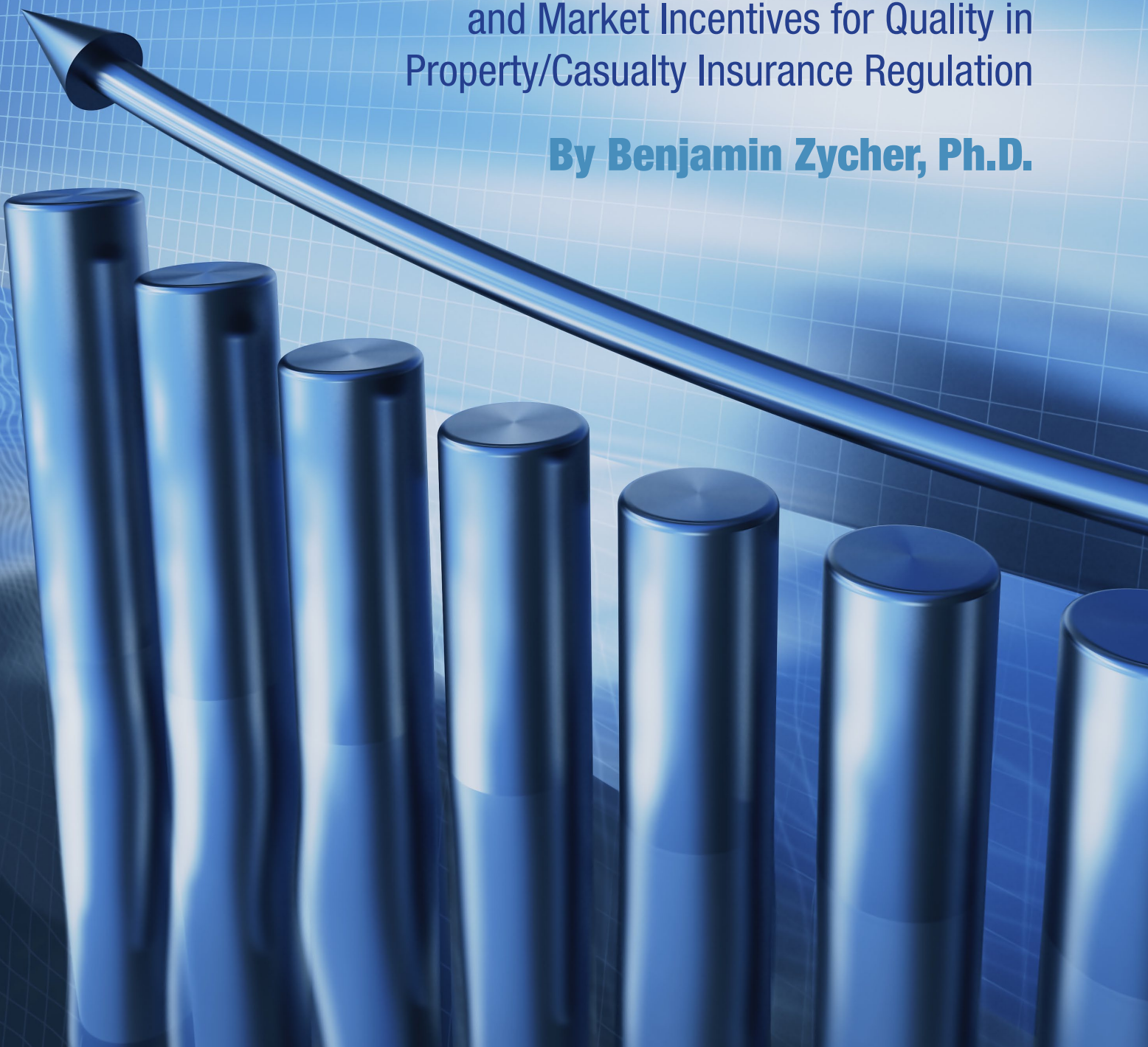


COSTS AND CONSEQUENCES

Rate-of-Return Biases, Rate Suppression,
and Market Incentives for Quality in
Property/Casualty Insurance Regulation

By Benjamin Zycher, Ph.D.



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Contents

Acknowledgments	7
Executive Summary.....	9
I. Introduction	11
II. Two Central Biases Inherent in Regulated Rates	15
III. Other Biases	20
IV. The Empirical Literature on the Effects of Rate Suppression	26
V. An Aside: Observations on Solvency Regulation and Market Incentives for Quality	28
VI. Conclusions	31
Endnotes	33
About the Author.....	38
Statement of Research Quality.....	39
About PRI.....	40

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Executive Summary

The imposition of legal and regulatory constraints on market prices—price controls, or rate suppression in the case of the property/casualty insurance market—is an important tool with which public officials can effect wealth transfers among groups and economic sectors. At the same time, regulatory efforts to suppress rates and otherwise to constrain the operation of competitive market forces in the insurance sector are likely to yield consequences increasing costs and reducing consumer welfare.

Rate suppression can take the form of allowed rates too low to compensate insurers for expected costs and/or a rate structure that engenders cross-subsidies among consumer groups. Such regulatory policies are analogous to a tax imposed upon the market, which must be borne by someone. Because insurers must acquire capital in a competitive international capital market, it is unrealistic to assume that insurers will bear the burden of this implicit tax, except perhaps in the short run.

Several important biases are inherent in the rate approval process, particularly in terms of determination of the allowed rate of return to investment, all of which have the effect of raising the cost of capital. The empirical literature on the effects of rate suppression and other regulatory efforts is largely consistent with these observations and with the prediction of economic analysis that consumers writ large cannot be made better off with such interventions. Moreover, market forces provide powerful incentives to invest in the optimal level of insurance quality, that is, insolvency risk, and solvency regulation may or may not contribute to that goal.

The historical political response to large increases in insurance costs—California in the 1980s and Florida in this decade provide useful examples—has been to impose ever-more stringent regulatory constraints on the market. The discussion in this paper suggests that a strengthened reliance on competitive market forces would yield more salutary outcomes.

I. Introduction

It is more than a mere truism to say that there are no free lunches; in the context of property/casualty insurance, that reality suggests that regulatory efforts to constrain rates in the purported interest of consumers may create unintended consequences yielding adverse effects instead. In particular, this paper discusses efforts to suppress rates, or to mandate coverage for risks that are excluded by the insurance contract, as well as important biases inherent in the regulatory rate approval process. These biases can be predicted to reduce the allowed rate of return to investment in the production of insurance services; such biases therefore must raise the cost of capital in a competitive international capital market. Unlike the case for Las Vegas, not everyone can be a winner when the insurance piñata is emptied, and those who find themselves worse off—even if they do not know it—represent a natural constituency both large and potentially powerful in favor of policy reform, if given the requisite information.

There is the further reality that the creation of large inefficiencies in so important an economic function as risk pooling inexorably will yield substantial adverse effects in the aggregate. Examples are inefficient resource shifts among sectors and geographic regions, with resulting unemployment and other unfavorable impacts; aggregate reductions in state gross product, employment, and tax revenues; and a reduction in the ability of the market to pool risks. The insurance function is so important that few, if any, policymakers are prepared to accept the effects of coverage becoming unavailable or “unaffordable.” Instead, we have seen some examples of government entry into the provision of insurance services, particularly in markets damaged by public policies. This is a deeply troubling response carrying implications that ought to worry those interested in stronger economic growth over the longer term. A good example is the market for coverage of storm-related property damage in Florida, in which the state government found it necessary to establish the Citizens Property Insurance Corporation and the Florida Hurricane Catastrophe Fund in 2002 and 1993, respectively, as rate suppression over time has reduced the availability of private insurance.¹

Unlike the case for Las Vegas, not everyone can be a winner when the insurance piñata is emptied.

