

PRESIDENTIAL ADDRESS

(2)

Rate Suppression

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ABSTRACT

This article considers why insurance markets may be especially vulnerable to regulatory suppression of insurance prices in response to political pressure for lowering rates or limiting rate increases. The analysis focuses on why exit by insurers will likely be too slow to deter significant rate suppression. The first possibility considered is that valuable state-specific investments by insurers are subject to appropriation through rate suppression without producing rapid exit. The second and more speculative possibility is that rapid growth in claim costs may allow part of the market to be insured under government mandated pay-as-you-go premium arrangements that at least temporarily permit lower than market premiums (at least temporarily) without producing substantial incentive to exit. The likely adverse effects of these policies on insurance markets are discussed.

"Rate suppression" can be defined broadly as government suppression of insurance rates below levels that would exist without price regulation. For some time now, the property-liability insurance trade press and other industry publications have contained many stories suggesting that regulation has suppressed auto insurance rates in a number of states. Attention has recently turned to rate suppression in workers' compensation insurance — and it often is suggested that rate suppression in both lines has become chronic in some states (e.g., Kramer, 1991).

This article considers why some insurance markets may be especially vulnerable to rate suppression. I assume throughout that significant increases in insurance costs produce strong political pressure for reducing rates or limiting rate increases.¹ What is less clear is how this pressure can produce

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¹ Baumol (1991) discusses the technological causes of real cost increases in insurance markets. He notes: "The insurance industry is plagued by persistently rising costs which force its rates to rise cumulatively to a degree that inevitably make that industry a perpetual target of suspicion (p. 154) Political intervention has characteristically taken the form of attempts to abolish the cost disease by fiat — in effect, to declare cost increases illegal (p. 163)." Cummins and Tennyson (1992) provide detailed discussion of cost increases in auto insurance.

chronic rate suppression. Given the competitive structure of these markets, persistent rate suppression should produce reductions in product quality or exit by insurers. Both possibilities should discourage rate suppression. If quality responses are constrained, the threat of widespread exit alone should give politicians and regulators considerable pause before persistently suppressing rates.

As it stands, the evidence on exits is somewhat puzzling. While significant exit has occurred in some states (see below), it has not really been rapid or truly widespread in any state. It is possible that stories of rate suppression are simply fiction, but this is hard to reconcile with adverse underwriting results and exits that have occurred. Another possibility — that rates are suppressed, but only to levels that provide a fair rate of return — is also difficult to reconcile with long-run equilibrium in a competitively structured industry.

The next section discusses the evolution and forms of rate suppression and summarizes evidence of rate suppression. This is followed by brief discussion of why reductions in product quality are unlikely to prevent significant rate suppression. Two possible explanations of why rate suppression also need not be deterred by the threat of immediate and widespread exit are then considered. I first discuss the possible role of appropriable quasi-rents that arise from state-specific investments involved in the production of insurance. I then consider the ability of government to establish or mandate cash flow insurance plans — that is, “pay-as-you-go” insurance — rather than fully funded coverage. The likely adverse effects of these policies on insurance markets are discussed in both cases.

Background

My analysis focuses on aggregate (or statewide) rate suppression, which I define as a reduction of total premium revenues for all coverage sold in a given line and state below the level that would exist without price regulation. Aggregate rate suppression can occur if average rate increases are not permitted to keep pace with statewide increases in costs. It also can occur if rates are selectively reduced for certain groups of insureds in a given line without an offsetting increase in revenues for other groups (see Harrington, 1990). In principle, cross-subsidies from selective rate suppression can occur without aggregate rate suppression.² In what follows

² In any case, groups whose rates are lowered will be insured predominantly in the involuntary market. Forms of involuntary markets in auto insurance include assigned risk plans, joint underwriting associations, and reinsurance facilities. Maryland has a state insurer. A common feature of these plans is that they spread experience for the involuntary market among insurers in proportion to their share of the voluntary market. Most states have a separate rate structure for the involuntary market; a few states with reinsurance facilities do not. Instead, insurers are required to accept all applicants at a regulated rate, and applicants for which regulated rates are perceived as inadequate will be reinsured. Workers' compensation insurance markets in most states involve

the term rate suppression refers to aggregate rate suppression unless otherwise noted.

