Volume Title: NBER Macroeconomics Annual 2008, Volume 23

Volume Author/Editor: Daron Acemoglu, Kenneth Rogoff and Michael Woodford, editors

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-00204-7

Volume URL: http://www.nber.org/books/acem08-1

Conference Date: April 4-5, 2008

Publication Date: April 2009

Chapter Title: Comment on "When Does Improving Health Raise GDP?"

Chapter Author: Simon Johnson

Chapter URL: http://www.nber.org/chapters/c7280

Chapter pages in book: (p. 221 - 225)

Comment

Simon Johnson, *Massachusetts Institute of Technology and NBER*

Over the past half century, public health specialists have learned a great deal about how to deliver better health care in low-income countries, but until recently they have been seriously constrained by lack of resources. There is a great deal still to be learned about how best to save lives and improve health around the world, but there is also little doubt that with existing knowledge, technology, and management, great strides could be made if the money were made available.

The unambiguously good news of the past decade is that improvements in the health of people in the developing world have moved closer to the top of the agenda for policy makers, foundations, and nongovernmental organizations around the world. While the exact amount of effective financing remains subject to some discussion, it is now clear that the amount of available resources will increase substantially over the coming years.[1]

As a result, we should reasonably expect with high probability that health conditions in today's low-income countries will improve substantially over the next 20 years. There will likely be improvements in both prevention and treatment; consequently, mortality and morbidity due to infectious disease will decline, in some cases dramatically. The impact will partly be seen in lower infant and child mortality, but there will be an increase in survival rates at most ages.

What are the probable consequences of these health improvements? Could it be, for example, that substantial increases in life expectancy will lead to higher productivity, by allowing harder work or encouraging the accumulation of more human capital? If yes, then the investments in health—which are compelling for their own sake—could have an additional benefit because they could raise income and, even better, place these countries on a sustainably higher growth path.

This is the well-defined set of questions that Ashraf, Lester, and Weil take on in a comprehensive and convincing manner. The stakes are

978-0-226-00204-0/2009/2008-0303$10.00

high. While the investments in better health should (and likely will) take place regardless of the economic impact, if the economic benefits are limited or even zero, this has some consequences. In particular, health improvements would need external financing (i.e., various forms of aid) for longer and perhaps even indefinitely.

And there are, of course, more worrying possibilities. What if saving lives leads to a significant increase in population that outstrips the increase in output? Then income per capita might actually decline. And that is not the worst possible outcome. What if increasing population leads to more crowding on limited resources and, as a result, more social conflict? There is certainly plenty of anecdotal evidence to suggest that this might have happened in some particular historical circumstances.[2]

I. Why Is This a Hard Question to Answer?

As the authors point out, there is a great deal of micro evidence that strongly supports the idea that health improvements raise incomes. But it is not so clear how this evidence aggregates to the macro level. For example, if my health improves, perhaps that just improves my labor market outcomes relative to others (with unchanging health) rather than increasing countrywide productivity levels. In addition, there are various general equilibrium considerations, most notably in terms of how fertility responds and the implications for population growth.

Ashraf et al. propose the entirely sensible approach of applying neoclassical growth theory to examine how various plausible micro parameters fit together to imply a macro story. This offers both some immediate answers and a productive framework for others to build on. It also highlights some limitations of this framework and offers a way to pose alternative hypotheses.

In particular, looking at the effects of simulations—while not always compelling—in this case works well. The thought experiment is clear: if the micro parameters from the leading studies are right, what are the macro implications of improving health?

II. The Bottom Line

The results should be seen as quite startling relative to the conventional wisdom in this area. If one takes established parameter values, and perhaps errs slightly on the optimistic side, the effects of raising life expectancy from 40 to 60 years (which is an entirely plausible scenario for

poor countries over the next two decades) would raise income per capita by 15%, relative to the baseline. This is at the very lowest end of the estimates put forward by official bodies advocating this approach (see, e.g., Commission on Macroeconomics and Health 2001).

Even more striking is the authors' finding with regard to the time path of adjustment; again, being able to look at this carefully strengthens the case for simulations. For the first 30 years after the major health improvement, income per capita is lower than it would have been otherwise.

In addition, the finding that eradicating malaria could not have a major economic impact—partly because malaria accounts for a relatively small part of the total disease burden even in high-mortality parts of Africa—deserves a great deal of attention and further investigation. This is a major challenge to those advocates pushing antimalaria measures as a first-order way to improve health.

III. Some Specifics

There is room for further research across a range of topics here, particularly in terms of exploring alternative key parameters. In particular, the age-specific fertility rate here—from Sri Lanka in 1953—may be a little on the low side, because the big push in terms of health improvements (e.g., addressing malaria) in that country started already in the mid-1940s.