In short: the term “pro-consumer” as typically used is highly myopic at best. Price controls, whether explicit or implicit, must induce changes in the characteristics of the coverage offered, particularly given the presence of a competitive capital market. Price controls also induce change, perhaps at a more subtle level, in the characteristics of the pool of insured risks. Rates made somewhat artificial by regulators induce shifts in coverage decisions and in investment patterns, as individuals seek to capture subsidies for themselves and to avoid subsidizing others. Because rates artificially low for some must be financed by someone else, price controls—rate suppression in the context of the property/casualty insurance market—have the effect of transferring wealth among consumers, and thus cannot be “pro-consumer” on net, particularly given the larger reality that the economic inefficiencies attendant upon rate suppression yield a smaller economic basket in the aggregate.

This paper discusses several downward biases inherent in the regulation of insurance rates and then summarizes the literature on the effects of rate suppression in property/casualty insurance markets. A final section offers observations on solvency regulation, the traditional justification for regulatory attention to insurance markets, ostensibly because information about insurers may be difficult for consumers to gather or interpret.

Rate suppression can take two forms, alone or in combination. First, regulators can approve an overall rate level too low to attract capital sufficient to maintain the quality of insurance (risk-pooling) at competitive levels. “Quality” in this context is the *ex ante* likelihood that capital will be sufficient to pay contractually agreed claims in the event of a large adverse event, or group of events. In the short run, unlikely to be a long period of time given the efficiency of international capital markets, this is a simple transfer of wealth from the insurance sector to policyholders; that is, an implicit tax/transfer mechanism similar to a burglar stealing office equipment.

Price controls have the effect of transferring wealth among consumers, and thus cannot be “pro-consumer” on net.

In the longer term, standard analysis shows that it is an implicit tax on all capital whether invested in the insurance sector or elsewhere.² In both the short and long runs, wealth may be transferred from taxpayers (or the beneficiaries of other public outlay programs) if policymakers choose to subsidize particular segments of the insurance market. In addition, as has been the case in Florida, wealth may be transferred among policyholders, as some are required to

pay higher premiums in order to finance the earlier losses borne by others. In the extreme case, there are no “winners” from rate suppression in that the insurance market simply disappears, and this is not a mere theoretical possibility. Rate suppression in the property/casualty insurance market in Florida, for example, led several major insurers to leave the market or to reduce their exposure sharply in the 2007-2009 period.³

In the less-extreme case, a smaller insurance market (or one with a smaller capital base) survives, and the winners are those able to get coverage at rates lower than the competitive level.⁴ But for the economy as a whole, the economic losses must exceed the gains enjoyed by the winners, in that the allocation of risk is a crucial function (or “input”) in a modern economy, and rate suppression must have the effect of causing too little risk pooling and an inefficient allocation of risk. Moreover, for the capital market such rate suppression, in addition to reducing the expected rate of return, may increase the perceived riskiness of investment in the insurance sector, as the future level and structure of rate suppression are heavily a function of political variables that are inherently uncertain.⁵ Sections III and IV discuss various downward biases inherent in the rate approval process, one designed at least ostensibly to yield returns to investment neither inefficiently low nor excessive in terms of competitive capital markets.

The market disappears in a downward spiral, as the number of policyholders providing the implicit subsidy declines while the number receiving the subsidy grows.

Second, regulators may preserve an overall rate level that is competitive, but with a rate structure designed to subsidize given groups, whether defined geographically or otherwise, at the expense of others. In the short run, again, this is a simple tax/transfer mechanism, with the subset of policyholders paying higher rates replacing the capital market as the losers. In the longer term, this kind of rate suppression might survive if overall rates are competitive. But it must be the case that the insurance subsectors paying higher rates (in order to subsidize others) will become smaller (or the pool of such policyholders will shrink); and the groups paying less and thus receiving the transfers will grow. Demand elasticities, after all, are not zero even in the short run.⁶

In the extreme case, again, the market disappears in a downward spiral, as the number of policyholders providing the implicit subsidy declines while the number receiving the subsidy grows. Other less extreme outcomes also are possible or even likely, but in terms of standard economic analysis, none yields net benefits for the economy as a whole in the sense of fostering an efficient allocation of risk. Note that the potential adverse effects for the insurance sector itself are serious, in that insurers are unlikely to serve equal proportions of policyholder classes (that is, winners and losers), so that the cross-subsidies mandated by regulation can interfere with competitive dynamics.⁷

Forced coverage of excluded risks is an extreme form of rate suppression: a coverage mandate is imposed by regulators or politicians, usually after an event (e.g., a hurricane) causing large losses, but the insurer receives no compensation for the risk or cost of the forced exposure. Moreover, the actual (expected) earned premium is negative (rather than zero) if bad-faith litigation and/or judgments are part of the bargain. One hypothesis is that forced coverage of excluded risks may be more harmful than the more straightforward forms of rate suppression, in that the insurer (and thus the capital market) is confronted with a world in which risks cannot be pooled within a more-or-less known

statistical distribution. Instead, the regulators impose an environment of statistical uncertainty in which risks cannot be “pooled” because they are imposed after the fact.⁸

This suggests that the rate increases needed to preserve capital soundness for the industry may be greater than is the case for the more straightforward forms of rate suppression. Again, because demand elasticities are not zero, any such “remedy” creates problems of its own. Since the winners in this case pay no premiums at all, their demand elasticity approaches infinity, the real-world implication of which is substantial overinvestment in risky assets. As in the case of the national flood insurance program created in 1968, market incentives not to overinvest in the assets at risk have been weakened substantially.⁹ The risk problems created by coastal storms in, say, Florida and Texas, and earthquake exposure in California, are prominent current manifestations of such adverse public

Rate suppression in its various forms carries implications far more serious than generally recognized.

policies. But there is no reason in principle that forced coverage of excluded risks cannot be extended to other insurance sectors in which there are votes to be bought.

In short, rate suppression in its various forms carries implications far more serious than generally recognized. There are no free lunches.

Rate suppression will yield a smaller insurance sector either because the capital market will force (a partial) disinvestment or because the required rate increases in the longer term will induce some to self-insure, to shift among industries or geographic regions, or to make other such adjustments. Perhaps more subtly, markets inexorably will respond by shrinking those sectors relatively more dependent upon insurance services.¹⁰

II. Two Central Biases Inherent in Regulated Rates

Economic principles in the absence of data analysis cannot determine the competitive cost of capital for a given firm (or industry on average).¹¹ Economic analysis can, however, delineate the parameters that determine the competitive cost of capital facing given firms, and it can predict the direction of change in that cost of capital attendant upon shifts in exogenous conditions. In the context of rate-of-return regulation, economic analysis can show the directional effect of such regulation per se upon the cost of capital, and in addition can show the directional effects of particular regulatory definitions, decision processes, and measurement approaches—that is, the effects of particular modes of implementation.¹²

Like all prices, the cost of capital, that is, the competitive rate of return, is determined in competitive markets by the individual decisions of investors and borrowers. Those decisions are affected by changes in perceived conditions that influence expected returns and perceived risks. From the viewpoint of any individual investor, investment in a given activity precludes investment in an alternative activity; thus, the opportunity cost of investment in a firm is the expected return forgone in the best alternative activity.¹³ Since investors seek out investment opportunities with maximum expected returns for given perceived risks, alternative investments (i.e., business firms) must compete for capital by offering a combination of expected returns and perceived risks that is at least competitive. In the context of the insurance industry, the cost of capital therefore is the minimum risk-adjusted rate of return that attracts sufficient capital to satisfy the solvency demands of policyholders.

Investment in a given activity
precludes investment in an
alternative activity.

One could replace “the solvency demands of policyholders” with “the solvency requirements of regulators.” As a matter of analytic principle, however, the economically efficient amount of policyholder capital invested as a guarantee of payment for insured losses (“surplus”) is the amount for which policyholders are willing to pay premiums yielding at least a competitive rate of return on marginal increments to that capital. An equivalent way to view this is as follows:

The greater the capital/premium ratio, the lower is the *ex ante* probability of default on the part of the insurer, and so the higher the quality of the insurance product, other things being equal. This higher quality is something for which policyholders are willing to pay some amount, but that marginal value of higher quality may or may not be sufficient to yield a competitive return to shareholders for an additional dollar of investment. The first dollar of such capital is very valuable to policyholders; the second dollar is slightly less valuable, etc. At some point the marginal value of additional capital to policyholders falls below the marginal cost of capital to shareholders; at that point the amount of such capital is efficient. As is the case for all goods, people will have different demands (or willingness to pay) for quality, and insurance products will vary in quality so as to satisfy such heterogeneity in preferences.

