REVIEW

Analyzing the possible effects of adopting a model of national health insurance in India on economic growth

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In this paper, I attempt to summarize some key portions of the literature on the effects that national health insurance has on economic growth, specifically involving the variable of life expectancy. In order to do this, I first looked at a theoretical explanation for the connection between NHI (National Health Insurance) models and economic development; following that, I looked at the direct empirical trends between the implemention of national health insurance policy and economic development; finally, I looked at the implementability of such a policy in India.

Key Words: *National health insurance; Health insurance; Nationalized healthcare; India; Economic growth; Educational investment; Labor output*

INTRODUCTION

This paper reviews the existing literature on the effects of increased access to healthcare on economic growth. Specifically, it explores empirical evidence related to the theoretical claim that people with better life expectancy in countries with lower mortality rate are more likely to invest in their own education, thus promoting economic growth. It also attempts to generalize conclusions related to correlations between life expectancy, mortality rates, and labor output.

For the purposes of this paper, "national health insurance," hereinafter "NHI," refers to "a system of health insurance that insures a national population against the costs of healthcare, administered by the public sector or a partnership between the public and the private sector, funded primarily by taxpayer money." Examples of such systems are the National Health Service in the United Kingdom and Medicare in Australia.

The link between increased healthcare access and growth

There is still some debate among economists about whether expansion of healthcare access is a significant factor in boosting economic development. Acemoglu and Johnson for instance, suggest that "there is no evidence that the large increase in life expectancy raised income per capita" [1]. However, we suggest that the literature, taken as a whole, seems to indicate at least some positive correlation between increased access to healthcare and increased economic development.

The theoretical logic behind the notion that more access to healthcare boosts the economy is two-fold. The first prong of this is the reasonably simple idea that access to healthcare increases labor output. The analytical reasoning for this is simply that healthy workers are more productive. This has been studied to a significant extent in the literature. For instance, Bloom, Canning, and Sevilla conclude, in their empirical study, that "a one-year improvement in a population's life expectancy contributes to an increase of 4% in output. This is a relatively large effect, indicating that increased expenditures on improving health might be justified purely on the grounds of their impact on labor productivity" [2]. More recently, Saha documented that improvement in rates of life expectancy at birth in India had a strong positive correlation with increases in future total factor productivity [3]. In fact, most significant empirical literature on the effects of healthcare on economic growth using the variable of life expectancy at birth surrounds comparing growth in life expectancy to labor output and productivity—consider, for instance, Knowles and Owen [4], Webber [5], Bloom et al. and Acemoglu and Johnson.

The second prong is relatively less-studied in the empirical literature, but quite extensively studied in the theoretical literature; it directly relates to the topic of education. This prong suggests that investment in healthcare creates an incentive for individuals to invest in education. This theoretical idea is explained by Finlay as follows: "Individuals who are healthier live longer, and are encouraged to invest more in education as the time horizon over which returns to education can be enjoyed in the form of higher skilled wages is extended" [6].

This, as we mentioned before, is well-explored in the theoretical literature. Blackburn and Cipriani suggest that more access to healthcare results in higher life expectancy and lower early child-bearing due to access to birth control, both of which increase rates of education, thus indirectly boosting economic growth [7]. Chakraborty finds that lower mortality rates leads to more educational investment, explaining that "mortality also affects investment through rates of return. Risks associated with investment in education, for instance, may not be fully diversifiable. Higher mortality would then reduce returns on such investment" [8]. Similarly, Kalemli-Ozcan, Ryder, and Weil find that "mortality decline produces economically significant increases in schooling and consumption" [9]. Finlay actually provides a comprehensive empirical analysis of this idea that is otherwise under-explored in the empirical literature, concluding that "health does play a role in economic development. Before dismissing its role in determining cross country differences in economic growth the channels by which health influences economic growth must be considered. In this paper I have shown that health influences economic growth *via* education incentive effects, and more weakly through a fertility effect" [6].

The conclusion of all this is that it is more than likely that increased access to healthcare contributes to economic growth.

