowing companies to choose between regulatory systems will cause a "race to the bottom." It also suggests that regulation should be optional. Moreover, given the multiplicity of possible commitment devices, competition between potential regulators should help us to discover the best form of regulation. Indeed, different forms of regulation might be desired by different sorts of customer and firm. A longer menu of regulations is a good thing, and there is no a priori reason to think that a private entity could not be a regulator.

The menu of regulations does not have to be complex. Also competition could be promoted between different state regulators as well as between private regulators.<sup>26</sup> Regulatory competition can facilitate a process of discovery to find the "best" ways of regulating in different con-

<sup>23</sup> For example, the insurer may wish to commit to hold sufficient capital such that its probability of insolvency is kept within a certain bound, as appears to be implicit in the U.K., U.S., and Australian statutory regulatory systems.

<sup>24</sup> An approach such as this is taken by the majority of travel service providers in the U.K. Such providers are often providing services costing several thousands of pounds, and potential travellers are open to a number of different risks. The vast majority of travel-service providers have agreed to join a voluntary industry scheme (called ABTA) that both regulates the provision of travel services and provides protection should a particular company become insolvent.

<sup>25</sup> Moreover, such a private institution may be explicitly ruled out by existing legislation.

<sup>26</sup> An analogy here can, once again, be drawn with monetary policy. In an environment without exchange control, there is competition between money produced by different central banks, none of which are private at the current time. Different currencies are used by businesses and individuals for different purposes. The central banks that issue the currencies backed by the most credible methods of commitment to maintaining purchasing power are likely to see their money used more and benefit from seignorage. The outcome is arguably better than the earlier regime in the U.K. in the 1970s when exchange control gave the U.K. central bank a monopoly of money in the U.K. Furthermore, there is no reason in principle why the private sector should not be able to compete with nationalized central banks.

texts. If there is regulatory competition it is, of course, important that customers can distinguish between insurance companies regulated by different entities. It might be that consumers prefer a government regulator, but the possibility of entry by an alternative regulator should provide a discipline, albeit an imperfect one, on the government regulator. A further advantage of regulatory competition is that specializations might develop. An overseas agency, for example, might be better placed to enforce certain types of contract: for instance, to take a noninsurance example, one might expect a greater degree of expertise in regulating codetermination contracts<sup>27</sup> in Germany than in the U.K. This suggests that we should allow firms to opt for overseas regulation if they choose to do so.

A wider choice of regulators is in tune with public choice thinking. The public choice school stresses the danger of “regulatory creep”: the danger that over time, regulators will extend the scope of their activities in pursuit of personal, rather than social, betterment. As we note above, competition between regulators will serve as a natural check upon this tendency. Moreover, when the regulator’s relationship with the insurer is clearly enumerated in a contract, both regulatory creep and insurer rent-seeking<sup>28</sup> will be easier to identify and so will be discouraged.

Recall that an important difference between the banking and insurance markets is that the systemic effects attendant upon bank failure do not exist in the insurance markets. In the absence of these externalities, the only measure of regulatory usefulness is whether consumers are prepared to pay for regulation. While unregulated insurers may be unattractive to consumers, they should be allowed to exist.

<sup>27</sup> That is, governance contracts that involve a degree of compulsory labor representation on the Board.

<sup>28</sup> Rent seeking by companies refers to the situation whereby large companies try to use their influence with the regulator to develop regulations that allow particular incumbent companies to prosper—one tactic is to influence the regulator to bring in regulations that will raise fixed costs and thus inhibit competition. There was concern that this had happened on the passing of the 1870 Life Assurance Companies Act in the U.K.—this act required new entrants to pay a deposit to enter the market, though the Act was, in other respects, liberal. See Booth (2007).

## 7. EMPIRICAL IMPLICATIONS

The main innovation of this paper is to provide a theoretical justification for insurance regulation, based upon the information and institutional economics literatures. The normative implication of our analysis is that, when insurance contracts do not generate third-party externalities, any attempt to prescribe their form is welfare-reducing and hence should be avoided. For this reason, our conclusions are not easily testable. As a simple example, we cannot use measures such as insolvency levels to rank regulatory systems, because we have no a priori knowledge of consumer preferences.