Rate-of-return regulation by its very nature must reduce expected returns.

Since rate-of-return regulation, by definition and in theory and practice, must affect the expected return to investment¹⁴ in insurance activities (underwriting), the effect of regulation itself is crucial for determination of the cost of capital under regulation. As rate-of-return regulation reduces (or increases) the expected return in a given activity, it must increase (or reduce) the cost

of capital to that activity. To put it differently, as regulation, say, increases the probability of a future return below normal, it must increase the difficulty (cost) with which capital is attracted. As noted above, moreover, the methodologies with which regulation is implemented will have further effects. Therefore, a central theme of this paper is the dependence of the cost of capital upon regulation. That dependence cannot be analyzed outside the broader context of regulation itself.

The mere reality of regulation—quite apart from the methodologies actually chosen to implement regulatory requirements and constraints—must raise the cost of capital because rate-of-return regulation by its very nature must reduce expected returns.¹⁵ One direct implication of this observation is the downward bias introduced into calculations of the cost of capital for regulated firms when evaluated through empirical examination of non-regulated firms. If rate-of-return regulation in an industry is new, for example, analysis of the earlier cost of capital for newly regulated firms is likely to contain a downward bias. Similarly, the use of data from unregulated firms or industries, ostensibly from a comparable “risk class,” will yield an estimate of the cost of capital that is biased downward, even if the estimation methodology itself is unbiased.

More subtly, retroactive imposition of regulation upon newly regulated firms ignores the effect that regulation would have had upon the cost of capital had the capital market known then that regulation was to be imposed later. This is relevant to “rollback” periods sometimes observed—or *ex post facto* imposition of requirements that losses already incurred but not covered be covered nonetheless—in that the use of historical data for calculation of the competitive rate of return, even if unbiased on other grounds, nonetheless is biased downward because the cost of capital during the rollback period would have been higher had investors known that returns during that period subsequently would be subjected to rate-of-return regulation.

In the long run, overly confiscatory behavior by regulators—yielding returns below normal—is not viable because regulated firms and industries would not be able to attract (sufficient) capital and the wealth transfer objectives of regulation shaped by political incentives would break down.¹⁶ This straightforward observation on the behavioral reality of investors and capital markets yields two fundamental implications of rate regulation in the context of the cost of capital for the attendant firms.

First: Regulators are forced by the very nature of regulation to measure the cost of capital before they can determine “reasonable” prices.

Regulation ostensibly pursues prices that are “reasonable” or “competitive”; but such prices, at least in principle, simultaneously are supposed to yield returns that also are competitive or “fair and reasonable.”¹⁷ Such “reasonable” prices usually are defined in terms of costs as measured by the regulators. This cost-based regulation is a rather simple-minded application of the elementary concept that in the long run competitive prices will equal average total cost. In the short run, “reasonable” prices can (or should) be defined in terms of demand and cost conditions as well, since prices must serve to equate the quantities demanded and supplied at some market-clearing price; but such prices would yield a “fair and reasonable” (competitive) return to investment only by accident.¹⁸

Indeed, it is far more likely that prices reflecting demand and supply (or cost) conditions would yield returns either above or below competitive levels. In any event, measurement of demand conditions is extremely difficult, and incorporation of demand conditions into ratemaking would violate the requirement for a “fair and reasonable” return because prices and returns typically would fall during periods of weak demand and rise during periods of strong demand. That is precisely what regulation attempts to avoid: a “fair and reasonable” return is to be earned by the regulated firm in all periods.

Therefore, the requirement for a “fair and reasonable” return automatically forces rate-of-return regulation to be based upon costs as measured by the regulators.¹⁹ And since capital is a major cost in all regulated contexts, the cost of capital must be measured before “competitive” rates can be determined. This necessary determination of the cost of capital—that is, of the competitive or fair and reasonable return—is perverse in terms of economic efficiency, that is, the interests of both shareholders (firms) and policyholders (consumers), because the regulatory process is very likely to yield a rate of return lower than the competitive rate of return. This is the case in particular when data from unregulated periods are used for statistical analysis. Two significant biases result, which can be described as the *asymmetry bias* and the *truncation bias*.

Overly confiscatory behavior by regulators is not viable.

The asymmetry bias. This regulatory bias exists even under “fair” price regulation. Since demand conditions facing any given insurer must be relatively elastic,²⁰ prices that are too low *relative to* marginal costs will increase total premium income absolutely, but will raise costs even more by increasing the number of policies sold. That is because the allowed price, in that it is too low, is lower

than marginal cost. Accordingly, in the case of prices too low relative to costs, returns unambiguously will be lower than those projected by the regulators. Prices that are too high relative to costs will reduce total premium income; by reducing the number of policies sold, total costs will be reduced also. Because price is greater than marginal cost, premium income will rise more than total costs. But even under the assumption that approved prices vary randomly between being too low and too high, *prices*

The regulatory process is very likely to yield a rate of return lower than the competitive rate of return.

that are too low will impose losses systematically greater than the gains enjoyed when prices are too high.

low, furthermore, will produce losses without fail, while prices that are too high will be undercut by competitors, thus diluting the gains. In short, even an unbiased methodology subtly but unambiguously will impose net losses upon shareholders. This asymmetry, therefore, must reduce expected (mean) returns, and so must raise the cost of capital.

This result is inevitable because prices that are too low impose losses on each of a larger number of policies than is the case for gains when prices are too high. Prices that are too

A simple example of this bias may be useful at this point. Consider an insurer selling 100 policies; both price and (constant) marginal cost equal \$1,000. Total cost (including the opportunity cost of capital) and total revenue are \$100,000. Suppose regulators authorize a price that is inefficiently low, say, \$900, and that the demand elasticity (in absolute value) is 2.0. A price reduction of, say, 10 percent increases sales of policies to 120; total revenue is \$108,000, but total cost is \$120,000.

Accordingly, the expected loss is \$12,000. If, on the other hand, the regulators authorize a price inefficiently high, say, \$1,100, then 80 policies will be sold. Total revenue would be \$88,000 while total cost would be \$80,000. The expected gain is \$8,000. Expected losses from prices that are inefficiently low systematically exceed expected gains from rates that are inefficiently high. This bias grows as the demand elasticity facing the firm rises; for example, if the demand elasticity is 3.0 (in absolute value) the expected loss would be \$13,000 while the expected gain from the inefficiently high price would be \$7,000.²¹ This bias exists because the losses imposed when rates are too low are borne on more policies than is the case for the gains on policies when rates are too high.

Moreover, even that simple example understates the problem. Unless the insurer is required to charge the inefficiently high price (\$1,100), market forces will lead it to charge the efficient price (\$1,000), at which only the normal, competitive rate of return is earned. In other words, a maximum price higher than the competitive market price is irrelevant, except to the extent that it may change expectations about future regulatory constraints. Accordingly, in the more realistic case, regulated prices too low in some time periods are not offset at all by prices too high in others.

The truncation bias. Regulators can influence insurance prices more easily than is the case for the costs of providing insurance services. It is therefore inevitable that insurance prices under regulatory (or political) scrutiny face greater constraints than do the costs of providing insurance services. In practice this means that prices on average are limited prospectively to those yielding a “fair and reasonable” return, while losses after the fact are unlimited. Accordingly, over time average expected returns inexorably must be below normal due to the inability of regulators to predict future revenues and costs with certainty. In other words, potential profits are limited by the regulators, but potential losses remain unlimited; the mean expected return to investment must be below normal by arithmetical necessity.²²

Accordingly, the second fundamental implication of rate regulation can be stated as follows: Regardless of the methods with which regulation is implemented, upside potential will be exceeded systematically by downside risk.

