

Draft—Work in Progress

Market Socialism and Community Rating in the Affordable Care Act

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H.E. Frech III  
University of California, Santa Barbara  
Peter Zweifel  
University of Zurich

**I. Introduction**

The socialist calculation debate began almost 100 years ago when Ludwig von Mises and Friedrich Hayek argued that a socialist state could not determine marginal-cost prices and therefore could not allocate resources efficiently. Oscar Lange and Abba Lerner responded with the market socialist model, where a socialist planner in a decentralized government-ownership economy would adjust prices in response to excess demand and thereby achieve marginal cost pricing and allocative efficiency. There are mixed views on whether market socialism would work well for an entire economy. (E.g Edmund Phelps is negative, while John Roemer is positive.)

In this paper, we briefly review the debate and the market socialist response with a view to community rating in health insurance. Even among its supporters, market socialism is widely regarded as only an abstract idea. We disagree. We argue that market socialism exists, and is growing in importance, in major parts of modern economies—especially in health care and health insurance. In these sectors, prices are often set centrally, while ownership includes many state-owned, nonprofit, and mutual firms. We examine the case for applying market socialist principles to health care and especially to health insurance policy. In particular, these principles

are shown to imply that current community rating of health insurance premiums is a source of major inefficiencies, harmful pressure on regulation, and unnecessary difficulties in implementing not only the U.S. Affordable Care Act but also decentralized competitive social health insurance in countries such as Germany and the Netherlands. We suggest moving in the market socialist direction—towards marginal cost pricing combined with subsidization of contributions targeted to the poor.

## **II. The Socialist Calculation Debate**

The early socialists, including Karl Marx, had little to say about how to actually operate a socialist economy. They mostly discussed and critiqued capitalism. This changed in 1920 after Ludwig von Mises's classic challenge, where he contended that rational economic calculation was impossible under socialism. Earlier, in 1908 Enrico Barone showed that an economically rational socialist state would have to solve the same economic problems, leading to the same mathematical description of the optimum (i.e. the solution to an enormous number of simultaneous equations) as a capitalist market economy (Barone 1908). Barone's work did not stir much debate. The debate started in earnest later when Ludwig Von Mises argued that there was no way to rationally determine how productive goods are to be used without private ownership and markets in the means of production (von Mises 1920). Later the argument was taken up by Friedrich Hayek and Lionel Robbins, stressing the idea that there was no practical way to elicit and use individuals' detailed, partly tacit, local knowledge of productivities at different prices necessary for a central planner to solve the hundreds of thousands of simultaneous equations (Robbins 1934; Hayek 1935). This asymmetry of information has of

course been a central theme in (health) insurance markets ever since Akerloff (1970) and Rothschild and Stiglitz (1976).

The local-knowledge argument produced a major response, most famously by Fred Taylor (1929), Oskar Lange (1936, 1937) and Abba Lerner (1944). They proposed a new model, called market socialism (sometimes called the Lange-Lerner model).<sup>1</sup> The basic idea is that the means of production are owned by the state and state-owned firms are run by hired managers. In the original version, the managers are instructed to follow rules, rather than maximize profits. The system finds the correct price to guide production and allocation by a method of trial and error. The (misnamed) Central Planning Board promulgates a set of prices, called accounting prices.<sup>2</sup> Enterprises are owned by the government, which selects the managers. Managers are instructed make supply and demand decisions, based on the prices announced by the Central Planning Board, following three rules: (1) set output so that marginal cost equals price, (2) minimize average cost, (3) act as though prices were parametric (fixed). Rule (3) requires the manager of an enterprise to ignore its market power both as a seller and as a buyer of inputs. If the Central Planning Board observes evidence of excess demand, it raises the price. If it observes evidence of excess supply, it reduces the price. In this way, like the Walrasian auctioneer, the Central Planning Board finds the correct equilibrium set of prices that reflect marginal costs.<sup>3</sup> At the equilibrium, the marginal costs are themselves based on the correct equilibrium prices.

Lange does not specify how the managers are incentivized to follow the rules. Indeed, he famously said that this issue “belongs to the field of sociology, rather than economic theory”

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<sup>1</sup> We stress Lange’s version because it is relatively simple, clearly described, and best known.

<sup>2</sup> The “Central Planning Board” is misnamed because it merely announces prices and then gropes toward a market-clearing set of prices. It does not plan.

<sup>3</sup> One difference is that there is false trading in market socialism, but not in a Walrasian auction.

(Lange 1934, 1938, p. 109).<sup>4</sup> This is a major weakness of the model and a major misunderstanding of the direction that economics would follow.<sup>5</sup> Later efforts by Wayne Leeman (1977) and John Roemer (1994) have attacked this weakness, leading to a more operational version of the model.

### **III. Market Socialism: Towards An Operational Model**

In response to various criticisms of the early market socialist arguments, some economists have revised the model to make it more operational and more efficient. Generally speaking, these revisions can be considered as liberalizing the model in varying degrees.

Leeman (1977, pp. 139-157) alters the model by allowing the enterprises to directly set prices, possibly in negotiation between buyers and sellers. Contrary to Lange and anticipating later developments in economics, Leeman takes the incentives for enterprise managers seriously. He sets the success indicator for managers as enterprise profit, rather than following Lange's (or any other) rules. To incentivize the managers to maximize profits, he calls for profit-sharing and also for giving the managers tenure to insulate them from expropriation and political pressure. He delegates to an agency above the enterprise level the responsibility for enforcing a competitive structure. In industries where that is impossible (called natural monopolies by Leeman) a government agency or corporation would be responsible for setting price equal to marginal cost (or perhaps average cost to avoid subsidies) and for regulating quality and assortment. Notice that this reintroduces a price-finding role of Lange's "Central Planning Board," though the role is more difficult when the firms have market power. He explicitly allows for a private capital market for debt, but not equity. In effect, the profit sharing by

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<sup>4</sup> Page cites are to the reprinted version of 1938.

<sup>5</sup> See, e.g. Jean-jacques Laffont and David Martimort (2002).

managers with tenure creates a small amount of a non-tradable form of equity. But, as Leeman notes, the system ends up risk taking mostly financed and controlled by the government.

In more recent work, Roemer (1994, pp. 60-84) takes a similar view to Leeman's. He takes account of more recent research on principle-agent problems (Alchian and Demsetz 1972; Sappington 1991; Hart and Moore 1990). Like Leeman, Roemer allows direct price setting by enterprises. He sets up a clever system of equity markets, where each individual is endowed by the state with a coupon (or voucher) with which to purchase shares in mutual funds. The mutual funds then purchase shares in firms that are traded in markets and pay dividends. The mutual funds can only be sold for coupons, which can only be used for purchasing other mutual funds. Equity cannot be bequeathed at death so equity ownership cannot be accumulated by families over time. But, risk taking can be partly private and higher-powered incentives are in play, compared to earlier versions of market socialism. There is a sense in which the firms are private, though the returns to capital are *ex ante* equalized and socialized.