Between the enactment of the McCarran-Ferguson Act in 1945 and the late 1950s, the clear emphasis of rate regulation in most states was on setting minimum rate levels (see Joskow, 1973, and Hanson, Dineen, and Johnson, 1974; also see Kramer, 1991). During the 1960s and early 1970s two distinct trends emerged. First, some states moved towards greater reliance on competition rather than rate regulation. Second, and in direct contrast, the focus of auto insurance rate regulation in a number of other states became affordability of coverage and suppression of rate increases in the face of rising claim costs, especially in high-cost urban areas. In the latter half of the 1980s the trend towards rate suppression accelerated in auto insurance and spread to workers' compensation insurance in conjunction with rapidly increasing claim costs in both lines.³ In addition to concern with affordability, proponents of rate suppression argue that strict limits on insurance rates and close supervision of and controls on insurance company costs are needed to deal with allegedly inadequate competition and to promote fairness in insurance pricing (e.g., Consumer Federation of America, et al., 1989).

Important changes in the administration of prior approval regulation in many states during the past 25 years are consistent with a shift towards tighter and more comprehensive control over prices. Until the mid to late 1960s, review of rate filings under prior approval laws usually focused on whether loss and expense components of rates were consistent with actuarial principles. Rate filings were allowed to include "reasonable" margins for underwriting profits with little or no consideration given to investment income. Beginning in the mid 1960s, several factors, including political pressure to limit rates in the presence of rapid growth in claim costs, contributed to the adoption of formal methods to reflect investment income in rates in most states with prior approval during the subsequent decade.

In the mid 1970s a few states began formal regulation of rates of return on capital using methods similar to those employed to regulate public utilities. Rate of return regulation gradually expanded over the next decade and has accelerated in recent years (see Derrig, 1991). Rate of return regulation in some states has involved lengthy debate over all inputs to the rate determination process (e.g., Derrig, 1986). A few states have recently enacted limits on the amount and types of expenses that can be used in rate

the assignment of involuntary market risks to designated servicing carriers with the results for the state reinsured through a national pool and then allocated to insurers in proportion to voluntary market volume in the state. In some states, involuntary market coverage is provided by separate pools or state funds.

³ The most well-known example of this trend is the enactment of Proposition 103 by California voters in 1988, which substituted prior approval for competitive rating, limited auto insurance rate classification, required that the insurance commissioner be elected rather than appointed, and called for an across the board rate rollback.

filings, and proposals have been made for the adoption of fixed rules for projecting claim costs. Some states with rate regulation also have adopted rules that discourage insurers from withdrawing from a given line of business in the face of rate suppression. These "lock-in" provisions discourage selective exit by requiring an insurer to exit from all lines in a state if it withdraws from a given line.⁴ These developments and a large amount of anecdotal evidence on the results of rate hearings, the size of involuntary markets, insurance company exits, and insurance reform legislation are consistent with a trend towards rate suppression. The evidence of a significant negative reaction of insurance stock prices to the passage of Proposition 103 in California suggests that capital markets regard the insurance reform movement, with its emphasis on rate control, as unfavorable to insurers (see Fields, et al. 1990; Szweczyk and Varma, 1990; and Shelor and Cross, 1990).

Many studies have compared insurance company financial results in states with different types of rating laws. Most of this research has compared auto insurance loss ratios (ratios of incurred losses to earned premiums for the state). Some studies, especially those that relied on simple comparisons of mean loss ratios during the 1970s, found no significant difference between states classified as prior approval and competitive rating (see Harrington, 1984). Several studies using more elaborate statistical methodologies and data from the late 1970s to the early 1980s suggest that the average impact of prior approval regulation was to increase loss ratios by several percentage points and that the impact of regulation on loss ratios varied widely across prior approval states (e.g., Pauly, Kleindorfer, and Kunreuther, 1986; Harrington, 1987; and Grabowski, Viscusi, and Evans, 1989). These findings are consistent with rate suppression in some states with prior approval. There also is evidence that prior approval regulation is associated with larger involuntary markets (see Grabowski, Viscusi, and Evans, 1989; also see Harrington, 1990).⁵ A number of studies also have presented evidence of involuntary market rate suppression and discussed the effects of cross-subsidies in auto insurance in individual states (e.g., Harrington and Pritchett, 1990; Rottenberg, 1989; and Blackmon and Zeckhauser, 1991; also see U.S. General Accounting Office, 1986a).

There is some evidence that deregulation of workers' compensation rates in the late 1970s and early 1980s may have led to lower net premiums (premiums less policy dividends) in some states (e.g., U.S. General Accounting Office, 1986b). This result would be consistent with workers' compensation rate regulation limiting rate reductions prior to the change.

⁴ For example, a New Jersey law, which to date has been upheld by the courts, requires insurers that wish to stop writing auto insurance either to exit all property-liability lines simultaneously or to wait five years to exit the auto line alone.