Potential profits are limited by the regulators, but potential losses remain unlimited.

These biases would be exacerbated in the important case in which approved rates are too low rather than too high on average. Regulation inherently raises the cost of capital because regulation must impose more stringent constraints upon realized gains than upon realized losses, thus reducing actual returns below competitive levels.

III. Other Biases

The cross-subsidy bias. Since regulators cannot measure marginal cost, regulated prices can equal marginal cost only by accident.²³ By definition, prices unequal to marginal costs, given regulated constraints on the overall level of prices, that is, returns, must yield cross-subsidies, since losses on one line of insurance must be compensated by gains on others if only the “fair and reasonable” return is to be earned.

Consumers, of course, are happy to receive subsidies in the form of artificially low prices, but consumers prefer not to subsidize others by paying prices artificially high. A system of regulation that is firm-specific will tend to yield prices for given types of coverage that differ across insurers, particularly since particular lines of insurance will vary in quality and other dimensions, and thus in costs that can be allocated among lines by the regulators. Again, those prices will equal marginal cost only by accident.

Efforts by consumers to maximize the net benefits of insurance purchases will lead them to seek out the subsidized lines and avoid the lines for which regulated prices exceed marginal cost. Since the regulators, not knowing marginal cost, cannot know *ex ante* which lines will offer the greatest subsidies (that is, cross-subsidies for other lines), they cannot predict how consumers will respond to a given set of relative prices, across lines for a given insurer and for a given line across insurers. But the behavior of consumers will not be random; they will adjust their purchases so as to yield the greatest subsidies for themselves, which is to say, the greatest losses for insurers. As with the asymmetry bias discussed above, this means that realized returns will tend to lie below allowed returns systematically, yielding a further rise in the cost of capital under rate-of-return regulation.

Consumers prefer not to subsidize others by paying prices artificially high.

The capital structure bias. Economic efficiency requires that the same (competitive) rate of return be earned by all capital invested in the firm, regardless of whether the capital was acquired as equity or debt. This leads firms

to take on debts and associated interest costs only if the capital so acquired is expected to yield a rate of return at least equal to the interest rate on the debt. That is analogous to the decision rule facing owners of equity capital: will investment in the given firm yield a return at least equal to the relevant opportunity cost of capital?

Market processes will generate returns to all capital, regardless of financing source, and the profitability of investment in given increments of capital depends on a comparison of the actual returns to capital and the market rate of interest—that is, the competitive rate of return. Regulatory processes, on the other hand, treat only equity (surplus) as capital entitled to the allowed rate of return; interest payments on debt simply are treated as a current cost.

Even if the allowed “fair and reasonable” rate of return is unbiased, the exclusion of debt capital from the capital stock allowed the competitive rate of return biases total returns downward. If past management decisions were unbiased with respect to the use of debt to

This bias must raise the cost of capital for the regulated industry.

finance investment, those investments on average would earn at least the competitive rate of return.

Exclusion of such capital from the “rate base” under rate-of-return regulation thus yields a bias in that actual total returns earned by shareholders are driven below those that would prevail in the absence of regulation.²⁴

This bias, again, must raise the cost of capital for the regulated industry, other things being equal.

The use of historical data. Historical data obviously must be used for actuarial analysis and other projection purposes, but hardly determines those purposes because the world changes. In particular, the use of historical returns for purposes of estimating the “fair and reasonable” return is problematic at a minimum; that procedure assumes implicitly that historical returns as measured were “fair and reasonable,” an assumption that may be incorrect. Even if an insurer or the industry is estimated to have earned a given return over many years, it still is the case that the competitive return—the cost of capital—is prospective; after the fact, realized returns may fall below anticipated returns, and there is no reason that such an outcome cannot occur repeatedly over time.

Since historical returns vary, the determination of the prospective reasonable rate of return is affected by choices among alternative historical periods, a regulatory variability increasing the riskiness of the regulatory process, thus raising the cost of capital under regulation.

Generic rule making. Unlike regulation of public utilities, confronted with only one or a very few firms in a given sector,²⁵ rate regulation aimed at insurers must confront hundreds or thousands of firms, each idiosyncratic in terms of specialization, product and customer characteristics, ad infinitum. The heterogeneity of the insurance industry means that common issues (or common solutions to issues confronting the whole industry) are unlikely to predominate under many circumstances, but the regulators have huge incentives to enforce “generic” regulations in order to make the regulatory burden manageable. In short, the goals of “fairness” and a manageable administrative burden are inconsistent.

To put it differently, the goal of economic efficiency for insurers and consumers cannot be reconciled with the need for a manageable regulatory process. Even if the generic regulations are unbiased for the industry as a whole, the application of such unbiased regulations to a given insurer increases the riskiness of future regulatory outcomes. That occurs because the conditions facing a given insurer are likely to vary relative to those facing the sector as a whole, and so must increase the cost of capital for all individual insurers upon which the generic regulations are to be imposed.²⁶

The goals of “fairness” and a manageable administrative burden are inconsistent.

Separation vs. aggregation of insurance lines. Regulators must decide whether to measure returns by line or for all lines collectively. If returns are measured for each line separately, regulatory decisions must be made

about the allocation of some types of costs across lines. This is the familiar economic “joint product” problem. For the case in which the various products (insurance lines) are produced in roughly fixed proportions, any method of allocating a given set of costs among joint products is arbitrary. Unless these joint costs are allocated in precise proportion to relative demand conditions across different lines of insurance, cross-subsidies cannot be avoided, thus yielding the bias discussed above. But regulators cannot know relative demand conditions—or, for that matter, prospective joint costs—with such precision. Prices, therefore, can equal true marginal cost only by accident, inevitably yielding cross-subsidies and the attendant increase in the cost of capital.

If, on the other hand, returns are measured across all lines, the joint product problem disappears, but is replaced with the problem noted above: the inevitable inequality of prices and marginal costs for each line. Again, therefore, cross-subsidies and increases in the cost of capital are the inevitable result. Either approach used by the regulators will yield an increase in the cost of capital. The more likely case is that in which regulators subjected to important political pressures are particularly interested in rate suppression for a given line; fire and flood insurance, depending on the specific characteristics of a given geographic area, are obvious examples. Whether costs for these insurance lines are underestimated implicitly or explicitly, this sort of rate suppression will yield markets for these lines too large, due to an excess of true cost over allowed price, and markets for other lines too small, yielding the asymmetry and/or cross-subsidy biases noted above.

The use of historical costs. Under rate-of-return regulation, “equity” necessarily means the book value of assets, because regulators can measure only accounting costs rather than true economic (or “opportunity”) costs. As long as the inflation rate exceeds zero, allowed prices will tend to be too low because some assets will have been acquired years ago; the relevant parameter for the economically efficient application of revenue requirement regulations is their market value. And as long as the expected inflation rate is greater than zero, the market will recognize the confiscatory risk posed by an unexpected increase in the inflation rate under regulation driven by accounting costs, thus raising the cost of capital to the industry.

The ancillary income bias. Regulators typically attempt to reduce the level of allowed prices by counting investment income (derived from the investment of premiums) and other such ancillary income streams.

An example is income derived from financing of premiums. Such financing provides valuable services to consumers, and exclusion of such income must have the effect of reducing the supply of such services and the demand for the insurer's products. Since a substantial part of an insurer's costs are fixed—these include such opportunity costs as the value of the insurer's actuarial database and the value of its brand-name capital—the reduction in demand must yield a reduction in total returns, which would reveal itself as a reduction in the market value of the firm's assets. Since the market can foresee this result under regulation, the outcome must be an increase in the cost of capital.