Opinions on the outcome of the debate vary. Quite recently, Edmund Phelps (2013) has reconsidered the socialist calculation debate. He states that most economists, presumably including him, believe that von Mises and Hayek won (Phelps 2013, p. 129). Phelps is more concerned with the lack of dynamism he expects with socialism of any sort. Leeman (1977, pp. 156-157) is careful to distinguish between what he views as realized objectives (interestingly, in Leeman's view, a high rate of innovation would be realized) and those that fail to be realized (precisely efficiency, due to a lack of competition between enterprises controlled by the government). Roemer, with a much more thorough-going revision of the Lange model, believes that it would work well. Andrei Shleifer and Robert Vishny claim that market socialism can

solve the allocation (or rationality) problem, saying that, “Lange thus established quite convincingly that a benevolent Central Planner can, in principle, clear markets” (1994, p. 166).<sup>6</sup>

Throughout the debate, there is a great deal of stress on getting the prices right, equal to marginal cost. Indeed, this is Lange’s first rule. This idea gets so much emphasis in Lerner’s *Economics of Control* (1944) that it may be considered the main theme. Von Mises and Hayek argued that efficient prices cannot be achieved without private property and ordinary markets, so socialism will not work. The market socialists responded with various price-finding mechanisms.

#### **IV. Market Socialism Exists in Many Sectors—Especially Education and Health**

The contestants in the debate, including Phelps, are thinking of market socialism as a way of organizing the entire economy. This is big-think economics at the highest level, almost philosophy. At that level, the debate is fascinating and sheds light on what problems an economy, any economy, must solve. The debate also shows a disconnection between the relatively formal market socialists and their more applied, institutional critics.

We suggest looking at the problem at a less grand level than the participants in the debate. We argue that market socialism is not just an abstract concept for the whole economy, but is a useful lens to view major, growing *parts or sectors* of actual economies existing right now. Further, market socialistic principles might be a useful guide for policy in those sectors. For this analysis, we do not need to take a stand on the big-picture issue of whether market socialism would work well or be practical for the entire economy. Nor do we need to take a

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<sup>6</sup> Shliefer and Vishny (1994) oppose market socialism for different reasons, grounded in theoretical and applied work in public choice. In their view, market socialism would be much more vulnerable to governmental intervention in favor of interest groups than capitalism. While fascinating, this idea is beyond the scope of our work. Consciously making a strong simplifying assumption, we assume a benevolent government in keeping with the founders of market socialism, Lange (1938, p. 75) and Lerner (1944, p. 6)

stand on whether the current institutional set up in education and, especially health care, is optimal.

In many parts of the economy where citizens have an altruistic interest in each other's behavior and outcomes, government and nonprofit firms are important and often dominate, especially in the growing sectors of health insurance, health care, and education. These government and nonprofit firms increasingly interact in markets, not just bureaucratically within organizations. In these markets, the prices are sometimes set by the nonprofit firms themselves and sometimes by a governmental agency. For example, some Dutch health insurers and all German and Swiss social health insurers are nonprofit firms competing for members. In Germany, only around 10 percent of the population is enrolled in profit-seeking private health insurance. Even in the U.S., 63 percent of the private health insurers are nonprofit, insuring 45 percent of privately insured consumers. Nonprofit and government firms are even more important in U.S. hospitals, with 69 and 15 percent of the beds (Alliance 2014). These firms interact in markets, sometimes setting their own price and sometimes with prices regulated in some way by the state (e.g. U.S. Medicare for the elderly and Medicaid for the poor).

In many countries, education is provided by governmental and nonprofit firms, some of them competing in markets. From Sweden to Italy in Europe (but less so in the U.K.), primary and secondary education are dominated by public schools. This is true of the U.S. as well, although this is changing with its "charter" schools. Even universities are predominantly public throughout continental Europe; at the same time, they increasingly compete for faculty and students to bolster their ranking. This description has long fit the U.S. college sector. In sum, markets for education roughly fit the market socialist model.

Further, in many economies the provision of goods subsidized by the government has

increasingly being done by decentralized private or public organizations, interacting competitively in markets with a great deal of oversight, often with some sort of central price setting. This is especially true of insurance-based healthcare systems, as those of Belgium, Germany, Israel, the Netherlands, and Switzerland. This form of organization has been dubbed “quasi-markets” by Julian LeGrand (1991) in a heavily-cited paper. It is also sometimes called, less descriptively, “New Public Management,” especially in the public administration literature.<sup>7</sup>

In conclusion, a large and growing portion of the economy is organized in a way that can be analyzed as market socialism. Across the OECD, the average spending on education is about 6 percent and on health care about 9 percent of GDP. The U.S. is slightly higher than average for education, but well above average for health care. We will focus on health insurance, whether provided by highly regulated mostly private profit-seeking and nonprofit insurers as in the U.S. or by nonprofit insurers or even governmental entities such as the health districts in Sweden.

## **V. The Key Market Socialist Principle: Getting the Price Right**

As discussed above, the socialist calculation debate centered on pricing. The market socialists agreed on the centrality of pricing and argued that their mechanisms would find the right prices, equal to (close to) marginal costs. Getting the price right is important for economic rationality and incentive compatibility. For economic rationality, getting the price of health insurance right is necessary to allow efficient choice. If the prices are wrong -- not reflecting marginal costs -- consumers will make socially inefficient choices. Choice itself is necessary to

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<sup>7</sup> There is a large literature on this in both economics and public administration; see e.g. Powell (2014), Bradly and Taylor (2010), Gruening (2001), Cooper *et al* (2011), Gaynor, Moreno-Serra, and Propper (2013), and Glennester (1991).

efficiency because of consumer heterogeneity in preferences, health status, expected health care costs, financial position, attitude towards risk, moral hazard and so on.

Recent research based on U.S. data for consumers in private health insurance (which already is somewhat homogenized) show substantial gains from choice (Dafney, Ho and Varela 2013; Bundorf, Levin and Mahoney 2014). Indeed, part of the rationale for the U.S. Affordable Health Care Act of 2010 was to extend more choice to more consumers. Most national healthcare systems allow for choice, either within the domain of social insurance or through markets for supplemental insurance to top up the primary plan.<sup>8</sup> The importance of consumer heterogeneity in the provision of health insurance will be the topic of a companion paper (Zweifel and Frech, 2015).