Notwithstanding these remarks, we believe that empirical data and some historical examples can shed further light upon our work. While a more complete empirical study is beyond the scope of this paper, we discuss here some relevant results. In the following section we embark upon a more detailed analysis of current legislation.

One clear implication of our analysis in this paper is that long-term insurance markets should be relatively thriving in countries with stable legal systems, transparent mechanisms for writing and enforcing contracts, and strong investor protection. This thesis has been tested extensively in the related field of corporate finance, and appears to hold: see La Porta et al. (1998) for an important early treatment. The ability to write and to enforce contracts is likely to be more important than the degree of explicit regulation of the insurance market. In lightly regulated markets, our work suggests that institutional mechanisms are more likely to evolve to resolve informational asymmetries and to enforce contracts.<sup>29</sup>

Since we argue that insurance companies should be able to differentiate themselves according to their regulation as well as their pricing, our theory suggests that pricing differentials should exist between differently regulated insurance contracts. It is hard to investigate this, as there has in the past been little differentiation between insurance firms along regulatory dimensions. Nevertheless, it is worth noting that some related

<sup>29</sup> For example, in the lightly regulated U.K. markets in the late nineteenth century it has been argued that actuaries as professional guardians had a stronger role in insurance companies than they did in more heavily regulated markets such as the U.S.: see Nicoll (1898).

research has been performed in the context of the banking industry, where research can be conditioned upon the structural break provided by the 1933 Glass Steagall Act. For example, Puri (1996) finds significant price differences between the shares of firms underwritten by institutions that committed to stay out of the securities business, and those that did not.<sup>30</sup>

Finally, while we have stressed that the level of insolvencies cannot be regarded as an indicator of the success of regulation, it is worth noting that we can at least say that light regulation need not involve an inevitable weakening of standards. The lightly regulated U.K. insurance market in the past generated a much lower level of insolvencies than did the more heavily regulated U.S. market.

## 8. REGULATORY PROPOSALS

In the following sections we compare current regulatory practices in the United States and the United Kingdom with the system that we have proposed in this paper. We then make proposals for amendment. There are some similarities between the systems of regulation of insurance in the U.K. and the U.S. Both have systems in which there are responsibilities at two different levels: state and federal government in the case of the U.S.; national and EU level in the U.K. Both of these systems contain elements that could be compatible with the model of regulation that we have proposed.

### 8.1 The Insurance Regulatory Framework in the United States

An analysis of early U.S. insurance law appears in Teece (1885), Homans (1897), and King (1892). The paper by Homans includes an excellent discussion of the merits of state versus federal regulation. Shepherd (1948) also discusses the constitutional background to U.S. insurance regulation. From its beginnings in the 1850s, insurance regulation was based in states. In 1871, however, the National Association of Insurance Commissioners (NAIC) was set up to facilitate the

development of consistent and uniform rules between states. The NAIC still exists today and plays essentially the same role. There were moves to try to attain federal supervision of insurance: in 1944 a constitutional basis for federal supervision was established. However, the 1945 passage by Congress of the McGarren-Ferguson Act allowed the pre-1944 status quo to prevail, as long as state regulation was deemed to be "adequate." The result is a situation that, if it prevailed in Britain, would be regarded as a "typical British compromise." Under the Constitution, the federal government has the right to regulate insurance. Congress exercises that right in some areas but does not extend the use of that right more widely; states undertake much of the practical business of regulating, but general acceptance by the states of the provisions of the NAIC means that much regulation relating to the determination of solvency is uniform. In particular, solvency margins in insurance companies across the U.S. are calculated using the NAIC risk-based capital formula.