In any event, inclusion of actual investment income as part of regulated “revenue” is incorrect from an economic efficiency perspective. In effect, this treatment of investment income forces consumers to bear the risks of the investments; high investment returns would reduce premiums, perhaps substantially, but low returns would reduce them only marginally or not at all, and investment losses would yield increases in premiums. But policyholders cannot be the efficient bearers of this risk because for them the cost of obtaining information about and influencing investment decisions is too high. Moreover, differing investment outcomes among competing insurers would yield different premiums for identical insurance products, a result that could not prevail in a competitive market and that in a regulated environment would yield uneconomic shifts of business among consumers.

Competitive behavior, which regulation in principle attempts to simulate, would not treat investment income this way because such income (or losses) would affect neither the demand for nor the marginal cost (supply) of insurance services. Instead, *expected* investment income—essentially, the product of the investment and the risk-adjusted market rate of return—is the relevant parameter, because payment of premiums at the beginning of the coverage period amounts, in effect, to a “loan” from consumers to insurers.²⁷ Market competition in effect forces premiums down, therefore, by the market rate of interest, that is, by the earnings on the investments expected *ex ante*. By excluding more than the efficient amount of investment income, regulation raises the cost of capital.

Exclusion of various expenses. Regulators often attempt to exclude charitable and political donations, as well as various other costs, from compensation through approved premiums; such regulatory constraints have the effect of increasing the riskiness of investment in the industry, thus raising the cost of capital. In order to see this, it is useful to ask why, if

consumers are made worse off by such expenditures, presumably because of an adverse effect upon prices, competitive firms continue to make them. Or, equivalently, why such expenditures fail to attract entry into the market by competitors eschewing such expenditures and thus able to undercut prices. The answer is that such expenditures, in ways that are highly subtle, provide important services to consumers.

Since the market can foresee this result under regulation, the outcome must be an increase in the cost of capital.

For example, political contributions are as legitimate a business expense as any other. Just as firms buy various goods and services from their suppliers, so the government, analytically, is a “supplier” of the business (or policy) environment. Firms make political contributions in efforts to induce government not to raise their costs or to confiscate their assets, whether explicitly or implicitly. Accordingly, such political investments

Firms make political contributions in efforts to induce government not to raise their costs or to confiscate their assets.

make insurance consumers better off, because without them both costs and risks faced by the insurance sector—and thus rates faced by consumers—would be higher. Precisely the same argument applies to spending on (or against) ballot initiatives.

Both advertising and charitable contributions are important and legitimate costs of doing business, or, more specifically, of reducing the costs faced by consumers in efforts to determine which firms are reliable. Firms advertise in order to make the availability and the characteristics of their product known more widely. More subtly, firms advertise in order to provide consumers with a “signal” that their services will be reliable and

that their promises will be honored. Expenditures on advertising build up what can be termed “advertising capital,” which earns returns for the firm as long as the firm honors its commitments. It is analogous, therefore, to a surety bond.

If the firm begins to renege on its promises to its customers, they will go elsewhere, and the firm will lose the returns on (and thus the economic value of) its advertising capital.²⁸ In short, the very fact that the firm invests in advertising—quite apart from the specific content of the advertisements themselves—provides a signal to consumers that the firm will earn greater total returns by dealing honestly than by cheating. Similarly, charitable contributions build “goodwill capital,” which for analytic purposes is identical to advertising capital; its creation tells consumers that the firm is not a fly-by-night operation, and so has net incentives to deal honestly.

The effect of institutional advertising is subtle as well. It is time-consuming and otherwise costly for consumers to view and compare voluminous advertising, to investigate individual firms, and more generally to differentiate (or “search”) among firms. Such costs reduce the amount that consumers would be willing to pay for insurance services, and so are equivalent to a tax borne (in part) by the industry.²⁹ Thus, it is in the interest of the firms—and their customers—to reduce such search costs. Institutional advertising is one effective means of doing so. It creates “generalized” brand name capital for the firms contributing to the advertising campaign by, say, a joint trade association.³⁰ Such institutional advertising in the trade press serves the same function by reducing search costs for agents and brokers.³¹

Advertising by one insurer, moreover, bestows benefits upon all insurers by reminding the public of the availability and importance of insurance services. This also is a collective effect of advertising—one that may be important in a number of industries—and so carries an inherent “free rider” problem: any given insurer has an incentive to wait for other insurers to supply this informational service. In short, industries as the sum of their constituent firms may have incentives to advertise too little from the social standpoint. One

imperfect way for the sector as a whole to overcome this collective good or free rider problem is to engage in institutional advertising.

Payments to affiliated companies, even if higher than those that would have been charged by non-affiliated competitors, in most cases serve the interests of consumers. The reason for this is the difficulty of enforcing some types of (long-term) contracts; as conditions change over time, firms with which the insurance company does business may have incentives to renege on various commitments. This behavior, and the associated additional costs of writing and enforcing contracts, may make it efficient for an insurance company to pay affiliated firms higher prices for the same services, particularly if the affiliated firm is not the efficient provider except for the problem of contract enforcement. An affiliated firm has far weaker incentives to engage in opportunistic behavior.

Even the exclusion of bad faith judgments from compensation through approved rates, surprisingly, would raise the cost of capital and make consumers worse off. While perhaps counterintuitive, this reality results from a straightforward consideration of consumer interests. If firms simply pay all claims without question, costs and rates would rise sharply, unambiguously making consumers worse off; that is why consumers willingly enter into insurance contracts knowing that some future adverse events are excluded from coverage. The efforts of firms to scrutinize claims thus make consumers better off; and as long as there is a gray area—contracts cannot anticipate all possible contingencies—in which claims are the subject of legitimate dispute, some bad faith judgments are inevitable. This is due not to “bad faith” in any relevant sense, but instead to differing perceptions of evidence, differing interpretations of contracts in a world in which not all events can be foreseen in detail, and other such manifestations of uncertainty.

If firms simply pay all claims without question, costs and rates would rise sharply, unambiguously making consumers worse off.

Certainly consumers are interested in having their claims honored, but they are interested also in low insurance rates. The tension between these two consumer interests is obvious. If bad faith judgments are excluded as legitimate business costs, insurers will be led to pay claims too readily from the standpoint of consumers’ interests. The net result will be greater risk in terms of investment in the industry, and a high cost of capital.

IV. The Empirical Literature on the Effects of Rate Suppression

A significant body of empirical literature examines the effect of rate suppression on coverage costs, market structure, and other such parameters. Danzon, in an examination of workers' compensation coverage, finds that "regulatory suppression of rates increases cost growth, including both the number of claims and the amount paid per claim." And: "... our results are consistent with the hypothesis that rate suppression increases the frequency and severity of injuries to employees."³² Grace, Klein, and Phillips find that stringent rate regulation of auto insurance in South Carolina "worsened market conditions ... [and] escalated costs and prices." A subsequent reform substantially loosening the rate restrictions yielded a doubling of "the number of insurers writing auto insurance."³³ Bartlett, Klein, and Russell find that efforts to engender cross-subsidies in insurance markets broke down "once the market found mechanisms by which low-risk policyholders could avoid subsidizing high-risk insureds."³⁴ Klein and Kleindorfer find that "Government policies have imposed significant cross-subsidies from low-risk to high-risk areas ... undermin[ing] incentives for managing catastrophic risk. This increases insurers' risk of insolvency and undermines their ability to purchase adequate reinsurance ..."³⁵

The "pro-consumer" assumption made by proponents of rate suppression may be seriously misleading at best.

Harrington and Danzon find in a study of workers' compensation insurance "a positive and statistically reliable relationship between loss growth and lagged measures of regulatory price constraints, suggesting that rate regulation increased the frequency and/or severity of employee injuries."³⁶ Suponic and

Tennyson find that stringent rate regulation reduces the market share of the lowest cost carriers in the market for auto insurance.³⁷ Tennyson finds that "insurance rate regulation entails high costs for society and for insurance consumers ..."³⁸ Regan, Tennyson, and Weiss find for the auto insurance market that "bodily injury and property damage liability loss costs are higher in rate-regulated states, and that the bodily injury to property damage liability claims ratio is higher in regulated states."³⁹

Grace and Klein, in their examination of the homeowner's insurance market, conclude that "[public] policies that help to control claim costs and encourage market entry, not increased regulation, offer the most promise

in improving market conditions for consumers.”⁴⁰ In an examination of the effects of an explicit cross-subsidy system implemented in Massachusetts, Derrig and Tennyson find “a significant and positive (relative) growth in loss costs for towns that were subsidy receivers in line with the theory of underlying incentives for adverse selection and moral hazard.”⁴¹

This body of empirical work suggests that at a minimum the “pro-consumer” assumption made by proponents of rate suppression and other regulatory interventions in insurance markets may be seriously misleading at best. This is consistent with standard economic analysis of consumer behavior in the face of an enforced system of cross-subsidies and with the analysis of regulatory biases presented above.