#### **A. Incompatibility of community rating with efficient pricing**

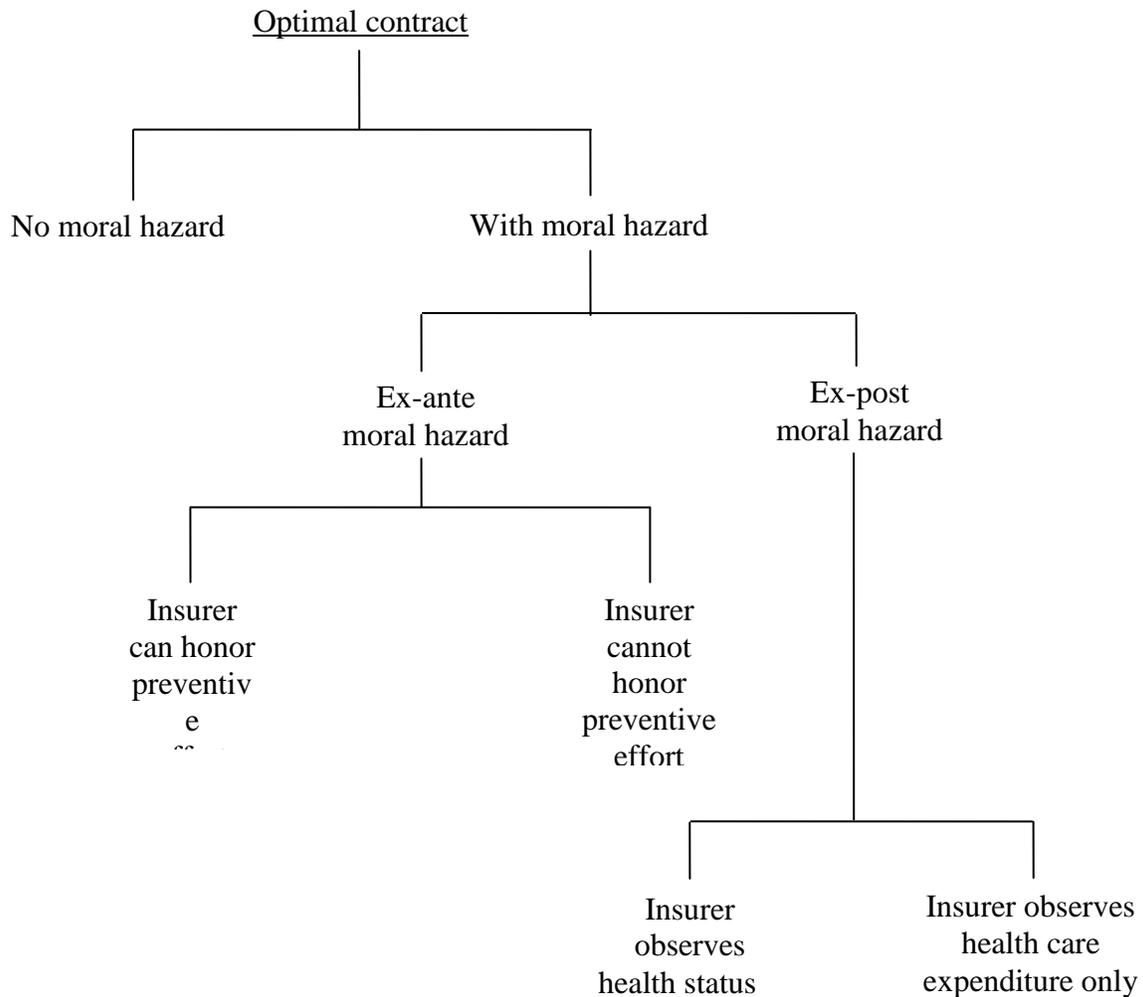
Perhaps the most important violation of key market socialist principles occurs with pure or modified community rating, which prevents insurers from marginal cost pricing. Note that “marginal cost” in the context of health insurance means the present value (PV) of expected future healthcare expenditure (HCE) plus a loading for administrative expense and risk bearing associated with the enrolment of a particular consumer. Consider an idealized, simplified world with no moral hazard. Even in this setting, the marginal cost rule calls for premiums graded according to risk because consumers differ with respect to their PV of expected HCE, caused by several sources of heterogeneity. E.g. heterogeneity in risk of illness, different propensities to use care conditional on health status and different practice patterns of providers. Therefore, even in this idealized and simplified world, some consumers pay too little for their health insurance

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<sup>8</sup> Examples of the latter include private supplemental insurance for U.S. Medicare beneficiaries, the French *Sécurité sociale*, and Australian *Medicare*.

under community rating, while others pay too much. When we consider ex ante and ex post moral hazard, we uncover more sources of heterogeneity and therefore mispricing. See Fig. 1 to illustrate the possible cases.

**Figure 1. Optimal health insurance contracts**



**Source:** Zweifel, Breyer, and Kifmann (2009), ch. 6.1.

Let us first consider ex-ante moral hazard with costly preventive effort. Here, the question arises as to whether the insurer can devise a contract that induces preventive effort (in keeping with the incentive compatibility constraint in the language of contract theory) while

getting the insured to buy it (in keeping with the participation constraint). For simplicity, direct utility effects of health are neglected unless otherwise stated, causing a small loss of generality.

This simplified model predicts that given full insurance coverage, the the consumer's optimal level of prevention is zero. Thus, it takes less than full coverage to induce a positive amount of preventive effort. In order to satisfy the participation constraint, the premium for this less complete coverage must be lower than for full coverage so that the expected utility of the insured is higher than in the case of full coverage combined with zero preventive effort.

Individuals with a high marginal effectiveness of their preventive effort will see their participation constraint satisfied at a rather small reduction in premium below the premium for full coverage. These considerations imply that the optimal premium must reflect the probability as it results from preventive effort. Since the amount of cost sharing for optimally limiting ex-ante moral hazard depends also on individual-specific parameters (specifically, marginal effectiveness and opportunity cost of prevention), premiums and premium differentiation according to the amount of copayment cannot be uniform for optimality.<sup>9</sup> Thus, ex ante moral hazard is an additional source of heterogeneity.

Once some illness has materialized, again an issue of observability and possible ex post moral hazard arises. If health status were somehow observable, then indemnity (lump sum, contingent claim) insurance would be optimal (Zeckhauser, 1970). Since the marginal cost of medical care is fully borne by the insured, the choice of intensity or type of treatment will be efficiently chosen by the insured. This serves to fully eliminate ex post moral hazard. The lack of ex post moral hazard in this analysis does not imply identical indemnity benefits across individuals. The optimal indemnity payment for a perfectly observed adverse health event (e.g. a

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<sup>9</sup> For now, we simplify by ignoring the possibility of nonprice rationing as a tool to mitigate moral hazard. We will introduce this later.

broken hip) depends of the idiosyncratic productivity of medical care in restoring the individual's to full health (or improving the individual's health). Further, in a realistic model with actuarially unfair insurance, heterogeneity in risk aversion also implies different indemnity payments. Of course, this source of heterogeneity layers on top of the differences in probabilities of illness states, differences in ex ante moral hazard and other issues discussed above. In an efficient health insurance market, even assuming that optimal indemnity contracts were possible premiums must be risk-based.<sup>10</sup>

The far more relevant case of ex-post moral hazard is when health status is unobservable. HCE is observable, so the optimizing instrument in the hands of the insurer is once again the degree of copayment. As shown by *Zeckhauser* (1970) and more recently *Blomqvist* (1997), a cost-sharing rule that is non-linear in expenditure turns out to be generally optimal. For example, *Buchanan et al.* (1991) simulated optimal insurance policies to arrive at a \$ 200 deductible and a 25 percent coinsurance rate, whereas *Blomqvist* (1997) comes up with a coinsurance of 27 percent at roughly \$ 1,000 and declining to 5 percent at roughly \$ 30,000. The parameters of this rule depend on individual characteristics, providing a further source of heterogeneity, reinforcing the concept that uniform premiums cannot be optimal.

