



ELSEVIER

Journal of Health Economics 21 (2002) 923–926

JOURNAL OF
**HEALTH
ECONOMICS**

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Editorial

Welfare effects of supplementary insurance: a comment

This issue of the Journal features two papers, *Community Rating of Health Insurance and Different Benefit Packages* by Matthias Kifman and *Alternative Health Insurance Schemes: A Welfare Comparison* by Hansen and Keiding, that examine the welfare implications of permitting voluntary supplementary insurance in a regime with a community-rated, compulsory basic insurance package. This is a critical question in any country that either has adopted or is considering some mix of private and compulsory/public insurance, including Germany, the Netherlands and the US. The conclusions of these papers appear to be radically different. Hansen and Keiding (HK) conclude that a compulsory scheme with voluntary supplementation is likely to be welfare superior to the pure compulsory scheme, but that the compulsory scheme alone may also be welfare-dominated by a pure voluntary market insurance regime, using either a Hicksian or an average utility criterion of welfare improvement. By contrast, Matthias Kifman (MK) concludes that if the insurers that offer the compulsory basic benefit are also permitted to offer supplementary coverage, this can only benefit low risks at the expense of high risks. Hence, if one purpose of the compulsory insurance is to enforce a cross-subsidy from low to high risks, permitting supplementation is likely to be counterproductive. However, MK also concludes that high risks may be better off if the insurers that offer the supplementary benefit are subsidized while those that offer only the basic benefit are taxed, which seems counterintuitive, given the initial finding, that permitting supplementation without a subsidy benefits low risks at the expense of high risks.

These apparently contradictory findings are possible because the two papers differ in their basic assumptions. Within their respective assumptions each paper makes a significant contribution. HK provide a welfare comparison between several alternative health insurance regimes: (1) an unregulated, voluntary market regime; (2) a compulsory and uniform universal regime with community rating; (3) a compulsory, universal, community-rated regime that permits private supplementary insurance. Their analysis offers two significant advances over previous papers on this topic. First, in order to make the welfare comparison between the community-rated compulsory insurance regime and the voluntary private insurance regime, HK derive the level of the compulsory insurance as the equilibrium choice in a median voter model of political choice. Modeling the compulsory coverage as an endogenous outcome of rational choice within the political process is an important step towards realism. More often, papers on this topic simply assume that the level of compulsory coverage is somehow optimally chosen by a benevolent, omniscient regulator (for example, [Dahlby, 1981](#)) or the political determinants of this choice are ignored (for example, Kifman

op.cit). Second, HK base their welfare comparisons on either the Hicksian compensation principle, that the winners from the change could compensate the losers, or a utilitarian average utility concept. As they note, these welfare criteria are probably more relevant than the Pareto improvement criterion, since compulsory insurance regimes are likely to make low risks worse off, assuming that the level of compulsory coverage exceeds the level that would be chosen voluntarily by low risks.

HK's voluntary insurance allocation is one in which consumers either buy full coverage or no coverage. They show that this voluntary coverage could yield higher average utility than the compulsory insurance determined by the median voter, under plausible assumptions about the distribution of risks. Low risks are better off under the compulsory insurance regime because they obtain insurance at reasonable cost, whereas they remain uninsured in the voluntary market; however, high risks are worse off with compulsory coverage because they have less coverage than they would choose to buy in the voluntary market equilibrium. However, this limitation of the compulsory coverage regime is reduced if high risks can purchase risk-rated supplementary coverage. This finding, that it is welfare-improving to permit private supplementation to a compulsory, community-rated basic insurance scheme, is similar to the conclusion in [Dahlby \(1981\)](#), who showed that compulsory coverage with voluntary supplementation can Pareto-dominate the equilibrium in a private insurance market with adverse selection. The contribution of HK is that their result is derived with an endogenously chosen compulsory scheme and applying the Hicks compensation criterion of welfare improvement, which can evaluate a broader range of changes than the Pareto concept used by Dahlby.

The main limitation of HK's analysis is that their voluntary insurance allocation assumes, without proof, the existence of a pooling contract in the private insurance market. In their model, individuals' risk of loss varies along a continuum, with loss probabilities known to the individuals but not to the insurers. Given this asymmetric information, HK's voluntary insurance market is presumably subject to adverse selection. However, their analysis of the existence of their voluntary insurance allocation focuses on the demand side of the market. For the supply side of the insurance market the only restriction is a zero profit constraint, that the premium for the pooling contract equals the average cost of those individuals who buy the insurance. They do not demonstrate the stability of their pooling contract in the face of entry by cream-skimming competitors who might draw off low risks by offering incomplete coverage ([Rothschild and Stiglitz, 1976](#)). This limitation of the model is acknowledged but not addressed. It is possible that their conclusion, that the voluntary market allocation may dominate the compulsory scheme chosen by the median voter, would not hold if the outcome of the voluntary market, under Rothschild–Stiglitz assumptions, is either no equilibrium or an equilibrium with very low coverage for low risks. However, with a [Wilson \(1977\)](#) notion of equilibrium, in which insurers anticipate the consequences for their contracts of entry or exit of other insurers in the market, the HK voluntary market is more likely to be viable, in which case their results would go through. HK also do not consider the supply of the compulsory insurance; they simply assume that it would continue to be community rated if supplementary insurance is offered, hence they do not consider the problem addressed by MK.