V. An Aside: Observations on Solvency Regulation and Market Incentives for Quality

The economically efficient insolvency risk—that is, the risk that maximizes consumer well-being—is not zero because actions and investments that can reduce this risk are not costless. However counterintuitive as a central concept, some insurer insolvencies should be accepted because the cost of avoiding them exceeds the benefit of doing so. The insurance market inherently has incentives to provide the correct amount of confidence, which conceptually is the amount that equates the benefits and costs

to consumers of marginal reductions in the probability of insurer bankruptcy.

At a far more subtle level, market forces make reliability profitable.

Insurers face investment risks associated with shifts in interest rates, as well as underwriting risks associated with the size of future claim costs. Such uncertainties present substantial

problems for both insurers and regulators in the measurement of “adequate” loss reserves before the fact. Nonetheless, there were a total of 18 property/casualty insolvencies in 2009 (of which eight were in Florida), out of a total of about 3,500 firms filing annual statements with the National Association of Insurance Commissioners.⁴²

This small number of insolvencies raises an interesting issue: why is the insurance industry so reliable? Part of the answer may be regulatory enforcement of minimum capital requirements and the constraints imposed by the state insurance guaranty funds, although there are reasons (discussed below) to believe that such governmental involvement may have counterproductive effects. At a far more subtle level, market forces make reliability profitable. Since consumers are willing to pay for a high degree of reliability—which is very different from perfection—the profit motive leads firms to provide the amount of reliability for which consumers are willing to pay and to utilize market institutions as means of implicitly informing and assuring consumers about this reliability.

Foremost among the subtle market forces that promote reliability and thus reduce insolvency risks is the price of insurance itself.⁴³ In such markets as that for insurance services, market price is driven up to reflect the costs imposed upon producers by honest dealing and by a continuing effort to supply the reliability

level demanded by consumers; in addition, the (marginal) value to consumers of insurance services is driven up by increased reliability. Since a failure to honor the insurance contract might be profitable in the short term, one of those costs, ironically, is the gain forgone because the terms of the insurance contract are honored.⁴⁴ The increase in the price of insurance yielded by market forces analytically is a stream of payments or rewards from consumers for reliable behavior, the present value of which is bid up in competitive markets to exceed the prospective gains to be had through a failure to honor reliability commitments.

Accordingly, the market price itself, quite apart from its role in terms of direct resource allocation, is a market guarantee of quality, because profit-maximizing firms recognize that the stream of reliability payments is more valuable than the one-time gain to be had from a failure to honor commitments.⁴⁵ From the viewpoint of consumers, the upward shift in price is a signal that the firm will earn greater returns from honest dealing than from cheating.⁴⁶ Similarly, advertising provides profitability incentives to provide the efficient amount of reliability. Certainly, firms advertise in order to make the availability and the characteristics of their products known more widely.

Firms advertise in order to provide consumers with a signal that their services will be reliable and that their promises will be honored

More subtly, firms advertise in order to provide consumers with a signal that their services will be reliable and that their promises will be honored. Expenditures on advertising build up what can be termed brand name (or advertising) capital, which earns returns for the firm as long as it honors its commitments. Advertising is analogous, therefore, to a surety bond: if the firm fails to honor its promises, customers will go elsewhere, thus depriving the firm of the returns on (and thus the economic value of) its investment in brand name capital. In short, the very fact that the firm invests in advertising—quite apart from the specific content of the advertisements themselves—provides a signal to consumers that the firm will earn greater total returns by dealing honestly than by failing to do so.⁴⁷

Other market institutions provide additional incentives for providing an efficient level of reliability. Agents and brokers have incentives to identify and deal with “safe” insurers as a means of avoiding future losses of business caused by erosion of consumer confidence in the wake of an insurer insolvency. Such second-party demanders of insurance services as banks have powerful incentives to monitor insurer solvency. And insurers with sizable investments in such intangible capital assets as sales forces have important incentives to avoid the loss of business that would be attendant upon a failure to honor commitments.

It is likely to be the case that individual consumers have inadequate incentives to make investments in monitoring the solvency risk of a given insurer, in that other consumers would benefit from that information but could not be forced to pay for it.⁴⁸ Moreover, individual consumers might face

difficulty interpreting such information. This may provide an efficiency rationale for regulatory enforcement of capital standards and the like; but, on the other hand, it is possible as well that the guaranty funds administered by the state governments, designed to honor policyholder claims (partially) in the event of an insurer insolvency, have the opposite effect.

Government officials almost never
have the informational diversity yielded
by diffused market choices.

The guaranty fund system reduces incentives for consumers to search for reliable (that is, safe) insurers, and so also reduces incentives for insurers to make their promises to honor claims more credible by enlarging their capital structures, thus reducing insolvency risk. Larger capital structures, after all, are not free. And agents and brokers

in the absence of the guaranty fund system would have stronger incentives to identify and deal with safer insurers. In short, the guaranty funds provide the insurance system with incentives to reduce the reliability of insurance services, even as they allow risky insurers to undercut the prices of their competitors. It is not obvious on *ex ante* grounds whether the regulatory/guaranty fund framework on net yields greater efficiency.

On the other hand, because politics is the art of wealth redistribution, public decision-makers may have incentives to increase insurer insolvency risk above efficient levels.⁴⁹ This potential problem would be particularly acute in the case in which officials have time horizons shorter (that is, discount the future more highly) than that of the market.⁵⁰ Under certain conditions⁵¹ state legislatures may have incentives to adopt a perspective longer than that of elected regulators, and may have political incentives to constrain the behavior of the regulators; this would be the case in particular if the prospect of insurer insolvencies were to pose a serious threat to government budgets and/or economic growth. Solvency regulation in this context, therefore, can be viewed as a “second-best” response to the insolvency risks inherent in the possible incentives of regulators to seek greater guaranty fund protection and strengthened rate suppression. Solvency regulation, that is, can be viewed as an institution constraining the ability of rate regulators to engage in confiscatory behavior.

As a crude generalization, such official regulation of the regulators is unlikely to be a good substitute for private-sector monitoring of capital adequacy; government officials almost never have the informational diversity yielded by diffused market choices. Moreover, government has incentives to use such rules for purposes of cartelizing the industry, thus generating profit gains which then can be dissipated among favored interest groups by legislatures ostensibly concerned with solvency.⁵²

VI. Conclusions

The central themes developed in this paper are as follows:

- Regulatory efforts to suppress rates and otherwise to constrain the operation of competitive market forces in the insurance sector are likely to yield consequences increasing costs and reducing consumer welfare.
- Rate suppression can take the form of allowed rates too low to compensate insurers for expected costs and/or a rate structure that engenders cross-subsidies among consumer groups. Such regulatory policies are analogous to a tax imposed upon the market, which must be borne by someone. Because insurers must acquire capital in a competitive international capital market, it is unrealistic to assume that insurers will bear the burden of this implicit tax, except perhaps in the short run.
- Several important biases are inherent in the rate approval process, particularly in terms of determination of the allowed rate of return to investment, all of which have the effect of raising the cost of capital.
- The empirical literature on the effects of rate suppression and other regulatory efforts is largely consistent with these observations and with the prediction of economic analysis that consumers writ large cannot be made better off with such interventions.
- Market forces provide powerful incentives to invest in the optimal level of insurance quality—that is, insolvency risk—and solvency regulation may or may not contribute to that goal.