In a simplified analysis, restricted to a linear cost-sharing rule involving the single coinsurance parameter, the optimal value of that parameter depends on the elasticity of the demand for medical care with regard to coinsurance, which amounts to a price elasticity (*Zweifel, Breyer, and Kifmann, 2009, ch. 6.5*). The larger (in absolute value) this price elasticity, the more important the ex-post moral hazard effect which needs to be counteracted by cost sharing in the insurance contract. In a generalized analysis with many health states, their probabilities along

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<sup>10</sup> Indemnity, contingent-claim health insurance exists only for a small niche product, accidental death and dismemberment insurance, where death or the loss of a limb is observable.

with the corresponding marginal utilities of wealth enter as additional parameters. Finally, the generosity of sick leave pay affects ex-post moral hazard effects on the demand for health care (Zweifel and Manning, 2000), which suggests that optimal health insurance depends on additional variables, yet another source of heterogeneity in efficient premiums (and benefit plans). Uniform premiums are not able to accommodate these individual differences in price elasticities, probabilities, and parameters from other insurance contracts.

### **B. Uniform premiums, risk adjustment, and health insurer behavior**

We now turn to health insurer behavior under the constraint that premiums cannot be set according to risk, or even to variables related to risk, such as age and sex. This is pure community rating. In this world, for breaking even, insurers must keep total expenditure per insured below the uniform premium that the market will bear for their differentiated product. To achieve this goal, they have two instruments at their disposal. One is risk selection effort, the other, innovation effort, which will be analyzed below.

If selection and cost-reducing innovation are two instruments available to health insurers, the factors affecting their balance are of interest. The most important factor is premium regulation (see Fig. 2). Indeed, a necessary condition for selection to be profitable is that the contribution margins of high and low risks differ (Pauly, 1984). Uniform premiums (and indeed all forms of premium that are not risk-based) by definition cause this divergence because a consumer with high expected future HCE cannot be charged a higher premium and a consumer with low expected future HCE cannot be charged a lower premium. Quite frequently, expected HCE even exceeds the premium received. Simply to break even, the insurer must have a

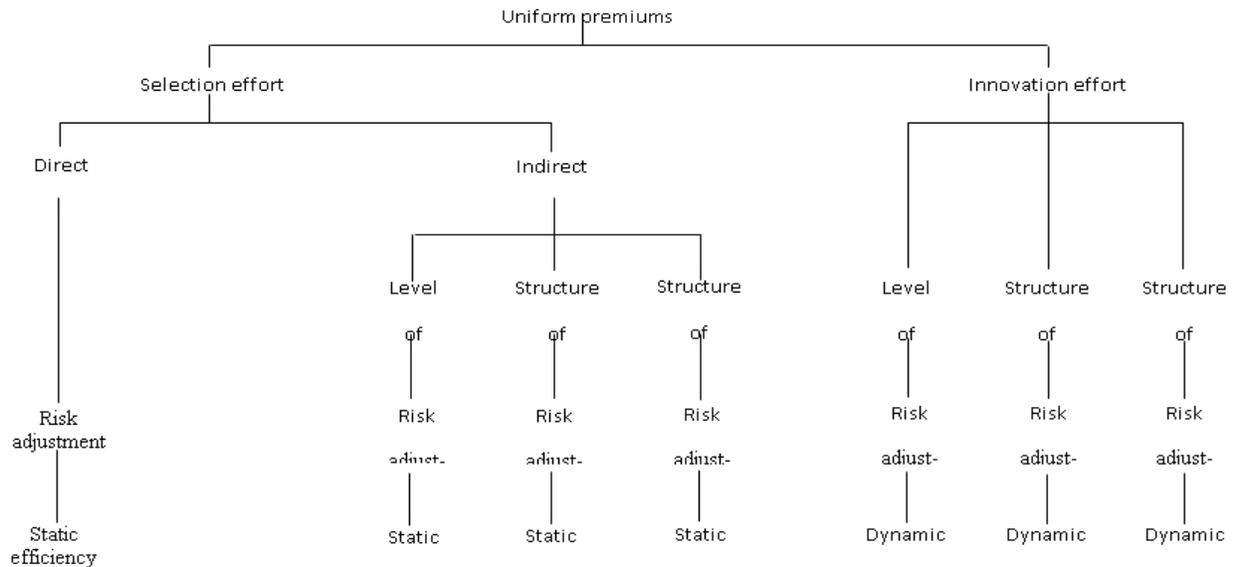
sufficient number of individuals enrolled whose expected HCE is below the uniform premium.<sup>11</sup>

This creates an incentive to undertake selection effort. Selection effort (sometimes called cream skimming in the U.S.) is inefficient and can harm access of high risk consumers.

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<sup>11</sup> For an example of an adverse selection death spiral, see Frech and Smith, (forthcoming).

**Figure 2. Effects of uniform premium regulation on insurer behavior**



Thus, it is the premium regulation (especially in the guise of uniform premiums) that tilts the balance in favour of selection and against cost-reducing innovation (Zweifel, 2010). Additional regulation becomes necessary to mitigate the problem. For an extended list of measures, see Van de Ven and Ellis (2000);, risk adjustment (RA) occupies the prominent place among them. RA is a mechanism designed to equalize the difference between premiums received and expected HCE across risk groups. The RA scheme receives payments from insurers enrolling below-average share of high risks and uses these funds to disburse payments to insurers enrolling an above-average share of high risks. In all, RA can be seen as a secondary regulation induced by the primary regulation of uniform premiums.

Unfortunately, RA necessarily is imperfect, thus failing to fully counteract the distortion of incentives caused by uniform premiums. First, RA needs to be prospective in order to keep insurers' incentives for cost control intact. This means it should be based on predicted future rather than past actual HCE. However, because RA is inherently inaccurate, it burdens insurers with the risk of unexpected deviations in HCE from their expected value. The burden is particularly troublesome for non-profit, mutual and government insurers that do not have access to large capital markets containing diversified investors. These firms are likely to behave in a risk-averse manner. Therefore, prospective risk adjustment is politically resisted by many health insurers and in several countries it has been given up in favor of retrospective risk adjustment (Van de Ven and Ellis 2000).