⁵ In general, suppression of both voluntary and involuntary market rates and restrictions on rate classification will increase involuntary market size. It would be difficult to sort out the relative effects of these influences.

However, these results could reflect greater flexibility of competitively determined rates during the soft market of the early 1980s, as opposed to any long-term reduction (see U.S. General Accounting Office, 1986b). Moreover, this evidence largely precedes the rapid increase in workers' compensation claim costs during the mid to the late 1980s, which appears to have been associated with substantial pressure for regulators to limit rate increases below levels indicated by increases in costs.

Availability, Quality, and Exit

Rate suppression provides incentives for insurers to reduce quality, withdraw coverage, and/or exit from a market. For rate suppression to be politically viable, it seems likely that these responses must be constrained, delayed, or difficult for consumers to discern. Before discussing the exit issue in detail, it is important to suggest why reductions in availability and quality are unlikely to prevent rate suppression. Regarding availability, suppression of rates for a given group of buyers or an overall line of business reduces the incentive for insurers to provide coverage voluntarily. However, absent widespread exit, mandated involuntary markets operate to ensure availability of coverage. Rate suppression will increase the size of the involuntary market rather than produce immediate shortages.

Rate suppression will likely produce some reductions in quality, but several factors limit the magnitude of cost-saving reductions in service in response to rate suppression.⁶ First, reductions in quality may adversely affect an insurer's reputation in other markets. As an example, reductions in capital and increases in insolvency risk would affect all of an insurer's customers. Second, while insurers may be able to cut costs (or increase investment income) by imposing stricter standards for claims payment, these actions expose an insurer to litigation. They also might lead to regulatory action under unfair claims practice legislation. Third, while cost-reducing changes in levels and types of services in response to rate suppression might initially reduce insurer losses and pressure to exit, future rates could eventually be adjusted downward to reflect the savings in costs. For these reasons, quality reductions will not likely eliminate insurer losses from significant rate suppression.

Regulatory reductions in premium rates that cannot be offset by reductions in costs ultimately will cause insurers to exit from a state. Significant numbers of exits from the auto insurance market have occurred in several states known for tight rate regulation (e.g., Massachusetts, New Jersey, and South Carolina). A few large national insurers with agency distribution systems have withdrawn from the auto insurance market in

⁶ Comparisons of operating expenses for insurers that operate in a single state have provided some evidence that prior approval regulation is associated with lower operating expenses (and presumably fewer services). See Pauly, Kleindorfer, and Kunreuther (1986). For related discussion and analysis, see Braeutigam and Pauly (1986).

many states, and several large workers' compensation insurers have exited from a number of states with unfavorable regulatory climates. However, as noted in the introduction, exit has been neither rapid nor truly widespread in any state. While this could indicate that industry claims of rate suppression are overstated, it also raises the question of why insurers could be reluctant and thus slow to exit when confronted with rate suppression.

Some insurers could expect or hope that rate suppression will only be temporary. Indeed, the adverse effects of chronic rate suppression, including that it ultimately will cause many insurers to exit, could encourage the belief that it must be short-lived. In addition, exit from a state requires some combination of termination and relocation of employees and agents. For insurers with multistate operations, these responses could adversely affect relations with employees and agents in other states. Results could include reduced productivity and more difficulty in hiring employees and appointing agents. Increased turnover of agents and employees in other states also is possible, and it will become more costly for insurers to provide company-specific training if employees are concerned that their jobs will be in jeopardy if rate suppression were to spread to their home state. While these factors likely play some role in explaining slow exit, the remainder of the paper focuses on the possible roles of state-specific investments and the ability of the government to establish or mandate cash flow insurance plans.

State-Specific Investments and Appropriation of Quasi-Rents

State-specific investments and resultant appropriable quasi-rents that arise from insurance production may help explain how rate suppression can persist for a substantial period without producing widespread exit. Many if not most insurers make state-specific investments. These investments are made in anticipation of achieving at least a fair return. Much of the cost of these investments — including a fair return — is expected to be recovered from premium revenues over a period of years. This requires that future premiums exceed future variable costs, which include both expected losses and variable expenses. The excess of premiums over variable costs, which is necessary to induce investment, constitutes what is known as a quasi-rent.

There are several types of state-specific investments that give rise to quasi-rents. Some insurer investments are specific to individual policies or policy cohorts and thus specific to the states in which policies are written. First, insurers incur underwriting and screening costs. Rather than being fully recovered during the first year of coverage, a portion of these costs is expected to be recovered over the duration of the relationship with policyholders (see Feldblum, 1991). Second, loss ratios for some types of business may decline over time as insurers obtain valuable private information about the claims history of their clients. This latter case, which has been analyzed by D'Arcy and Doherty (1990), implies that prices in long-run equilibrium with free entry will produce losses in early policy

years that are expected to be recovered in future years. Thus, in both cases, renewal premiums are expected to exceed variable costs.