Not all areas of insurance regulation follow the NAIC provisions, however. There is legitimate debate as to whether the system would be more "efficient" if there were a uniform, federal system of regulation or whether this would lead to more distant and less effective regulation. There is also discussion of whether there should be a parallel system of federal regulation that companies could opt for instead of state regulation (see Society of Actuaries Record 1999, 2001). One other issue worth mentioning is that certain products (most notably investment products) can be regulated by the Securities and Exchange Commission (SEC): this presents an alternative regulatory route for some long-term products with an investment aspect.

It is worth noting that, until at least the middle of the twentieth century, the regulatory system in the United Kingdom was based on requiring companies to publish information, this approach being expressed in its purest form in the 1870 Life Assurance Companies Act. In the U.S., on the other hand, regulation generally directly controlled the activities of insurance companies. This was particularly true after the Armstrong Investigation by the State of New York (which reported in 1906), the conclusions of which were implemented across a number of U.S. states (see Moor-

<sup>30</sup> Interestingly, Puri finds some evidence that, for the most opaque issues, bank underwriting was valued because banks were perceived as being better at learning about and pricing such issues.

head 1989). However, our concern here is more with the institutional framework for regulation than with its extent.

## 8.2 The Insurance Regulatory Framework in the U.K.

At the EU level, there is a desire to create a single market in which trade is regulated according to common principles. The EU can make directives in relation to insurance that have to be implemented by all member states. In insurance, these directives aim to achieve a number of objectives. The First and Third Life Directives prohibit member states from passing laws that the EU believes might prohibit trade. For example, member states are not allowed to pass laws stating how insurance funds not held to cover liabilities should be invested; if member states did do so, it would be a restriction on the free movement of capital within the EU. Directives also require states to pass laws to achieve particular objectives. Examples of these include the minimum solvency margin requirement, the rules that dictate the approach to the valuation of assets, and liabilities and rules that prevent concentration of assets in particular investments. There are various ways in which EU directives and detailed rules can be developed and implemented, but, in general, implementation is at member-state level.

This process of developing common regulations for implementation across the EU is known as harmonization. The purpose of the harmonization part of the single market program is to ensure that all insurers in the EU maintain certain minimum standards, agreed to by member states.

Member states can develop regulations that are not prohibited by the directives. The Third Life Directive then allows an insurance company regulated in any member state to sell insurance in all member states without establishing a separate subsidiary. For example, a U.K. resident can purchase insurance from a Dutch insurer regulated by the Dutch government. This process is known as "mutual recognition" and is generally regarded in the U.K. as a more effective method of regulating at the EU level than harmonization, although mutual recognition tends to follow from a certain degree of harmonization. Following from our public choice analysis above, it could be said that mutual recognition creates a degree of

regulatory competition. If, for example, a large U.K. insurer tried to ensure that U.K. regulation was adopted that raised costs for small firms and effectively restricted entry to the U.K. market, insurers regulated by 24 other governments would still be able to sell to U.K. consumers. At a practical level, the mutual recognition process makes negotiations regarding the common, harmonized framework of regulation easier to conclude.

Discussion is currently ongoing in the EU regarding revision of the harmonized regulatory requirements; this process is known as Solvency II. This is likely to produce more detailed harmonized regulatory standards at the EU level, although implementation is not envisaged until at least 2008: see Muir and Waller (2003) and CEA and Tillinghast (2006) for further discussion of this process.

Until recently the UK followed the minimum EU requirements with regard to life insurance solvency regulation, with the addition of an extra solvency requirement known as the resilience reserve.<sup>31</sup> This reflected the fact that the whole U.K. system of insurance regulation, at the time the U.K. entered the EU, was based on "freedom with publicity": freedom of insurers to trade subject to publication of information about their financial position. However, since December 2004 life insurance firms have been subject to a new solvency regime in the U.K. Firms with with-profit liabilities of more than £500m have to calculate assets and liabilities on a realistic basis, as well as on the prudent statutory basis hitherto used. The realistic assessment of assets and liabilities might lead the regulator to require the firm to hold more capital if the free capital position of the company is less favorable than under the statutory EU basis. Under a so-called Pillar Two requirement, firms are required to make an internal assessment of any additional capital that they require to provide against the particular risks taken by the firm. There is a full discussion of these issues in Muir and Waller (2003).