Prospective RA is inherently inaccurate (see Fig. 2). Research shows that on the basis of publicly observable risk adjusters such as age, sex, and place of residence, only 3 to 4 percent of the variance in annual individual HCE can be predicted (Van de Ven and Van Vliet, 1992; Beck et al., 2010). This leaves a great deal of scope for the use of private information that insurers can use in order to improve their own prediction and therefore to drive selection efforts. Therefore, risk adjustment cannot compensate fully for differences in HCE due to risk characteristics. Including previous HCE in the set of risk adjusters does increase the explained share of the HCE variance, but at the price of making RA partially retrospective. Previous hospitalization has been proposed as a predetermined substitute of HCE; however, its introduction penalizes insurers who successfully control costs by using managed care techniques to reduce hospitalization and therefore discourages cost control (Schoder, Sennhauser and Zweifel 2010).

For community rating to be meaningful, direct selection of low risk consumers must be prohibited. However, this hardly means that selection effort cannot work.

For performing so-called indirect selection, all insurers use knowledge of the relationship of different risk types and how the types are related to preferences for certain contract types.

Indirect selection can be operated through the choice of (a) benefit level, (b) benefit structure, and (c) provider structure.

- (a) Indirect selection through the benefit level: In the simplest case of two risk types differing only in terms of their illness probability, this amounts to offering a contract with high coverage and high premium to high risks and low coverage and low premium to low risks. This is the classic ‘separating contracts’ solution to the adverse selection problem in an insurance market (Rothschild and Stiglitz, 1976). Optimal RA scheme would have set payments into and receipts from the scheme in a way that the PV of their expected value results balances the costs and benefits of selection for each health insurer. This is not possible because it depends on factors that are not known to the regulator (see Zweifel and Breuer 2006 for details). An alternative to RA would be to also require uniformity of benefit levels and copayments. However, this would severely restrict consumer choice and harm insurers’ ability to control moral hazard.
- (b) Indirect selection through the benefit structure: Here, the two risk types can be defined e.g. by their different probabilities of consuming medical care for a chronic condition, in addition to medical care for an acute one. As shown by Glazer and McGuire (2000), the two types (being characterized by different expected expenditures for a chronic condition) have different preference structures, a fact that can be used to initiate indirect selection processes. The returns to indirect selection through the benefit structure again depend on factors that are not observed by the regulator.

(c) Indirect selection through the provider structure: This is conceptually very similar to selecting through the benefit structure. High risks are insureds that are particularly likely to call on the services of higher-cost providers (rather than providers of chronic care, as in (b) above). (Glazer and McGuire, 2000). Here, the differences between the budget constraints characterizing the different types of insured are accentuated because the low-cost provider may make special efforts to contain moral hazard on the part of the insured through managed care nonprice rationing (Glazer and McGuire 2000). The returns to indirect selection depend again on factors that are not known by the regulator.

Finally, note that this discussion focuses exclusively on the incentives of health insurers, neglecting the adage, “It takes two to tango”. Indeed, consumers have an incentive to select the contract that gives them the best deal. In particular, a low risk will eschew a policy that is loaded with a payment into the RA scheme. Since RA is necessarily imperfect, insurers will find ways to attract low risks. Conversely, a high risk will seek out a policy that is highly cross-subsidized by payments from the RA scheme. Payments into and from the RA scheme are not independent because the scheme must attain budget balance. Therefore, the single instrument called RA is to neutralize the selection incentives of two parties, viz. insurers and consumers. However, the Tinbergen (1952) rule states that for attaining two objectives, the policy maker needs two instruments. Thus, even an unattainable perfect RA would be insufficient to deal with the selection incentives created community rating and by premium regulation in general (Zweifel, 2013).

There are of course regulatory alternatives available, which however entail particularly important efficiency losses. For one, imposing a uniform provider structure across insurers

deprives them of an important possibility to match their products with the preferences of their clientele. It also becomes difficult for them to offer Managed Care options, which require differing degrees of pre-commitment by providers to perform nonprice rationing as a means to control moral hazard. Finally, having insurers offer contracts featuring one type of provider only would make economics of scope impossible. In sum any imaginable RA scheme fails to neutralize the risk selection incentives induced by uniform premiums, resulting in static inefficiency (see Fig. 2).

Taking a longer view, where innovation is a key factor, the effects uniform premium regulation on health insurers' incentive to innovate may be the most deleterious of all. Three dimensions of innovation are discussed here.

(a') Innovation w.r.t. the level of benefits: This amounts to offering contracts with different deductibles and rates of copayment as well as premium rebates for no claims (which permit consumers to determine their degree of cost sharing after the advent of illness). For instance, the Technicians' sick fund, a German social health insurer, launched a contract with choice of coinsurance rates ([www.tk-online.de](http://www.tk-online.de)), while Swiss social health insurers offer a choice of annual deductibles up to US\$ 2,600 (at 2014 exchange rates). These adjustments of the properties of health insurance contracts mitigate ex-ante and ex-post moral hazard effects as discussed above. Since these options expose consumers to differing degrees of financial risk, they must be priced accordingly, necessarily contravening the idea of community rating with its uniform premiums.

Assuming that the regulator accepts some premium differentiation while operating a RA scheme, the incentive for innovation is still undermined, and for the following reason. Those who choose to move to an innovative plan tend to be of relatively young age (see

e.g. Cutler and Reber, 1998). However, all known RA schemes rely heavily on age as a predictor of HCE. An innovative insurer, showing an increased share of young enrollees on its books, therefore is subject to a financial sanction, causing a suboptimal amount of innovation with respect to the level of benefits. This is even true of an innovation that serves to reduce the loading for administrative expense because the young are again particularly likely to react to the concomitant reduction in premiums.

(b') Innovation w.r.t. the benefit structure: Here, an important innovation is the design of special disease management programs that coordinate the services covered (different types of ambulatory and hospital care as well as drugs) in the aim of an improved health outcome and/or lowered HCE. This is an aspect of managed care. To the extent that consumers must give up freedom of choice in the course of a treatment path, they have to be offered a reduction in premium. Again, this is at odds with uniformity of premiums (see Zweifel and Breuer, 2006 for more details).

(c') Innovation w.r.t. the provider structure: An important innovation in this field is to contract with service providers who accept new forms of remuneration. In order to elicit sufficient effort for cost reduction and maintenance of quality, a two-part fee with some degree of supply-side cost sharing is optimal (Chalkley and Malcomson, 1998; Trottmann et al., 2011). Typically, such plans are launched by Managed Care organizations who attract young physicians. However, since younger physicians tend to have a younger clientele, all known RA schemes sanction an insurer who launches an innovation attracting young providers.