In addition to policy-specific investments, insurers often make substantial investments in distribution networks, claims facilities, human capital, and reputation that are not tied to particular policies. Some portion of these investments also is state-specific. Again, much of the cost of these investments, including a normal return, is expected to be recovered in higher prices over a period of years.⁷

Thus, insurers make significant investments on an on-going basis in anticipation of receiving premiums necessary to provide an adequate return. Once such investments are made, the expected quasi-rents are potentially appropriable through rate suppression. If regulators begin to suppress rates after investments have been made, two results will occur.⁸ First, insurers will not receive adequate compensation on the investments that have been previously made. Rate suppression thus reduces (expropriates) the value of prior investments. Second, rate suppression will reduce or eliminate the incentive for making future investments in the state.

Reductions in rates below levels needed to compensate investors for state-specific investments will not lead to exit as long as suppressed premiums are sufficient to cover variable costs. The threat of widespread and immediate exit will not be credible because exit will not occur as long as regulators do not push total premiums below variable costs. If insurers anticipated rate suppression, state-specific investments would not be made without immediate compensation. However, an unanticipated change in the regulatory environment, such as that associated with a substantial increase in claim costs, would likely leave insurers vulnerable to appropriation of the value of past investments.

Appropriable quasi-rents are probably significant for many insurers in a given line of business.⁹ Moreover, the entire amount of appropriable quasi-rents for a line could be used to lower premiums for subgroups of policyholders that exert the most pressure for rate reductions. With quasi-rents, it is even possible that premiums could be suppressed below variable costs for favored groups without allowing premium increases for other

⁷ Absent rate suppression, the value arising from these investments would be marketable to other insurers.

⁸ For similar discussion in the context of public utility regulation, see Blackmon and Zeckhauser (1990). Boquist and Mazzeo (1989) provide empirical evidence for utilities.

⁹ To illustrate with a simple case, the level per-year charge X that is needed to amortize an upfront investment of S is the solution to $S = X(1 + \beta v^{-1} + \beta^2 v^{-2} + \dots + \beta^n v^{-n})$, where β is the expected proportion of existing policyholders at the end of each year that renew the next year (assumed constant for simplicity), $v = (1+r)^{-1}$, r is the interest rate, and n is the last possible renewal year. For large n , X approximately equals $(1-\beta v^{-1})S$. If $S = \$100$ and $r = .06$, $X = \$15$ for $\beta = .9$ and $X = \$25$ for $\beta = .8$. Alternatively, if $S = 20\%$ of the first-year premium and $r = .06$, then X equals 3% and 5% of the first-year premium for $\beta = .9$ and $\beta = .8$, respectively.

groups. Widespread and rapid exit would not occur as long as total premiums are at least equal to total variable costs for the line.¹⁰

As discussed earlier, several states have erected barriers to exit from lines that appear subject to chronic rate suppression. These barriers typically take the form of requirements that insurers exit all lines in the state in order to exit a given line or that an insurer pay substantial assessments to state involuntary markets as a condition for exit. Forcing an insurer to exit all lines would require it to forfeit the value of past investments made in other lines of business in addition to any remaining value of investments in a line subject to rate suppression. Thus, these requirements may effectively lock in a company unless it is willing to write off its entire investment in a state. As a result, they could allow premiums to be pushed even lower in lines subject to rate suppression without causing exit.¹¹

The popular and industry media sometimes argue that these requirements discourage exit by forcing insurers to give up profitable business in other lines in order to exit personal auto insurance. In a sense this argument is correct — they require insurers to forfeit valuable investments in other lines to leave a line in which rates are suppressed. However, the existence and effect of these restrictions on exit does not imply or require that premiums in other lines exceed competitive levels. Instead, exit will be discouraged by these rules as long as insurers would forfeit the value of past investments that were made in anticipation of receiving a normal return on investment in other lines.¹²

The obvious drawback of regulatory appropriation of quasi-rents is that it eliminates the incentive for future state-specific investments. Exit will not be rapid, and insurers can be forced to write new business, but persistent rate suppression that is not severe enough to produce rapid exit would produce a gradual reduction in benefits from prior investments that are no longer being replaced. The likely result would be significant changes in the types and levels of services that are provided. It is even possible that low cost methods of production that require large upfront expenditures might be gradually replaced by higher cost methods that require lower upfront outlays but larger expenses over time. Similar to the effects of chronic suppression

¹⁰ To illustrate, if expected variable costs per policy equal \$90 and the break even premium needed to recover the specific investment is \$100, an insurer would not exit after making the investment unless the average premium fell below \$90. A premium of \$70 (below variable cost) for one-third of the market and \$100 for the remaining two thirds would yield an average premium of \$90. If premiums were allowed to increase above \$100 for some insureds, the maximum amount of reduction and/or number of insureds that could be charged less than \$100 would increase.

