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1 Introduction

The concept of Medical Savings Accounts (MSAs) – that individuals save and pay for their own medical needs – emerged in response to concerns of escalating healthcare costs. The appeal of enlisting consumers in reducing costs as well as mobilising additional funds for healthcare led to implementation of this mechanism in countries as diverse as Singapore, China, the United States, and South Africa over the last 20 years. MSAs purport to address some of the main inefficiencies of private health insurance – moral hazard, escalating costs, adverse selection, and gaps in coverage. This essay explains key theories supporting MSAs in addressing these challenges. The validity of theoretical arguments is then examined using empirical findings from country studies. This is followed by a discussion analysing if MSAs sufficiently address inefficiencies of private insurance and thus represent an attractive alternative to financing healthcare. Does the design of MSAs deliver benefits promised by theory? If not, what is at risk?

2 Medical savings accounts: how accountable are they in theory?

2.1 Controlling consumption?

One of the key deficiencies of private health insurance is moral hazard and its impact on healthcare costs. Economic theory purports that health insurance provides incentives to over-consume and over-supply. With healthcare payments partially, if not fully, borne by a third party, the full cost of care is not evident. As a result, consumers may engage in riskier behaviour, increasing the likelihood to need more healthcare, and/or simply purchase more healthcare than medically needed. In addition, providers may also supply more care than necessary. Such behaviour changes increase the quantity of healthcare consumed. It is allocatively inefficient as too much of society's resources are directed to healthcare, creating a welfare loss.

Cost-sharing is argued to effectively address moral hazard. The theory is that if individuals bear more costs, they consume less as they make more conscious consumption choices. The 1970's Rand Health Insurance Experiment (Rand HIE) is widely cited supporting evidence. This experiment randomised 2000 families across 14 health plans with co-insurance rates of 0%, 25%, 50%, 95% and maximum expenditures of 5%, 10% or 15% of poorer families' incomes (up to \$1000) (Newhouse & the Insurance Experiment Group 1993). The study found increased cost-sharing reduced consumption relative to free care; other studies found similar effects (Scitovsky & Snyder 1972, Sheffler 1984).

MSAs take the notion of cost-sharing to the extreme where the majority, if not all, of routine healthcare costs are borne by the individual. Thus, in theory, moral hazard is resolved by MSAs.

"Because the MSA holder is the consumer and purchaser of healthcare services, an incentive is created to lower usage as well as compare services to obtain lower prices." (Scheffler & Yu 1998: 274)

2.2 Stemming costs?

Private health insurance is also associated with escalating healthcare costs due to moral hazard from third party payments and administrative costs. Cost-sharing is similarly proposed as a solution because it forces consumers to become more conscious of price and quality. The theory is that as consumers seek cost-effective services, competition is fostered amongst firms on price and quality. Furthermore, costs would be reduced with MSAs given the absence of expensive private insurance practices, e.g. screening consumers, processing claims/appeals, and conducting utilization reviews/audits.

Cost-sharing should also theoretically reduce medical expenditures. This is supported by the Rand HIE which found per capita expenditure 45% higher on the free plan compared to the 95% coinsurance plan (Jost 2007). Theory argues that MSAs will encourage competition on the basis of price and quality, further reducing costs and health expenditures. In practice, however, the ability of MSAs to stem costs is not always supported by evidence. What then is at the root of escalating healthcare costs?

2.3 Filling coverage gaps?

Private health insurance is also criticised for fostering adverse selection, resulting in inefficient coverage gaps. This scenario describes the higher propensity of unhealthier individuals to purchase insurance and conceal their health background. Insurers raise premium prices to account for more and costlier medical expenses. In turn, healthier individuals may find this price expensive and are less likely and/or able to purchase coverage. Their exit from the market causes the insurance pool to shrink in size and increase in risk; prices rise and the cycle continues.

In theory, MSAs obviate adverse selection because there is no risk pooling and thus no selection. Rather, pooling occurs across an individual's lifetime – individuals save during economically active, healthy years and spend in elderly years when need for healthcare is increased. Furthermore, MSAs are often linked with catastrophic insurance which have higher deductibles and therefore lower premiums. In theory, lower premiums extend coverage to those currently uninsured. Whether MSAs are effective in addressing adverse selection and coverage gaps is of much debate and raises important questions. Will individuals be able to adequately save? If not, can they still access care?

3 Medical Savings Accounts: accounting for the evidence

The above theoretical arguments indicate MSAs ability to successfully address deficiencies in private health insurance – moral hazard, escalating costs, adverse selection and coverage gaps. Do the theories hold in practice? MSAs have been incorporated into national health financing systems of four countries (i.e. China, Singapore, South Africa, and the United States of America. How successful have they been? Evidence is presented and followed by discussion analysing their impact.

