

Can insurance increase financial risk? The curious case of health insurance in China

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Abstract

We analyze the effect of insurance on the probability of an individual incurring ‘high’ annual health expenses using data from three household surveys. All come from China, a country where providers are paid fee-for-service according to a schedule that encourages the overprovision of high-tech care and who are only lightly regulated. We define annual spending as ‘high’ if it exceeds a threshold of local average income and as ‘catastrophic’ if it exceeds a threshold of the household’s own per capita income. Our estimates allow for different thresholds and for the possible endogeneity of health insurance (we use instrumental variables and fixed effects). Our main results suggest that in all three surveys health insurance increases the risk of high and catastrophic spending. Further analysis suggests that this is due to insurance encouraging people to seek care when sick and to seek care from higher-level providers.

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1. Introduction

The most basic argument for insurance is that it reduces financial risk. The classic textbook argument in the case of health insurance has an individual facing a known probability of falling ill and a corresponding known reduction in wealth caused by the medical expenses necessitated by falling ill (cf. e.g. Culyer, 1989). If offered full and actuarially fair insurance the risk-averse individual accepts it, preferring to pay the corresponding premium thereby securing a certain wealth equal to the expected wealth in the absence of insurance. The benefit of insurance is the reduction in risk—the knowledge that whether or not illness occurs, wealth is the same in both states. Relaxing the assumption that insurance offered is full leaves the risk-averse individual preferring insurance, because although not eliminated, the risk associated with illness is substantially reduced.

How this characterization of health insurance plays out in practice – and therefore how far health insurance protects people from financial risk – has been the subject of very little empirical research. Yet it is not obvious that in the real world health insurance always reduces risk. Contrary to the textbook example, there is not a fixed financial loss associated with illness, or even with each type of illness. A wide variety of tests and interventions can be undertaken,

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even for patients with similar conditions. Patients are not indifferent to the type and extent of care they receive, because in contrast to the textbook model, they derive utility from health status as well as financial wealth, and additional tests and interventions may be expected – at least up to a point – to increase the chances of a recovery. So, patients have an incentive to engage in ex post-moral hazard, increasing their demand for care as the price is reduced through insurance (Feldstein, 1973). This would not be sufficient to raise out-of-pocket payments, of course, unless demand were price elastic, which empirical work from around the world suggests it is not. If, however, insurance were to cause providers to shift the patient's demand curve to the right, out-of-pocket payments could increase as a result of having insurance. Inasmuch as the demand curve indicates the amount of care the patient would choose at a given price if he had the same information as the provider, and given that providers gain by such action, such a shift amounts to demand inducement (McGuire, 2000). In the McGuire-Pauly model (McGuire and Pauly, 1991) insurance might be argued to reduce the disutility a provider experiences from a given amount of inducement on the grounds that health care becomes less burdensome financially for patients with insurance; the effect would be to increase the provider's optimal level of inducement. This outcome seems less likely the greater is the control that the insurer has over the care delivered by the provider for a given medical condition (e.g. by imposing quality standards), the less freedom providers have to set prices, the greater the degree of self-regulation by the medical profession, and the stronger is any ombudsman or other authority acting on behalf of patients.

In many countries, especially developing countries, these checks on provider behavior are typically very limited if not largely absent. This is largely true of China, which is the setting for the present paper. Systems for monitoring and enforcing quality standards are weak. Providers are restricted in the prices they can charge patients. However, the government-set schedules for fees and medicines provide physicians with a strong incentive to favor high-tech care over basic care. For basic interventions, the government has set the price below cost so as to make them affordable even to fairly poor patients, while more sophisticated interventions are priced above cost to enable providers to make profits on them in the hope that providers will use these profits to cross-subsidize the delivery of basic interventions. In practice, and contrary to the outcome hoped for by the government, the price structure encourages providers to supply sophisticated care wherever possible, by shifting demand from low-margin basic services to high-margin high-tech care and drugs. Unsurprisingly, even low-level facilities have acquired sophisticated medical equipment, and there is evidence the care the system delivers is more costly and more sophisticated than is medically necessary (cf. Liu and Mills, 1999). The incentive to over-treat is accentuated where, as in China, there is a third party picking up part of the cost, especially one that is simply reimbursing (a fraction of) the costs incurred by the provider. Self-regulation by the Chinese medical profession is limited, and while the Chinese government has identified the delivery of unnecessary and poor quality care as a matter for concern, there are no formal complaint procedures for patients who feel that they have been over-treated. In such a setting, it seems perfectly plausible that at least some patients may end up not only getting more care than would have been the case if they had been uninsured, but also paying more out of pocket. Insurance in such a setting may, in other words, actually *increase* the probability of large out-of-pocket payments and hence exposure to financial risk.

Some studies to date have, of course, looked at the effect of insurance on out-of-pocket spending. Often these are tabulations of spending by insurance status or cross-section regressions of spending on insurance status and other covariates: examples from the US, which find *higher* out-of-pocket spending among the insured, include Rubin and Koelln (1993), Waters et al. (2004) and Shen and McFeeters (2006).¹ Such studies are vulnerable to biases caused by health insurance being endogenous. Sepehri et al. (2006) find that in Vietnam failure to take into account endogeneity (or equivalently selection on unobservables) causes the impact on out-of-pocket spending to be biased upwards, in their case making the difference between insurance having no impact on out-of-pocket spending and having a significant dampening effect. Finkelstein and McKnight (2005) use differences-in-differences and find that Medicare in the US significantly reduced out-of-pocket spending. A different approach is taken by Gertler and Solon (2000), who examine hospital pricing behavior vis-à-vis insured and uninsured patients in the Philippines. They find that private hospitals earn larger revenues from insured patients: for insured patients, hospitals secure payments from the insurer, but manage to earn similar out-of-pocket revenues to those they earn from uninsured patients. Gertler and Solon conclude that this is due to hospitals charging higher prices for insured patients, not delivering more services.

¹ The volume edited by Preker and Carrin (2003) contains several studies in this genre from developing countries.

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