¹¹ For example, premiums could potentially be held below variable costs in one line provided that the deficit did not exceed the excess of premiums over variable costs in other lines.

¹² It also is sometimes argued that insurers will raise prices in other lines within a given state — or even raise prices in other states — in order to offset losses on a line subject to rate suppression. I consider this argument below.

of housing rental rates through rent control (e.g., a reduction in the stock and variety of rental housing and upkeep of existing units), these changes will tend to occur slowly and thus not be immediately visible.

Reduced premium rates directly lower the incentive for insurers to commit capital. Theory also suggests that a major factor that motivates insurers to hold financial capital is that financial distress could entail a costly loss of quasi-rents (e.g., Finsinger and Pauly, 1984, and Harrington and Danzon, 1992). As a result, appropriation of quasi-rents through rate suppression reduces the incentive for insurers to commit capital to protect the value of quasi-rents. The effects could be quite limited for multistate insurers if reductions in capital reduced their ability to compete in other states. Nonetheless, some increase in insolvency risk would be expected at the margin, especially for local insurers.

As an example of possible effects on levels and types of services, regulatory appropriation of quasi-rents would probably affect growth rates and market shares for insurers with different distribution systems. Direct writers generally have lower expense ratios than insurers that use independent agents and brokers, but direct writers commonly incur larger upfront investments when entering or expanding in a given market. Because direct writers will thus tend to have greater quasi-rents, they will be more vulnerable to appropriation by rate regulation. This suggests that direct writers will be especially reluctant to enter or expand in states where rate suppression might be likely in the future. On the other hand, because direct writer operation generally involves larger upfront investments that would be lost in the event of exit, direct writers will likely be more reluctant — other things being equal — to exit from states that begin to suppress rates.

The possible appropriation of quasi-rents through rate suppression also can be expected to produce upward pressure on prices and affect investments in some states that currently do not suppress rates. The possibility of future rate suppression can increase the price needed to induce state-specific investments and to offer coverage.¹³ This raises the possibility that rate suppression in one state can increase prices in other states if it increases the perceived likelihood of future rate suppression. In addition, the chance of future rate suppression will encourage use of production methods with lower upfront costs and/or pricing systems that provide more rapid recovery of upfront costs.

Note that the possibility of higher current prices in a state because of the likelihood of future rate suppression differs significantly from the popular argument that insurers will try to recover losses from regulation in one state from higher prices in other states. In the latter case, attempts by an insurer to recover losses through higher prices in other states would produce a loss of customers to other insurers that either are not subject to or are less

¹³ See Dixit (1991) for theoretical analysis of how regulatory price limits can increase prices needed to induce investment.

affected by rate suppression. Moreover, if an insurer had the ability to increase its profits by raising prices in any given market, it would do so independently of whether its rates were suppressed in some other market.

Cash Flow vs. Funded Premiums

With "fully funded" coverage, premiums must be sufficient to cover the discounted value of incurred losses and other costs.¹⁴ However, total paid losses in a year for policies sold in the current and prior years (i.e., calendar-year paid losses) in a given line or state can be significantly less than the discounted value of claim costs for new occurrences during the year (i.e., than the discounted value of accident-year losses). As a result, cash flow (or "pay-as-you-go") premiums based on calendar-year paid claims can be significantly less than fully funded premiums, at least temporarily. This raises the possibility that pressure for low rates can in turn create pressure to substitute pay-as-you-go (or near pay-as-you-go) premium rates for fully funded premiums.