It is worthwhile to recall that a basic motivation for introducing RA was to direct insurer effort away from risk selection and towards innovation efforts. However, the very same RA is

now found to consistently weaken incentives to innovate, hurting dynamic efficiency, as well as static efficiency.<sup>12</sup>

## **VI. Lessons for the Affordable Care Act and Competitive Social Health Insurance More Generally**

The ACA imposes guaranteed issue and modified community rating that requires the same premium for consumers of the same age, regardless of risk or sex for each type of insurance plan. Further, it substantially compresses rating based on age. The result is a large increase in premiums for young people, estimated at over 50 percent for males aged 25 to 36, causing adverse selection on age (O'Connor 2013, p. 20).

While imposing new pricing rules, the ACA grandfathered existing insurance for individuals and small groups that do not comply with the ACA (Kaiser 2014). The plans were grandfathered as of March 23, 2010. The analysis presented in section V leads to the prediction that relatively old and high-risk consumers will switch out of the grandfathered plans in their attempt to benefit from the cross-subsidization of premiums inherent in ACA-approved ones.

Further, the ACA regulations led to mass cancellations of individual and small group health insurance plans that were not grandfathered in 2013 (Cohen 2013). Though expected (Interim Final Rules 2010, p. 41932), these mass cancellations were politically unpopular. The Administration responded by granting states permission to allow continuation of the cancelled

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<sup>12</sup> See Schroder, Sennhauser and Zweifel (2010) for a theoretical analysis.

plans for one year and possibly longer (Cohen 2013).<sup>13</sup> Continuing cancelled policies works much like grandfathering them, permitting low-risk individuals to avoid the cross-subsidization that would be imposed by them by ACA-approved ones. This once again drives home the point noted in Section V, stating that it is not sufficient to focus on the risk selection incentives of insurers; consumers have interests of the same type, too.

According to early aggregate data, adverse selection against the ACA-approved plans has happened. The overall percentage of enrollees who have both used healthcare services and have serious health conditions is reported to be 27 percent in ACA-approved exchange plans, compared to only 21 percent in ACA-approved off-exchange plans, a mere 12 percent in grandfathered plans and 16 percent in originally cancelled plans (Mathews and Weaver 2014).

Some aspects of the ACA serve to mitigate selection problems, however. These are mandates, subsidies, RA, transitional reinsurance, **and so-called** risk corridors (Leida 2013; Collins 2013; Norris, van der Heijde and Leida 2013). The Administration recently suggested new ways to subsidize the ACA-approved plans (Pear 2013). This goes some way in the direction advocated not only by Zweifel and Breuer (2006), Zweifel and Pauly (2007), Pauly (2010), and Bhattacharya et al. (2013). Consider a good that citizens have agreed upon to view as a ‘must have’ (MH), which however is out of reach for parts of the population. Rather than regulating the price of MH, the economist’s policy prescription typically is to expose MH suppliers to a maximum of competition while supporting those consumers who cannot afford the good using means-tested subsidies tied to the purchase of MH. In keeping with the second Theorem of welfare economics, the desired final allocation is reached by the competitive process combined with a tax-financed transfer designed to modify the initial allocation. Applied to health

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<sup>13</sup> Eighteen states, including California, New York and the District of Columbia, have announced that they will not allow cancelled policies to be continued, whereas nineteen were willing to go along with the Administration and allow continuation (Lucia, Kieth and Corlette 2013; Leida 2013).

insurance, consumers who are both high risks and poor are enabled to shop for insurance coverage at competitive, risk-rated premiums (rich high-risk types do not need to be subsidized). For the health insurers, consumers across the board come with the right price tag, obviating any need to avoid high-risk types and seek out low-risk types. Curiously, most health economists have been neglecting this solution, accepting community rating.

The one country known to the authors that has introduced means-tested subsidization of contributions to mandatory social health insurance is Switzerland. However, the reform of 1996 failed to get rid of premium regulation that had been in existence since 1911 (Kreier and Zweifel 2010). Rather, it relied on RA to neutralize risk selection incentives. As one would predict from the analysis presented in Section V, the volume of RA never ceased to increase since its inception, resulting in a redistribution mechanism involving more than 1.0 percent of the country's GDP (Eugster et al. 2010).

However, incentive-compatible pricing of health insurance is a matter of degree. Experience in Australia shows that a partial movement away from community rating and towards risk-based premiums can be very helpful. In the year 2000, the Australian government liberalized age-related pricing somewhat by allowing "lifetime community rating", where premiums depend on the age at which the consumer enrolls.<sup>14</sup> Its objective was to mitigate adverse selection in private supplemental insurance. This change led to a major increase in the privately insured population, from 32.2 percent to 43.0 percent in less than a year (Frech, Hopkins and MacDonald 2003, p. 59). This expansion has persisted to some extent (Ellis and Savage 2008, p. 264; Buchmueller 2008). While more liberal than before the reform, the system retains aspects of community rating, creating incentives for low-risk types to avoid its inherent

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<sup>14</sup> Outside of Australia, lifetime community rating is not very common, but it is used in German private health insurance (a small part of the German system) and U.S. Medicare Part B insurance for physician services.

cross-subsidization of high risks. These incentives are countered to some degree by a tax surcharge on earners of high incomes who refuse to purchase private coverage. The reduction in tax revenue caused by their uptake of private health insurance is less visible than would be a subsidization of premiums for the less well-to-do.

## **VII. Concluding remarks**

This paper starts from the observation that important sectors of developed economies such as education and health fit the socialist market model in that both for-profit, nonprofit and governmental suppliers compete for business. Although heavily regulated in the pricing of their services, they enjoy a degree of managerial autonomy. The proponents of market socialism agree in their emphasis on marginal cost pricing. In the important case of competitive social health insurance, however, community rating prevails. Since the marginal cost of enrolling an individual is equal to the present value (PV) of his or her future healthcare expenditure (HCE) plus a loading for administrative expense and risk bearing, any form of uniform premium regulation contradicts marginal cost pricing.

The consequences of this violation are severe. In the case of health insurance, community rating makes high-risk types pay less than the PV of the expenditure they cause. Little wonder that they are eschewed by insurers who cannot perform cross-subsidization of premiums under the pressure of competition. To secure their economic survival, health insurers must enroll a sufficient number of low-risk types to balance their books. This risk selection incentive leads to supplementary regulation, e.g. in the guise of risk adjustment (RA). Payments into the RA scheme are designed to artificially increase the insurer's marginal cost of enrolling a low-risk type; payments from the scheme, to artificially lower that of enrolling a high-risk type. In

addition, uniform premiums clash with the need for insurers to reward consumers' commitment to control moral hazard by their choice of increased copayment or Managed Care options, which calls for premium reductions.