<sup>31</sup> The resilience reserve resulted from a form of unsophisticated stress test and was designed to create an element of risk-based capital. There was also a requirement for the Appointed Actuary to provide a financial condition report that would normally be prepared using dynamic financial analysis of the kind that underpins the Canadian solvency system.

In practice, it is possible to envisage the U.S. and EU systems operating in a similar way. Indeed, it is even possible to envisage an "EU Association of Insurance Commissioners" that develops standard practices that EU states can follow if they wish, but that they can also choose not to follow. Paradoxically, at a constitutional level the division of powers between states and federal/European government is more clearly delineated in the U.S. than in the EU, but, at a practical level and in the case of insurance regulation, the regulatory responsibilities at different levels of government are more clearly defined in the EU than in the U.S.

### 8.3 Proposals for British and U.S. Solvency Regulation

Under the Third Life Directive, companies can operate in any EU country while regulated only by the company's home state regulator, and, to some extent, companies can choose their home state. In the U.S. insurers need to be licensed in every state in which they write business, unless they write business through an intermediary that is licensed to place business with "non-admitted insurers," and the law very much encourages the use of admitted or licensed insurers.

It could be argued that the mutual recognition system in the EU provides a degree of regulatory competition, although this is undermined by the harmonized minimum standards. A limited degree of regulatory competition does exist, but it is not of a type consistent with our analysis above. We will take the EU system of regulation and describe how it could be developed so that it meets the criteria that we have developed above. We will then apply that analysis to the U.S.

Our argument acknowledges the importance of information disclosure in facilitating contracting between the insurer and the insured. To the extent that the natural tendency of the market to generate this disclosure is inhibited by existing legal and institutional arrangements, it is true that some form of compulsory, statutory regulation of disclosure may be desirable. However, this does not need to go beyond the principles underlying the 1870 Life Assurance Companies Act, appropriately updated. This Act required that an insurance company publish both information on its solvency position and the basis on which the po-

sition was calculated. Under the Third Life Directive, EU companies have to publish their solvency position, calculated according to a particular method, and hold a minimum margin of solvency calculated according to the same method. In fact, the use of a particular published basis and method, prescribed by regulatory authorities, seems to have fossilized valuation methods used to provide published information so that more sophisticated techniques have sometimes not been introduced.<sup>32</sup>

An alternative framework would be to have simple harmonized EU regulation requiring the publication of the solvency position of companies and publication of the basis upon which it was calculated. In cases where International Accounting Standards were not adhered to, this would probably prompt further investigation by analysts. An additional full statement of assets and liabilities would enable an external actuary to determine whether the basis used for valuation was appropriate and whether there were risks, such as embedded options, that were not appropriately valued. There would be no requirement for a particular level of solvency to be achieved and no requirement to use a specific basis for calculation.

Beyond this minimum harmonized requirement, regulatory competition could be fostered by allowing mutual recognition of the regulatory rules selected by each member state. Member states could then develop their own regulatory frameworks and insurers regulated by one state could sell to consumers resident in another. Guarantee schemes such as the U.K. Policyholders Protection Fund and the U.S. Guaranty Fund system could be developed by regulators in member states on a similar basis.<sup>33</sup> So far, what we propose is similar to existing arrangements

<sup>32</sup> This was a criticism in the recent case of solvency difficulties at The Equitable. Ironically, the origin of the particular form of the statutory returns enshrined in the 1870 Act can be traced back to representations made by Arthur Morgan, on behalf of The Equitable, to the 1841 Select Committee on Joint Stock Companies. The statutory returns, and the methods of reserving for embedded options, did not seem to evolve much between 1841 and the time at which The Equitable's troubles began in the 1990s.

<sup>33</sup> Though there is no reason why these funds need to be provided by state regulators rather than by voluntary industry agreements, as the case of ABTA, cited above, shows.



within the EU, except that there would be less harmonized regulation.