I also wonder about the assumptions regarding retirement from the workforce (at age 65) in the context of today's developing countries. And the female life table for South Asia may or may not provide the best guide to the life table for sub-Saharan Africa; certainly some more discussion of HIV/AIDS would help in this comparison.

In any case, the authors have done both economics and history a great service here. There is a large medical history literature, full of evidence from the mid and early twentieth century. Using the ideas presented here, and perhaps building beyond the neoclassical framework, other researchers can dig up alternative details and conduct careful micro studies using historical data. A productive literature is already developing in this direction.

IV. So It's Fertility

The heart of the matter appears to be the fertility response to health improvements. When and if fertility falls rapidly, this helps raise per capita income;

East Asia offers some encouraging examples, but they turn out to be not as general as commonly supposed. The issue is not just that more children survive (an immediate effect), but also that more women reach childbearing age (a delayed effect). Fertility per woman may also increase. Exactly why the fertility response can be so delayed, and appears to be relatively slow in Africa, remains an important puzzle.

Presumably parents lower their target number of children as survival rates increase. But if they do not understand what is happening or if they regard public efforts to improve health as unlikely to be sustained (not unreasonably, given national and international track records vis-à-vis Africa), then the fertility adjustment may be slower.

In addition, in many historical instances, big losses of population have come in infrequent but dramatic epidemics rather than through constant death rates due to endemic disease. Often these epidemics are rooted in famine, and this in turn has its roots in some kind of misrule. There is surely room for a more integrated approach in which institutions' impacts include fertility decisions in the face of health improvements.

Going back to the nineteenth century, one could take the view that ordinary people in many developing countries learned the hard way that, given the way they were governed, modernization was accompanied by health disasters. Keeping fertility high might be seen as a form of insurance against such disasters. Ironically, at the same time Europeans (and some others) found themselves on a very different path, with higher income, more democracy, and the breakthrough germ theory of disease.

In some countries modernization ensured that epidemics were finally brought under control, and it was "safe" or even optimal for families to transition to low fertility.[3] In other countries—including most of the poorest today—serious vulnerability to epidemics remains; see, for example, the differential experience with HIV/AIDS. As a result, families may well hesitate in lowering fertility, particularly in the face of a health improvement that might, for all they know, prove to be temporary.

V. And Then a Miracle Occurs?

Could there be some additional mechanism through which health improvements affect economic outcomes, that is, outside the framework of this model? For example, if there is an improvement in technology development and adoption, because more potential inventors survive to be productive, this could have a major nonlinear impact.

If better health increases the savings rate, perhaps this could lead to some form of increasing returns. If there is out-migration to high-wage areas, then the ensuing remittances could help raise income. It might also create a pressure group for institutional change in a helpful direction. Further work could explore these channels and evaluate, in the same appealing manner as the current paper, whether they are at all plausible.

VI. Conclusion

The case for spending substantially more on improving health conditions in today's low-income countries is compelling but has nothing to do with economics. We have the resources to save the lives of many children and adults, and we should just do it. There is no question that this should be a top international policy priority.

But the authors' work should give all of us pause in this productive and pressing work. At the very least, they raise concerns about the direct effects of improving health on output, and this suggests that complementary nonhealth investments to directly raise output should also be important.

If we do not know exactly what investments to make—perhaps because economics has fallen somewhat behind public health—we should need to devote considerable effort to this question also. Fortunately, the authors are pointing us in some promising directions. But further work in this area should also become a priority.

Endnotes

1. For example, increased funding for vaccine research has become an important priority for the Group of 7. The United States has proposed additional bilateral support for improving health in low-income countries. The Gates Foundation is focused on the same issue.
2. Acemoglu, Johnson, and Fergusson (2008) have preliminary results suggesting that this might be a relevant consideration for some countries in the modern period.
3. See, e.g., Davis (2001) on the nineteenth-century experience in developing countries. Farmer (1999) makes a related argument for the poorest people in poor countries today.

References

Acemoglu, Daron, Simon Johnson, and Leopoldo Fergusson. 2008. "Social Conflict and Health." Working paper, Massachusetts Institute of Technology.
Commission on Macroeconomics and Health. 2001. *Macroeconomics and Health: Investing in Health for Economic Development*. Geneva: World Health Organization.
Davis, Mike. 2001. *Late Victorian Holocausts*. London: Verso.
Farmer, Paul. 1999. *Infections and Inequalities: The Modern Plagues*. Berkeley: University of California Press.