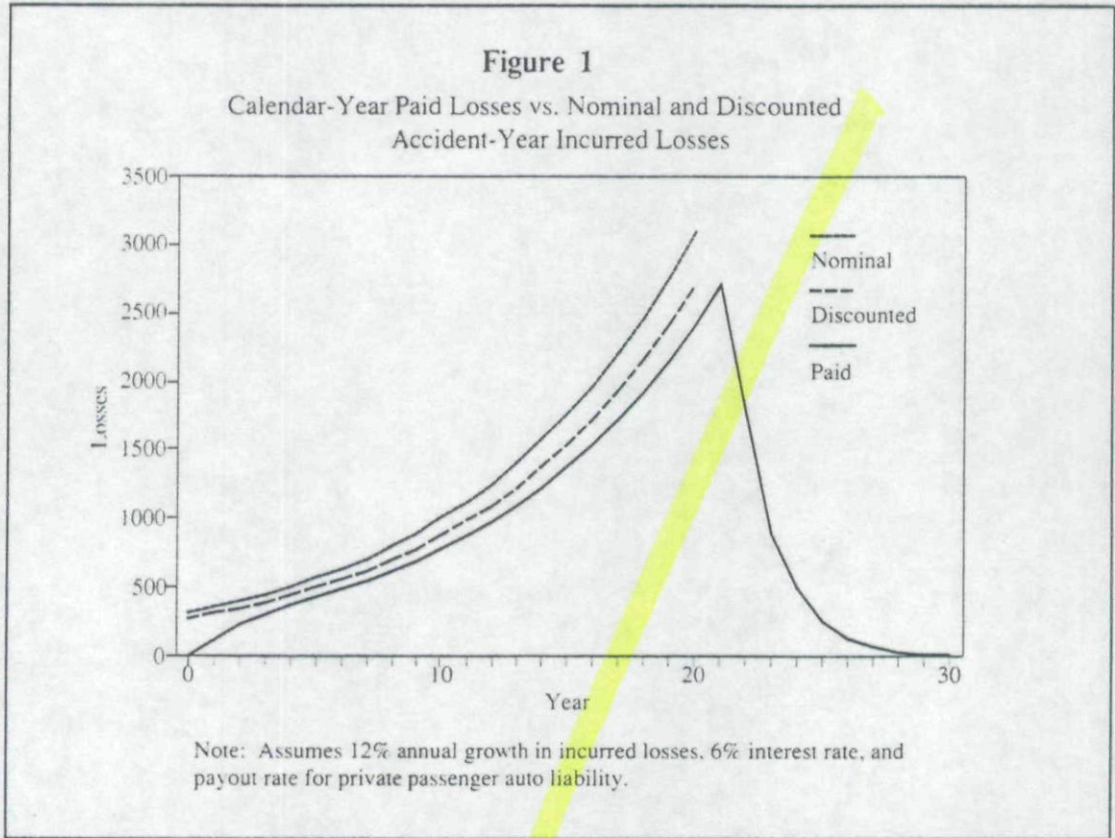
For long-tailed lines of business, it is well-known that calendar-year claim payments for a given policy cohort will be much lower than discounted accident-year incurred losses during the early life of the cohort. It also is well-known that low paid claims during this start-up period make insurance markets vulnerable to entry by high-risk or fly-by-night insurers. However, little attention has been devoted to the long term relationship between calendar-year paid losses and the discounted value of accident-year incurred losses.

To illustrate this relationship, assume a constant interest rate and a constant and exogenous annual growth rate for accident-year incurred losses for a given policy cohort. Then if the growth rate in accident-year incurred losses exceeds the interest rate used in discounting, it can be shown that calendar-year paid losses in period t (hereafter "paid losses") are less than discounted accident-year incurred losses (hereafter "discounted losses") until accidents are assumed to cease and the final runoff of paid claims takes place (see the Appendix). In addition, the steady state gap between paid and discounted losses prior to the final runoff increases with the growth rate in incurred losses. If the horizon is indefinitely long, then paid losses and thus pay-as-you-go premiums will remain less than discounted losses and thus fully funded premiums indefinitely.¹⁵

¹⁴ For simplicity this discussion abstracts from the effects of insolvency risk on insurance rates.

¹⁵ Of course, an indefinite horizon only makes sense for multiple cohorts. Allowing for entry by new cohorts generally would increase any excess of discounted losses over paid losses. That paid losses could remain less than discounted losses indefinitely is analogous to the social insurance "paradox" where pay-as-you-go retirement plans can provide greater benefits than funded retirement plans indefinitely if the sum of per capita wage and population growth exceeds the interest rate (e.g., Aaron, 1966).

This phenomenon is illustrated in Figure 1 assuming a 10-year claims tail, \$1,000 of nominal accident-year losses in year 10, the claims payout pattern for private passenger auto liability, a 12 percent annual growth rate in incurred losses, and a 6 percent discount rate.¹⁶ The start-up period is 10 years. This is the length of time before calendar-year paid claims include payments for accidents in each of the 10 prior years. Following the start-up period, an additional 10 years of claims are incurred. The runoff of remaining payments takes place during the last 10 years.