NHI models and their effects on life expectancy and mortality rates

NHI models lead to increased access to healthcare. This is reasonably intuitive—by definition, a national health insurance model would ensure basic health insurance coverage to everyone. Indeed, Nicholson, Yates, Waterburn, and Fontana note that universal health coverage "can only be achieved through publicly governed, mandatory financing mechanisms (general taxation and social health insurance contributions) that compel

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wealthier and healthier members of society to subsidize the poor and the vulnerable"[10]. Since life expectancy and mortality rates are the key variables in the literature cited above with regard to a connection between healthcare and growth, we should look to the effects of NHI models on those two variables.

The empirical research suggests that national health insurance increases life expectancy. James, Devaux, and Sassi analyze trends between 1990 and 2013 and determine that increased government spending on healthcare in those two decades, increased spending on healthcare globally contributed to one year of life expectancy gains [11]. Moreover, life expectancy has a positive correlation with core components of NHI models. Pearson, Colombo, Murakami, and James (2016) explain in an OECD report, "A positive correlation exists between population coverage and life expectancy, though this is mostly driven by India and Indonesia. A clear negative relationship exists between out-of-pocket (OOP) payments and life expectancy, suggesting that financial risk protection is associated with health outcomes. GP density (service coverage) is positively associated with life expectancy. The relationship between total health expenditure and life expectancy is also positive" [12].

Similarly, most research suggests that national health insurance reduces mortality rates. Moreno-Serra and Smith studied 153 countries between 1995 and 2008, and found that a 10% increase in government spending on healthcare was associated with an average reduction in mortality for women by 1.6 deaths per 1000 and for men by 1.3 deaths per 1000 [13]. Bokhar Gai and Gottret find that a 10% increase in government spending on healthcare per head led to reductions of 2.5%-4.2% in mortality for children younger than 5 years and up to 5.2% reductions in maternal mortality rates [14].

The direct statistical relationship between NHI models and growth

On a theoretical and empirical level, we have established two general themes in the literature: (1) that improved life expectancy and decreased mortality rates lead to economic growth and (2) that significant increases in healthcare spending, as seen in models of national health insurance, improve life expectancy and decrease mortality rates. It must follow, therefore, that models of national health insurance boost growth.

The literature confirms this. For instance, Jamison et al. find that, between 2000 and 2011, 24% of the economic growth of low- and middle-income countries can be attributed to health investment [15].

Envisioning an NHI model in India

The status quo in India is a model of theoretical universal health coverage —for instance, healthcare in public hospitals is free for low-income individuals. However, it is not quite an NHI single-payer system, given that first the majority of the population is not insured and instead pays for healthcare by cash and second the private sector spends more than the public sector on healthcare [16].

Berman, Ahuja, and Bhandari suggest that low-income individuals' expenditure on healthcare actively impoverishes them [17]. The evidence above suggests that a country like India would benefit immensely from implementing an NHI model.

The constraint, of course, is cost. Prinja et al. estimate that the cost of true universal health coverage in India would be INR 1713 per person per annum [17]. However, the evidence above is a strong indicator that the economic gains of such a plan might be worth it-certainly something that a country with one doctor per 10,189 people, one public hospital bed per 2046 people, and one state-run hospital per 90,343 people should consider. The recently unveiled Ayushman Bharat scheme is a step in the right direction, but for a country with 67% of healthcare expenditure being household out-of-pocket expenditure, aiming for even higher insurance coverage could translate into significant boosts to economic growth.

CONCLUSION

This paper offers the argument that national health insurance policies promote economic growth to some extent. However, we must be cautious of blindly accepting the theory that national health insurance policies promote education investment, given that it is a theory that is relatively under-explored in the empirical literature. However, the existing literature does seem to confirm the existence of such a connection.

In addition, I wish to make one important caveat clear: this paper should not be seen as a case for adopting national health insurance policies in India, for three reasons. First, as a review of the research, this paper determines the existence of a connection between increased life expectancy and lowered mortality rates lead to economic growth, and that national health insurance policies increase life expectancy and lower mortality rates. However, it does not look at alternatives to national health insurance and their contribution to increased life expectancy and lowered mortality rates. Second, this paper does not assess the opportunity cost of establishing policies of national health insurance and whether this money could be spent in a better way to guarantee even further economic growth. Third, this paper only deals with the effects of national health insurance policies on economic growth—it does not make a value judgment about whether economic growth is the primary goal of public policy. Indeed, economic growth is merely a means to an end and there is still significant philosophical debate about what that "end" might be-whether that "end" is maximizing quality of life, reducing suffering, or protecting natural rights.

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