Is it reasonable to subsidize healthcare in Developing Nations? A question purely from the growth perspective

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15 April 2015

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(April 2015)

Abstract: The paper purports to examine the rationale in subsidizing healthcare in the developing economies solely from the standpoint of economic growth with the help of a three-sector, full-employment small economy model with exogenous labour market imperfection and a non-traded sector providing healthcare services. Consumption of healthcare services emanates positive externalities and raises the efficiency of workers. There is provision for providing public subsidy on the consumption of health services. The analysis finds that the socially optimal consumption subsidy on health is not necessarily positive and crucially hinges on factors like degree of labour market imperfection, quality of services provided by the healthcare sector and its production technology. These results lead to a few important policy implications in the context of the developing countries. Finally, this analysis provides a theoretical justification why the magnitude of public spending on healthcare services is significantly lower in the developing countries vis-à-vis the developed nations.

Keywords: Consumption externality; healthcare; efficiency of labour; health subsidy; social welfare; developing countries; general equilibrium.

JEL codes: I18; J31; H21; D58; D62.

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1. Introduction

Public spending on healthcare is an important agenda of the government in any country. Healthcare is a merit good that generates positive consumption externalities through human capital formation that is conducive to economic growth. In an economy where there is a sector that emanates consumption externalities; and, there are no other distortions a consumption subsidy is the right instrument to deal with externalities and improve social welfare. The simple argument is that a consumption subsidy on the good would increase its demand and increase the producer price given its supply. The forces of free market would, therefore, compensate the producers and induce them to produce more; thereby, increasing social welfare. Hence, from the pure growth perspective consumption of healthcare services should be subsidized.

Governments across countries whether developed or developing spend substantial amounts of their budgets in providing health subsidies. For example, as per the World Bank dataset US spent 8.3 percent of its gross domestic product (GDP) on healthcare in 2012. The corresponding figures for UK, Germany and Japan were 7.8, 8.6 and 8.3 percent, respectively. On the other hand, the developing countries in general spent much less on healthcare compared to the developed world. For example, China, India and Bangladesh spent only 3.0, 1.3 and 1.2 percent of their respective GDP in providing subsidy on health.[1] The figures for per capita public expenditure on healthcare are also substantially higher in developed countries compared to those in developing nations. This difference may arise due to the fact that in a developing country like India the government has to spend a substantial amount of its resources on redistributive programs with a view to mitigate poverty and income inequality. In this context, it is important to note that public expenditure on healthcare in developing countries by itself plays a

[1] See http://data.worldbank.org/indicator/SH.XPD.PUBL.ZS

redistributive role. This is because the poor people can spend only a meager amount from their own pockets on health. Public expenditures on both preventive and curative healthcare services help them much in getting at least some access to healthcare services.[2,3]

Setting aside the redistributive role of public expenditure on health let us solely concentrate on the aspect of economic growth. In an economy where consumption externalities are the only source of distortion the socially optimal consumption subsidy is unambiguously positive. Is this the case in a small open (say, developing) economy in the presence of other distortion(s) e.g. labour market distortion? Another important question is whether the optimal subsidy anyhow depends on the quality of health services provided by the healthcare sector.

The present paper is aimed at providing answers to the above questions in terms of a three-sector full-employment small open economy model with exogenous labour market imperfection and a non-traded sector providing healthcare services. Consumption of healthcare services emanates positive externalities through improving health conditions and hence the efficiency of workers. Wages across sectors differ implying the existence of labour market distortion. Hence, this is a situation where multiple distortions coexist. There is provision for public subsidy on health designed to deal with externalities. In this backdrop, we have shown that the socially optimal consumption subsidy on health is not necessarily positive and crucially hinges on the degree of labour market imperfection, the quality of services provided by the healthcare sector and the production technology of this sector. We have also pointed out a few important policy implications of our

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[2] In the developing countries, the greater emphasis is on curative healthcare spending which often reflects a bias towards the better-off people while preventive healthcare expenditure with much larger externalities would have been of greater help to the economically weaker section of the population. See Cevik and Tasar (2013) in this context.

[3] These aspects have been discussed in detail in Musgrove (1999), Self and Grabowski (2003) etc.

theoretical findings. The policy to subsidize healthcare should be accompanied by measures designed to improve the quality of the services rendered by this sector and to lessen the degree of imperfection prevailing in the labour market. These policies, if undertaken concurrently, would increase the possibility that the health subsidy would successfully be able to deal with consumption externalities and improve social welfare. Finally, this analysis also provides a theoretical justification why the magnitude of public spending on healthcare services is significantly lower in the developing countries relative to the developed nations.