The historical political response to large increases in insurance costs—California in the 1980s and Florida in this decade provide useful examples—has been to impose ever-more stringent regulatory constraints on the market. The discussion in this paper suggests that a strengthened reliance on competitive market forces would yield more salutary outcomes.

A strengthened reliance on competitive market forces
would yield more salutary outcomes.

Endnotes

- 1 See Florida TaxWatch, “Florida’s Financial Exposure From Its ‘Self-Insurance’ Programs: The Citizens Property Insurance Corporation and the Florida Hurricane Catastrophe Fund,” Special Report, Florida Council of Economic Advisors, April 2010. See also Martin F. Grace and Robert W. Klein, “The Perfect Storm: Hurricanes, Insurance, and Regulation,” *Risk Management and Insurance Review*, vol. 12, no. 1 (2009), pp. 81-124, in which the authors discuss the damaging effects of the Florida regulatory response to the 2004-2005 hurricane season.
- 2 For the classic analysis of this long run problem, see Arnold C. Harberger, “The Incidence of the Corporation Income Tax,” *Journal of Political Economy*, vol. 70, no. 3 (June 1962), pp. 215-240.
- 3 The most prominent example was State Farm in its announced intention in January 2009 to leave the Florida market after a request for a rate increase of 47 percent was rejected. A subsequent agreement with Florida insurance regulators allowed State Farm to increase rates by about 15 percent and to shed 125,000 of its 810,000 residential policies, effective August 2010, leading it to remain in (part of) the Florida market. See, e.g., “State Farm Sticks Around,” TampaBay.com, December 16, 2009, at <http://pqasb.pqarchiver.com/sptimes/access/1952805581.html?FMT=ABS&FMFS=ABS:FT&date=Dec+17%2C+2009&author=JEFF+HARRINGTON&pub=St.+Petersburg+Times&edition=&startpage=A.1&desc=STATE+FARM+STICKS+AROUND>.
- 4 Even if government provides a capital guarantee fund of some sort, it must be funded by policyholders either directly or indirectly, by taxpayers. The former case must yield higher rates and a smaller market, while the latter case inexorably will lead to cross-subsidies for favored groups.
- 5 “Riskiness” in this context refers to the variance around the average expected rate of return. Regulation can be predicted to reduce the average and increase the variance.
- 6 If the demand elasticity among the losers is less than 1 (in absolute value), then this system of cross-subsidies can “work” in the sense that the total premiums paid by this group will rise with an increase in insurance rates; but it is hard to believe that this condition holds in the long run. Note that the demand elasticity can be less than 1 for given members of this group, while exit by a subset of the group yields an overall demand elasticity greater than 1 for the group as a whole. Moreover, the relevant parameter is not total premiums paid, but premiums per dollar of exposure. Again, the “long run” is not necessarily a long period of time.
- 7 In other words, different insurers are likely to have differing proportions of winners and losers, so that a rate structure that makes the cross-subsidy system “work” for a given insurer may not do so for another. The end result is an attempt by regulators to preserve differing rates for (nearly) identical products, an outcome that cannot be sustained. One likely long-run effect would be a bifurcated market, in which winners and losers are segregated completely with different insurers, an outcome that would destroy the system of cross-subsidies.
- 8 Note here the standard distinction between “risk,” defined as random draws from a known statistical distribution, and “uncertainty,” defined as an inability to define the relevant statistical distribution.

- 9 For a description of this program, see <http://www.fema.gov/business/nfip/>. For a discussion of the cross-subsidies and other problems created by the program, see Congressional Budget Office, “The National Flood Insurance Program: Factors Affecting Actuarial Soundness,” November 2009, at <http://cbo.gov/ftpdocs/106xx/doc10620/11-04-FloodInsurance.pdf>.
- 10 This effect may be small for some sectors and large for others; but it is larger in the long run than the short run for all, as adjustments become more economic with time, and the effects are unlikely to be uniform across sectors.
- 11 Empirical determination of the cost of capital requires application of a capital asset pricing model or similar analytic tool derived from investor utility theory. Of particular conceptual relevance is the marginal tradeoff between risks and returns. The skewed statistical distribution of expected returns is relevant also, but does not affect the discussion in this paper.
- 12 A distinction is important: the mere fact of regulation, however implemented, has impacts upon the cost of capital; and the particular regulatory approaches actually implemented will have additional effects.
- 13 Most discussions distinguish alternative investments by riskiness or “risk class.” Accordingly, the opportunity cost of a given investment is the best forgone investment of a comparable risk class. That qualification is correct conceptually, and so this paper occasionally makes the same distinction. However, both perceived risks and expected returns for alternative investment opportunities rise and fall along continuums, so that the designation of a given “risk class” is somewhat arbitrary, and the definition of “comparable risk” somewhat ambiguous.
- 14 More rigorously, the mere fact of regulation must affect the statistical distribution of expected returns, that is, the mean and variance of the distribution. Again, the specifics of implementation must have further effects.
- 15 The “expected return” is the mean of the probability distribution of potential returns, as perceived ex ante. The reason that the mere fact of regulation must reduce that expected return is discussed below. Again, the implementation of regulation may offset or exacerbate the effect of regulation itself.
- 16 Because regulation attempts to impose a price level and structure different from that emerging from an unregulated market process (to whatever degree it would have been “competitive”), it must have the effect of transferring wealth among groups. In that regulators often are appointed by elected officials or are elected themselves, and may have aspirations for higher (elective) office, regulation inexorably becomes politicized. To the extent that those from whom wealth is transferred have options, the regulatory system may break down as well.
- 17 A “fair and reasonable” return may or may not be a “competitive” return depending upon the behavior of the regulators and the courts; the discussion here emphasizes the downward biases inherent in regulatory outcomes, but not usually recognized.
- 18 Accordingly, prices can (and usually do) diverge from average total cost in the short run, even under perfect competition, because market prices serve most fundamentally to clear markets, that is, to equate the quantities demanded and supplied. Returns that diverge from the competitive cost of capital then induce entry or exit of capital from the industry.
- 19 “Demand conditions” refers not to the expected quantity of insurance sold or to expected total premium, but instead to the relationship between the amount of insurance sold on the one hand and prices, economic conditions, and all of the other parameters influencing demand on the other. Even “cost,” defined correctly, cannot be measured easily by regulators, because cost refers

not to historical or accounting cost, but instead to opportunity cost, which does not show up on balance sheets. This introduces further biases into the regulatory determination of “reasonable” prices, especially during periods of inflation, a point to which I return below. Moreover, clearly, not all costs can be allowed, or the upper limit on returns could be evaded easily by the regulated firms. This introduces the need for “prudence” analysis of costs by the regulators. See, e.g., Benjamin Zycher, “Economic Efficiency and ‘Prudence’ Analysis of Powerplant Investment,” *Contemporary Policy Issues*, vol. 6, no. 3 (July 1988), pp. 42-59.