The prospects of RA neutralizing risk selection incentives created by uniform premium regulation turn out to be dim. As argued by Hayek (1935) in particular, the authority in charge of RA suffers from an asymmetry of information because insurers have private information (such as the expected life of the contract that enters their PV calculation) that the regulators or planners do not have. Past HCE, while an important predictor of future HCE, cannot be efficiently used by the regulator since it renders RA retrospective, undermining insurers' incentive to control cost. The most damaging argument, however, is the insight that not only insurers but also consumers have an interest in risk selection (e.g. low-risk types seeking to avoid the extra loading in the guise of payment into the RA scheme). Therefore, the single RA instrument would need to achieve two objectives, viz. controlling the incentives of both insurers and consumers, which is not possible according to Tinbergen's rule stating that the number of policy instruments must equal the number of objectives to be attained.

It may be time to heed the policy prescription of the market socialists: Rather than regulate price to bring a merit good within the reach of those who cannot pay for it, enable them to pay the competitive price using targeted subsidization. Applied to health insurance, the prescription is to break away from community rating, let health insurers risk-rate premiums, and subsidize high-risk individuals who are low-income at the same time.

## References

- Akerlof, George A., “The Market for “Lemons”: Quality Uncertainty and the Market Mechanism,” *The Quarterly Journal of Economics*. 84 (3) (Aug., 1970), pp. 488-500.
- Alchian, Armen A. and Harold Demseta, “Production, Information Costs, and Economic Organization,” *American Economic Review* 62 (5) (Dec., 1972), pp. 777-795
- Alliance for Advancing Nonprofit Health Care (2014), [nonprofithealthcare.org](http://nonprofithealthcare.org)
- Barone, Enrico, 1908. "Il Ministro della Produzione nello Stato Collettivista", *Giornale degli Economisti*, Sept./Oct., 2, pp. 267–293, 392-414, trans. as "The Ministry of Production in the Collectivist State," in Freidrich. A. Hayek, ed. (1935), (London: George Routledge & Sons, (1935) *Collectivist Economic Planning*, 245-290.
- Beck, Konstantin, Peter Zweifel and Maria Trottmann (2010), Risk Adjustment in Health Insurance and Its Long-term Effectiveness, *Journal of Health Economics* 29(4), 489-498.
- Blomqvist, Ake, “Monopolistic Competition and Supply-Side Cost Sharing in the Physician Services Market,” working paper No. 9705, University of Western Ontario, 1997
- Bhattacharya, Jay, et al. 2013. *Best of Both Worlds: Uniting Universal Coverage and Personal Choice in Health Care*, Washington, D.C.: American Enterprise Institute (August 6, 2013).
- Bradley, Steve and Jim Taylor, “ Diversity, Choice and the Quasi-market: An Empirical Analysis of Secondary Education Policy in England, *Oxford Bulletin of Economics and Statistics*, 72 (1) (2010), pp. 1-26.
- Buchanan, Joan L., Emmett B. Keeler, John E. Rolph and Martin R. Holmer, “Simulating Health Expenditures under Alternative Health Insurance Plans, *Management Science* 37 (9) (September 1991), pp. 1067-1090.
- Buchmueller, Thomas. 2008. Community Rating, Entry-Age Rating and Adverse Selection in Private Health Insurance in Australia. *Geneva Papers on Risk & Insurance - Issues & Practice* 33 (4) (October): 588-609.
- Bundorf, M. Kate, Johathan Levin and Neale Mahoney, “Pricing and Welfare in Health Plan Choice,” *American Economic Review* 107 (2) (December 2012), pp. 3214-3248.
- Chalkley, Martin and James T. Malcomson, “Contracting for Health Services with Unmonitored Quality,” *Economic Journal* 108 (499) (July 1998), pp. 1093-1110.
- Cohen, Gary, Director, Center for Consumer Information and Insurance Oversight, Centers for Medicare and Medicaid Services, letter to the Insurance Commissioners, (November 14, 2013).

Collins, Sara. 2013. Pros and Cons of the President's Policy Fix for Health Plan Cancellations. Commonwealth Fund Blog, (November 18, 2013).

Cooper, Zack, Stephen Gibbons, Simon Jones and Alistair McGuire, "Does Hospital Competition Save Lives? Evidence from the English Patient Choice Reforms," *Economic Journal* 121 (August 2011), pp. F228-F260.

Cutler, David M. and Susan J. Reber (1998), Paying for Health Insurance: The Trade-off Between Competition and Adverse Selection, *Quarterly Journal of Economics* 113 (May), 433-466.

Dafny, Leemore, Katherine Ho and Maruicio Varela, "Let Them Have Choice: Gains from Shifting away from Employer-Sponsored Health Insurance and Toward an Individual Exchange," *American Economic Journal: Economic Policy* 5 (1) (February 2013), pp. 257-277.

Ellis, Randall P., Elizabeth Savage. 2008. Run for cover now or later? The impact of premiums, threats and deadlines on private health insurance in Australia. *International Journal of Health Care Finance and Economics* 8 (4) (December): 257-277.

Eugster, Patrick, Michèle Sennhauser, and Peter Zweifel (2010), Capping Risk Adjustment? *Journal of Health Economics* 29(4), 499-507.

Frech, H.E. III, Sandra Hopkins and Garry MacDonald. 2003. The Australian Private Health Insurance Boom: Was it Subsidies or Liberalized Regulation? *Economic Papers* 22 (1) (March): 58-64.

Frech, H. E. III and Michael P. Smith, "Anatomy of a Slow-Motion Health Insurance Death Spiral," *North American Actuarial Journal*, (forthcoming).

Gaynor, Martin, Rodrigo Moreno-Serra, and Carol Propper, "Death by Market Power: Reform, Competition, and Patient Outcomes in the National Health Service," *American Economic Journal: Economic Policy* 5(4) (November, 2013), pp. 134-166.

Glazer, Jonathan and Thomas McGuire, T.G. (2000), Optimal Risk Adjustment in Markets with Adverse Selection: An Application to Managed Care, *American Economic Review*, 90, 1055-1071.

Glennerster, Howard (1991), Quasi-Markets for Education?, *Economic Journal* 101 (408), 1268-1276.

Gruening, Gernod "Origin and theoretical basis of New Public Management," *International Public Management Journal* 4 (2001), pp. 1-25.

Hart, Oliver and John Moore, "*Journal of Political Economy* 98 (6) (Dec., 1990), pp. 1119-1158.

Hayek, Friedrich A., THE PRESENT STATE OF THE DEBATE. “The Present State of the (Socialist Calculation) Debate,” in Friedrich A. Hayek, ed., *Collectivist Economic Planning* (London: George Routledge & Sons, (1935), pp. 201-244. Available from the Ludwig von Mises Institute, [http://wiki.mises.org/wiki/Ludwig\\_von\\_Mises\\_Institute](http://wiki.mises.org/wiki/Ludwig_von_Mises_Institute)

Interim Final Rules for Group Health Plans and Health Insurance Issuers Relating to Coverage of Preventive Services Under the Patient Protection and Affordable Care Act. 2010. *Federal Register* 75 (137) (July 19, 2010): 41726-41760.