2. The Model

3. Comparative statics

In this paper, as discussed earlier, we are interested to examine whether the provision of a consumption subsidy on healthcare is desirable from the perspective of social welfare of this small open developing economy. To put it differently, we would like to investigate whether the optimal rate of consumption subsidy in the present context is indeed positive.

Totally, differentiating equations (1) – (12) the following proposition can easily be derived.[4]

Proposition 1: A consumption subsidy on healthcare leads to: (i) an increase in the price of healthcare services, P_G; (ii) an increase in the return to capital of type N i.e. R; (iii) an expansion of sector G; and, (iv) an expansion (a contraction) of sector 1 (sector 2) both in terms of output and employment.

Proposition 2: The socially optimal rate of health subsidy is not necessarily positive. It is positive (zero) (negative) if and only if $\{W^* hE_h L(\frac{\sigma\theta_{LG}}{\theta_{NG}})\} > (=)(<) \frac{(W^* - W)a_{L1}X_1\lambda_{K2}\beta}{|\lambda|}$.

[4] This has been proved in Appendix 1.

From equation (16) the following three ***corollaries*** readily follow.

Corollary 1: The possibility that the socially optimal health subsidy would be positive increases with an increase in E_h and vice versa.

Corollary 2: If $\sigma = 0$ i.e. if technology of production in the healthcare sector (sector G) is of the fixed-coefficient type, the socially optimal health subsidy is zero.

Corollary 3: In the absence of any labour market imperfection i.e. when, $W^* = W$, the optimal subsidy is unequivocally positive.

An essential implication of ***corollary 3*** is that even though the optimal subsidy in this economy is positive its magnitude would be less than the case with no or very small degree of labour market distortion. This probably provides a theoretical justification why the magnitude of public spending on healthcare services is significantly lower in the developing countries vis-à-vis the developed nations which are relatively free of such type of distortion.

3. Concluding remarks

In the small open economy literature it is a well-known result that in the case of consumption externalities the consumption of the good that emanates pecuniary benefits should be subsidized to improve social welfare. Healthcare is such a good/service which is universally provided to consumers at a subsidized price. In a model with no other distortion there is no gainsaying that healthcare services should be subsidized. The issue

does not remain that much straightforward in the presence of multiple distortions.[5] This paper examines the optimality of the health subsidy in the context of a small open developing economy with labour market distortion and positive consumption externalities. A three-sector, full-employment model has been considered for analytical purpose where the two traded sectors form a Heckscher-Ohlin subsystem while sector G, a non-traded sector, produces healthcare services with labour and a sector-specific input, capital of type N. The consumption of commodity G creates positive externalities and raises the efficiency of workers in the economy. There is provision for health subsidy with a view to deal with externalities and improve national welfare. Workers in sector 1 receive a low wage, W while in the other two sectors the wage rate is W^* with $W^* > W$. Thus, there is labour market imperfection. In this setting, the paper has investigated the optimality of the health subsidy. The analysis has found that the health subsidy leads to reallocation of labour between the sectors and raises the effective labour endowment through externalities. These two effects are called ***labour reallocation effect*** (***LRE***) and ***labour endowment effect*** (***LEE***), respectively both of which affect social welfare through changing aggregate wage income. The optimality of the subsidy policy crucially depends on the relative strengths of the two opposite effects. The optimal subsidy is positive (negative) if the ***LEE*** (***LRE***) dominates over the ***LRE*** (***LEE***). Therefore, the analysis finds that the optimal health subsidy in this developing economy is not necessarily positive and crucially depends on factors like production technology in the healthcare sector, the quality of services provided and the degree of labour market distortion. The last two results leads to a few important policy implications. Before providing the health subsidy the government should take the initiatives to improve the quality of the services provided by this sector as much as possible and resort to labour market reform that is designed to mitigate distortion prevailing in the labour market. These policies, if undertaken concomitantly, would increase the probability that the health subsidy would successfully be able to deal with consumption externalities and improve social welfare.

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[5] In the presence of multiple distortions the effect(s) of any parametric changes on social welfare (or any other objective(s)) might change enormously compared to the one distortion case. This is because the effects of different distortions might move in the two opposite directions nullifying each other's effects. Hence the net effect depends on the relative magnitudes of different effects. This is a well-known result in the theory of international trade.

Furthermore, the study provides some justification why the governments in the developing economies spend/should spend much less on healthcare vis-à-vis their counterparts in the developed nations.

Finally, it should be clearly spelt out that this analysis has been carried out assuming that social welfare depends solely on national income and the distributional aspect of health subsidy has completely been ignored. If that objective is also brought in the picture apart from the growth objective there might be grounds for providing health subsidy even though the policy fails to deliver the goods from the perspective of economic growth.

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