As can be seen, discounted losses exceed paid losses until the runoff period. Paid claims are 11 percent lower than discounted losses in years 11 through 20 — the steady state difference prior to the final runoff is 11 percent. This effect is substantial; it approximately equals the difference between nominal and discounted accident-year losses that arises from discounting. While Figure 1 assumes a 20 year horizon for incurred accidents and illustrates the runoff after 20 years, it should be emphasized that the steady state difference would remain for longer horizons.

¹⁶ Payout rates were calculated using industry data for 1980 accidents, Schedule P-Part 3, from *Best's Aggregates and Averages*, 1990 ed. The data reflect allocated loss adjustment expenses. The estimated payout rates assume for simplicity that all claims are paid after 10 years. This assumption leads to some reduction in the length of the claims tail.

As shown in Table 1, with comparable assumptions the steady state difference between paid losses and discounted losses would be 14 percent using payout patterns for workers' compensation and 25 percent using payout patterns for medical malpractice. Table 1 also illustrates the steady state difference when the interest rate equals or exceeds the growth rate in incurred losses. When the interest rate equals (or exceeds) the growth rate, the steady state difference between paid and discounted losses equals (or exceeds) zero.

Table 1

Cash Flow vs. Funded Premiums: Illustrated Ratios of Calendar-Year Paid Losses in Year t to Discounted Accident-Year Losses in Year t Using an Interest Rate of Six Percent

	Private Passenger Auto Liability	Workers' Compensation	Medical Malpractice
A. Steady state ratios for alternative annual growth rates in accident-year losses			
growth rate = 12%	0.89	0.86	0.75
growth rate = 6%	1.00	1.00	1.00
growth rate = 3%	1.07	1.09	1.17
B. Estimated ratios for 1989			
	0.98	0.97	0.85

Note: Assumed loss payout rates calculated with industry paid loss data for 1980-89 for accidents in 1980. Data obtained from *Best's Aggregates and Averages*, 1990 ed., Schedule P, Parts 2 and 3.

Table 1 also shows the ratios of paid losses to estimated discounted losses for the industry in 1989 for private passenger auto liability, workers' compensation, and medical malpractice. For auto liability and workers' compensation, discounted losses were only slightly greater than paid losses. Nonetheless, the gap could be significant in some states and time periods. In particular, a significant increase in claim cost growth will generally give rise to a large gap between paid losses and discounted losses — and thus between pay-as-you-go and fully funded premiums.

Rapid real growth in accident-year losses and thus a large gap between paid and discounted losses probably makes rate suppression more likely. Rate hearings often involve sharp disagreement over projections of incurred losses (see Derrig, 1986). The gap between paid and projected discounted losses could make the argument that insurers inflate their loss projections, overreserve, and make hefty profits (e.g., Consumer Federation of America, 1989) appear more plausible. Perhaps more important, the gap between paid and discounted losses might plausibly create pressure either for direct government provision of pay-as-you-go coverage — or for government mandated involuntary markets that are operated on a cash flow or near cash flow basis. In the latter regard, it is worth noting that seven of the twelve active state joint underwriting associations for medical malpractice coverage

had negative statutory net worth in 1988 — three others had zero net worth (Alliance of American Insurers, 1990). They all had positive cash flow.¹⁷ In addition, while it need not imply cash flow or near cash flow premium rates, insurers pay assessments for most workers' compensation involuntary markets, and for some auto involuntary markets, that are tied to cash outflows for losses and expenses.

If involuntary markets were operated as cash flow plans with large unfunded deficits, insurers might at first appear to have significant incentives to exit unless premiums were allowed to increase on voluntary market business (or unless significant quasi-rents deterred exit). But there is an exception to this conclusion — at least in principle. If the government could guaranty that future involuntary market premiums would be sufficient to cover total paid claims each year, then the net present value to insurers of writing involuntary market business at less than fully funded premium rates would not be negative. While large involuntary market accounting losses would result, insurers could break even on a cash flow basis. The involuntary market might not need to be subsidized by the voluntary market in order for insurers to break even overall.¹⁸ The private sector conceivably could provide mandated coverage with large accounting losses indefinitely without charging higher premiums on other business. However, an arrangement of this sort would likely be unstable and thus risky for private insurers. Current politicians probably cannot credibly bind future decisions. As a result, unfunded deficits might ultimately be shifted back to private insurers.¹⁹

The preceding illustrations and discussion assumed that the growth rate in incurred losses would be the same for pay-as-you-go and fully funded premium arrangements. In reality, reductions in premiums below fully funded levels for groups that would face the highest unregulated premiums would likely encourage high risk activity. Also, incentives for efficient monitoring of claims could be diminished if such policies led to arrangements in which claim costs are shared among insurers in exchange for fixed settlement fees that reduce incentives to investigate losses and to detect fraud.²⁰ Rate suppression also could detract attention from the underlying causes of high and rapidly growing claim costs, such as fraud, rapid growth

¹⁷ To be sure, this evidence is only suggestive given that loss reserves generally are not discounted under statutory accounting rules.