Kaiser Family Foundation (2014), *Summary of New Health Reform Law*. Kaiser Family Foundation (April 25, 2014).

Kreier, Rachel and Peter Zweifel (2010), Health Insurance in Switzerland: A Closer Look at a System Often Offered as a Model for the United States, *Hofstra Law Review* 39(1), 89-110.

Laffont, Jean-Jacques and David Montmort, *The Theory of Incentives*, Princeton Univ. Press, 2002.

Lange, Oskar, “On the Economic Theory of Socialism,” *Review of Economic Studies* 4(1 and2) (Oct. 1936, Feb. 1937), pp. 53-71 and 123-142, reprinted with small changes in Benjamin E. Lippincott, ed., *On the Economic Theory of Socialism* (1938), Univ. of Minnesota Press (1938), pp. 55-143. The later, 1938, version will be used for citations.

Leeman, Wayne A., *Centralized and Decentralized Economic Systems*, Chicago: Rand McNally (1977).

LeGrand, Julian, “Quasi-Markets and Social Policy,” *Economic Journal* 101 (408) (September, 1991).

Leida, Hans K. 2013. President Obama’s transitional policy for canceled plans. Milliman (November 19, 2013).

Lerner, Abba, *The Economics of Control* New York: McMillian (1944), reprinted by Augustus Kelly, New York, 1970.

Lucia, Kevin, Katie Keith, and Sabrina Corlette. 2013. State Decisions on the Health Insurance Policy Cancellations Fix. *The Commonwealth Fund Blog* (November 27, 2013).

Mathews, Anna Wilde and Christopher Weaver. 2014. Sick Drawn to New Coverage: High Rates of Serious Conditions in Health Law Plans Put Pressure on Premiums. *Wall Street Journal* (June 25, 2014).

von Mises, Ludwig, “Die Wirtschaftsrechnung im sozialistischen Gemeinwesen,” *Archiv für Sozialwissenschaften*, vol. 47 (1920), translated as “Economic Calculation in the Socialist Commonwealth,” Friedrich A. Hayek, ed., *Collectivist Economic*

*Planning* (London: George Routledge & Sons, (1935), pp. 87-130. Available from the Ludwig von Mises Institute, [http://wiki.mises.org/wiki/Ludwig\\_von\\_Mises\\_Institute](http://wiki.mises.org/wiki/Ludwig_von_Mises_Institute).

Norris, Doug, Mary van der Heijde and Hans Leida. 2013. Risk Corridors under the Affordable Care Act—A Bridge over Troubled Waters, but the Devil’s in the Details. *Health Watch*, Issue 73 (October 2013): 1-10.

O’Connor, James T. 2013. Comprehensive Assessment of ACA Factors That Will Affect Individual Market Premiums in 2014. Milliman (April 25, 2013), available at <http://ahip.org/MillimanReportACA2013/>

Pauly, Mark V. 2010. *Health Reform Without Side Effects: Making Markets Work for Individual Health Insurance*, Stanford, California: Hoover Press.

Pear, Robert. 2010. Insurers Are Offered Assistance for Losses. *New York Times* (December 3, 2013).

Powell, Martin, “Making Markets in the English National Health Service, *Social Policy & Administration* (May 26, 2014) online first <http://onlinelibrary.wiley.com/doi/10.1111/spol.12080/full>

Roemer, John E. *A Future for Socialism* Cambridge, Mass.: Harvard University Press (1994).

Robins, Lionel, *The Great Depression*, London 1934, Reprinted by the Books for Libraries Press, Providence Rhode Island (1971).

Rothschild, Michael and Jeffrey Stiglitz, (1976), Equilibrium in Competitive Insurance Markets: An Essay in the Economics of Incomplete Information, *Quarterly Journal of Economics* 90, 629-649.

Sappington, David E., “Incentives in Principal-Agent Relationships,” *Journal of Economic Perspectives* 5 (2) (Spring, 1991), pp. 45-66.

Schoder, Johannes, Michèle Sennhauser, and Peter Zweifel (2010). Fine-Tuning of Health Insurance Regulation – Unhealthy Consequences for an Individual Insurer, *International Journal of the Economics of Business* 17(3), 313-327.

Taylor, Fred M., “The Guidance of Production in a Socialist State,” *American Economic Review* 19 (1) (March 1929), pp. 1-8, reprinted in Benjamin E. Lippincott, ed., *On the Economic Theory of Socialism*, Univ. of Minnesota Press (1938), pp. 55-143.

Tinbergen, Jan (1952), *On the Theory of Economic Policy*, 2<sup>nd</sup> ed. published as *Contributions to Economic Analysis* Vol. 1, Amsterdam: North-Holland.

Trottmann, Maria, Peter Zweifel, and Konstantin Beck (2010), Supply-side and Demand-side Cost Sharing in Deregulated Social Health Insurance: Which Is More Effective?, *Journal of Health Economics*, 29(4), 489-498.

Van de Ven, Wynand P.M.M. and René C.J.A Van Vliet,(1992), How Can We Prevent Cream Skimming in a Competitive Health Insurance Market?, in: Zweifel, P. and Frech, H.E. (eds.), *Health Economics Worldwide*, Dordrecht: Kluwer, 23-46.

Van de Ven, Wynand P.M.M. and Randall P. Ellis, (2000), Risk Adjustment in Competitive Health Plan Markets, in: Newhouse, J.P. and Culyer, A.J. (eds.), *Handbook of Health Economics*, Vol. 1A, Amsterdam: North Holland, ch. 14.

Zweifel, Peter (2009), Technological Change and Health Insurance, in: J. Costa-Font and C. Courbage (eds.), *The Economics of New Health Technologies*, New York: Oxford University Press, 93-107.

Zweifel, Peter (2013), The Present State of Health Economics: A Critique and an Agenda for the Future (Editorial), in: *European Journal of Health Economics* 14(4), 569-571.

Zweifel, Peter and Michael Breuer (2006), The Case for Risk-based Premiums in Public Health Insurance, *Health Economics, Policy and Law* 1 (2), 171-188.

Zweifel, Peter and Willard G. Manning (1999), Moral Hazard and Consumer Incentives in Health Care, in: A.J. Culyer and J.P. Newhouse (eds.), *Handbook of Health Economics*, Vol. 1, Boston: North Holland, 1999, ch. 8, 409-459.

Zweifel, Peter and Mark V. Pauly (2007), Market Outcomes, Regulation, and Policy Recommendations, in: A. S. Preker et al. (eds.), *Private Voluntary Health Insurance in Development – Friend or Foe?* Washington: The World Bank, 115-145.