Finally, although the median voter approach to the political choice of the compulsory coverage is probably the only model that could yield tractable welfare results, a model of provider influence is probably more relevant in practice. The influence of providers in

the design of compulsory benefit packages is suggested by theoretical models of rational political decision-making, in which participants with concentrated interests have disproportionate weight (for example, [Stigler, 1971](#); [Becker, 1983](#)); it is also supported by casual empirical evidence from several countries, including the US health care reform debate. If provider influence leads to a more generous benefit package than would be chosen by the median voter, while tax rates more closely reflect median taxpayer preferences, this might explain the chronic underfunding that allegedly plagues tax-funded systems. Thus it is possible that HK's median voter model generates a relatively favorable version of the compulsory scheme. If so, their finding, that the compulsory scheme may be dominated by private insurance or by a compulsory scheme with supplementation, is particularly striking.

MK analyses the welfare effects of permitting insurers that offer the basic community-rated benefit to also offer supplementary benefits. He concludes that permitting insurers to offer both basic and supplementary coverage can only benefit low risks at the expense of high risks. This follows from the assumption that the community rated insurers offer supplementary benefits that disproportionately attract low risks. Permitting supplementation can thus lead to a separating equilibrium, in which the high risks buy the basic package from community rated insurers while the low risks buy the basic plus supplementary coverage from other insurers. This result has the potentially undesirable effects of reducing the transfer from low to high risks (which is assumed to be desired by the government) and leading the low risks to consume benefits worth less than their cost, because they thereby avoid the cross-subsidy to high risks.

MK's conclusions appear to contradict the results in HK (*op.cit.*) and in [Dahlby \(1981\)](#), who showed that supplementation can benefit high risks, who have a higher willingness to pay and hence can gain from supplementary coverage. These differences in conclusions are driven by several differences in assumptions. First, unlike HK and [Dahlby \(1981\)](#), MK does not assume identical utility functions for the low and high risks. He assumes that low risks can have a higher willingness to pay for supplementary benefits than high risks, whereas the standard assumption is that it is the high risks who buy the supplementary coverage, because the compulsory coverage is suboptimal for high risks but excessive for low risks. MK's assumption may be possible once the health benefit package is viewed as a multi-dimensional service package, whereas standard models assume a single-dimensional benefit, usually cash. Thus MK's result could occur if the supplementary benefit covers specific services such as health clubs or well baby care that only appeal to relatively healthy individuals. It might be possible for regulators to rule obvious cream skimming policies off limits, but that is an empirical question.

Second, whereas HK and [Dahlby \(1981\)](#) assume that community rating of the compulsory coverage is maintained regardless of supplementation, MK assumes that insurers who offer both supplementary and compulsory coverage can use the supplementary benefits to attract a disproportionate share of low risks. Essentially, in this model insurers cream skim by the design of the benefit package rather than by offering partial coverage. Under certain conditions, the outcome may be a separating (Wilson) equilibrium in which low and high risks buy different policies from different insurers, which eliminates the intended cross-subsidy from low to high risks on the basic benefit package.

Since MK's finding of potential adverse effects of supplementary benefits occurs only if the supplementary benefits are offered by the insurers who also offer the basic package, this

would seem to argue for having the supplementary policies offered by separate, risk-rated insurers, as in MK's benchmark case. However, this ignores the additional administrative costs and moral hazard that result when individuals hold multiple, possibly overlapping insurance policies. Countries that have such separate supplementary policies, usually offered by private insurers as an add-on to the publicly provided basic insurance, are familiar with these potential spillovers. In particular, if the supplementary policies cover benefits that are complementary to the basic insurance plan, permitting supplementation tends to drive up utilization and costs incurred by the basic coverage. This is most obvious in the case of "gap" policies that cover out-of-pocket expenses built in to the public policy, such as Medigap supplements to US Medicare or Mutuelles policies in France. Less obvious but similar in effect are policies that cover complementary services. For example, supplementary coverage of outpatient pharmaceuticals may increase utilization GP visits required to get a prescription, although there may other, offsetting cost-reductions for other services.

One clear conclusion is that the welfare effects of permitting supplementation of compulsory, community-rated insurance depend critically on who buys the supplementary coverage and how the supplementation affects the rating of the basic coverage. Supplementary coverage is more likely to be welfare improving if it is bought primarily by high risks, for whom the basic coverage is presumably suboptimal. This result may be more likely if the supplementary benefit is offered by separate insurers. However, this conclusion ignores the additional administrative costs and moral hazard that results if basic and supplementary coverage are offered only as two separate policies. A more complete analysis would consider supplementation in a model with endogenous political choice of the compulsory benefit, utility functions over a multi-dimensional benefit and consideration of the moral hazard as well as the adverse selection effects of supplementation. These papers may not answer all the questions but they both makes significant steps forward.

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Accepted 13 June 2002