3.1 Singapore

The impact of MSAs in Singapore is difficult to assess due to concurrent reforms in the health sector and lack of information (Hsiao 1995). What is available indicates that while MSAs were effective in reducing consumption, they were ineffective in containing costs or extending coverage (Barr 2001). In fact, an initial increase in health expenditure followed the introduction of MSAs, likely due to simultaneous infrastructural upgrades (Hsiao 1995). Furthermore, MSAs were not successful in introducing price competition as the Singaporean system operates on quality, e.g. physical amenities, rather than on price or technical measures (Dixon 2002). As such, high-cost not cost-effective care is provided, with service intensity and costs inflated. Reductions were not seen until the government recognised supply-side forces and intervened with regulations (Hanvoravongchai 2002). Cost reductions, therefore, cannot be attributed to MSAs but rather to direct government control (Barr 2001, Hsiao 2001, Dixon 2002).

MSAs also failed to fill coverage gaps in Singapore. Despite their compulsory nature and a 95% subscription rate in 1992 (Hsaio 1995), MSAs have played a small role in total spending, representing only 8% in 1999, due to restrictions on their use (Hanvoravongchai 2002). Important population segments remained without adequate coverage, and in recognition, the government created other forms of risk-pooling and safety nets for the poor and elderly. Coverage was extended because of these schemes, not MSAs (Barr 2001, Dixon 2002).

3.2 South Africa

MSAs' impact in South Africa is similar to Singapore. Evidence shows mixed success in reducing consumption and little in containing costs or extending coverage (Jost 2005). MSAs emerged in South Africa following the deregulation of private insurance in the late 1980s. It remains voluntary,

offered alongside private insurance in a mixed market. Following implementation of MSAs, consumption of outpatient services and drugs were reduced relative to traditional private insurance (Dixon 2002, Soderlund & Hansl 2000). However, service intensity remained high and private premiums rose (Dixon 2002, Thomson & Mossialos 2008). In fact, key drivers of costs in South Africa, e.g. hospital, technology, HIV/AIDS, are beyond the reach of MSAs (Jost 2005). Furthermore, MSAs seem unable to foster price competition. In a market with concentrated power, prices are determined by providers on a fee-for-service basis, tending to inflate costs (Jost 2005).

Due to the mixed market and lack of government oversight, risk selection was a prominent feature of early MSAs (Glied 2008). Financial protection, particularly for the elderly and those with chronic conditions, was particularly exacerbated before the government introduced regulation and risk adjustment in 2000 (McLeod & McIntyre 2008). Nevertheless, with tax subsidies and high deductibles, MSAs still attract the wealthy and healthy, leaving a large proportion of the population still lacking access to healthcare.

3.3 China

Evidence in China regarding the effectiveness of MSAs in reducing costs and increasing access is mixed. China implements MSAs at city-level and in combination with social insurance. Participation was initially piloted in two cities and later expanded and made compulsory in every city (Dixon 2002, Yi & Maynard 2008). Initial schemes showed a decline in total health expenditure; however, closer examination attributes this to a shift from inpatient to outpatient care and not a decline in overall consumption (Dixon 2002). Despite decreases in expensive and unnecessary care, evidence shows secondary effects of MSAs in decreasing use of some necessary care, improper use of funds and high administrative costs (Yi & Maynard 2008). MSAs may have potential to control costs but continual monitoring is needed to mitigate adverse effects and ensure sustainability in cost-savings.

MSAs impact on financial protection in China is not conclusive. Dixon (2002) suggests access under MSAs increased for the general population as they allowed for more equitable distribution of healthcare. On the other hand, Gao et al (2001) found deteriorating access for the urban poor and Yi and Maynard (2008) argue that lack of adequate risk pooling leads to weak benefit packages and raise concerns over the lack of a social safety net. Given the size of China's population and its ideology of equity for all citizens, there is a potential to extend coverage but risk should be managed such that it does not regressively shift costs.

3.4 United States of America (USA)

MSAs were introduced in the USA in 1996 together with high deductible health plans for catastrophic events (Dixon 2002). While there is much literature on MSAs from the USA, the majority remains advocacy pieces touting their advantages or disadvantages. Research literature of its impact on reducing moral hazard, containing costs and expanding coverage in the USA is lacking (Lav & Park 2001). What does exist is based on simulation exercises with findings debated for their assumptions in overestimating cost-savings. Buntin et al (2006) summarises these simulations with MSAs providing cost-savings from 10% to 25%. Other analyses predict expenditures unlikely to be reduced by MSAs because most healthcare costs in the USA are above \$2000 and thus covered under catastrophic insurance and not MSAs (Moon, Nichols & Wall 1996).