- 20 This means that the number of policies sold changes more than proportionately with a change in price. Thus, for example, a 5 percent increase in price would reduce the number of policies sold by more than 5 percent, other things being equal. Under conditions of elastic demand, an increase in price reduces total consumer spending on the good in question, while a decrease in price increases total consumer spending, again, other things being equal. If a given insurer is too small to affect market prices, then by definition it faces highly elastic demand. If an insurer is assumed to have substantial market “power” to raise prices, then it must be operating on the elastic portion of its perceived demand curve. It is easy to show that if it were operating on the inelastic portion of its demand curve, it could increase profits by raising its price until demand became elastic. Thus, all individual firms face elastic demand.
- 21 If demand is inelastic—say, 0.5 in absolute value—rates that are too low still impose losses larger than the gains when rates are too high. A rate of \$900 would yield a net loss of \$10,500, while a rate of \$1,100 would yield a net gain of \$9,500. Individual firms are very likely to face relatively elastic demand, in part because a firm facing inelastic demand would have powerful incentives to raise its prices until demand became elastic.
- 22 Strictly speaking, the statistical distribution of possible returns is truncated on the left because losses cannot exceed 100 percent, unless regulators force a firm to use resources from outside the market at issue to subsidize consumers in that market. That has been a realistic description of the property/casualty market in Florida. In any event, because upside potential is limited more than downside risk, the mean of the distribution is shifted to the left, thus reducing average expected returns below normal. If average expected returns were above normal, whether before or after regulatory intervention, entry by new competitors into the market would reduce that expected return to normal.
- 23 While insurers operating in competitive markets may not be able to measure marginal cost either, they are not constrained by limits on allowed returns. Competitive behavior will lead them to adjust prices so that neither excess demands nor excess capacity (supplies) are engendered by any particular price structure or level. Thus do market processes lead prices toward marginal cost despite the difficulty of measuring it. The same cannot be said for regulatory processes.
- 24 After all, the firm will borrow to make an investment only if it believes that it will generate returns higher than the interest rate that it must pay on the debt.
- 25 This is due to important scale economies (declining average cost) or “natural monopoly,” a condition far less important in the insurance sector; the main sources of such scale economies in insurance are the needs for large datasets for actuarial analysis and for large pools of policyholders so as to spread risks.
- 26 Once the generic regulations are written, they inevitably will favor some insurers and penalize others, whether intentionally or not. At that point, the cost of capital might be lower for the former group and higher for the latter, other things being equal.

- 27 This yields the standard industry accounting distinction between premiums “received” and premiums “earned.” The market enforces this “loan” because if premiums were to be paid only after the coverage period, the market would collapse in that only those suffering a covered loss would pay their premiums after the fact, yielding a massive adverse selection problem.
- 28 See, e.g., Benjamin Klein and Keith B. Leffler, “The Role of Market Forces in Assuring Contractual Performance,” *Journal of Political Economy*, vol. 89, no. 4 (1981), pp. 615-641.
- 29 To a significant degree, agents perform this information function but, alas, they do not work free of charge.
- 30 Given the difficulty—and weak incentives—for consumers in terms of distinguishing between participating and nonparticipating firms, the magnitude of such generalized brand name capital may be problematic.
- 31 In addition, there may be some functions that benefit all firms—“collective” goods—but for which individual firms are unwilling to bear disproportionate costs. Lobbying against a particular legislative proposal is a good example. Efforts by trade associations may reduce this “free-rider” problem. But why any individual firm chooses to participate in the joint effort is a coordination problem beyond the scope of this paper. See Mancur Olson, *The Logic of Collective Action*, (Cambridge: Harvard University Press, 1973).
- 32 Patricia M. Danzon and Scott Harrington, *Rate Regulation of Workers’ Compensation Insurance: How Price Controls Increase Costs*, Washington D.C.: AEI Press, January 1, 1998.
- 33 Martin F. Grace, Robert W. Klein, and Richard D. Phillips, “Auto Insurance Reform: Salvation in South Carolina,” in J. David Cummins, ed., *Deregulating Property-Liability Insurance*, Washington D.C.: AEI-Brookings Joint Center for Regulatory Studies, 2002.
- 34 Dwight K. Bartlett, III, Robert W. Klein, and David T. Russell, “Attempts to Socialize Insurance Costs in Voluntary Insurance Markets: The Historical Record,” *Journal of Insurance Regulation*, vol. 17, no. 4 (Summer 1999), pp. 478-511.
- 35 Robert W. Klein and Paul R. Kleindorfer, “The Supply of Catastrophe Insurance Under Regulatory Constraints,” Financial Institutions Center, The Wharton School, University of Pennsylvania, June 1, 1999.
- 36 Scott E. Harrington and Patricia M. Danzon, “Rate Regulation, Safety Incentives, and Loss Growth in Workers’ Compensation Insurance,” *Journal of Business*, vol. 73, no. 4 (2000), pp. 569-595.
- 37 Susan J. Suponcic and Sharon Tennyson, “Rate Regulation and the Industrial Organization of Automobile Insurance,” in David F. Bradford, ed., *The Economics of Property-Casualty Insurance*, (Chicago: University of Chicago Press, 1998), pp. 113-138.
- 38 Sharon L. Tennyson, “Efficiency Consequences of Rate Regulation in Insurance Markets,” Policy Brief 2001-PB-03, Networks Financial Institute, Indiana State University, March 2007.
- 39 Laureen Regan, Sharon Tennyson, and Mary Weiss, “The Relationship Between Auto Insurance Rate Regulation and Insured Loss Costs: An Empirical Analysis,” *Journal of Insurance Regulation*, vol. 27, no. 1 (Fall 2008), pp 23-46.
- 40 Martin F. Grace and Robert W. Klein, “Homeowners Insurance: Market Trends, Issues and Problems,” Social Science Research Network, March 9, 2006, at <http://ssrn.com/abstract=816927>.

- 41 Richard A. Derrig and Sharon L. Tennyson, "The Impact of Rate Regulation on Claims: Evidence From Massachusetts Automobile Insurance," Social Science Research Network, April 3, 2008, at <http://ssrn.com/abstract=1115377>.
- 42 Insurance Information Institute, "Insolvencies/Guaranty Funds," August 2010, at <http://www.iii.org/media/hottopics/insurance/insolvencies/>; Insurance Information Institute, "Property/Casualty Financial Data," at <http://www.iii.org/policymakers/pcfm/>; and private communication with staff at the Property Casualty Insurance Association of America.
- 43 See Klein and Leffler, *supra.*, fn. 28; and Jack Hirshleifer and John G Riley, *The Analytics of Uncertainty and Information*, (Cambridge: Cambridge University Press, 1992), chapters 4 and 12.
- 44 In economic terms, forgone opportunities are real costs even though they do not appear in accounting statements.
- 45 In the simple case, the gain is "one-time" because once the firm fails to honor its commitments, consumers will do business with that firm no more.
- 46 Thus do consumers typically become suspicious about prices too good to be true. Market behavior thus is consistent with this prediction of economic analysis even if consumers do not perform such a calculus in their minds literally.
- 47 Accordingly, for goods and services the quality of which is difficult to measure before purchase, consumers tend to trust brand names that they recognize, yielding higher market prices for those products than for others, *ceteris paribus*. Consider an individual standing on a street corner offering for sale cans of what he claims is tasty fruit. If he has no specialized investment that he would lose were his promises to prove fraudulent, the market will offer him a price of zero, because no one will trust him. The very fact that a good is advertised is a signal that the good is worth advertising.
- 48 This is a major reason that market forces lead to an equilibrium in which it is efficient for the insurers rather than consumers to make the investments, discussed above, in enhancing confidence in the incentives of the insurers to honor their commitments.
- 49 The recent experience in Florida is consistent with this observation. See Grace and Klein, *supra.*, fn. 1, in which the authors discuss the damaging effects of the Florida regulatory response to the 2004-2005 hurricane season. See also Florida TaxWatch, *supra.*, fn. 1; Benjamin Zycher, "Insurance Price Controls, 'Affordability,' and Taxation By Regulation," *Regulation*, vol. 15, no. 2 (Spring 1992), pp. 69-74; and Benjamin Zycher, "No Sunny Outlook for Florida's Insurance," *South Florida Sun Sentinel*, April 25, 2010.
- 50 See James M. Buchanan and Dwight R. Lee, "Tax Rates and Tax Revenues in Political Equilibrium: Some Simple Analytics," *Economic Inquiry*, vol. 20, No. 3 (July 1982), pp. 344-354; and James M. Buchanan and Dwight R. Lee, "Politics, Time, and the Laffer Curve," *Journal of Political Economy*, vol. 90, No. 4 (August 1982), pp. 816-819.
- 51 See Dennis C. Mueller, *Public Choice III*, (Cambridge: Cambridge University Press, 2003), ch. 17. One such condition is the ability of long-lived political parties to constrain the behavior of public officials.
- 52 The traditional outcome of public-utility type regulation has been generation of above-normal returns in some activities, used to subsidize other activities.

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