¹⁸ This possibility suggests that the magnitude of any economic losses in or subsidy to the involuntary market could depend on the discounted value of premiums and cash outflows over multiple years.

¹⁹ Experience with the now defunct New Jersey auto insurance joint underwriting association, which produced a large deficit that is being partially financed through ex post surcharges on insurers, is probably instructive in this regard.

²⁰ See U.S. General Accounting Office (1986a) and Blackmon and Zeckhauser (1991). Harrington and Doerpinghaus (1991) provide detailed discussion of these effects in the context of restrictions on rate classification.

in medical costs, large numbers of lawsuits for minor auto injuries, and increasing litigation in workers' compensation. For these reasons, the ability to lower premiums under a pay-as-you-go scheme (or, for that matter, under other forms of rate suppression) would likely be short-lived. It is possible that within a few years paid losses would exceed the discounted value of accident-year incurred losses that would have existed had fully funded coverage been maintained.

Concluding Remarks

In an environment characterized by consumer dissatisfaction with the price of insurance, rate suppression offers the opportunity for immediate political benefits — regardless of the motives of policymakers and whether they understand its longer-term consequences. Beneficiaries include politicians with short-term horizons whose careers are enhanced, interest groups and experts whose influence and/or income grows by participating in legislative and judicial hearings, consumer groups who get the lion's share of any rate cuts, and, most likely, groups that benefit directly from higher claim costs.

With high and rapidly growing claim costs, the deck appears to be stacked in favor of rate suppression, as opposed to efficient actions (if any) to reduce premiums by controlling claim costs. The benefits of rate suppression to consumers are obvious and visible. The costs are more difficult to discern. While the courts might deter rate suppression, controlling its spread probably depends on whether voters can become sufficiently informed about causes of high premiums and the adverse effects of rate reductions without reductions in costs. The insurance industry is the leading institution that opposes rate suppression, but its protests are not viewed as credible by much of the public. Ironically, the slowness of insurer exit in response to rate suppression — economically justified though it may be — probably makes rate suppression more likely. Rapid exit and attendant market dislocations would convey substantial information to the public about the adverse effects of price controls, and it would make insurer arguments more credible.

Appendix

Discounted vs. Paid Losses

For simplicity assume a policy cohort of fixed size and non-random incurred losses in accident-year t of $(1+g)^t$. Let α_i , $i = 1, 2, \dots, n$, be the proportion of accident-year incurred losses in period t that is paid at time $t + i$ with $\alpha_1 + \alpha_2 + \dots + \alpha_n = 1$. The interest rate is r .

The discounted value of incurred losses for accidents in year t is:

$$\begin{aligned} D_t &= (1+g)^t [\alpha_1(1+r)^{-1} + \alpha_2(1+r)^{-2} + \dots + \alpha_n(1+r)^{-n}] \\ &= (1+g)^t \sum_{i=1}^n \alpha_i(1+r)^{-i} \end{aligned}$$

D_t is the product of nominal accident-year incurred losses and a discount factor that reflects the speed of claims payment and the interest rate.

For $t \geq n$, calendar-year paid losses (i.e., total losses paid at time t for accidents in year t and prior years) equal:

$$\begin{aligned} P_t &= \alpha_1(1+g)^{t-1} + \alpha_2(1+g)^{t-2} + \dots + \alpha_n(1+g)^{t-n} \\ &= \sum_{i=1}^n \alpha_i(1+g)^{t-i} \\ &= (1+g)^t \sum_{i=1}^n \alpha_i(1+g)^{-i} \end{aligned}$$

Thus, P_t is the product of nominal accident-year incurred losses and a discount factor that reflects the speed of claims payment and the growth rate in accident-year incurred losses.

For $t \geq n$, the ratio of paid losses in calendar-year t to discounted losses for accidents in year t is:

$$\frac{P_t}{D_t} = \frac{\sum_{i=1}^n \alpha_i(1+g)^{-i}}{\sum_{i=1}^n \alpha_i(1+r)^{-i}}$$

Clearly, $P_t = D_t$ when $r = g$, $P_t < D_t$ when $r < g$, and $P_t > D_t$ when $r > g$.

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