Despite expectations that tax benefits and lower premiums would result in high uptake, particularly among small businesses and uninsured individuals (Dixon 2002), uptake was much lower than expected with less than 50,000 enrolled in 1999 (Dixon 2002). Furthermore, there is no evidence demonstrating that MSAs increased coverage (Glied 2008), and it is unlikely that financial protection of poorer groups have been expanded as tax incentives would not serve such groups.

4 Discussion

The above case studies demonstrate weak, at best mixed, evidence supporting theoretical arguments that MSAs effectively address moral hazard, escalating costs and coverage gaps. Their impact depends on the country context, notably government stewardship, values of solidarity, and other institutional health financing mechanisms. The following discussion analyzes why MSAs have not lived up to their potential argued by theory, and therefore why MSAs do not represent an attractive alternative to financing healthcare in practice.

4.1 What's demand got to do with it?

Proponents of MSAs argue that rising healthcare costs are due to demand-side moral hazard that can be resolved by cost-bearing and cost-conscious consumers. The force of this overarching argument is not substantiated by available evidence but rather leads one to question the force of the supply-side in controlling costs. Singapore publically acknowledged that "market forces alone will not suffice to hold down medical costs to the minimum. … The government has to intervene directly to structure and regulate the health system." (Ministerial Committee 1993: 3). South Africa also recognised the role of government stewardship and the supply-side in cost-containment (Glied 2008). Consumers

alone cannot spur price competition in the health market to ensure cost-effective care. Policy-makers should ensure MSAs do not result in cost-shifting to individuals but real spending reductions and would be wiser to explore supply-side measures.

4.2 Spiralling de-insurance

MSAs may actually be widening rather than filling the coverage gap. Evidence of MSAs addressing adverse selection and coverage gaps is generally negative. Eliminating risk pooling in favour of individual inter-temporal pooling raises issues to policy-makers of trading equity for efficiency. But is it efficient? Time-pooling fails in situations where individuals do not require healthcare where individuals suffer from chronic conditions and are unable to adequately access healthcare. Furthermore, MSAs do not necessarily obviate adverse selection, especially when found in a mixed financing system with voluntary participation as in South Africa and the USA. In mixed systems, younger, healthier and wealthier individuals subscribe to MSAs attracted by their tax benefits whereas older, sicker individuals financially benefit from staying in traditional private insurance. The effects of adverse selection results in a spiral of "de-insurance" as individuals increasingly switch over (Thomson & Mossialos 2008: 3). Would it not be valuable to explore other solutions to adverse selection such as risk-adjusted mechanisms or regulations for coverage? It is interesting to note that Rand HIE investigators "argued for national health insurance with cost-sharing and not for the reduction of health insurance coverage" (Jost 2007: 128).

4.3 Eroding solidarity

It has been said that MSAs "reflect a philosophical shift in emphasis from collective to individual responsibility" (Robinson 2005: 1199). Indeed, there appears to be an erosion of solidarity as one proceeds from social health insurance to private health insurance to MSAs. Solidarity in healthcare is increasingly tenuous, weighted by escalating costs and stretched by widening inequities. The design of MSAs promise to deliver benefits but at the likely expense of equity. In post-apartheid South Africa and the individualistic Singaporean and American cultures, MSAs arose in a climate of self-responsibility. Indeed, Singapore's Prime Minister once stated "social and health welfare are like opium or heroin" (Lee 1981: 8). China remains an interesting case, given its ideology of equity for all citizens, MSAs may bridge the tension. Ultimately solidarity is a political and societal value, explaining why some nations focus on access barriers and supply-side issues in healthcare while others focus on consumer responsibility and demand-side issues.

4.4 Too much is at risk

MSAs purport to address the key deficiencies of private health insurance, i.e. moral hazard, escalating costs, adverse selection and coverage gaps. Unfortunately, there is not enough experience with MSAs to date. What empirical evidence does exist is limited to country contexts and confounding factors of other reform efforts. Given concerns that MSAs may actually not lead to cost-savings and furthermore erode financial protection, are there not other, less riskier means to better address these inefficiencies, e.g. co-payments and prospective payments for moral hazard, risk-adjusted mechanisms for adverse selection, regulation for coverage gaps, or more radically, providing national insurance? The country studies presented evidence where MSAs led to some increased efficiency. However, there are scenarios where MSAs led to the opposite – higher costs, more inefficiency, greater coverage gaps. While these can be critiqued as being based on a weak evidence base, they cannot be negated – too much is at risk.

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