The objection to this approach, given our own analysis in this paper, is that companies might write business under one regulator, and then change their domicile to another, more lightly regulated, country. This could be interpreted as the type of "race to the bottom" that we have already discussed. It would not be consistent with our key point, which is that the commitments that the insurer makes with the insured should be immutable if they are to have any value. To the extent that the insurer can switch between regulatory environments, it may be able to break its promises. When this is the case, regulation fails to have any commitment value, and the benefits that we have identified are lost. This type of contract breach is possible in the slightly different context of corporate law: in the U.S., companies can change their state of incorporation, and thus change the rules under which they are governed. This amounts to a breach of contract with the shareholders who invested under the old rules.

The problems outlined in the above paragraph are not evidence of a tendency for regulatory competition to generate a "race to the bottom." This race is not, in fact, created by regulatory competition, but by the ability to change the regulator of a tranche of business after it has been written. Hence, we suggest that once a tranche of business has been written, a company should not be able to change its regulator for that tranche of business unless it is able to obtain permission from policyholders. A similar system obtains in the bond markets, where the covenants of a bond cannot be altered without agreement from the bondholders. Of course, there would be no reason why an insurer should not sign up to a different regulator for *new* business, by establishing a subsidiary or a separate fund. This should not be administratively burdensome: separate funds within a life insurance business are established currently for many purposes.

Thus the mutual recognition system, adapted as above, would secure genuine regulatory competition, while ensuring that, once a policyholder had purchased a policy regulated under one system, the policy would remain regulated under that system. In the absence of systemic externalities of insurer failure, regulators who were remunerated through fees paid by regulated firms

(as the FSA is in the U.K.) would have an incentive to provide the optimal degree of regulation.

Harmonization to a greater degree than that described above could occur from the "bottom up." Regulatory agencies in different states within the EU could agree to adopt the same principles or methods, just as states do in the U.S. through the adoption of the provisions of the NAIC. Indeed, regulatory authorities in one member state could decide to adopt similar standards or approaches to those in Canada, the U.S., New Zealand, or Australia if they felt that market conditions and contractual terms were sufficiently similar. This would ensure that regulatory convergence occurred in response to the discovery of superior systems of regulation, rather than as a result of legislative fiat.

The same principles could be applied in the U.S. The minimum federal regulation required to facilitate interstate commerce may well simply be the publication of relevant information. Regulatory competition could exist between states, with states adopting, as they do currently, similar methods where they deem it appropriate. Once again, though, it is important that a tranche of business written under one regulatory jurisdiction remains regulated under that jurisdiction, since the commitment abilities and the methods of the regulator would form a part of the contract signed by the insured, changes would represent a breach of contract. But it would also be important that insurers regulated under one state were allowed to sell business within another state; separate licenses should not be required in every state in which an insurer sells business.

This system could be developed on an international basis. There is no obvious reason why an individual in the U.K. should not be able to purchase a life insurance policy from a company which is regulated in (say) Canada. This approach would provide a basis for the development of free trade in services.

Alternative, private, forms of regulation could develop too and compete with government regulators. We have mentioned some forms of private regulation that can resolve the commitment problem (the use of trustees, custodians, deposits, professionals, and double liability).

As we have stressed in several places in this paper, insurance regulation should be seen as a part of the contract that the insurer and the insured

write. Governments and private organizations should be able to provide regulation, and insurance companies should be able, if they so choose, to elect not to be regulated at all. The system that we suggest will not be achieved from a simple evolution of the current regulatory frameworks. We have argued, however, that the state could foster a new approach by providing a basic framework within which competing government regulatory agencies can exist and charge for their contract enforcement services. We do not know what the perfect regulatory framework looks like. However, competition between regulators would enable all of the potential mechanisms discussed above to be tested against new ideas, yet to be identified. In this arena the most effective regulatory mechanisms for contract enforcement could evolve naturally: the dispersed consumers, companies, and regulators would together discover the optimal balance of reduced risk and low cost of regulation.

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